

A Typology of Aspect-Actionality Interactions

Polančec, Jurica

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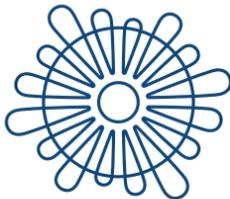
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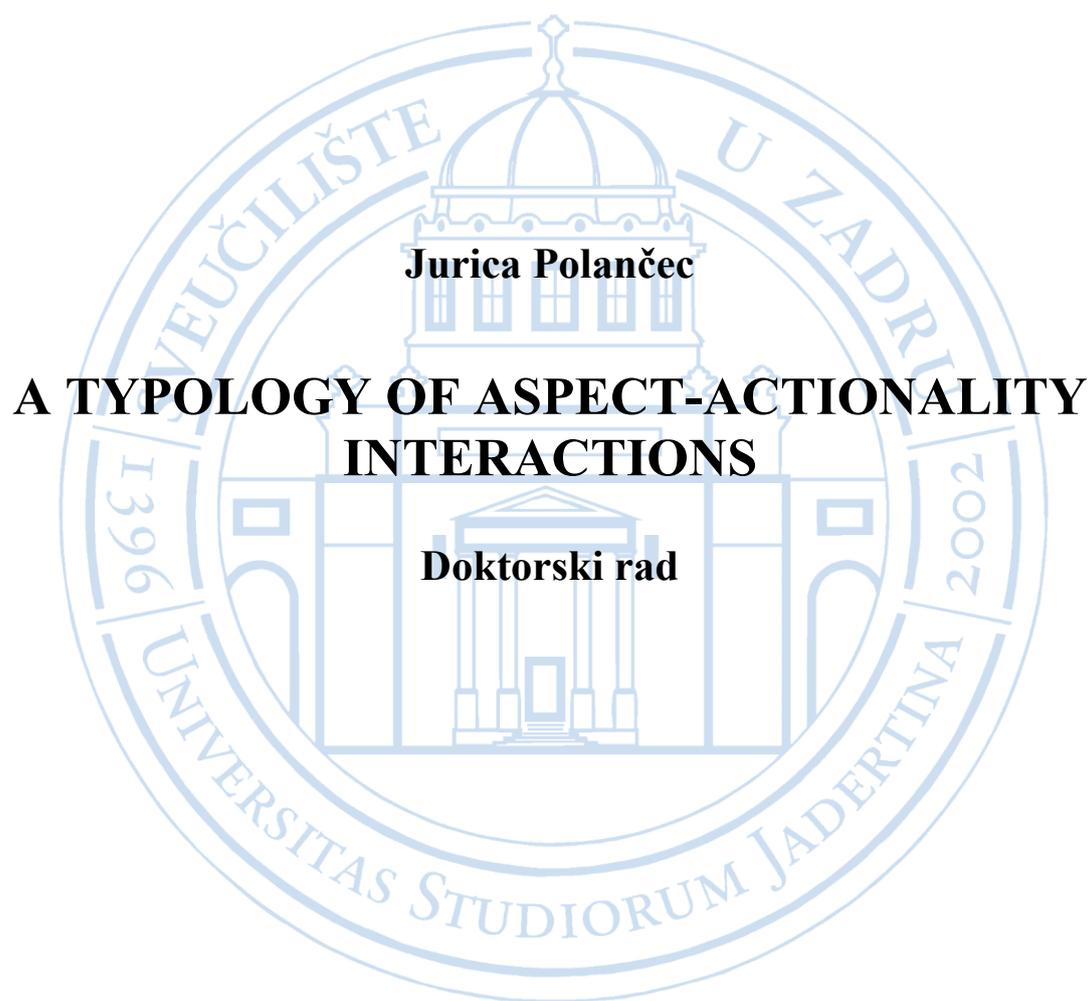
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SVEUČILIŠTE U ZADRU
POSLIJEDIPLOMSKI SVEUČILIŠNI STUDIJ
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Jurica Polančec

**A TYPOLOGY OF ASPECT-ACTIONALITY
INTERACTIONS**

Doktorski rad

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Ce qui décide du degré d'achèvement d'une œuvre, ce n'est nullement une exigence d'art ou de vérité, c'est la fatigue et, plus encore, le dégoût.

Emil Cioran *De l'inconvénient d'être né*

I suspect that whatever cannot be said clearly is probably not being thought clearly either.

Peter Singer *Ethics in the Real World*

Contents

1.	Introduction	1
1.1.	Background: aspect and typology of actionality.....	1
1.2.	Actionality: preliminaries	3
1.2.1.	Why actionality	4
1.2.2.	Actionality is linguistically relevant.....	5
1.2.3.	Vendler: actional classification and diagnostic tests	9
1.2.4.	What is being classified	13
1.2.4.1.	Verb senses are units of classification	15
1.2.4.2.	Actional makeup of the sentence and actional shift.....	17
1.2.4.3.	Grammatical aspect and actional shift	22
1.3.	Aspect: preliminaries	26
1.3.1.	Grammatical nature of aspect	28
1.3.2.	Viewpoint metaphor of aspect: critical assessment.....	29
1.3.3.	Non-viewpoint aspect	31
1.3.4.	Discourse functions of grammatical aspect	33
1.3.5.	Actionality and the definition of aspect grams	35
1.3.6.	Interim summary: aspect grams are of two kinds.....	36
1.3.7.	Aspect systems	37
1.4.	A note on terminology	41
1.5.	Aspect and actionality in interaction	44
1.5.1.	Aspect and actionality: same but different?	44
1.5.2.	On how to distinguish aspect and actionality	49
1.5.3.	The notion of aspect-sensitive classes	52
1.5.4.	Deconstructing “interactions”	57
1.6.	What it means to do typology	60
1.6.1.	Two approaches to language comparison.....	61
1.6.2.	Comparison of meaning	68
1.6.3.	Nonaprioristic approach to actionality	71
1.7.	Orthographic and terminological conventions.....	79
1.8.	Goals of the present study	80
1.9.	Outline of the dissertation	82
2.	Aspect and actionality: research traditions	85
2.1.	Anglo-American and Continental tradition	85

2.2.	Anglo-American formal tradition.....	86
2.2.1.	Aspect and actionality in the Anglo-American tradition	86
2.2.2.	Formal semantics: basics	89
2.2.3.	Brief history of formal research on actionality	94
2.2.4.	Formal semantics and crosslinguistic diversity	99
2.2.4.1.	Eurocentrism of formal semantics.....	100
2.2.4.2.	Crosslinguistic research on actionality in formal semantics	104
2.3.	Continental and descriptive-structuralist tradition	105
2.3.1.	Focus on grammatical aspect and morphology.....	105
2.3.2.	The descriptive and typological research on aspect-actionality interactions...	109
3.	Approaches to aspect-actionality interactions.....	115
3.1.	Walter Breu and Radical Selection Theories	115
3.2.	Sergei Tatevosov	123
3.3.	Other approaches.....	130
3.3.1.	Carlotta Smith	130
3.3.2.	Lars Johanson.....	133
4.	Actional classification.....	137
4.1.	Universality and comparison of actionality.....	137
4.1.1.	Linguistic and extralinguistic classification of predicates	138
4.1.2.	Misconceptions about the comparison of actionality.....	143
4.1.2.1.	Classes are not universal	145
4.1.2.2.	Variation in actional class membership.....	148
4.1.3.	How to compare language-specific actional classes	152
4.2.	Principles of actional classification	155
4.2.1.	Actional primitives and actional classes	156
4.2.2.	The place and role of aspect in actional classification.....	159
4.2.3.	Types of diagnostic tests	161
4.2.4.	Issues with tests.....	165
4.2.4.1.	Are tests reliable?	165
4.2.4.2.	Are tests consistent across languages?	169
4.3.	Description of actional primitives	172
4.3.1.	Phases (ϕ).....	173
4.3.2.	Transition (τ).....	179
4.3.3.	Multiplicative process (M) and semelfactive quantum (Q).....	180
4.3.4.	Summary and comparison with Tatevosov and Breu	182
4.3.5.	Excursus: non-actional features in actional classification	183

4.4.	Actional classes in this study	185
4.4.1.	Simple actional classes: $[\varphi_S]$, $[\varphi_P]$, and $[\tau]$	187
4.4.1.1.	Total states and plain activities	187
4.4.1.2.	Achievements	187
4.4.2.	Complex classes with transition	192
4.4.2.1.	Initiotransformatives $[\tau\varphi]$	195
4.4.2.2.	Accomplishments $[\varphi_P\tau]$	199
4.4.2.3.	Two-phase verbs $[\varphi_1\tau\varphi_2]$	206
4.4.3.	Multiplicative activities $[M+Q]$	210
4.4.4.	Exceptional kinds of complex classes	212
4.4.5.	Strong and weak actional classes	213
4.4.6.	Aspect-sensitive classes and properties of verb arguments	214
4.4.7.	Aspect-sensitive classes: a summary	217
5.	Aspect grams and systems in this study	221
5.1.	Aspect gram-types as comparative concepts	222
5.2.	Morphology of aspect	229
5.3.	Criteria for the inclusion of aspect grams	232
5.3.1.	The notion of grammatical and inflectional meaning	233
5.3.2.	The position of PROG	237
5.3.3.	A brief note on subsituation aspect grams	240
5.4.	Aspectual grams and systems: definitions	243
5.4.1.	The perfective-imperfective system	244
5.4.1.1.	Perfective (PFV)	245
5.4.1.2.	Imperfective (IPFV)	250
5.4.2.	The progressive-nonprogressive system	256
5.4.2.1.	Contrast with the PFV-IPFV system	256
5.4.2.2.	The progressive gram (PROG)	258
5.4.2.3.	The PROG-NONPROG system of English	263
5.4.3.	Other systems	266
5.4.3.1.	Maltese (Afrasiatic, Semitic)	266
5.4.3.2.	Japanese (Japonic)	267
5.4.3.3.	Belhare (Sino-Tibetan, Kiranti)	274
5.4.3.4.	Cayuga and other Northern Iroquoian languages	279
5.4.3.5.	Nyakyusa and other Bantu languages	282
6.	Sources and Sample	287
6.1.	Data sources	287

6.1.1.	Data availability	287
6.1.2.	Types of sources used in this study.....	292
6.1.3.	Reliability of data.....	293
6.2.	Sample.....	299
7.	A typological survey of aspect-sensitive classes	303
7.1.	Stative (non-eventive) classes	304
7.1.1.	Statives and PROG.....	305
7.1.2.	Morphological defectiveness of statives	311
7.1.3.	Total states [φ_S].....	314
7.1.4.	Inchoative states [$\tau\varphi_S$].....	316
7.1.5.	Distinction between permanent and temporary states.....	321
7.2.	Eventive atelic verbs	324
7.2.1.	Plain activities [φ_P].....	324
7.2.2.	Ingressive activity [$\tau\varphi_P$].....	326
7.3.	Accomplishments [φ_{PT}] and achievements [τ]	330
7.3.1.	Achievements and PROG.....	330
7.3.2.	Strict and extendable achievements in PFV-IPFV languages	339
7.3.3.	Strong and weak (non-culminating) accomplishments.....	346
7.4.	Two-phase verbs [$\varphi_1\tau\varphi_2$].....	355
7.4.1.	Two-phase verbs in PFV-IPFV languages and English	356
7.4.2.	Two-phase verbs in other aspect systems	359
7.5.	Multiplicative activities [$M+Q$].....	362
7.6.	Discussion	363
8.	Conclusions and path forward.....	367
	BIBLIOGRAPHY	371
	ABSTRACT.....	401
	EXTENDED ABSTRACT IN CROATIAN.....	403
	APPENDIX I: List of abbreviations	409
	APPENDIX II: Aspect systems of the languages of the sample.....	411
	CURRICULUM VITAE	415

1. Introduction

This chapter introduces the topic of the dissertation, the key concepts and associated terminology. It begins by providing a general background to the topic (§1.1) and then proceeds to discuss the four central concepts of the dissertation: actionality (§1.2), aspect (§1.3), how they interact and with it their affinities and differences (§1.4, §1.5), and finally, what is meant by typology (§1.6). Extensive discussions of actionality and aspect are continued in Chapters 4 and 5, respectively. Such an extensive discussion of these notions, in particular of aspect and actionality is warranted because, as Klein (2009a: 42) observes:

There is an initial understanding of notions such as tense, aspect, or Aktionsart, shared by most linguists and grammar makers. But on closer inspection, it rapidly turns out that each of these notions is loaded with problems that range from terminological confusion to fundamental unclarities of definition.

The chapter is rounded off with a brief discussion of orthographic and terminological conventions (§1.7), a rundown of the goals of the study (§1.8) and an outline of the dissertation (§1.9).

1.1. Background: aspect and typology of actionality

This work is devoted to investigating what has been traditionally referred to as interactions between actionality and aspect. Actionality and aspect are related but distinct linguistic phenomena. Actionality is defined as a lexicosemantic and lexicogrammatical phenomenon (§1.2), and aspect as a grammatical one (§1.3). The two constitute the domain of this study.

Aspect and actionality are notionally close (§1.5), and various implicational relations obtain between the two in natural languages – this is what is referred to here as “interactions” (§1.5.4). Aspect is in that sense one of the ways actionality is linguistically manifested in natural languages. Linguistic manifestation of actionality is a broadly conceived notion which also includes cooccurrence restrictions with adverbials, compatibility with certain syntactic constructions, and so forth.¹

The present study is based on the premise that grammatical aspect differs from all other manifestations of actionality due to its notional affinity with actionality. In that sense, it is often

¹ Another term is “realization”. It can also be said that actionality “interacts” (Filip 2011: 1192) or “intersects” (Filip 2012: 721) with properties of other linguistic categories.

noted that aspect is the grammatical category whose grammatical behavior is in the most direct way determined by actionality. Aspect is different from other manifestations in yet another way – it is a grammatical category. This property of aspect allows us to approach actionality systematically, since aspect as a grammatical category occurs obligatorily with verbs (at least aspects considered in this study – see §1.3 below). This results in systematic interactions between actionality as a lexically determined property of the verb and the grammatical category of aspect. Systematic interactions between the lexical content of the verb and the grammatical properties of aspect allow us to recognize a limited number of **aspect-sensitive classes** in any given language, provided the language has the grammatical category of aspect (§1.5.3). The notion of aspect-sensitive class is central to a variety of approaches to aspect-actionality interactions.

The existence of aspect-sensitive classes in individual languages allows us to approach actionality from a crosslinguistic perspective, since actionality is provided with a more systematic manifestation through aspect-sensitive classes than it is the case with its other manifestations. In other words, it allows us to **typologize** actionality (§1.6.3) by comparing aspect-sensitive classes across languages. This is, in essence, the approach to typology of actionality developed by Sergei Tatevosov (Tatevosov 2002a; 2016a) and the present study in many respects draws on his approach. This approach is built upon here by considering a much broader range of issues relevant for any crosslinguistic investigation of actionality.

Thus, while being primarily focused on aspect-actionality interactions, this crosslinguistic study also attempts to contribute to the following set of questions as laid out by Tatevosov (2002a: 394):²

The main question (...) concerns universal restrictions on crosslinguistic variation in the domain of actionality. What is a possible actional system? Which actional classes can be absent and which must be present in any system? What is the minimal actional system and what is a maximal one? (...)

In other words, this means that this dissertation explores more generally the ways to approach actionality from a crosslinguistic perspective while using interactions of aspect and actionality

² This set of questions is distinct, but not separate, from the two basic questions posed in formal semantics (Filip 2011: 1193): the question about what is the most fitting actional classification for natural languages, and the question as to what constitutes valid empirical evidence for such a classification schema.

as a case study. Goals of the present study will be stated more explicitly in §1.8, after a thorough discussion of the four central concepts in §1.2-§1.6.

1.2. Actionality: preliminaries

One of the most common ways of introducing the concept of **actionality** is by referencing the notion of time.³ For example, actionality is described as having to do with the “intrinsic temporal characteristic of situations” (Sasse 2002: 203), with the “pattern of distribution of action through time” (Talmy 2007: 106) or with “the way situations unfold in time” (Smith 1997: xiii). In a similar vein, actionality is said to suggest “the particular way in which [the] verb presupposes and involves the notion of time” (Vendler 1957: 143).

Another common way of introducing actionality is by providing an illustration of its linguistic effects (i.e. by ostension [cf. Levinson 1983: 27]). This practice is followed here; consider the following two examples:

- (1) English (Filip 2012: 722)
 - a. telic verb: *recover*
John recovered in an hour / *for an hour.
 - b. atelic verb: *swim*
John swam *in an hour / for an hour.

The two English verbs (*recover* and *swim*) differ, among other things, in one feature that has to do with their temporal, and more specifically actional properties. This actional feature is called **telicity**, which determines whether the situation described by the verb has an inherent endpoint or not. The presence, or absence, of an inherent point is in this case diagnosed in a syntactic context, via restrictions on co-occurrence with the adverbials *in an hour* and *for an hour*. The acceptability of *recover* with the adverbial *in an hour* signals its telicity and the existence of an inherent endpoint. In contrast, the acceptability of *swim* with the adverbial *for an hour* signals its atelicity and the lack of an inherent endpoint.

Apart from telicity (the presence/absence of an inherent endpoint), two other semantic features are normally considered actional, viz. duration (property of being extended in time or the lack thereof) and dynamicity (stability over time or the lack thereof). These three features combined

³ On “time” in linguistics and other disciplines see Klein (2009b).

are the basis for the best-known classification of predicates (see §1.2.3 below).⁴ The existence of three basic actional features is used in this chapter for introductory purposes (a somewhat different system of actional features is used in the present work; it is introduced in Chapter 4).

Every investigation of actionality must pose the following questions (Filip 2011: 1192): “[w]hat exactly are the aspectually⁵ relevant meaning components, how are they related to each other and how do they uniquely determine the relevant (...) classes and no other?” The answer depends, in part, on the diagnostic criteria employed to classify verbs, so-called **tests** for actionality, which are introduced below in §1.2.3 below and discussed in much detail throughout Chapter 4.

The remainder of this section introduces the most basic facts relevant for the understanding of actionality. A more detailed discussion of actionality is provided in Chapter 4.

1.2.1. Why actionality

To the uninitiated it may seem perplexing to see that seemingly minor semantic distinctions such as the actional ones are considered so important as to “warrant a separate treatment” (Vendler 1957: 143). The explanation lies in the observation that these distinctions belong to a small set of features with wide application: “part of the meaning of any utterance of a sentence is one of a small number of temporal/aspectual profiles distinguished on a small number of dimensions” (Moens & Steedman 1988: 17).

What is more, these semantic dimensions, i.e. actional features, are linguistically and grammatically significant because of “the way in which they interact with the syntactic and morphological structure in natural languages” (Filip 2011: 1191; cf. Dowty 1979: 185). For instance, in (1) the actional feature of telicity determines the verb’s potential for co-occurrence with the adverbials.

It is not surprising then that actionality is a concept whose “usefulness, if not necessity, for the explanation of a wide range of language phenomena is well established” (Filip 2012: 721).

⁴ One also finds *non-temporal* (i.e., *non-actional*) semantic features relevant for verb classifications, e.g. agentivity, causation and control. These three are briefly discussed in §4.3.5.

⁵ Here *aspectually* is used where *actionally* would be used in the present work. This is explained in §1.4.

There are dozens of genetically diverse languages where actional contrasts can be shown to be “central to the organization of their verbal systems” (Van Valin 2005: 32).

1.2.2. Actionality is linguistically relevant

Let us return to the definitions of actionality. Actionality is a phenomenon “of lexicosemantic nature” (Bache 1982: 62),⁶ and it is “essentially rooted in the lexicon” (Bertinetto 1994a: 392–393). Moreover, actionality is assumed to be “part of the intrinsic meaning of verb roots” (Talmy 2007: 108). The latter claim requires some clarification, which is provided in §1.2.4.1 below.

When we refer to the actional character of a verb or a predicate, “we do not talk about what is the case in reality, but about the way in which languages grasp and encode reality in lexical contents” (Klein 2009a: 61). In that sense, actionality is a linguistic phenomenon and one is interested in “the way in which [actional] distinctions (...) are played out in the grammar and in the structure and meanings of words” (Bach 2005: 169). In other words, we are interested in instances where actionality must be invoked in order to explain grammatical behavior and constraints in the use of various linguistic phenomena (Boogaart 2004: 1170).

In this study, I am therefore only concerned with those actional properties that are demonstrably **linguistically relevant**, i.e. for which we have “linguistic evidence to support the distinctions that we make” (Kroeger 2019: 381) and with which we can associate “a consistent, unique set of linguistic properties” (Smith 1997: 17). Actionality of a verb or a predicate is thus “a *linguistic* property which can be determined only by means of *linguistic* tests” (Van Valin & LaPolla 1997: 106, emphasis in original).

The insistence on the linguistic relevance has an important consequence: the actionality of a verb or predicate cannot be established by intuition. Instead, as said, actionality must be established by relying on *linguistic* manifestations of actionality.⁷ This is so because our intuitions about actional properties do not reflect linguistic knowledge – at least not directly.

⁶ A summary of alternative characterizations can be found in Brinton (1988: 3).

⁷ It is interesting to note that some actional features are easier to recognize without resorting to linguistic tests (e.g. punctuality) than some others (e.g. telicity). It takes a great deal of ingenuity to determine if a verb is telic without linguistic tests.

Rather, they draw from our conceptualizations of extralinguistic situations and our world knowledge. This issue is important for several reasons and will be revisited in §4.1.1.

Not every semantic contrast is considered relevant for classification. Let us illustrate this with two kinds of temporal distinctions found in English. There is, on the one end, a kind of temporal distinction that has little or no linguistic relevance. This is the distinction between specific states (*to rule*) and generic states (*to drive a cab*). The former kind involves actions which are “manifold and quite disparate in nature”, whereas the actions of the latter kind are a more uniform thing (Vendler 1957: 151). The distinction was discussed as relevant by Vendler, but was never taken up in the later scholarship on actionality, which is attributable to the fact that it is very difficult to demonstrate that the distinction has relevant linguistic consequences.⁸ On the other end, there is a group of verbs incompatible with the progressive aspect (**I'm knowing*), so-called states. This is a clearly discernible linguistic (more specifically, grammatical) consequence because the progressive aspect in English is an inflectional category that should have few if any usage restrictions.

Furthermore, many linguistic realizations of actionality are more strictly grammatical and actionality in that sense is a lexicogrammatical phenomenon. **Lexicogrammar** is a field of linguistics primarily interested in investigations of grammatically relevant semantic distinctions (cf. §1.6.2 below). Therefore, when one says that actionality is a lexicogrammatical phenomenon, that references the fact that actionality in many cases significantly influences the grammatical behavior of the verb. Incompatibility of stative verbs and predicates with the progressive aspect is a case in point. This description fits well within the Whorfian concept of **covert categories** or **cryptotypes**.⁹ Covert categories are described by Whorf as those categories that “easily escape notice and may be hard to define, and yet may have profound influence on linguistic behavior” (1945: 4). The lexicogrammatical or covert status relates actionality to verbal phenomena such as causation (Goddard 2011: 304ff.), agentivity/volition, transitivity (Nichols, Peterson & Barnes 2004) and, in the nominal domain, with phenomena

⁸ The only “test” mentioned by Vendler relates to the fact that one cannot say *I was ruling Cambodia all morning*; the opposite is true with *driving the cab*.

⁹ That connection can be attributed to King (1969), and it is also made, presumably independently, by Smith (1996: 228; 1997: 5) and Evans (2010).

such as the mass-count noun distinction (Behrens 1995) and the distinction between proper and common nouns (Lyons 1977: 449).

This observation is important because it allows us to specify the family of linguistic phenomena that actionality belongs to (i.e. its *genus*). Interestingly, actionality is almost never defined in terms of its *genus* (lexicogrammatical phenomenon / covert category) and *differentia specifica* (has to do with temporal characteristics of the situation). The class (i.e. the *genus*) is passed over in almost all definitions of actionality I have come across so far (e.g. in Dowty 1979; Filip 2011, 2012; Tatevosov 2002; Rothstein 2004, to name a few). In textbooks, for instance in Kroeger (2019: 379ff.), a descriptive definition is normally preferred.

The lexicogrammatical status of actionality is reflected in the absence of dedicated and/or systematic means of expression (cf. Filip 2012: 726). Instead, actionality manifests itself in the grammar of the language by means of “a battery of combinatorically defined tests” (Evans 2010: 529) and is often “evident in a productive morphosyntactic contrast” (Wilhelm 2007: 6). An example of a combinatorically defined test is the test with *for*-PPs and *in*-PPs in example (1) above. An instance of a productive morphosyntactic contrast is the inability of some verbs to occur in the progressive.

In this way, actionality is not unlike the mass-count distinction. The mass-count distinction is not systematically manifested in languages, at least not in the sense that it has constant formal expression, but still has significant consequences for grammatical behavior of nouns. Some of the linguistic manifestations of the mass-count distinction are the following. In Croatian, count nouns can freely form the plural – *stol* ‘table.SG’ and *stolovi* ‘table.PL’, whereas count nouns in most cases cannot (*grah* ‘bean.SG’, **grahovi* ‘bean.PL’). If the plural is possible, then the plural noun indicates something other than the noun in the singular (*kava* ‘coffee.SG’, *kave* ‘coffee.PL = kinds of coffee’). In English, mass nouns, unlike count nouns, are typically articleless, co-occur with the determiners *some* and *much*, but not with *few* and *many*, cannot take the indefinite article *a* and, as in Croatian, cannot be pluralized without undergoing a change in meaning (Quirk et al. 1985: 245–246; cf. Gill 1993: 366–367). What can be claimed is that the mass-count distinction determines the behavior of one of the nominal inflectional categories, viz. number. In the same way, the actional character determines the behavior of one of the verbal inflectional categories, namely aspect (recall that in English there is a group of verbs – so-called states – that are incompatible with the progressive aspect – e.g. **I’m knowing*).

Actionality is realized linguistically in a variety of ways, including “grammatical aspect, tense, adverbial modification, the syntax and semantics of quantification and various expressions of quantity, argument structure, and linking at the lexical semantics-syntax interface and also (...) a role in the temporal sequencing of discourse” (Filip 2012: 721; cf. 2011: 1192). The grammatical reality of actionality is also at display in those active-stative systems in which the alignment split is conditioned by the division between active (dynamic) and stative verbs (Mithun 1991).

In this work the focus will be on the interaction of actionality with the grammatical aspect. One instance of this phenomenon, the incompatibility of state verbs with the progressive in English (**I'm knowing*), has already been mentioned. Interactions between aspect and actionality are a more complex, multifaceted phenomenon and are explored in more detail in §1.5.4.

Among other manifestations, two will be particularly important in this work. One of these is the combinability with the *for*-PP and *in*-PP adverbials illustrated in example (1) above. The other involves the instances where the telicity of the verb depends on the quantificational and referential properties of verb arguments. This is illustrated in the following example:

- (2) English (Tatevosov 2002a: 350)
- a. telic interpretation: the object is singular
He wrote a letter *in*/**for* two hours.
 - b. atelic interpretation: the object is plural
He wrote letters ^{??}*in*/*for* two hours.

In (2), the denotation of direct object determines telicity. The singular object yields an unambiguous telic interpretation, while the plural object has a strongly preferred atelic interpretation.

These two manifestations are relevant as they have a major role in the establishment of aspect-sensitive classes. In particular, the test with *for*-PP and *in*-PP adverbials will be crucial for diagnosing the contrast between weak and strong subtypes of aspect-sensitive classes (see §4.4.5, §4.4.7 and Chapter 7), whereas the referential and quantificational properties of direct objects are important for the discussion about actional (aspectual) composition (see §1.2.4.2 and §4.4.6).

1.2.3. Vendler: actional classification and diagnostic tests

The effects brought about by the interactions of actionality with various linguistic expressions and grammatical categories can also be used as **tests** to determine the actional character of a verb. As already shown in example (1), the co-occurrence restrictions with *in*-PP and *for*-PP adverbials can be used as a diagnostic for the actional feature of telicity. The restrictions on the use with the progressive aspect mentioned in the previous section can be used as a diagnostic for the actional feature of stativity.

Based on the results of these tests, verbs of individual languages can be grouped into **actional classes**. By far the most influential classification of verbs was proposed for English by Vendler (1957).¹⁰ This is presented in Table 1, together with the semantic features that define each of the four proposed classes.¹¹ Characterization in terms of features is more recent and is adopted from Smith (1997: 20 et passim).¹²

Classes →	Activity	Accomplishment	Achievement	State
Examples →	<i>run</i> <i>push a cart</i> <i>walk</i> <i>swim</i> <i>pull</i> <i>think about</i>	<i>run a mile</i> <i>draw a circle</i> <i>write a letter</i> <i>get exhausted</i> <i>paint a picture</i> <i>make a chair</i>	<i>die</i> <i>reach a summit</i> <i>win the race</i> <i>spot (sth.)</i> <i>recognize</i>	<i>know</i> <i>believe</i> <i>love</i> <i>dominate</i> <i>like/dislike</i> <i>see</i>
Relevant features →	dynamic durative atelic	dynamic durative telic	dynamic punctual telic	stative durative atelic

Table 1. Vendler’s (1957) classification (adapted from Brinton 1988: 241; cf. Kroeger 2019: 385).

Vendler’s first opposition between **states** (*to know*) and **activities** (*to run*) is based on the criterion of “successive phases” (Vendler 1957: 144). States do not have them, activities do:

¹⁰ Vendler’s paper first appeared in 1957 in *The Philosophical Review*, 66, pp. 143–160. The same paper was reproduced with minor changes as Ch. 4 of *Linguistics in Philosophy* (Ithaca, NY: Cornell University Press, 1967), 97–121. This version was reprinted in Mani, Pustejovsky and Gaizuskas (2005), pp. 21–32. In this work, only the pages from the 1957 paper are cited.

¹¹ Some aspects of this classification were also known before Vendler in Western linguistics, for which see §2.3. The best-known case is Garey (1957), who foreshadows some of the crucial elements of Vendler’s classification. A similar system was developed by the Russian linguist Yuri Maslov (1948).

¹² See also Boogaart (2004: 1169).

this is also known as the feature of dynamicity. The *run* group (activities), which also includes verbs and predicates such as *push a cart*, is then contrasted with **accomplishments**, such as *draw a circle* or *run a mile*. The most important difference between these two, as Vendler notes, is in their entailments. According to Vendler, the following entailment is valid for activities: “even if [one] stops in the moment, it will still be true that [one] did run or did push the cart” (ibid.: 145). In contrast, with accomplishments there is no such entailment. The key feature of accomplishments is that “they proceed towards a terminus that is basically necessary” (ibid.: 146). This is better known as the feature of telicity. The final class of verbs introduced by Vendler involves the verbs denoting single moment events, which are called **achievements** (ibid.: 147), such as *recognize* or *reach the top*. In contrast to the other three classes, which are durative, achievements are punctual.

Among other tests used by Vendler (1957: 144–149), the progressive aspect should be mentioned, which is incompatible with states and achievements, as well as three tests for telicity: an early version of the test with *for*-PP and *in*-PP adverbials, the test with *it took him X time to Y*, and the entailments with the Present Perfect. All these tests are discussed in detail in §4.2.

The clusters of temporal features (telicity, dynamicity and duration) as revealed by the tests are called “time schemata” by Vendler. Nowadays, they are referred to as (aspectual, actional) classes. This term is also used here (for more on terminological conventions see §1.7).

Subsequent actional classifications rarely radically depart from Vendler’s four-way classification. A table of terminological correspondences between Vendler’s classification and classifications of 15 subsequent authors is provided in Tatevosov (Tatevosov 2002a: 320–321). Most modifications in fact consist of subdividing or collapsing some of Vendler’s distinctions or adding and refining existing diagnostic criteria (cf. Levin & Rappaport Hovav 2005: 88). The modifications of the Vendlerian system specific to this work will be discussed in Chapters 3 and 4. I now turn to diagnostic tests.

After Vendler, a number of various additional tests were proposed. A detailed summary of tests is given in Table 2.¹³

¹³ As pointed out by Walková (2013: 14), the behavior of achievements in response to tests 1–6 varies.

No	Test	States	Activities	Accomplishments	Achievements
1	habituality in a nonprogressive	NO <i>John knows the answer.</i>	YES <i>John runs.</i>	YES <i>John recites a poem.</i>	? [no example supplied by Dowty]
2	occurs with <i>deliberately, studiously, carefully, etc.</i>	NO <i>*John deliberately knew the answer.</i>	YES <i>John ran carefully.</i>	YES <i>John carefully built a house.</i>	?? <i>?John deliberately found a penny.</i>
3	occurs as complement of <i>force/persuade</i>	NO <i>*John forced Harry to know the answer.</i>	YES <i>John persuaded Harry to run.</i>	YES <i>John forced Harry to build a house.</i>	NO <i>*John persuaded Bill to notice a stranger.</i>
4	occurs in pseudo-cleft constructions with <i>do</i>	NO <i>*What John did was know the answer.</i>	YES <i>What John did was run.</i>	YES <i>What John did was build a house.</i>	? [no example supplied by Dowty]
5	occurs in the imperative	NO <i>*Know the answer!</i>	YES <i>Run!</i>	YES <i>Build a house!</i>	? [no example supplied by Dowty]
6	occurs in the progressive	NO <i>*John is knowing the answer.</i>	YES <i>John is running.</i>	YES <i>John is building a house.</i>	? <i>?John is noticing a painting. but John is dying.</i>
7	<i>x is V-ing</i> entails <i>x has Ved</i>	–	YES <i>John is running.</i> → John has run	NO <i>John is building a house.</i> → John has built a house	–
8	occurs with <i>for an hour/ spend an hour V-ing</i>	YES <i>John loved Mary for two years.</i>	YES <i>John walked for an hour.</i>	YES <i>John spent an hour painting a picture. ?John painted a picture for an hour.</i>	NO <i>?John noticed the painting for a few minutes.</i>

No	Test	States	Activities	Accomplishments	Achievements
9	<i>V for an hour entails at all times in the hour</i>	YES <i>John loved Mary for two years.</i> → John loved her at any time of the two years	YES <i>John walked for an hour.</i> → John walked at any time of the hour	NO <i>?John painted a picture for an hour.</i> → John painted a picture at any time of the hour	–
10	occurs with <i>in an hour/ take an hour to V</i>	NO <i>*John loved Mary in two years.</i>	NO <i>#John walked in an hour.</i>	YES <i>John painted a picture in an hour.</i>	YES <i>John noticed the painting in a few minutes.</i>
11	<i>x V-ed in an hour entails x was V-ing during that hour</i>	–	–	YES <i>John painted a picture in an hour.</i> → John was painting the picture during the hour	NO <i>John noticed the painting in a few minutes.</i> → John was noticing the painting during the few minutes
12	occurs with <i>stop</i>	YES <i>John stopped loving Mary.</i>	YES <i>John stopped walking.</i>	YES <i>John stopped painting the picture.</i>	NO <i>#John stopped noticing the painting.</i>
13	occurs with <i>finish</i>	NO <i>*John finished loving Mary.</i>	NO <i>*John finished walking.</i>	YES <i>John finished painting a picture.</i>	NO <i>*John finished noticing the painting.</i>
14	ambiguity with <i>almost</i>	NO <i>John almost loved Mary.</i> → John did not love her	NO <i>John almost walked.</i> → John did not walk	YES <i>John almost painted a picture.</i> → (1) John did not paint at all, (2) John painted but did not quite finish	NO <i>John almost noticed the painting.</i> → John did not notice the painting

Table 2. Tests for actionality in English (Walková 2013: 13–14, based on Dowty 1979).

Legend: ‘#’ unintended meaning; ‘–’ not applicable because it does not occur in the given form.

Proliferation of tests can result in complex multifactorial classifications where classes have no clear boundaries. In order to avoid proliferation of distinctions, an actional classification must be “a compromise between demands of semantics (...) and those of syntax” (Van Valin & LaPolla 1997: 91). This means that no classification is supposed to be perfectly exhaustive, and

that the role of classification is to indicate the common classes with the widest application. In other words, actional classification needs to rely on actional distinctions with greater linguistic and grammatical reality. Therefore, one may want to take into consideration only those that are most meaningful and successful in terms of explaining the grammatical behavior of verbs. Deciding which test is meaningful and which one is not is a delicate balancing act – an example was cited in §1.2.2 above.

Furthermore, even if common classes with widest application can be isolated based on their linguistic and grammatical relevance, the membership of such classes is in fact non-discrete and scalar in the sense that actional classes often have more central and more peripheral members (cf. Dowty 1979: 187). As we will see in Chapters 4 and 7, this concerns above all boundaries between stative and dynamic predicates and between punctual and durative predicates. Again, this is not unexpected as similar properties are observed with the mass-count distinction in the nominal domain, where nouns form “a scale of individuation” (Grimm 2018).

Even though the tests and the actional classification illustrated so far are normally assumed to be universal, they are in fact English-specific. This is because “the Vendler classes themselves have been motivated primarily by means of diagnostic tests involving language-specific constraints of English” (Boogaart 2004: 1170).

It follows from that that an actional classification of the verbs in any given language (and not only English) is language-specific, a conclusion which has apparently gained some traction among researchers of various theoretical persuasions. Accordingly, the same will be assumed in this work. Recognition of this fact poses serious problems for the comparison of actional classifications across languages and will be extensively discussed at various instances, in particular in §4.1 (see also §2.2).

1.2.4. What is being classified

The reader may have already noticed one inconsistency in the presentation. It concerns the fact that in Table 1, one finds both verbs (e.g. *to run*) and verb phrases (e.g. *run a mile*, *draw a circle*) as units of classification. Vendler did not explicitly address this inconsistency, and speaks of verbs exclusively (cf. Filip 1999: 72), even though, in many cases, it is whole verb phrases that are analyzed.¹⁴ This inconsistency of Vendler’s classification is well-known, as

¹⁴ In the rest of the section I use *verb* to refer to the verbal lexeme. Lexeme is understood in the traditional sense as a grouping of related senses that share the same phonological form (Saeed 2016: chap. 3). In that sense

Sasse (2002: 216) notes: “One of the most problematic aspects of the literature in the [Vendlerian] tradition is its general vagueness with respect to the level of linguistic analysis on which the time-schemata obtain.” Even though in §1.2 it was mentioned that actionality is a property of a “verb root,” this is a somewhat simplified view since, as will be shown, “all words in a sentence can contribute by their lexical meaning to describe the temporal make-up of a situation” (Klein 2009a: 59). This issue largely stems from the observation that, at least in English, most verbs (i.e., verbal lexemes) can be found in different classes: consider, for instance, *run* (activity) and *run a mile* (accomplishment) from Table 1. This raises the question of whether actionality is a property of the verbal lexeme (*run*) or, rather, a property of the whole verb phrase, clause or even sentence.

In this section the following issues are discussed. First, I argue in §1.2.4.1 that actional classification deals with classifying **verb senses** and not verbs as lexemes. Individual verb senses are associated with specific lexical representations, which serves as an independent criterion for establishing verb senses. Second, in §1.2.4.2 I discuss the well-established fact that the actional properties of the verb in the context (i.e. propositions) are attributable to more than the lexically specified verb senses. The lexically determined actional character associated with a particular verb sense is a starting point in the actional build-up of the proposition, but it can be modified by various grammatical operators and sentence elements. These modifications are referred to in the literature as instances of **actional (aspect) shift** (de Swart 1998; Zucchi 1998; Filip 1999: 61–69).^{15, 16} It is argued that the question of the linguistic level on which actional meanings obtain makes little sense, because multiple levels are typically involved in creating the actional build-up of the sentence and each level can contribute to it. Even though none of the levels can be given precedence over the other, I will nonetheless emphasize the fundamental importance of the lexically determined actional character. At last, §1.2.4.3 below discusses the role of grammatical aspect in actional shift.

lexeme corresponds to lexical entry and is represented by a headword (lemma) in a dictionary. Some authors take *predicate* as a unit of classification (see also §1.7). The term *verb phrase* as used here is rarely explicitly defined but appears to loosely correspond to the traditional generative notion of VP, i.e., to the combination of the verb and its object.

¹⁵ Sasse (2002: 215) and Johanson (2000) use the term “recategorization”. *Coercion* is sometimes used to refer to actional shift, but I distinguish between the two in §1.2.4.3.

¹⁶ Shifts also occur between count and mass nouns (Filip 1999: 61–62).

1.2.4.1. Verb senses are units of classification

The notion of verb is taken to signify the traditional lexeme (lexical entry, dictionary entry, see fn. 14). Verbs can have multiple senses (or meanings), which are considered to be part of the that same lexeme if they are judged to be related (Saeed 2016: 60–61; cf. Spencer 2013: 4–5); this is called verbal **polysemy**. Verb senses are characterized, apart from distinct meanings, by distinct lexical representations and a distinct set of paradigms (cf. Spencer 2013: chap. 2). This is in line with some approaches to lexical representation which assume that verbal polysemy implies distinct lexical representations with distinct morphosyntactic realizations for each sense (Levin & Rappaport Hovav 2005: 180; cf. Rappaport Hovav & Levin 1998 for a more extensive discussion).¹⁷ In that sense, it is crucial to note that such lexical representations encode the grammatically relevant facets of verb meaning, including actionality. Since different lexical representations can have different actional properties (but need not, as shown below), that entails that different verb senses of the same lexeme can also have different actional properties (but need not, as said). Distinguishing between verb senses by polysemous verbs is then the crucial step in determining actionality because, following Breu (1994: 32–33), actionality can only be assigned to specific verb senses, not to verbal lexemes as a whole.

Differences in morphosyntactic realizations – e.g. distinct argument structures or paradigm structures – are an independent criterion to distinguish different senses within a verbal lexeme.¹⁸

Verb sense is thus understood to combine a distinct meaning with separate argument structure as well as different actional character.¹⁹ An illustration of that criterion is the verb *to think* discussed in Vendler (Vendler 1957: 152–153).²⁰ Vendler notes that this verb has (at least) two basic senses, i.e. the verb is polysemous. They are illustrated by sentences *He is thinking about*

¹⁷ I disagree with Spencer (2013: 53–54), who identifies the distinct lexical representation with the lexeme, thereby effectively “neutraliz[ing] the distinction between polysemy and homonymy in favor of homonymy” and “treating the polysemous entries as (...) homonyms.”

¹⁸ There are other criteria as well, such as the translation criterion (Spencer 2013: 51–52), when distinct senses of a word correspond to different words in another language. A similar criterion is a paraphrase in a metalanguage (cf. Goddard 2011: 22). The two are however helpful only where verb senses are quite distinct semantically.

¹⁹ Note that argument structure is also not necessarily distinct between different senses, which can be problematic for isolating verb senses due to a lack of an independent criterion. However, such gray areas are in a way expected and need not concern us here.

²⁰ For the purposes of the discussion here I looked up the English verbs and their senses in *A valency dictionary of English* (Herbst et al. 2004).

Jones and *He thinks that Jones is a rascal*.²¹ The senses are distinguished by their argument patterns: the former sense appears with the PP *about sth*, the latter with a complement clause; they are also distinguished by their actionality: the former (*think about*) is an activity, the latter (*think that*) is a state.

Some verbs are polysemous, yet distinct verb senses do not have distinct actional characters. As noted by Vendler himself (1957: 153), the verb *believe* in its different senses (as evidenced in distinct argument structures such as *believe that*, *believe in*) is always a state. The same is true of the verb *to know* in the senses associated with the argument structures such as *know that* + clause, *know how* + clause, *know something* and *know somebody*. This does not diminish the argument put forward here as it relies crucially on the fact that distinct sense can but *need not* have distinct actional characters.

If it is accepted that the verb sense is the basic unit of classification, that observation provides an explanation as to why Vendler occasionally cites verb phrases instead of verbs as representatives of respective actional classes. Specifically, it can be argued that some of the verb phrases cited by Vendler are in fact stand-ins for particular verb senses. For instance, one of his accomplishments is the verb phrase *deliver a sermon*. By citing the object (*sermon*), Vendler, makes unambiguously clear that he refers to the ‘provide’ sense of *deliver*, as opposed to other senses of the same verb (*deliver a package*, *deliver a promise* or *deliver a baby*) (Herbst et al. 2004: 216–217). The same is true of Vendler’s accomplishments *attend a class* and *make a chair*, or achievements *reach the summit* and *cross the border*. This implies that Vendler intuitively refers to verb senses when he cites verbs and verb phrases. This is however not always the case. The examples where he mostly fails to (or does not bother to) disambiguate between different senses of the same verb are those where there is no difference in actional character between distinct senses.²² A good example is Vendler’s *push something*, which can be referred to at least three distinct senses: ‘push = move’, ‘push a person’ and ‘push an idea’ (Herbst et al. 2004: 633–634). However, all three senses are Vendler’s activities.

²¹ The two senses are glossed “thought” for the former and “opinion” for the latter by Herbst et al. (2004: 868).

²² This is understandable because Vendler’s main interest in the paper is to use “time schemata” (i.e. actional distinctions) to explain different senses of certain polysemous verbs, for instance *to see*, which is extensively discussed in the paper (Vendler 1957: 154–159).

This shows convincingly, I believe, that Vendler intuitively predominantly classifies verb senses, and not verbs as lexemes. A similar conclusion is reached by Sasse (2002: 216), who notes that “it is neither verb lexemes nor sentences that bear the time-schemata in Vendler’s approach, but abstract verb phrases or constructions (...), called “terms” by Vendler.” Smith uses a similar concept (“verb constellations”): “situation type [i.e. actional character, J.P.] is conveyed by the verb constellation, which I define as a main verb and its arguments, including subject” (1997: 2), as does Comrie (1976: 45): “situations are not described by verbs alone, but rather by the verb together with its arguments (subjects and objects)”.

The fact that verb senses, rather than verbs as lexemes, are units of actional classification is rarely explicitly addressed – Breu (1994), cited above, is a notable exception. Lack of explicit discussion is a source of occasional confusion, as illustrated in the following examples (both from Bertinetto 2000: 584), which are discussed as if there is no difference between them:

- (3) The mountains surround the lake. / The army was surrounding the lake.
- (4) John resembles his father. / John is resembling his father more and more.

The two examples are in fact quite different. In (3) we are dealing with two distinct senses. Even though this judgement is not shared by all dictionaries (e.g. Herbst et al. 2004: 835), it is based on the fact that the subject is inanimate in the first sense but animate in the second sense. This implies distinct lexical representations. In (4) the verb is monosemous, i.e. it has only one sense. The fact that Bertinetto sees no difference between these two verbs makes it perfectly clear why a simple statement about the need to distinguish different senses of the verb is warranted.

1.2.4.2. Actional makeup of the sentence and actional shift

The next set of problems arises when we are dealing with the following examples (taken from Dowty 1979: 60–62), where one and the same verb sense appears to belong to two actional classes depending on the syntactic context. Dowty observes that activity verbs of movement, such as *walk*, exhibit an accomplishment reading in presence of an adverbial: *walk a mile*, *walk to the park*.²³ Moreover, Dowty also recognizes a situation whereby an accomplishment verb has an activity reading when followed by an indefinite plural or a mass noun: *he read a book* is

²³ This means that *He walked for two hours* and *He walked a mile in two hours* are acceptable sentences. Conversely, *He walked in two hours* and *He walked a mile for two hours* both sound odd and require reinterpretations to be acceptable. See Boogaart (2004: 1168) for details.

an accomplishment, *he reads books* is an activity; likewise, *she ate a chocolate* is an accomplishment, *she ate popcorn* is an activity. The same phenomenon was illustrated in example (2) above.

In response to such examples, a view has become dominant over the years, at least since Verkuyl (1972), that actionality is a property that arises **in context** (cf. Sasse 2002: 216; Filip 2011: 1191). One of the first statements to that effect goes back to Vendler, who observes that the actionality of the “verb” can change depending on context (1957: 143–144). In other words, the Vendlerian classification does not classify lexemes, but rather “propositions conveyed by English sentences uttered in context” (Moens & Steedman 1988: 16; cf. Dowty 1979: 185). On that view, actionality is compositionally derived *in context* from the lexical meaning of the verb via **actional shift** with the import from objects and other clausal elements (called **shifters** by Filip 1999). Accordingly, actionality in many cases depends on the presence or absence of objects and other clausal elements: *to run* (intr.) is an activity, *to run a mile* is an accomplishment, depending on the context. This means that different contexts may imply different actional categorizations for a single verb sense. Thus, Dowty’s observation that an attempt to classify verbs (more precisely, verb senses) as activities or accomplishments is somewhat misguided seems particularly reasonable. The mainstream position is nicely summarized by Sasse (2002: 215):

Thus, the heuristic is such that one basically starts with the time-reference properties of the sentence as the explanandum and then gradually proceeds to a decomposition of the various factors that contribute to it. In actual fact the models proposed are largely bottom-up; i.e., they successively assemble sentence aspect out of aspectually relevant constituents, starting from the intrinsic time-schema of a verb or a verb phrase (a ‘predicate’).

I call such an approach the **context-based approach**. Such an approach takes as objects of classifications both verb senses and whole sentences (more precisely, propositions uttered in context).²⁴ However, it should be pointed out that in line with §1.2.4.1, contextually shifted actional character in fact often entails creation of a new verb sense if the argument structure is

²⁴ It will suffice to say for now that the context-based approach will be supplemented with what is called the **sense-based approach**, which uses verb senses as objects of classification. The details are filled in §4.2.1, where it is claimed that the sense-based approach makes more sense in the context of the topic investigated here, the relationship between aspect and actionality. The two approaches are not necessarily mutually exclusive.

modified. For instance, all the examples of contextually shifted actional characters cited above exhibit changes in argument structures of the respective verbs. In the case of *walk*, it is an adverbial that brings about the change in actional characters and in the case of *read* and *eat*, the change has to do with referential and quantificational properties of objects. In other words, propositions such as *John walked*, and *John walked to the park* involve two different senses of the same verb *walk*. While semantic difference between the two is minimal, distinct senses can be attributed based on their distinct argument structures, which was established as an independent criterion for identifying distinct verb senses.

The actional character attributable to propositions (sentences in the context) is thus typically a result of interplay of several factors, each of which operates on hierarchically ordered layers, starting with the lexically encoded actional character (cf. also Lindstedt 2001: 779). All these layers constitute the **actional makeup** or architecture of the sentence. They are listed at the end of this section.

Following Sasse (2002: 215), this effectively means that Vendlerian classes can be recognized at any level of analysis – a verb (i.e. a verb sense) can be classified as an accomplishment, as can be a verb phrase, a clause or even a sentence. This also implies, as noted by Dowty (1986: 43), that the same tests can be applied to inspect the actional character on all levels of analysis, which entails that one can “classify not only lexical predicates but also verb phrases and sentences by these tests.”

I believe that there is nothing wrong with this approach, although one clarification is necessary. The actional character of the verb in context (i.e. the proposition) can be largely traced back to that same lexically determined verb sense even if that original verb sense has undergone contextually conditioned modifications (Moens & Steedman 1988: 17; Dowty 1986: 43–44; Filip 2011: 1192; Sasse 2002: sec. 2; Tatevosov 2015).

The main argument for tracing actional shift back to the lexically determined actional character comes from “the observation that in many cases the expected shift does not occur, and the combination of a verb with a certain (...) shifter results in ungrammaticality or anomaly” (Filip 1999: 73). For instance, Filip notes (ibid.) that the presence of a goal-directed motion adverbial (*to the pond*) is ungrammatical with the sound emission verb *croak*, whereas an adverbial of the same kind is licensed (*to the park*) with the manner of motion verb *walk* (p. 67).

- (5) Compatibility with goal-directed adverbials
- a. **Frogs croaked to the pond.*
 - b. *John walked to the park.*

This appears to suggest that *walk* has the lexical potential to refer to telic situations, whereas *croak* does not, since sentences like *John walked to the park* are compatible with *in*-PPs. Crosslinguistic evidence points in the same direction: according to Tatevosov (2002a: 378), the same kind of shift is not available to the verbs of the same actional class in Mari (Uralic), Tatar (Turkic) and Bagvalal (Nakh-Dagestania).²⁵ Crosslinguistic differences regarding combinability of manner of motion verbs with directional adverbials are also mentioned by other authors (e.g. Rappaport Hovav & Levin 1998: 126 and references cited therein).

One final point that needs to be addressed is whether the original (that is, lexically determined) actional character of the verb sense can be directly observed or not. The problem was first stated by Vendler, who notes that “with many of these verbs, it is hardly possible to establish the category to which they ‘originally’ belong” (1957: 152). Two views can be distinguished. On the one hand, some authors claim that, even though in principle lexically determined, actionality cannot be observed *on its own* because “every occurrence of a verb is a definite context” (Dahl 1985: 27). This means that there is no “neutral context” in which inherent meaning could be separated from contextual influence. In contrast, Dowty (1986: 43) notes that:

The aspectual class of a verb is of course a property of its lexical meaning (and must be described by meaning postulates or similar means). The aspectual class a phrase or sentence belongs to will thus be determined in a mechanical and completely explicit way by the lexical aspectual class of its main verb and the compositional semantic rules that have applied in combining the NPs, adverbials, tenses and other constituents involved in the whole sentence.

This means that it is in principle possible to observe the original (i.e., lexically determined) actional character by peeling away the contributions of various contextual elements. In this work, no practical gain is made by adopting one or the other position. The issue remains open, but it should be noted that examples like (5) above point to the position that it is possible to observe the lexically determined actional character in at least some instances.

²⁵ Discussion in Tatevosov (2016a: 213–214) contradicts this claim. See also Van Valin & LaPolla (1997: 655n11) for Italian and other Romance languages.

Summing up, it is widely accepted that actionality is compositionally created across different hierarchically structured levels. All these layers constitute to what I call the actional makeup or architecture of the sentence. Actionality can change between different levels, which means that the resulting class often will not be the same as the lexically determined one. This kind of change also entails creation of a new verb sense, and therefore a new unit of classification. All instances of changes in actional character brought about by contextual elements are collectively known as actional shift. Instances of actional shift should not be viewed as “merely exceptional uses of certain verbs in special contexts” (Filip 1999: 72) – rather, they are systematic. Let us now review the layers on which actional shift can be observed.²⁶ Note that the exact details of how these layers interact and in which order the actional build-up of the sentence proceeds are rather controversial (e.g. Sasse 2002: 219).

The layer of derivational morphology. This is rarely discussed as English does not have much productive derivational morphology. In my interpretation, this level would incorporate the contribution made by subsituation (or secondary) aspects, introduced in §1.3 below (cf. Tatevosov 2015: 295–301).

The layer of inflectional morphology (the operator layer). Above all, this concerns the changes in actional character brought about by inflectional aspect grams, on which see §1.3 (where they are called viewpoint or primary aspect grams); actional shift is observed with other verb categories as well, such as the imperative in English (Filip 1999: 68). Note that the role of grammatical aspect in the actional architecture of the clause is more complex than that in the case of shifters that modify argument structure. Being relevant for the topic explored here, it will be discussed in greater detail in §1.2.4.3 below, where we will discuss instances where the English Progressive aspect brings about actional shift and the instances where it does not. The discussion will be further expanded in §1.5.4 and §4.2.2.

The phrasal layer. This concerns the shifts brought about by the referential and quantificational properties of direct objects within the verb phrase (VP). This was illustrated in example (2) above, where the singular count noun (*a letter*) yields a telic interpretation, whereas the indefinite plural noun (*letters*) yields an atelic one. Since Verkuyl (1972) this is known as

²⁶ Filip (1999: 63–69) brings a rather exhaustive list of the attested kinds of aspect shifts concerning telic-atelic alternations. Cf. also Sasse’s seven “aspectual tiers” (Sasse 2002: 263).

actional (aspectual) composition (Filip 2012: 737).²⁷ An extensive description of the phenomenon is provided in Tatevosov (2015: chap. 3), and a shorter English version is found in Tatevosov (2002a: 349–357). Actional composition is widely discussed in formal semantic literature. The matter is discussed in greater detail in §2.2.3 and §4.4.6. The referential and quantificational properties of subjects can also convey effects of actional composition, even though strictly speaking subjects are not part of the verb phrase (cf. Filip 2011: 1191).

The clausal layer. This concerns various adverbials: iterative and frequency adverbials (*three times, sometimes*), point adverbials (*once, at that moment*), time-span (*in*-PPs) and durative (*for*-PPs) adverbials, directional and locative adverbials (*a mile, out of the room, to the park*) (Filip 1999: 63–68). Here the role of adverbials in actional shift will largely be disregarded, with the exception of *in*-PPs and *for*-PPs. See also the next section.²⁸ Note that it is commonplace to refer to actionality as a property assigned at the clausal level, which is not to be taken to mean that actional character is specifically created at the level, but instead it simply means that the derivation of actionality *stops* at the clausal level. However, this is only partially true, as actional interpretation can be enriched by non-linguistic cues, that is, on the discourse level, as explained now.

The discourse layer and beyond. This refers collectively to all instances where the actional interpretation depends on “the inferences that can be drawn from discourse-level linguistic context and the context of the utterance” (Filip 1999: 63). For an illustration see Filip (1999: 65–66, 79n42).

1.2.4.3. Grammatical aspect and actional shift

In the preceding section, it was established that the lexically determined actional character can be modified via actional shift. These modifications can be attributed to different layers of the actional architecture of the clause. One of these layers is the operator layer or the layer of inflectional morphology, which also includes grammatical aspect. This section specifically focuses on the role of grammatical aspect in actional shift.

²⁷ See §1.4 for the choice between adjectives *aspectual* and *actional*.

²⁸ Resultative small clauses can also be mentioned in this connection, such as *dead* in *The sheriff shot the man dead* (Smith 1997: 27), where adding *dead* derives a telic sentence. A more detailed account is found in Rothstein (2004: chap. 3).

Grammatical aspect can shift the lexically determined actional character of the verb sense via operation known as **actional (aspect) coercion**. Actional coercion constitutes a subtype of actional shift which arises when a verb is modified by a semantically incompatible syntactic element (Walková 2013: 19) and is governed by a contextual reinterpretation (de Swart 1998: 359–360). Consider the sentence *Mary played the same waltz* from Filip (1999: 65). This sentence has a basic telic interpretation, i.e., it is compatible with an *in*-PP. If the sentence occurs with a *for*-PP adverbial, which can only be combined with atelic verbs, the result is an infelicitous sentence ^{??}*Mary played the same waltz for an hour*. The sentence, however, can be made felicitous by assigning a new interpretation to it. Filip notes that two reinterpretations are possible: either “there was some playing of the waltz by Mary and it lasted for an hour” or “an iterative interpretation, namely, Mary played the same waltz over and over for an hour.” Both interpretations are pragmatically marked. In other words, they require effort on the part of the speaker to find an appropriate reinterpretation as well as some contextual support. In this particular instance, the adverbial *for an hour* shifts the lexically determined actional meaning of the verb *play* and derives a new one.

Similar examples can be found in the domain of inflectional aspect morphology. A well-known example is the English Progressive when combined with state verbs such as *hate* or *love*, as in the following examples:

- (6) I am hating zoology class. (Smith 1997: 52)
- (7) I’m loving the hot hue, the sweet, off-the-shoulder neckline. (Bar-el 2015: 81)

These examples also are pragmatically marked: they have “a certain color and emphasis” (Smith 1997: 11). With respect to the role of grammatical aspect in actional shift, the shifted status is not normally determined on the basis of pragmatic markedness or oddity, at least in the literature on English. Instead, it is assumed it is “the least morphologically marked form [that] represents ‘pure’ lexical meaning of a predicate, while addition of any morphological material results in a transformation of this meaning” (Tatevosov 2002b: 473). In practice, this means that the Simple (i.e. the non-progressive or NONPROG – see §1.3 below) form expresses the basic meaning, whereas the progressive form expresses the shifted one. Accordingly, one would consider the actional character of the verb as manifested in example (8) the basic one, and the actional character in example (9) the shifted one (Smith 1997: 18, 30; cf. Moens & Steedman 1988: 18):

- (8) Mary coughed. (once → semelfactive reading)
- (9) Mary was coughing. (repeatedly → multiplicative reading)

However, example (9) is quite different than examples (6) and (7) in that the combinability of example (9) with the progressive is perfectly natural (Smith 1997: 172). There is nothing that requires pragmatic inference or reinterpretation: example (9) is pragmatically neutral. Therefore, there is no reason to consider the multiplicative reading shifted since it is not coerced (cf. Tatevosov 2016a: 82–83). Instead, it could be assumed that the multiplicative reading of example (9) simply reflects what is lexically determined for the English verb *cough*.

A crucial argument in favor of this alternative view is the observation that the multiplicative reading (i.e., a series of coughs) is also available in the Simple form (Tatevosov 2002a: 333). That is, the sentence *Mary coughed* can refer both to one cough as well as to a series of coughs. This is supported by the fact that this sentence is perfectly natural with a *for*-PP adverbial, e.g. *Mary coughed for an hour* (Smith 1997: 18), without being pragmatically odd or infelicitous.

Given these two observations, the traditional analysis of *cough* is rejected. Instead, verbs like *cough*²⁹ are considered both multiplicative and semelfactive in their lexical representation. More precisely, the multiplicative meaning manifested in example (9) is lexically determined and is not shifted through the use of the progressive. The progressive conveys the existing actional character and does not create it by means of actional shift.

As a rule of thumb, I will assume that inflectional aspect grams simply convey or **express** the actional character of the verb when an actional meaning is available to that verb without contextual support and where no sense of pragmatic oddity is present. Conversely, aspect will be assumed to shift (derive, recategorize) the actional character of the verb in the clear cases of actional coercion, i.e., where additional contextual support is required to carry out actional recategorization and where pragmatic oddity or markedness is felt.

This basic distinction between the function of actional expression and the function of actional shift (derivation) will be discussed in greater detail in §1.5.3 and 1.5.4 below.³⁰ There I will present arguments in favor of the more general claim that inflectional aspect grams do not shift

²⁹ Verbs like *cough* belong to the class of multiplicative processes, for which see §4.3.3.

³⁰ In addition, a class of aspect grams will be introduced in these sections as well as in §1.3, whose function is specifically to bring about aspect shifts. These aspect grams that serve as shifters are called subsituation (or secondary) aspect grams.

actional character in most cases, but rather simply **express** the lexically predetermined actional character. This is in keeping with the observation, discussed in §1.3 below and further in §5.3, that inflectional aspect grams stand in paradigmatic contrast, which effectively means that inflectional aspect grams form aspect systems that are symmetrical in terms of semantic and morphological contrast. This entails that no aspect gram can be assumed to be more marked than the other (Smith 1997: 8–10).³¹ Special cases like in examples (6) and (7) are exceptions to that generalization.

Interestingly, some adverbials like *in*-PPs and *for*-PPS, much like aspect grams, have a double function and can serve both as a means of expressing actionality as well as a means of shifting actionality. In the former case, adverbials act as a diagnostic test for actionality.³² In the latter case, they serve as shifters.³³ Thus, in *Mary played the same waltz for an hour*, discussed above, the *for*-PP acts as a shifter, whereas in *John swam for an hour* (= example (1)b above) it acts as a diagnostic test. The same double nature is also at display with *in*-PPs, for example in the otherwise infelicitous sentence **John swam in an hour*, which can be coerced into a telic interpretation with the help of the carefully constructed context (see Filip 1999: 66). In contrast, in the sentence *John recovered in an hour* (= example (1)a above) the *in*-PP adverbial functions as a diagnostic test. Again, the diagnostic function of *for*-PP and *in*-PP adverbials is considered the more basic one, and they can function as shifters only in certain circumstances.³⁴

To recapitulate, the purpose of this section was to demonstrate that some of the elements that were listed in §1.2.4.2 as shifters – viz. inflectional aspect grams (as well as some adverbials) – in fact exhibit a double nature. They either function as a means of a particular kind of actional

³¹ This is in contrast with derivational morphology, where there is always a basic form and a derived form.

³² One naturally wonders whether aspect grams in their function of conveying actionality can also be considered as diagnostic tests. Although this certainly makes sense, it is hardly ever discussed in the literature. Aspect grams are typically considered as diagnostic tests only in the instances of cooccurrence restrictions (Sasse 2002: 216), e.g. the English Progressive is considered as a test for stativity because it is said that stative predicates do not occur with the Progressive.

³³ It is unclear if, when acting as shifters, *for*-PPs and *in*-PPs create a new verb sense or not because they do not change the argument structures of the cited verbs. The question remains open.

³⁴ This position is not without controversies (Sasse 2002: 233, 257). The position that *for*-PPs and *in*-PPs are in most cases tests and not shifters is challenged by some authors such as Depraetere (1995a). Examples relevant for this discussion are also found in Adyghe (Arkadiev 2009: 66–77). More research is needed.

shift (actional coercion) or as a means of simple actional expression. In this work, most attention is given to the actional expression function of inflectional aspect grams and adverbials.

1.3. Aspect: preliminaries

When I started writing this dissertation, I was convinced that providing a workable definition of grammatical aspect would be a rather straightforward task. The task, however, turned out to be more complicated than expected as it took me quite some time to figure out a sufficiently workable definition of aspect. The main issues that I encountered in that time can be summarized as follows: the definitions of aspect cited in the literature are either too vague or too narrow.

The definitions are **vague** in the sense of semantic characterizations – literature abounds in inoperationalizable definitions lacking predictive power which often rely on the metaphor of viewpoint. Consider the classical definition of aspect, where aspects are seen as “ways of viewing the internal temporal constituency of a situation” (Comrie 1976: 3; adapted from Holt 1943: 6). Comrie (1976: 4) uses this broad characterization to refer to the perfective aspect as external, i.e. the one that “looks at the situation from outside,” and to the imperfective aspect (the progressive included) as internal, i.e. the one that “looks at the situation from inside.” This is referred to here as the viewpoint definition of aspect,³⁵ and the problems with such an approach are discussed at some length in this section, as are some alternatives to it (see §1.3.2–1.3.4 below).

The definitions are also too **narrow** in the sense that in most accounts the focus is exclusively on the perfective-imperfective contrast (e.g. Boogaart 2004: 1173), with the addition of the progressive aspect. In that sense, literature on grammatical aspect leaves one unequipped to deal with a wide variety of other aspect grams and systems. This makes the task of deciding which grams to include into an investigation more difficult. As it will be said below, the perfective (PFV), imperfective (IPFV), and progressive (PROG) are in fact only the best-known aspect grams, and in this work a number of other grams are also considered. In this section, more specifically in §1.3.7 below, I limit myself to presenting only the most basic facts about

³⁵ Boogaart (2004: 1174) uses the term the “perspectival” approach to aspect.

various aspect grams and systems investigated in this work, with more details provided in Chapter 5.

Furthermore, in order to decide which grams to include in this study, and to come up with an operational definition of aspect which allows crosslinguistic comparison of aspect-sensitive classes, I had to recruit several notions which tend to be neglected in discussions on grammatical aspect.

First, I relied heavily on the notions of obligatoriness and lexical generality, which are characteristic of highly grammaticalized grams. This allowed me to distinguish the obligatory and lexically general aspect grams, which are inflectional (e.g. the PFV and IPFV), and the aspect grams lacking these characteristics, which are therefore non-inflectional (e.g. habitual or resultative).³⁶ In §1.3.6 below, the former type will be referred to as viewpoint (or primary) aspect grams, and the latter as subsituation (secondary) aspect grams. There are numerous properties that distinguish these two groups of aspect grams but note that most of these observations are very preliminary and await further crosslinguistic research. Subsituation (secondary) aspect grams remain outside of the scope of this dissertation and in this study only the inflectional aspect grams will be considered. As noted by Mair, crosslinguistic studies should “rather focus on strongly grammaticalized, conventional and if possible, even obligatory constructions” (2012: 811). Basic ideas regarding this division are outlined in §1.3.6 and explored further in §1.5.4 and Chapter 5.

Furthermore, obligatory and lexically general aspect grams have another important feature: they form systems of paradigmatically opposed (i.e., mutually exclusive) aspect grams. The notion of system, that is, a set of mutually exclusive aspect grams, is central to this study (Maslov 2004: 28; Tatevosov 2015: 85–89) in the sense that the sample is restricted to the languages with grams that are organized into aspect systems. These grams, by definition, are those that are obligatory and lexically general. There is one exception, viz. the progressive gram (PROG), which, depending on the language, need not be obligatory. For instance, in English it is obligatory and consequently forms the aspect system. In contrast, in Spanish it is not, and it is

³⁶ The habitual is the gram which “indicates that what is expressed in the sentence took place in the majority of those occasions” (Dahl 1985: 97). The resultative is the gram which “express[es] a state implying a previous event” (Nedjalkov & Jaxontov 1988: 6).

orthogonal to the existing PFV-IPFV system. The three criteria are explored in more detail in §5.3.

All things considered, when making decisions about languages to be included into this investigation, it was required that the individual languages have an aspect system, i.e. a set of (typically two) obligatory, lexically general and mutually exclusive aspect grams.

Once the criteria of obligatoriness, lexical generality and paradigmatic opposition were established, it turned out that the PFV-IPFV system is not the only type of aspect system attested in the languages with obligatory aspect. Other types of systems were encountered as well and, consequently, a way of comparing these systems to the “default” PFV-IPFV system needed to be worked out. The way to do so involves several components, including the decomposition of the IPFV proposed in Comrie (1976) and the contexts used to define the PFV and IPFV in Dahl (1985). This is discussed in more detail in Chapter 5 with some preliminaries in §1.3.7 below.

Before turning to the examination of the issues listed in this prelude, more will be said about the grammatical nature of aspect. This property of aspect is in a way fundamental for the understanding of it, as evidenced in the term *grammatical aspect* itself.

1.3.1. Grammatical nature of aspect

When speaking of grammatical aspect, the key notion is that of the **gram**. A gram is “a grammatical item in a particular language with specific form and specific meaning and/or function” (Dahl & Wälchli 2016: 328; cf. Bybee & Dahl 1989: 52).³⁷ As explained above, in this work, only aspect grams with specific properties are considered, viz. inflectional aspect grams.

Aspect is a grammatical phenomenon. This position has been unambiguously assumed in the literature at least since Comrie (1976) and Lyons (1977). This, in broadest terms, means that aspect grams are (or are expected to be) productive, semantically regular and abstract. However, as already mentioned, in this work only a subset of aspect grams is considered, i.e. those that are obligatory and lexically general, i.e. inflectional (see §5.3.1 for more on the distinction between grammatical meaning and inflectional meaning). This implies that all aspect grams are

³⁷ Originally the term “gram” was coined as an abbreviation for “grammatical morpheme” (Bybee & Dahl 1989: 51; Bybee, Perkins & Pagliuca 1994: 2).

regular, productive and semantically abstract, but only a subset of them is obligatory and lexically general.

Furthermore, the above definition of the gram implies that grammatical aspect is “dependent on overt marking” (Sasse 2002: 205; cf. Bertinetto 1994a: 392),³⁸ including morphological zeros (Bybee 1994). In contrast, actionality has no overt marking, at least not in the same sense and not consistently (cf. §1.2 above). In the rest of the work, aspect is referred to more broadly as a grammatical phenomenon, whereas actionality is broadly referred to as a phenomenon of lexicosemantic and lexicogrammatical nature, as was explained before. This characterization and the relationship between aspect and actionality will be discussed in more detail in §1.5 below.

Its grammatical status notwithstanding, aspect is one of the grammatical categories most closely dependent on the lexical meaning of the verb (Breu 1994: 23). With aspect, then, the conflict between the grammatical and lexical is particularly emphasized (Plungjan 2016: 346). This fact is captured by the notion of relevance introduced by J. Bybee (1985). According to Bybee, the content of the category is considered relevant for the content of the verbal stem if it affects and/or modifies its meaning. Aspect is a category seen as highly relevant for the lexical meaning of the verb and is in that respect “most directly and exclusively relevant to the verb.”³⁹ Aspect is therefore unlike agreement (Bybee 1985: 15) or tense, which “[do] not (...) alter the situation described by the verb at all” (Bybee 1985: 18–19; cf. Dik 1994: 36). Instead, aspect is in this respect comparable to valence-changing categories and voice (Bybee 1985: 99).⁴⁰

1.3.2. Viewpoint metaphor of aspect: critical assessment

Let us now consider in more detail the viewpoint definition of aspect introduced at the beginning of this section. The viewpoint definition of aspect, based on “ways of viewing,” “different perspectives,” “different viewpoints,” and so forth, continues a longstanding

³⁸ According to Sasse, there are approaches that assume that the aspect distinctions encoded in some contexts by morphology can in other contexts be assigned by interpretation (Sasse 2002: 205, 207), but this view is rejected here.

³⁹ This property of aspect is also reflected in the fact that aspect grams occur closer to the stem than tense and mood grams in the sample of 50 languages investigated in Bybee (1985: 34–35, cf. 196–200).

⁴⁰ See also §4.2.2.

European aspectological tradition,⁴¹ in particular the theory of aspect influenced by the Aorist-Imperfect opposition found in Ancient Greek, Latin and Romance languages (see §2.3 for the history of the research on aspect). The viewpoint definition of the perfective (PFV) and imperfective (IPFV) aspects can be illustrated with (10)a and (10)b:⁴²

(10) Spanish (Cipria & Roberts 2000: 305)

a. IPFV past (“Preterito Imperfecto/the Imperfect”)

Corrían *3000 litros* *de petróleo* *por las cañerías.*
 flow-IPFV.PST.3PL 3000 liters of oil through the pipes
 ‘3000 liters of oil flowed through the pipes.’

b. PFV past (“Preterito Indefinido/the Preterite”)

Corrieron *3000 litros* *de petróleo* *por las cañerías.*
 flow-PFV.PST.3PL 3000 liters of oil through the pipes
 ‘3000 liters of oil flowed through the pipes.’

In (10), the IPFV and PFV aspects are used to present two different pieces of information – two viewpoints – about the verb *corrir* ‘to run, to flow’. In (10)a, the situation is presented as ongoing, because it is presented from the inside (internal viewpoint), whereas in (10)b the situation is presented as complete(d), as a blob, i.e. from the outside (external viewpoint). A related way of characterizing the distinction is by saying that the PFV indicates that a situation is bounded, and the IPFV that a situation is not bounded (Bybee & Dahl 1985: 55). The PFV and IPFV grams are discussed in more detail in Chapter 5, as are other relevant aspect grams.⁴³

This traditional definition of aspect is widespread, but it has several serious flaws. First, it has often been criticized for lacking explicitness (Tatevosov 2015: 65) and for being inoperationalizable (Sasse 2002: 205, 209). Klein thus rightly asks “what exactly is meant by ‘to see/view/present a situation in different ways’” (2009a: 56). It is open to subjective interpretations, and, probably more important, it lacks explanatory and predictive power (Plungjan 2016: 348). This means that it is difficult to explain and/or predict the behavior of the PFV and IPFV in terms of the viewpoint metaphor only. Some authors, such as Klein (1994:

⁴¹ Brinton (1988: 2) provides a sample of early definitions of aspect.

⁴² Spanish exhibits the contrast between the PFV and IPFV in the past, as is common crosslinguistically. Brief information on aspect systems on all languages discussed in this dissertation is provided in Appendix II.

⁴³ This examples clearly demonstrates that the viewpoint metaphor in fact contrasts the perfective and the progressive, rather than the perfective and the imperfective. This is another weak spot of the viewpoint approach.

xi), point out that Comrie’s characterization of viewpoint may be intuitively correct, but that a way to formalize that intuition still needs to be worked out.⁴⁴

Moreover, the viewpoint definition is also based on the dubious premise that aspect pertains to speaker’s choices, and that different aspect grams provide the speaker with the freedom to emphasize different fragments of the situation. In this view, grammatical aspect is seen as subjective, in the sense that it allows a subjective view of a situation depending on the speaker’s choice.⁴⁵ This claim has been repeated over and over without much critical reflection since the earliest aspectological works (e.g. Jespersen 1924: 276) and is still commonly cited (Comrie 1976: 4; Brinton 1988: 3; Bertinetto 1994b: 133; Plungjan 2016: 348). It is also one of the central tenets of a more recent approach developed by C. Smith (see §3.3.1). This position is however untenable and even misleading (Johanson 2000: 31; Boogaart 2004: 1166). Instead, a more correct view is that the alternative viewpoints of the same situation presented by the speaker are in fact governed by the actional character of the predicate – e.g. in (10)a and (10)b. See §1.5.3 below for more details (cf. for similar ideas Bache 1982: 70–71; Klein 1994: 100; Smith 1997: 62; Plungjan 2016: 357).⁴⁶

1.3.3. Non-viewpoint aspect

The two flaws discussed so far are at least to an extent dealt with in the literature (the former more so than the latter). In contrast, it is rarely discussed that the viewpoint definition leaves out of consideration a range of grams that cannot be subsumed under the viewpoint metaphor but are traditionally called “aspects.” The habitual aspect is a case in point. For instance, in Comrie (1976), the initially broad definition of aspects (“ways of viewing the internal temporal constituency of a situation”) can be understood as applicable to the aspects other than the PFV, the IPFV and the PROG. However, in the course of Comrie’s book, this definition is reinterpreted as relating exclusively to the “inside/outside” metaphor and is understood as such. Other aspects such as the habitual are tacitly assumed to be compatible with this definition, but whatever

⁴⁴ In fact, the most influential attempt at a more precise definition of viewpoint aspect was developed by Wolfgang Klein himself (Klein 1994; Klein 1995; Klein, Li & Hendriks 2000). See §2.2.2.

⁴⁵ In the same line of thinking, actionality is “objective.”

⁴⁶ The idea that aspect is about subjective choices is almost exclusively based on the semantic relationship of the PFV-IPFV pairs of the activity (atelic durative) predicates. It is only with these predicates that there is hardly any discernible difference in meaning between the PFV and IPFV aspects, which creates the impression that the choice of the aspect gram is left to the speaker. For examples see §1.5.2.

connection may exist between the “inside/outside” metaphor and the habitual is never discussed.⁴⁷ This overextension of the viewpoint definition to encompass all aspects was taken over in subsequent crosslinguistic studies (e.g. Dahl 1985: 24), and is, as noted, rarely challenged.

Our overview of literature indicates that almost all contemporary definitions of aspect rely exclusively on the viewpoint definition. In other words, the mainstream definition of aspect is largely contingent on the properties of the PFV, the IPFV and the PROG aspects and is implicitly assumed to explain these aspects only. Consider the following quote: “[a]spect concerns the different perspectives which a speaker can take and express with regard to the temporal course of event, action, process, etc.” (Klein 1994: 16). Definitions along similar lines are found in most of the aspectological literature (Bache 1982: 70; Brinton 1988: 3; Bertinetto 1994b: 113 *inter alia*). Kroeger (2019: 388), a recent semantics textbook, explicitly equates grammatical aspect with viewpoint. Likewise, Lindstedt (2001: 768) equates aspect with “the presence or absence of a bound,” which is only relevant for the PFV-IPFV distinction. In all these works almost no attempts are made to investigate the applicability of the viewpoint definition to aspects other than the PFV, the IPFV and the PROG.

The viewpoint definition thus leaves the status of aspect grams like the habitual or the resultative unaccounted for. The problem is apparent in the struggles of those few authors who attempted to apply the viewpoint definition to aspect grams like the habitual or resultative. Focus on viewpoint aspect grams results in what can be called *the restricted view of aspect*, whereby “aspects” are equated with the PFV and IPFV and by extension the PROG, and aspect is seen as involving the binary opposition between the “outside” and “inside” aspect. This restricted definition of aspect is also prominent in the field of investigations of aspect-actionality interactions as well, and most authors include only the PFV and IPFV aspects in their models (see Chapter 3). Overall, one can agree with Brinton’s statement that “no clear idea of the basic underlying categories of aspect has emerged” (1988: 19). In other words, it is unclear what connects viewpoint aspects (e.g. the PFV, the IPFV or the PROG) with some other types of

⁴⁷ In that sense, Comrie’s definition of the IPFV in fact defines only the PROG and possibly the stative component of the IPFV.

aspect (e.g. the habitual or the resultative). I will refrain myself from pursuing this matter any further here.

1.3.4. Discourse functions of grammatical aspect

So far, we have seen that the viewpoint metaphor may not be the most successful way to characterize grammatical aspect. In this section, I explore an alternative way to define aspect grams, namely by referring to their discourse functions. Traditional viewpoint aspect grams such as the PFV and IPFV are often linked to their functions in narrative discourse. Discourse functions of aspect grams have to do with the phenomenon called *taxis*, introduced by Jakobson (1971).⁴⁸ Taxis is “information about the temporal localization of narrated events relative to other events with respect to simultaneity and non-simultaneity” (Johanson 2007: 190).⁴⁹ Aspect grams are in that sense used to localize one event relative to another event. Many authors insist that this is not the primary function of aspect grams and that their contribution to the expression of taxis relations can be derived from their more basic aspect functions (e.g. Johanson 2007: 191) or even from the actional properties of predicates.⁵⁰ In contrast, other authors put much emphasis on taxis relations in their descriptions of aspect, for instance Thelin, who claims that “aspect (...) cannot be fully understood unless treated as a function of discourse organization assigned only secondarily to individual propositions or sentences” (1990: 22). The position adopted here is closer to the authors like Thelin, whereby discourse functions are taken to be an integral part of the definition of inflectional aspect grams such as the PFV and IPFV.⁵¹

Discourse functions of aspect are manifested via three principal “taxis configurations” (Sasse 2002: 228): **sequence** (PFV + PFV), **simultaneity** (IPFV + IPFV) and **incidence** (PFV + IPFV).

Sequence and simultaneity are illustrated with the following examples from Spanish:

⁴⁸ Discourse functions of the perfective and imperfective aspects were discussed as early as in Jespersen (1924: 276).

⁴⁹ The notion of taxis is also relevant in the context of the distinction between aspect and actionality, for which see §1.5.2.

⁵⁰ The relationship between actionality and discourse is of central interest in Discourse Representation Theory (cf. Smith 1997: 36).

⁵¹ This strand of aspectological research has been strong in Continental aspectology. It was in particular popular among German-speaking aspectologists (see Pollak 1988: 107–123 for an influential recapitulation).

- (11) Sequence taxis configuration (Chapado Chorro & García García 1991: 50)
Fernando fue (PFV.PST) *agente de seguros*, *perteneció* (PFV.PST) *a la mafia*, *se casó* (PFV.PST), *se divorció* (PFV.PST).
 ‘F. was an insurance sales agent, then was a mafia member (lit. belonged to the mafia), then got married and then divorced.’ (situations occur one after another)
- (12) Simultaneity taxis configuration (Chapado Chorro & García García 1991: 58)
Estudiaba (IPFV.PST) *y escuchaba* (IPFV.PST) *música*.
 ‘He/she studied while listening to music.’ (situations are simultaneous)

Incidence is better known under its original German name *Inzidenzschema* and was first formulated by Pollak (1988: 107–124).⁵² Consider the following examples from French and Spanish:

- (13) Inzidenzschema in French (Pollak 1988: 107)
Un jour je voyageais (IPFV.PST) *en Calabre ... quand arriva* (PFV.PST) *l’aventure que je vais vous conter*.
 ‘One day I was traveling (IPFV.PST) to Calabria, when the adventure that I’m going to tell you about happened (PFV.PST).’
- (14) Inzidenzschema in Spanish (Kattán-Ibarra & Pountain 2003: 75)
Leía (IPFV.PST) *cuando llegó* (PFV.PST).
 ‘I was reading (IPFV.PST) when he/she arrived (PFV.PST).’

The Inzidenzschema consists of a background situation encoded by the verb in the IPFV aspect (*Un jour je voyageais en Calabre*), which is interrupted (or “inzidiert” in German, Pollak 1988: 107) by the situation encoded by the verb in the PFV aspect (*quand arriva l’aventure*).

The notion of Inzidenzschema has a wide crosslinguistic application, as seen in the following example from Laz, where the event of reading was interrupted by opening of the door:

- (15) Inzidenzschema in Laz (Mattissen 2001: 27)
neġna goinžu-si goloġionamti
 door open(MID).3SG.PFV.PST-SUB read.1>3.IPFV.PST
 ‘When the door opened, I was reading.’

The Inzidenzschema will be used along with the other two taxis configurations as an integral part of the crosslinguistically applicable definitions of inflectional aspect grams in Chapter 5.

Similar to the concept of taxis relations is the distinction between backgrounding and foregrounding functions of aspect suggested by Hopper (1979; cf. Binnick 1991: 378–381; Boogaart 2004: 1170; Timberlake 2007: 330). While the IPFV is taken to indicate a

⁵² The first edition was published in 1960.

backgrounded situation, i.e. “the supportive material which does not itself narrate the main events,” the PFV is used to indicate a foregrounded situation, i.e. the part of “the narrative which relate[s] events belonging to the skeletal structure of the discourse” (Hopper 1979: 213).

In fact, discourse matters have been incorporated into the definition of aspect grams very early. For instance, Comrie uses the taxis relations (specifically, the Inzidenzschema) as the very first step to introduce the IPFV and PROG aspects (1976: 3).

Discourse functions of inflectional aspect grams demonstrate that these grams have functions which are exclusive to them and thus can be taken as definitory. I find that this could be a more productive approach to the traditional viewpoint aspect grams than it is the case with the inside/outside metaphor, and the one that could in the end lead to a more satisfactory definition of viewpoint function. This was, for instance, suggested by Johanson, who points out that “essential functions of viewpoint categories are related to the discourse and cannot be described without discourse analysis” (Johanson 2000: 43). In that sense, the inside/outside metaphor would be dispensed with and the traditional viewpoint aspect grams, such as the PFV, the IPFV, and the PROG would be formulated with reference to taxis relations, and no reference to viewpoint/perspective metaphor would be needed. Still, I find both discourse and viewpoint approaches to inflectional aspect grams (in particular, to the PFV-IPFV opposition) productive and necessary to define aspect in a comprehensive manner. I agree with Boogaart (2004: 1174) that the two approaches are compatible.⁵³

1.3.5. Actionality and the definition of aspect grams

There is another important component of the definition of aspect grams, namely the functions of aspect related to the actionality of the predicate. The interrelatedness of aspect and actionality is at display already with the verb *corrir* illustrated in example (10) above. Namely, the difference between the two sentences can also be accounted for by resorting to the notion of actionality in the sense that the PFV aspect in (10)b makes an explicit reference to the fact that the “flowing” has reached its natural conclusion, i.e. all 3000 liters of oil have flown, whereas in (10)a the situation is presented in the IPFV without any reference to an endpoint. In other words, in (10)b this verb is telic in the same sense the English verb *recover* in (1)a is, whereas,

⁵³ Provided that, of course, the viewpoint metaphor is defined in a less vague manner.

in (10)a, the same verb is atelic in the same sense the verb *swim* is in (1)b (Cipria & Roberts 2000: 305). This is explored in more detail in §1.5.3 below.

In literature, viewpoint aspect grams are normally defined *either* in terms of their interactions with actionality, that is, as operators over the actional properties of predicates, *or* in terms of their viewpoint and discourse functions, introduced earlier. The distinction between the two ways to understand and define aspect grams is rarely explicitly discussed (but see Bohmeyer & Swift 2004: 263fn2). In this work, both elements are taken to be necessary for the full understanding of viewpoint aspect grams and will be used in their definitions in Chapter 5.⁵⁴

1.3.6. Interim summary: aspect grams are of two kinds

The observations put forward in the preceding sections allow for positing a distinction between two kinds of aspect grams. This concerns in particular the remarks from §1.3.3 above, where it was noted that many aspect grams do not fit neatly into the characterizations developed to deal with aspect grams such as the PFV, the IPFV and the PROG. As a result, I propose to provisionally distinguish between the traditional viewpoint aspect grams and non-viewpoint aspect grams.⁵⁵ The former will be called **viewpoint** (or primary) aspect grams and the latter **subsituation** (or secondary) aspect grams.⁵⁶

Subsituation aspect grams are grams like the habitual or resultative that cannot be said to fulfill the viewpoint and discourse functions. Instead, the function of subsituation aspect grams is to bring about actional shift, a fact alluded to in §1.2.4.2 above. That is, subsituation grams are specialized for modifications of the actional character of the verb (Plungjan 2011a: 395ff.).

In this work, I will restrict myself to the investigation of viewpoint aspect grams.⁵⁷ For the sake of completeness, subsituation aspect grams and their basic functions will be briefly mentioned

⁵⁴ Similar but more implicit approaches can be observed in Breu's model, and even more so in the model by C. Smith.

⁵⁵ Related ideas of the division of aspect into the more inflectional and the less inflectional (i.e. derivational) types are introduced by J. Bybee (Bybee 1985: 86–87, for instance).

⁵⁶ A brief note on terminology is in order. The term 'viewpoint aspect gram' is kept because it is well-established despite apparent issues with the notion of viewpoint. The term 'subsituation aspect' is adapted from Athabaskan linguistics (Rice 2000; Wilhelm 2007). Despite not being widespread, it is seen as more appropriate for being self-explanatory and describing quite succinctly the function of these grams. See §1.4 for alternative terms used to refer to subsituation aspect. The pair 'primary – secondary' is from Plungjan (2011a).

⁵⁷ Note that some languages lack viewpoint aspect grams. Such languages are excluded from this study.

in §1.5.4 below and their grammatical status discussed in §5.3.3. Subsituation grams are certainly relevant for the topic of aspect-actionality interactions (cf. Tatevosov 2002a: 389–391), because it can be assumed that they form a separate layer in the actional build-up of the sentence.⁵⁸ Still, they will not be a subject of this study, due to the limitations of space and lack of existing research. Before any attempt to integrate subsituation aspect grams into a theory of aspect-actionality interactions, a crosslinguistic study of such grams, one that is still lacking, should be conducted.

In §5.3, it will be shown that the distinction between viewpoint and subsituation aspect grams correlates to an extent with the distinction between inflectional and derivational morphology. Viewpoint grams are inflectional aspect grams and their properties include obligatoriness and lexical generality. In addition, inflectional grams are tied together in a system of mutually exclusive members, that is, they stand in a paradigmatic relationship. Subsituation aspect grams lack all of these properties.

In that sense, the investigation is restricted to the aspect grams that are part of a system of paradigmatic oppositions. A paradigmatic relationship also implies that the forms of two aspect grams stand in the symmetric morphological and semantic opposition⁵⁹ – none of them can be viewed as derived or more marked in the sense of §1.2.4.3 above. This is again unlike subsituation aspect grams such as the habitual or resultative, which are more derivation-like, and whose forms are always considered derived and more marked.

1.3.7. Aspect systems

At this point, the viewpoint aspect grams considered in this study should be briefly introduced, as should the aspect systems they form part of. As mentioned before, in this study I only considered viewpoint aspect grams, which, by definition, form systems of mutually exclusive members.

The understanding of aspect grams and systems relies heavily on the existing research in TAM typology (the so-called Bybee and Dahl approach – see §2.3.2). Owing to that research,

⁵⁸ Presumably the derivational layer (see §1.2.4.2). A separate layer for one variety of subsituation aspect, namely quantificational (or iterative, pluractional) aspect, is assumed in the Functional Grammar (see Sasse 2002: 227). A similar suggestion for quantificational aspect is also found in Arkadiev (2009: 57). Johanson (1996) argues the same for telicizers. See also Tatevosov (2015: 102–110).

⁵⁹ See Smith (1997: 9) for a more nuanced view.

crosslinguistic semantics of aspect morphology is well understood and we know today that aspect grams are remarkably consistent crosslinguistically. However, the Bybee and Dahl typology deals only with a subset of existing aspect grams and a subset of possible aspect systems, namely the PFV and IPFV grams, and the PROG aspect gram. For that reason, this work introduces numerous innovations to the way aspect grams and systems are approached from a typological perspective.

These grams give rise to two kinds of aspect systems, both of which are considered in this study.⁶⁰ The first one is the perfective-imperfective system, in which the perfective (PFV) and imperfective (IPFV) grams are paradigmatically opposed.⁶¹ The other relevant system is the one attested in English, where the aspect system makes use of two obligatory grams, progressive (PROG) and simple/nonprogressive (NONPROG), which are also paradigmatically opposed (cf. Comrie 1976: 33). The crucial aspect of this system is the obligatory use of PROG, which is not contextually interchangeable with the NONPROG gram.

These two kinds of aspect systems are singled out here for two reasons. First, they are well-known from the extant typological, descriptive and theoretical literature. Second, they are well attested in the languages of the world, the PFV-IPFV system certainly more so than the PROG-NONPROG system. In that sense, they will be taken as the default or canonical aspect systems. Other, less frequent and more idiosyncratic aspect systems will be defined in terms of contrast with these two systems, but no taxonomic relationship between the canonical systems and other aspect systems is assumed. In other words, other systems are not considered instances of either the PFV-IPFV system or the PROG-NONPROG system.

⁶⁰ Recall that grams involved in an aspect system stand in paradigmatic opposition and are by necessity obligatory. The notion of aspect systems relies heavily on the classical structuralist concept of contrast within the linguistic system. This is, however, not the only way to understand aspect systems, which can also be cast in terms of scalar implicatures, also known as Horn scales (Levinson 1983: 132–135). For instance, this is done by Bickel in his description of the Belhare aspect system (Bickel 1996).

⁶¹ A particular type of the PFV-IPFV system is the Slavic-style or verb-classifying aspect (Dahl 1985: 84–89; Plungjan 2011b; Arkadiev & Shluinsky 2015), which in significant ways diverges from the classical PFV-IPFV systems of the inflectional type. Moreover, despite the fact that the range of actional meanings manifested in Slavic-style aspect systems is similar to what is attested in the PFV-IPFV systems of the inflectional type, the internal organization of these meanings within the aspect system of Slavic is different (Tatevosov 2016a: chap. 5). For these reasons, the aspect systems of Slavic languages are not considered in this study. Likewise, the languages with aspect systems similar to Slavic in this and other respects were also excluded from this study: Lithuanian (Arkadiev 2011), Nenets (Tatevosov 2016b; 2017) and Nanai (Oskolskaya 2017).

The differences between the PROG-NONPROG system and the PFV-IPFV system are best understood in terms of Comrie’s (1976) decomposition of the IPFV gram into three components: ongoing-episodic (also called “progressive”), habitual-generic, and ‘state exists’.⁶² The two systems differ with respect to the expression of the habitual-generic meaning and reference to stative situations (‘state exists’): in the PROG-NONPROG system, the default gram for habituality-genericity and reference to statives is NONPROG, whereas in the PFV-IPFV system these are expressed by the IPFV. The differences are summarized in the following table:

PFV-IPFV SYSTEM		
IPFV		PFV
ongoing-episodic	habitual-generic and ‘state exists’	perfective (bounded) meanings
PROG-NONPROG SYSTEM		
PROG	NONPROG	
ongoing-episodic	habitual-generic and ‘state exists’	perfective (bounded) meanings

Table 3. Two main types of aspect systems.

The two systems are diachronically related, PROG-NONPROG often develops into the PFV-IPFV one when the PROG gram expands into the habitual-generic and stative contexts and thus becomes an IPFV (Bybee, Perkins & Pagliuca 1994: 140–149).

Note however that previous studies rarely considered both the PFV-IPFV and the PROG-NONPROG aspect system. In some studies, only the languages with the traditional PFV-IPFV system were included, e.g. the line of work done within bidimensional approaches (see §1.5.1 below and Chapter 3). In others, the two types of systems are conflated. This is the case, for instance, in the work of C. Smith, where it is claimed the English also has the PFV-IPFV system (see §3.3.1 for details). In contrast, this study clearly distinguishes the two types of systems. My contention is that the clear distinction between different types of aspect systems is a prerequisite for a methodologically sound typological investigation of aspect-actionality interactions and aspect-sensitive classes. The two systems will be described in more detail in §5.4.

⁶² One should carefully distinguish between terms denoting a certain meaning or context of use and grams, which have a certain meaning and a certain expression (Bybee & Dahl 1989: 52). I will consistently distinguish between the two. Hence the distinction between a meaning (‘ongoing episodic’) and a gram (‘progressive’) that conveys the meaning of ‘ongoing episodic’. The same is valid for ‘state exists’.

There are other, lesser known systems. There are five languages in my sample which do not fit the mold of either the PFV-IPFV or PROG-NONPROG systems: Maltese, Japanese, Belhare, Cayuga and Nyakyusa. Each language will be treated in more detail in §5.4.

Two types of aspect systems were not included in this study. The first type is the system with the gram called factative. The factative gram changes between perfective (bounded) and imperfective (ongoing) meanings depending on the actional properties of the predicate. Accordingly, with some verbs, typically dynamic or telic, it has the perfective past meaning, whereas with others, typically state or atelic, it has the imperfective present meaning (Šluinskij 2012: 957). The factative gram is typically zero-marked and stands in paradigmatic opposition with a gram similar to the PROG or the IPFV. It is therefore inflectional. The factative is found in many languages of West Africa, in numerous creoles (Maurer & the APiCS Consortium 2013; Bickerton 2016: 54; Michaelis 2018), and elsewhere in the world. In many cases, it is mistaken for the perfective, and in fact is called such in many sources. The term *factative*, on the other hand, is mainly used among scholars of creoles and West African languages; it originates from Welmers (1973: 346–347), who first described the gram. Factative aspect systems are not included in this study because there are still many unknowns about the properties of the aspectual systems in which it is found, let alone about its interaction with actional meanings.

Another system outside the scope of this study is the one in which the only major aspectual category is a variety of the perfect called iamitive (Olsson 2013; Dahl & Wälchli 2016). Such systems are found in the languages of Mainland Southeast Asia, e.g. in Thai (Jenny 2001) and Lao (Enfield 2007: 241ff.), and Khmu (or Kammu), an Austroasiatic language (Svantesson 1994). The iamitive gram typically originates from the verb that means ‘finish’ (cf. Dahl & Velupillai 2013a). Such less developed aspectual systems seem to extend well into Oceania,⁶³ where they are found, for instance, in the Oceanic languages Tokelauan (Vonen 1994), Nafsan (or South Efate) (Krajinović 2020) and other languages cited in Olsson (2013: 17). In such systems, actional classes can be established through interactions with the iamitive/perfect (see Jenny 2001 for an excellent discussion of Thai; cf. also Olsson 2013: 17–21 for other languages). The perfect and its varieties are not considered in this dissertation because the status of the perfect as an aspect is unclear. At best, the perfect is to be considered a hybrid category

⁶³ At the southern edge of this region, in West Papua, one also finds languages with completely atrophied TAM systems, and no grammatical aspectual or tense marking at all (Dahl 2001).

exhibiting properties of both aspect and tense (Klein 1994). Therefore, the perfect-based systems are beyond the scope of this investigation and will not be discussed any further in the course of this work.⁶⁴

1.4. A note on terminology

The field of aspectual and actional semantics is notorious for its “terminological and notional confusion” (Sasse 2002: 1),⁶⁵ the fact already lamented by Jespersen (1924: 286). In order to prevent some of that confusion, the choice of the terms *aspect* and *actionality* is briefly explained in this section.⁶⁶ Hopefully, this clarification will make for easier comparison of this work with works using distinct nomenclatures.

Following the tradition established by Comrie (1976: 7), the term **aspect** is understood to refer to the grammatical category introduced in §1.3 above. It is also often referred to as *grammatical aspect* to further emphasize the distinction with actionality. This is necessary because in many works the term *aspect* is used in a different meaning, to which I return in a moment.⁶⁷

The term **actionality**, on the other hand, which in this work refers to the lexicosemantic phenomenon introduced in §1.2 above, is more recent. This concept has been referred to with a variety of terms, including *Aktionsart*, *aspectual class*, *aspectual character*, *situation type*, *situation aspect*, *action*, *verb class*, *lexical aspect*, *inherent aspect*, *eventuality type* and so forth.⁶⁸ The term *Aktionsart* is arguably the best known and most easily recognized term for actionality among “ordinary working linguists.” However, owing to the reasons discussed in §2.3.1 below, the term *Aktionsart* will be avoided in this work (e.g. Comrie 1976: 6–7, fn. 4;

⁶⁴ Bybee (1985: 141) mentions another kind of aspect system, viz. the habitual-continuous system, found in languages such as Kiwai, Maasai, Nahuatl, Pawnee, Sierra Miwok, Tarascan, and Zapotec (Isthmus). I was unable to review evidence for positing such an aspect system, except for Maasai, which in fact has a fairly straightforward PFV-IPFV aspect system.

⁶⁵ This in particular concerns the nomenclature for aspect grams, and only to a lesser extent the nomenclature for actionality (cf. Brinton 1988: 4).

⁶⁶ A more extensive discussion of the terminology in this field can be found in Kortmann (1991).

⁶⁷ Grammatical aspect is called “ASPECT₁” in Sasse (2002).

⁶⁸ The terms were adapted from Lindstedt (2001: 772), Tatevosov (2002a: 317), Sasse (2002: 203). In the latter two works, more exhaustive lists of terms can be found. Actionality is called “ASPECT₂” by Sasse in his 2002 paper.

Sasse 2002: 203; Plungjan 2016: 345–346). Instead, the term actionality will be consistently used,⁶⁹ following a well-established practice.⁷⁰

Much of the terminological confusion in this area of research is a result of inconsistent differentiation of what is here called aspect (a grammatical category) and actionality (a lexicosemantic and lexicogrammatical category). This confusion has been compounded by numerous and obvious affinities between the two concepts.

Despite having been emphasized as early as in Comrie (1976: 1–6, Chap. 2), Lyons (1977: 705–706) and Dowty (1979: 52),⁷¹ the distinction between the two notions has been made inconsistently. Although the differentiation has since become more established in linguistics (e.g. Brinton 1988: 2–3; Smith 1997; Rothstein 2004: 1–2, among many others), it is still not universally observed, either terminologically or notionally (cf. Boogaart 2004: 1165).⁷² As Bertinetto & Delfitto (2000: 189) put it: “[f]or some, the above statement [i.e. the distinction between aspect and actionality, J.P.] will be self-evident; for others, it will barely make sense.”

This distinction is either blurred or simply ignored (Brinton 1988: 3). The reasons for this are explored in Chapter 2. In some cases, this can be explained by the low level of understanding of these two notions, as was the case in earlier periods of aspectology (Brinton 1988: 19–21). In other cases, the lack of distinction can be explained by the specific theoretical position of the researcher (so-called unidimensionality, see §1.5.1 below), whereby the two concepts (aspect and actionality) are not clearly distinguished because they are considered to be part of a single semantic domain. In such approaches and more broadly in most of the Anglo-American linguistic literature, this domain is usually referred to as “aspect” (Sasse 2002: 212–213;

⁶⁹ The term was apparently popularized by P. M. Bertinetto (cf. Sasse 2002: 232). However, he informs me that he did not originate the term but does not recall the exact source from which the term was adopted (he also notes that the source was German, that is, the original term must have been *Aktionalität*). I have come across two works where the term *Aktionalität* is used (Flämig 1965; Andersson 1972), so it may well be that the term was used more broadly in German linguistics at the time of these publications.

⁷⁰ Bache (1982: 71) is one of the rare authors defending the term *Aktionsart*. In his later works that term is replaced with the term *action* (Bache 1995; Bache 1997).

⁷¹ Dowty proposed the term *aspectual class of a verb* for actionality, and *aspectual form of a verb* for aspect, but these terms did not gain traction.

⁷² Some of the instances of notional and/or terminological confusion in textbooks include Frawley’s semantics textbook (1992: 294ff.), Payne’s fieldwork manual (1997: 243) and Talmy (2007: 107–108), who employs “aspect” to refer to both aspect and actionality.

Boogaart 2004: 1167). In other words, the term aspect is used as a cover term for actionality and grammatical aspect. Here, the term **aspectuality** will be used in that meaning instead (Binnick 2001: 557; Lindstedt 2001: 772; Sasse 2002; Boogaart 2004: 1165),⁷³ since the term aspect is of course used in a different meaning.

It should be noted that the strict notional and terminological distinction between aspect and actionality also extends to the use of the adjective *aspectual*. This adjective is normally used inclusively to refer to both actionality and aspect (e.g. Brinton 1988: 4). This is evident in collocations such as *aspectual class* or *aspectual character*, where the adjective refers to actionality, not aspect.⁷⁴ As I find this confusing and inconsistent, this use will be avoided. Instead, the adjective **actional** will be employed to refer to actionality. More precisely, I speak of *actional classes / character / composition* etc., rather than *aspectual classes, character, composition* etc. as it is customary in most works on actionality and aspectuality.⁷⁵ The adjective **aspectual** will be used to refer to aspect in collocations such as *aspectual grams, aspectual meanings*, as will the noun **aspect** in the premodifying position, e.g. *aspect gram*. This allows us to consistently distinguish between aspect and actionality in collocations such as *aspectual (aspect) meanings* and *actional meanings*. The gap left by no adjective corresponding to aspectuality can be resolved by using a periphrastic expression such as *related to aspectuality*.

To briefly recapitulate, three terms will be used in the course of this study – aspect, actionality, and aspectuality. Aspect is a grammatical phenomenon, and actionality is a lexicosemantic and lexicogrammatical one. Finally, aspectuality is the name employed here for the conceptual domain encompassing both aspect and actionality.

As an aside, I would like to mention the family of terms that are used to refer to what I have called subsituation aspect grams in §1.3 above. References to such grams are ubiquitous in the literature on aspect, where they are characterized as less grammaticalized, more derivational and semantically more specific. Hence the terms such as “derivational aspect” (Dahl &

⁷³ The term is recent – the lack of such term was noted, for instance, by Brinton (1988: 4). It was however introduced much earlier in Soviet aspectology (Bondarko 1967).

⁷⁴ This originates in the practice, discussed right above, of using “aspect” as a cover term for the entire domain in question.

⁷⁵ The parallel more precise expression is also adopted in Russian: the adjective *akcional’nyj* is used instead of *aspektual’nyj* (e.g. in Tatevosov 2015; 2016a).

Velupillai 2013b), “preaspectuals” or “peripheral viewpoint” (Johanson 2000: 40–42 et passim; cf. also Ebert 1999) and “lexically restricted grammatical marking” (Tatevosov 2002a: 389).⁷⁶ Their specific function with respect to actionality is also captured by terms such as “secondary aspect” (Plungjan 2011a: 395–402), or forms that “specify actionality” (Bertinetto, Ebert & Groot 2000: 554). Further adding to confusion, the term *Aktionsart* (and its English translation *mode of action*) is also used to refer to subsituation aspect (e.g. Johanson 2000: 55–57; Boogaart 2004: 1171–1173; Robbeets 2015: 208).⁷⁷

1.5. Aspect and actionality in interaction

In previous sections, actionality was defined as a lexicosemantic and lexicogrammatical phenomenon (§1.2), and aspect as a grammatical phenomenon (§1.3). In §1.4 above the two were strictly distinguished notionally as well as terminologically. It was also alluded to that there exist certain semantic affinities between the two. These affinities are the topic of this section.

1.5.1. Aspect and actionality: same but different?

Aspect and actionality are so intricately interconnected that it is possible to claim that “[p]robably no other area of grammar shows such a striking mutual relationship between grammatical and lexical meaning” (Breu 1994: 23).

The interconnectedness of actionality and aspect has led many researchers to assume that actionality and aspect are in fact two manifestations of the same set of primitive semantic distinctions. To that effect, Lyons claims that “[a]spect and [actionality] are interdependent (...) because they both rest ultimately upon the same ontological distinctions.” (1977: 706). Affinities between them also contributed to the lack of consistent distinction between the two phenomena observed in the previous section.

On a more general level, aspect and actionality both have something to do with time (Boogaart 2004: 1165), because of which they are often seen as members of a broad domain of

⁷⁶ In the Athabaskan linguistics, these grams are called “aspects”, and are opposed to viewpoint aspect grams, which are called “modes” (e.g. Bortolin 1998: 44).

⁷⁷ Rather confusingly, Johanson notes that some of his modes of action are preaspectuals but does not discuss the exact relationship. In his work, the notion of preaspectuals appears to be limited to weakly grammaticalized periphrastic constructions (cf. also §5.3.2 here)

aspectotemporality or simply “time”, which also includes grammatical tense.⁷⁸ Aspect, actionality and tense are therefore often investigated together (see, e.g. Bertinetto 1994b; Klein 2009a). In this work, we are concerned with tense only incidentally, as it is assumed that “actionality reveals its true character in interaction with aspectual grams rather than with grams expressing temporal reference (...)” (Tatevosov 2002a: 343). In what follows I provide a first sketch of that interaction, which is then further elaborated on in Chapter 4.

Before that, however, it should be emphasized again that the distinction between aspect and actionality is taken as a basic premise in this work, and the question of their interaction and interrelatedness is at its heart. Still, as noted in the previous section, the distinction between actionality and aspect remains controversial. As Sasse shows in his influential article (Sasse 2002), one of the fundamental points of disagreement in research on aspect-actionality interactions is “the acceptance or non-acceptance of a dichotomic distinction between two categorial dimensions within the aspectual domain” (Sasse 2002: 202), the two categorial dimensions being aspect and actionality. The “acceptance” approaches are called by Sasse **bidimensional**, and the “non-acceptance” approaches **unidimensional**.

Another point of divergence between different approaches concerns “the level of linguistic analysis on which aspect theories are supposed to be valid” (Sasse 2002: 207) – cf. §1.2.4 above. Accordingly, theories have the morphological, syntactic, lexicogrammatical, discourse or some other linguistic level as their focus. Sasse also notes that two dimensions of variation between approaches are in principle independent, but there are certain overlaps. In that sense, bidimensional approaches are also strongly characterized by the view that “the interpretation of a sentence is a result of the interaction of actionality with the aspectual meaning of a gram that figures in this sentence.” (Tatevosov 2002: 318). In contrast, unidimensional approaches are built to be valid on the phrasal or clausal level, that is, they are predominantly syntactic.

⁷⁸ Tense and aspect are both grammatical phenomena having to do with “time”, and this conceptual affinity is reflected in the fact that they are often cumulatively expressed by the same set of grammatical formatives, and that there are non-trivial implicational relations between aspect meanings and temporal reference (Dahl & Velupillai 2013b). They are different however in the sense that tense is deictic, i.e. it “involves an explicit or implicit reference to the time of utterance”, whereas aspect is non-deictic in that sense (Lyons 1977: 705). For more see e.g. Comrie (1976: 5; 1985), Klein (1994: 5, 18–26; 2009a: 42–51), Boogaart (2004: 1175), Kroeger (2019: 386) etc. See also §1.3.1 and §4.2.2.

In **unidimensional approaches**⁷⁹ aspect and actionality are considered to be part of “a single conceptual dimension in terms of which aspectual phenomena on all representational levels can be analyzed and described” (Sasse 2002: 202), whereby both aspect and actionality are “reduced to the same aspectually relevant concepts” (Filip 2012: 726). This conceptual dimension is called simply “aspect.”⁸⁰ Much of the Anglo-American tradition of aspectuality studies, going back to Vendler (1957), and developed within the framework of formal semantics is essentially unidimensional.^{81,82} This tradition, which in principle does not deny some involvement of aspect grams in the actional makeup of a sentence,⁸³ has largely addressed actionality with little or no interest in the interrelatedness of grammatical aspect grams and actionality. The most radical unidimensional approach is the theory of aspect developed by Henk Verkuyl (1972; 1993). The Anglo-American tradition and formal semantics are discussed in §2.2.

The theoretical framework adopted in this dissertation follows in most respects the basic tenets of bidimensional approaches: the distinction between aspect and actionality is recognized and aspect is assumed to be a privileged element in actional build-up of the sentence. The reasoning behind this theoretical stance is related to the fact that bidimensional approaches are better suited to highlight points of crosslinguistic variation in actional systems of different languages (at least those with grammatical aspect) and are therefore of greater use in a typological

⁷⁹ The characterization of unidimensional approaches laid out in this overview relies heavily on Sections 2.3 and 2.4 in Sasse (2002).

⁸⁰ In §1.4, it was noted that in this tradition the term *aspect* has long been employed as a cover term for both aspect and actionality (*aspectuality* is used here in that sense) and not to refer to the grammatical category exclusively.

⁸¹ An early statement of unidimensionality is found in Mourelatos (1978: 419), in whose view actional distinctions “involve fundamental linguistic categories reflected partly at the lexical level and partly – in the case of Indo-European languages, pervasively – at the morphological and syntactic level.”

⁸² For sure, unidimensional approaches can in many instances be equated with the theories of aspectuality developed within formal semantics, but not all formal semantic approaches are unidimensional. A case in point is the approach developed by C. Smith, which is both bidimensional and formal-semantic. See §3.3.1 for an appraisal. The opposite does not hold either as there are unidimensional non-formal approaches, for instance Croft (2012: e.g. 31–33). On the other hand, it does hold that adherents of unidimensional approaches, formal or non-formal, almost exclusively originate in the Anglo-American tradition – from Jespersen (1924) to Bybee (1985: e.g. 21; 100-102) and Croft (2012).

⁸³ According to Filip (2011: 1188), “on one proposal, the function of the perfective/imperfective morphology is to encode aspectual classes (Mourelatos 1978: [418]), which is taken to justify a single, possibly universal, semantic/conceptual dimension in terms of which phenomena belonging to both the grammatical aspect and aspectual/Aristotelian classes are analyzed.” See also Tatevosov (2015: 35).

investigation such is this one.⁸⁴ This finds its explanation in the fact that unidimensional and related approaches have initially been developed solely on evidence from English and other Germanic languages, for example Dutch (in the case of H. Verkuyl's approach). Unidimensional approaches are thus better equipped to explain the facts of aspectless languages, whereas bidimensional approaches are explicitly designed to deal with languages with aspect, more specifically with languages that feature the PFV-IPFV aspect system (cf. Sasse 2002: 265; Tatevosov 2015: 24–35).

In §4.2.2, I will critically discuss the case for focusing a typology of actionality on languages with grammatical aspect. In the rest of the section I briefly review one of the major issues in bidimensional approaches, namely the question of whether aspect and actionality are related on some more fundamental semantic level.

Among the linguists who adhere to bidimensional approaches, there is little consensus as to the exact nature of the relationship between the two phenomena. The main points of disagreement include the question of whether aspect and actionality are distinct conceptual domains with distinct sets of primitive semantic distinctions or rather two manifestations of the same domain that operate with the identical set of semantic primitives. Moreover, if they *are* distinct domains, there is much debate over the specifics of their interrelatedness.

According to Sasse (2002: 222–225), bidimensional approaches can be divided with respect to the different understanding of the relationship between aspect and actionality in the following manner. On the one hand, there are **Radical Selection Theories**, which exhibit only moderate bidimensionality “insofar as they recognize two distinct components of aspectual relevance (i.e. aspect and actionality, J.P.) (...), but the two “dimensions” ultimately result from the distribution, over two distinct levels, of what are assumed to be basically the same cognitive categories” (Sasse 2002: 225). Historically speaking, Radical Selection Theories grew out of the Continental aspectological tradition “by increasingly taking into account the relevance of [actionality]” (Sasse 2002: 222). This explains the centrality of grammatical aspect in these approaches. Another fundamental assumption is that actional features and aspect grams “stand in an operator-operandum relationship” (Crane & Persohn 2019: 309; cf. Sasse 2002: 223),

⁸⁴ In this connection, it should be mentioned that bidimensional approaches have been tested on a small, but typologically diverse set of languages. Most important contributions are mentioned in Chapter 3.

meaning that aspect grams are sensitive to the actional character of the verb, which influences interpretations of aspect grams and their combinability with verbs of different actional properties. This assumption is crucially involved in the notion of aspect-sensitive classes, explored in §1.5.3 below. Most prominent representatives of Radical Selection Theories are W. Breu, H.-J. Sasse and B. Bickel, whose work will be discussed in greater detail in §3.1. Early authors such as Comrie (e.g. 1976: 6) and Lyons (1977: 706) can also be placed in this group (cf. Bache 1982: 62, 64).

In contrast, so-called **composite theories of aspect** are “genuine bidimensional approaches” in which “the two layers or components of an aspectuality domain are associated with distinct semantic characteristics”, and which “consequently work independently and contribute different shades of aspectual meaning to sentences additively” (Sasse 2002: 225). In addition, in this approach, actionality is “to be clearly distinguished from the grammatical aspect, formally and also semantically, as each is taken to require distinct analytical tools” (Filip 2011: 1188–1189). Most explicit examples of this approach are C. Smith, whose work is discussed in more detail in §3.3.1, L, as well as P. M. Bertinetto and C. Bache, two authors which are not covered but briefly in Chapter 3. Other authors with similar views, but who were concerned with only one of the two dimensions (either actionality or aspect) are Dowty (1979), Klein (1994), and Filip (1999).

Despite the differences between the two kinds of bidimensional theories, Sasse notes certain affinities between the two approaches in the sense that the composite theories can be viewed as mere notational variants of radical selection approaches. Approaches by some authors, like L. Johanson, have properties of both approaches (see §3.3.2). The theoretical questions about whether aspect and actionality are one phenomenon, or two distinct phenomena, are in fact immaterial for the crosslinguistic investigation presented here. Therefore, in Chapter 3 the individual approaches will not be distinguished according to this criterion.⁸⁵

In the present work, bidimensionality is taken as the fundamental assumption. In the next section, some of the arguments in favor of the distinction between aspect and actionality will be presented. Afterwards, I will turn to the notion of interactions.

⁸⁵ In Chapter 3, only the approaches dealing specifically with interactions will be discussed in more detail, in particular those that have been designed with crosslinguistic applicability in mind.

1.5.2. On how to distinguish aspect and actionality

In this work, the distinction between grammatical aspect and actionality is taken as the most fundamental assumption. This section presents an argument in favor of that distinction. The argument revolves around the interaction of Vendlerian activities, i.e. durative and atelic predicates, with the PFV aspect, and demonstrates that actionality and aspect operate with different kinds of boundaries. This argument is commonly invoked in the literature (Bache 1982: 60–62; Johanson 2000: 54–55; Bertinetto & Delfitto 2000; Sasse 2002: 205–206, 220–221; Boogaart 2004: 1166).⁸⁶

The grammatical aspect is often taken to be about completion, and this is indeed true in cases involving telic predicates, viz. accomplishments and achievements. Consider the following two examples from French, which contain the accomplishment verb *écrire* ‘write’ (cf. Bertinetto & Delfitto 2000: 193):

(16) Elle écrivait sa thèse. (IPFV.PST)
‘She used to write / was writing her thesis.’

(17) Elle écrivit sa thèse. (PFV.PST)
‘She wrote her thesis.’ (the thesis is finished)

The two forms differ in aspect; *écrivait* in (16) is imperfective, *écrivit* in (17) is perfective. Most importantly, the PFV form, unlike the IPFV one, refers to the fact that the process of writing has been completed (the IPFV refers to the fact that the writing occurred regularly in the past, or that it was ongoing at some reference point in the past). In that way, the PFV aspect expresses the natural endpoint that is lexically determined for the verb *écrire* ‘write’.

However, the PFV aspect (in French and in general) need not refer to a lexically specified endpoint. It can also refer to arbitrary boundaries with predicates that are not lexically specified for telicity, i.e. activity (durative, atelic) and state predicates. Consider the following examples from French, which contain the activity verb *regner* ‘reign, rule’ (Smith 1997: 6):

⁸⁶ An additional argument not typically invoked in other works is found in Smith (1997: 81–86).

- (18) Il regna (PFV.PST) pendant trente ans.
 (19) Il regnait (IPFV.PST) pendant trente ans.
 both: ‘He reigned for 30 years.’

The two examples, unlike the previous pair, are virtually synonymous and the difference between the two examples is subtle. Comrie describes the difference as follows (1976: 17):⁸⁷

[T]he former [i.e., ex. (18)] gathers the whole period of thirty years into a single complete whole, corresponding roughly to the English ‘he had a reign of thirty years’, i.e. one single reign, while the second [i.e., ex. (19)] says rather that at any point during those thirty years he was indeed reigning, i.e. is connected more with the internal structuring of the reign, and would be more appropriate as a background statement to a discussion of the individual events that occurred during his reign.

Example (18) shows that the PFV aspect can create boundaries that are independent of the lexically determined boundaries. In that example, the boundary referred to by the PFV aspect is not the natural endpoint (the reigning has no natural endpoint), but instead the arbitrary determined duration of thirty years. In such cases, the PFV presents the situation as a single whole and as temporally bounded and terminated (cf. Smith 1997: 67–68). Note that this also demonstrates certain conceptual affinities between aspect and actionality since both notions revolve around the notion of boundaries (cf. Sasse 2002: 201). Still, they are distinct in the sense that, while actionality is about natural endpoints that bring about change of state, aspect is about arbitrary endpoints which can be imposed onto a situation regardless of whether the boundary is lexically determined or not.

Typically, temporal boundedness is specified by an adverbial of temporal duration (*for*-PP) like the French *pendant trente ans* in the examples above. These and other adverbials with similar effects are discussed at length in Bertinetto & Delfitto (2000).

Temporal boundedness is not only at display with dynamic predicates (that is, activities). It can also be found with non-dynamic predicates (that is, states). A case in point is the Spanish verb *estar* ‘be’ in the following example (Kattán-Ibarra & Pountain 2003: 76), where the temporal boundedness is specified by the adverbial *un año* ‘for a year’:⁸⁸

- (20) Estuvimos (PFV.PST) un año en España. ‘We were in Spain for a year.’

⁸⁷ For French see also Smith (1997: 205–206). For analogous examples in Modern Greek see Sasse (2002: 247). For Ancient Greek see Timberlake (2007: 297–298).

⁸⁸ The imperfective past (*estábamos*) is also possible if the duration of the stay in Spain (*un año*) is not specified.

An effect akin to the one brought about by adverbials of temporal duration (*for*-PPs) is present in the discourse in the taxis configuration of sequence, which requires the PFV irrespective of the telicity of the predicate (Bickel 1996: 38; see §1.3.4 above for taxis). Consider again example (11) from 1.3.4 above, repeated here as (21):

(21) Spanish: PFV past in the taxis configuration of sequence

Fernando fue agente de seguros, perteneció a la mafia, se casó, se divorció.

‘F. was an insurance sales agent, then was a mafia member (lit. belonged to the mafia), then got married and then divorced.’

All four verbs in (21) are in the PFV.PST form and are interpreted as occurring in a sequence. The last two, *se casó* ‘got married’ and *se divorció* ‘divorced’, are telic verbs, and their PFV form refer to their natural endpoints, as in example (17) above. In contrast, the propositions *fue agente de seguros* ‘was an insurance sales agent’ and *perteneció* ‘belonged’ are atelic and their PFV form refers to their limited duration and to the fact that they ended (‘was an insurance sales agent (and then he was not)’, ‘belonged to the mafia (and he then did not)’). They are temporally bounded by other situations occurring within the sequence instead of by an adverbial like the one found in example (18).

Again, the role of the PFV aspect in creating the discourse effect of sequence is most obvious with activities (Sasse 2002: 256), but also with states, as in the example above. The use of the PFV governed by taxis considerations is a strong, perhaps the strongest, argument in favor of making a notional distinction between aspect and actionality (Sasse 2002: 229). It also adds an argument in favor of including discourse functions in the definition of viewpoint aspect, as discussed in §1.3.4 above.

Temporal boundedness of state and activity verbs in the PFV is also evidenced by the fact that some languages in such combinations exclude the reading that the state continues into the present, as in the following example from French (*a été* is a PFV.PST form):

(22) French (Smith 1997: 195)

#Jean a été malade hier soir et il est malade maintenant.

‘Jean was sick this morning and he is sick now.’

The same is found with activity verbs in Chipewyan (Wilhelm 2007: 50–51). It is unclear at this point if this is generally valid for PFV-IPFV languages. Note also that the English translation is fine, indicating that no such contradiction obtains with English Past Simple (cf. Smith 1997: 171).

Since the distinction between natural and arbitrary endpoints (boundaries) will be of some significance in this work,⁸⁹ at this juncture I would like to introduce terminological choices, adapted from Smith (1997: 67–68).⁹⁰ First, the property of any kind of endpoint or boundary, regardless of whether it is natural or arbitrary, which is conveyed by the PFV aspect, will be called **boundedness** (Declerck 1979; Depraetere 1995b). In that sense, the PFV aspect gram is characterized by boundedness. The PFV forms of the French verbs *écrire* in (17) and *regner* in (18) are bounded, i.e. they have an endpoint. However, the PFV aspect with these two verbs conveys two different types of boundedness. In the case of *écrire* it conveys the fact that writing finished or was completed, i.e. it conveys a natural endpoint (or completion). On the other hand, with *regner* it conveys an arbitrary endpoint (or termination) and presents the situation as temporally delimited. Following the established aspectological tradition, the latter use of the PFV will often be referred to as **delimitative**,⁹¹ and the former as **completive**. Table 4 provides a summary.

Function of the PFV gram	Actional character of the predicate	Example
reference to a natural endpoint (completive function)	telic (accomplishment, achievement)	<i>écrire</i> in (17)
reference to an arbitrary endpoint and a temporally delimited situation (delimitative function)	atelic (activity, state)	<i>regner</i> in (18)

Table 4. Two functions of the PFV aspect.

To recapitulate, situations can have natural endpoints or arbitrary endpoints. Both endpoints are instances of boundedness. Boundedness is typically brought about by the PFV aspect (but also NONPROG which incorporates the meanings of PFV aspect – see §1.3.7). The nature of the endpoint exhibited by a verb (natural, arbitrary, or even both) is determined by the lexically determined actionality (Smith 1997: 67).

1.5.3. The notion of aspect-sensitive classes

In this section, the central notion to this investigation, the notion of aspect-sensitive classes, is presented in more detail. In §1.1 above, it was noted that aspect-sensitive classes arise through

⁸⁹ In particular with respect to the distinction between weak and strong actional classes, for which see §4.4.3.

⁹⁰ The natural endpoint is called “crucial limit” and the arbitrary endpoint “relevant limit” in Johanson (2000). A similar distinction between “temporal bound” and “material bound” is found in Lindstedt (2001: 775).

⁹¹ Another term for delimitative is “complexive” (Bary 2009).

systematic interactions between the lexical content of the predicate and the properties of grammatical aspect. Verbs are assigned to an aspect-sensitive class based on the actional interpretations of individual aspect forms. The interactions of actional meanings and aspect grams allow us to establish a system of actional classes of predicates (cf. Arkadiev 2009: 59). Aspect-sensitive classes are only one of the ways that classes of predicates can be established, but they are arguably the most appropriate for aspect languages (see §4.2.2 for further discussion).

The concept of aspect-sensitive originates in the observation that individual aspect forms have different readings depending on the actional character of the predicates they occur with. For instance, Lyons (1977: 713) explicitly notes “that one and the same aspect will be interpreted differently according to the [actionality] of the verb” (cf. Boogaart 2004: 1173).

The first approach to actionality that explicitly exploited the notion of aspect-sensitive classes was developed by W. Breu, from whose work the term *aspect-sensitive class* is adopted (e.g. Breu 1994: 23). Similar approaches were developed by S. Tatevosov, who employs the term *actional characteristic*, and L. Johanson. More information on the specifics of the models developed by these authors is provided in Chapter 3, while Chapter 4 lays out the system of actional classification and associated aspect-sensitive classes used in this investigation is presented. Here I limit myself to the illustration of this concept.

The illustration will be based on the actional meanings (or interpretations) of Modern Greek aspectual grams past PFV (“Aorist”) and past IPFV (“Imperfective”). As already said, the two aspect grams can have a range of distinct readings depending on the predicate in question. The availability of these readings is systematic, and verbs can be accordingly classified into five aspect-sensitive classes:⁹²

Vendler label	Citation form	Past IPFV	Past PFV
state	<i>kséro</i> ‘to know’ (ξέρω)	<i>íksere</i> ‘he knew’	n/a
n/a (state + achievement)	<i>agapáo</i> ‘to love’ (αγαπάω)	<i>agapúse</i> ‘he loved’	<i>agápise</i> ‘he fell in love’

⁹² The examples are taken from Sasse (1991c: 37). The Greek examples are reproduced without modification. The examples are not transliterated but transcribed phonetically. I added the column *Citation form*, which contains the verbs in their usual citation forms (1st person singular of the present tense) together with the original spelling in the Greek alphabet. See also Breu (1994: 26–30) for examples from Romance languages and Russian.

activity	<i>dhulévo</i> ‘work’ {δουλεύω}	<i>dhúleve</i> ‘he was working’	<i>dhúlepse</i> ‘he worked (and then...)’
accomplishment	<i>pethéno</i> ‘die’ {πεθαίνω}	<i>péthene</i> ‘he was close to death’	<i>péthane</i> ‘he died’
achievement	<i>vrísko</i> ‘find’ {βρίσκω}	<i>évriske</i> ‘he used to find’	<i>vríke</i> ‘he found’

Table 5. Five aspect-sensitive classes of Modern Greek.

The resulting classification into five aspect-sensitive classes roughly corresponds to the traditional Vendlerian classes. I kept the labels for ease of reference.⁹³ Let us now examine each of the aspect-sensitive classes.

The traditional Vendlerian class of states is split into two subgroups. The first group is constituted by verbs like *kséro* ‘to know’, for which no PFV form is available. The second is constituted by pairs like *agapúse* ‘he loved (IPFV)’ and *agápise* ‘he fell in love (PFV)’ which combine the Vendlerian classes of states (in the IPFV) and achievements (in the PFV). The IPFV verb form encodes the state resulting from the change of state (‘to love’), while the PFV expresses the beginning (inception, entry into) of that state (‘to fall in love’). The latter group has no label in the Vendlerian model,⁹⁴ which shows that the two classifications fit only imperfectly. In this work, such verbs are called *inchoative states*. In order to distinguish *inchoative states* more consistently from Vendlerian states, the latter will be referred to as *total* or *non-inchoative states*.⁹⁵

With activities, the IPFV aspect encodes the ongoing activity, and the PFV aspect an arbitrary boundary. Accordingly, in the PFV aspect the situation described by the verb is presented as temporally delimited (see §1.5.2 above for this notion). With accomplishments, the IPFV form represents the preparatory phase that precedes the natural endpoint and the PFV represents the attainment of that natural endpoint. Finally, with Vendlerian achievements, the PFV aspect is

⁹³ The Vendlerian classification is in part aspect-sensitive but relies less consistently on different interpretations with PROG. Therefore, the differences between Modern Greek aspect-sensitive classes and the Vendlerian classification can be in part attributed to different diagnostic criteria and in part to the differences between the PFV-IPFV system of Modern Greek and the PROG-NONPROG system of English (see §1.3.7 above for aspect systems). The authors who rely more consistently on the interactions of the English PROG with different verb classes normally arrive at richer classifications than the Vendlerian one. The classifications in Dowty (1979) and Quirk et al. (1985) are a case in point.

⁹⁴ But its existence is acknowledged in the Vendlerian classification. See §2.2.4.1 for a discussion.

⁹⁵ For the term “total state” see §4.4.1.1.

the expected choice, and expresses a punctual change of state. IPFV forms of achievements have special readings, such as the habitual in the case of Modern Greek, conveyed in the translation by *used to*.

An aspect-sensitive class can thus be defined as a union of actional meanings available to inflectional aspect grams. In the case of Modern Greek, it is a union of actional meanings available to the past IPFV and PFV grams. They can be summarized as follows (note the non-Vendlerian labels *total states* and *inchoative states*):⁹⁶

Aspect-sensitive class	Actional meaning in past IPFV	Actional meaning in past PFV
total state	state (<i>iksere</i> ‘he knew’)	n/a
inchoative state	state (<i>agapuse</i> ‘he loved’)	entry into a state (<i>agapise</i> ‘he fell in love’)
activity	ongoing process (<i>dhuleve</i> ‘he was working’)	temporally delimited process (<i>dhulepse</i> ‘he worked (and then...)’)
accomplishment	ongoing process (<i>pethene</i> ‘he was close to death’)	natural endpoint (<i>pethane</i> ‘he died’)
achievement	nonepisodic: habitual etc. (<i>evriske</i> ‘he used to find’)	natural endpoint (<i>vrike</i> ‘he found’)

Table 6. Actional interpretations of Modern Greek the IPFV and PFV aspect forms.

Thus, for instance, the actional class of activities can be defined as a class of verbs and predicates that have the meaning of an ongoing process in the IPFV aspect, and the meaning of a temporally delimited process in the PFV aspect. Other classes are defined in an analogous way.

The actional meanings exhibited by the PFV and IPFV aspects in Modern Greek and the aspect-sensitive classes they allow us to posit are remarkably consistent across languages. This was a well-known fact in a number of early works (Comrie 1976: 41–51; Lyons 1977: 711–717; Bache 1982: 68–69), which provide virtually identical preliminary lists of these meanings and classes based on the examples from European languages. This list, similar to the one in Table 5 and Table 6, is nowadays commonplace in the literature (e.g. Boogaart 2004: 1178–1179; Timberlake 2007: 284–304; Swart 2012; Saeed 2016: 113ff.; Kroeger 2019: 379ff.). However, such works rarely if ever go beyond better-known European languages in citing their evidence

⁹⁶ The actional meanings are discussed in more detail in §4.3, where a different set of labels is used. The labels for the actional meanings used here are informal and meant to be as transparent and self-explanatory as possible.

(but see Timberlake 2007). Still, such evidence can be found in a number of other works (e.g. Sasse 1991a; Johanson 2000: 169–180; Tatevosov 2002a).⁹⁷ That being said, one of the major goals of this study is to investigate this matter on an even larger and more diverse sample of languages.

Crucially for the investigation here, the empirical procedure that has just been outlined is, in the words of Arkadiev (2009: 59), “a useful and effective method which allows one not only to discover actional classes in a given language in a non-aprioristic fashion, but also to compare actional classes across languages.” The procedure is best characterized as “tentatively universally applicable” (ibid, p. 77). However, it should be added that a set of firm criteria needs to be posited to ensure its crosslinguistic applicability. These criteria, which are outlined in §1.6 below, rely heavily on the existence of a recurring set of actional meanings and on the existence of crosslinguistically well-established aspect grams, such as the PFV, the IPFV or the PROG.

The notion of aspect-sensitive classes is helpful in dealing with two issues mentioned in passing in previous sections. One is the role of the actionality in the definition of aspect grams and the other is the claim about the subjective nature of viewpoint aspect. I turn briefly to each of these two issues in the remainder of this section.

First, the notion of aspect-sensitive classes has direct bearing on the understanding of aspect in individual languages as well as crosslinguistically. The procedure outlined earlier in this section uses pre-established aspect grams and a set of actional meanings. It considers the semantic effects exhibited by aspect grams when combined with verbs of different actional classes. The results point to the existence of a small set of aspect-sensitive classes. This consequently led to the idea that aspect grams can be defined as bundles of a limited number of actional meanings. For instance, the PFV gram of Modern Greek can be characterized as the gram combining the meanings of entry into a state, temporal boundedness, and natural endpoint. Understanding grammatical aspect in terms of various actional meanings will be referred to as the cluster analysis (see also §5.1).⁹⁸ The term cluster is adopted from Plungjan (2011a: 402–406), where the term “aspect cluster” is used to refer to aspect grams as combinations of actional meanings.

⁹⁷ The history of research is discussed in more detail in §2.3.2.

⁹⁸ This is not to mean that cluster analysis is the only way to understand grammatical aspect. As suggested in §1.3.4 and §1.5.2, an important element of the definition of aspect can be stated in terms of discourse

On the face of it, this kind of approach to aspect is circular since it apparently uses aspect grams to determine the actional character of the verb and then uses that actional character to define the very same aspect gram (Ebert 1995: 186).⁹⁹ However, rather than circular, this procedure can be understood as a kind of feedback loop (Cover & Tonhauser 2015: 335), whereby definitions or aspect grams and the information about the actional character of individual lexical items constantly “inform one another and are subject to change.” What is more, hypotheses about the classifications of predicates in individual languages always draw on existing typological knowledge. For these reasons, I see no problem in including cluster analysis as a component of the definition of aspect grams.

Furthermore, the existence of aspect-sensitive classes provides an argument in favor of the view, mentioned briefly in §1.3.2 above, that different perspectives of a situation provided by the viewpoint aspect offers are determined and restricted by the actional character of the verb. Thus, speakers have only a minimal choice in choosing different perspectives, and the choice of perspective is completely in the domain of lexically encoded actional properties. Interpretations of aspect grams are inseparable from the actionality of the verb they appear with.

In conclusion, aspect-sensitive classes are built on the idea of actionality being perceived through the lens of inflectional aspect morphology. When filtered through this morphological lenses, the actional character of the predicate is said to “interact” with aspect morphology. This notion of “interactions” is however more complex than it was indicated in this section. A deconstruction of the notion of “interactions” is the topic of the next section.

1.5.4. Deconstructing “interactions”

After discussing aspect-sensitive classes in the previous section, in this section it will be argued that interactions that obtain between aspect and actionality are in themselves complex. Some of that complexity was alluded to in §1.2.4.3 above, where it was claimed that viewpoint (inflectional) aspect grams in most cases do not shift the lexically predetermined actional character, with some exceptions.

In the previous section, we have seen that different predicates have different actional properties – the Modern Greek verb *agapáo* ‘to love’ is different than *pethéno* ‘to die’ – and that these

functions of aspect grams and in terms of boundedness.

⁹⁹ The issue of circularity is covered in more detail in §4.2.

differences can be put at display by pointing to the divergent actional interpretations of aspect grams. This allows us to discover a set of aspect-sensitive classes, which are a result of interactions between aspect gram semantics and the lexicalized actional character of the verb. This, in turn, emphasizes that one of the functions of grammatical aspect is to present the different fragments of a situation as lexicalized by the verb. Thus, aspect serves the function of conveying the actional potential of the verb – the IPFV aspect of *agapáo* ‘to love’ expresses the state, and its PFV expresses an entry into that state (see Table 5). In that sense, aspect can be said to **express or encode** actional meanings, i.e. one of the functions of aspect is the **expression of actionality**.

However, interactions between aspect and actionality can be of a different kind. In §1.2.4.3 above, examples of aspect grams exhibiting effects of actional coercion were cited. Recall the following two examples:

(23) I am hating zoology class. [repeats (6)]

(24) I’m loving the hot hue, the sweet, off-the-shoulder neckline. [repeats (7)]

In examples (23) and (24), the original stative actional character of the verbs *hate* and *love* is modified into a dynamic one. Actional coercion is caused by the clash in temporal features of PROG (which requires a dynamic predicate) and the verbs *hate* and *love* (which are stative). The PROG aspect imposes a sense that “goes against the grain of the lexical aspect of the predicate” (Timberlake 2007: 286). This demonstrates that viewpoint aspect grams, in this case the PROG gram, create an actional character which is otherwise not present in the lexical representation, that is, they act as shifters.

Deciding which viewpoint grams involve actional shifts and under what conditions is contingent upon the specific criteria for distinguishing what counts as lexically determined and what counts as shifted. In §1.2.4.3 above, the criteria adopted in this work were outlined. It was noted that new, coerced meanings can be characterized as pragmatically marked or odd, and that they require certain contextual support. Other authors may have different criteria – see §1.2.4.3 above for Smith (1997). In the model by Breu and Sasse (e.g. Sasse 1991c: 37), combinations of states and achievements with the PFV and IPFV aspect, respectively, are thought to involve actional coercion for reasons inherent to the model.

Actional expression and actional coercion are two ways in which aspect and actionality can interact. A third one involves constraints on the cooccurrence of aspect grams with verbs of

certain actional class, which stem from the incompatibility of aspect meaning and actional character. In this sense, cooccurrence restrictions are akin to actional coercion since both involve clashes of temporal features. The difference is that, with actional coercion, the clash is resolved by reinterpreting (coercing) the actional character of the verb, while, with cooccurrence restrictions, the clash is left unresolved and results in ungrammaticality. Well known instances of cooccurrence restrictions include the incompatibility of state predicates with the PROG and the PFV, observed to a varying degree across languages (see §7.1.1 and §7.1.2, respectively).

This three-way distinction between actional expression, actional coercion, and cooccurrence restrictions matches the three-way division of interactions in the work of W. Breu (e.g. 1994: 28–30; 1998: 55) between *empty* (or *vacuous*) *application* or *Leeranwendung* (my *actional expression*), *actional recategorization* or *Anpassung* (my *actional coercion*) and *incompatibility* or *Inkompatibilität* (my *cooccurrence restriction*).

Crucially, all these kinds of interactions are available to viewpoint aspect grams, a fact most explicitly stated by Plungjan (2011: 395ff.). I will assume that actional derivation and/or cooccurrence restrictions occur with viewpoint aspect grams in at least the following three instances. The first one is the combination of states with PROG, which was already discussed above. The second one concerns instances where the IPFV and other viewpoint grams are used with dynamic predicates in the habitual-generic function. In such cases, dynamic predicates are stativized, that is, there is an actional shift from dynamic to stative actional character (e.g. Bertinetto 1994a: 413; cf. Vendler 1957: 150–151; Smith 1997: 33–34).¹⁰⁰ The final instance involves the use of achievements with the aspect grams IPFV and PROG where these two grams are considered incompatible with achievements because of their punctual nature. The claim is critically evaluated in §7.3.

While being generally absent in the mainstream formal literature, references to the multifaceted nature of aspect-actionality interactions abound in the bidimensional literature. Apart from Breu, mentioned above, other authors discussing this issue are, for instance, Plungjan (2011: 395ff.), who explicitly distinguishes between the cases where viewpoint aspect grams are combined with verbs of matching actional character and the cases where there is no such match

¹⁰⁰ On the affinities between the habitual-generic meaning and statives see §5.4.1.2.

and as a consequence, actional coercion is observed. Other references are found, among others, in Tatevosov (2002a: 318), who observes that “[v]arious implicational relations obtain between actionality and aspect,” in Bache (1982: 68–69), who notes that in the combinations such as the PFV with a state predicate “the difference is not purely aspectual but involves Aktionsart,” and in Boogaart (2004: 1179), who claims that “grammatical aspect can establish coercions.”

The double relationship between aspect and actionality is also apparent in Smith (1997: 81–86), who observes that “situation types remain transparent to the receiver whatever the viewpoint of a sentence” (1997: 83), which is to say that the viewpoint does not change actional character, and, at the same time, that viewpoints may trigger shifts like adverbials (1997: 86). This is criticized as contradictory by Sasse, who asks (2002: 256): “How is it possible that viewpoints trigger situation type shifts and at the same time leave the situation types intact?”. However, this apparent contradiction of viewpoint aspect is well-attested.

Lastly, it was noted in the previous section that there exists a class of aspect grams dedicated to shifting the lexically determined actional character. They were referred to as subsituation (secondary) aspect grams in §1.3. They are only occasionally singled out in the literature. The most explicit reference is found in Plungjan (2011: 395ff.), who also originated the term “secondary aspect.” He lists the following grams as belonging to that group: the habitual (which shifts dynamic verbs into states), the multiplicative¹⁰¹ and various telicizers (which shift atelic verbs into telic).¹⁰² Johanson (2000: 40–42; 55–57) recognizes grams with a similar set of functions, including habituals (2000: 70–72) and telicizers (2000: 68–70). Other subsituation aspect grams not mentioned in these two works include inceptives (which shift states into inchoative states) and resultatives (which shift telic predicates into states).

1.6. What it means to do typology

In this section I define the term *typology*, the final of the four central concepts that figure in the title of this dissertation. Typology is understood as an approach to language which seeks to compare languages and establish the universals of human language. It is shown that there are two major approaches to typology (or language comparison), the Greenbergian typology on the

¹⁰¹ Relationship of this gram to the better-known pluractional (Wood 2007) is unclear.

¹⁰² It appears that Plungjan sometimes uses these terms to refer to grams (meaning/function plus expression) and sometimes to refer only to meanings/functions. I refer only to grams.

one hand, which is in most cases simply referred to as *linguistic typology*, and, on the other hand, generative grammar. In this work, typology refers to the former sense.

The two approaches to typology are primarily contrasted in their approach to morphosyntax; it is more difficult to characterize their opposition in the domain of semantics. Thus, before discussing semantics in §1.6.2, the two approaches to typology and their main characteristics are introduced in the next section, with the focus being mainly on their differences as reflected in their treatment of comparison in the domain of morphosyntax.

1.6.1. Two approaches to language comparison

Linguistic typology of the Greenbergian kind is best characterized as a subdiscipline of linguistics that (Bickel 2007; Moravcsik 2013: chap. 1; Song 2018: 39):

- a) compares languages across genetic, areal and cultural groupings with respect to various linguistic phenomena – phonological, grammatical and semantic-pragmatic;
- b) seeks to group languages into types¹⁰³ (“kinds”) of languages with respect to the linguistic feature investigated and establishes the geographic distribution of the types;
- c) seeks to formulate universals (or generalizations) concerning the linguistic phenomenon under investigation;
- d) seeks to explain these universals (or generalizations).

Thus, linguistic typology is oriented towards capturing the crosslinguistic diversity of the investigated phenomenon and establishing the limits of its variation. Linguistic typology is called Greenbergian after the discipline’s founder Joseph Greenberg.

Inherent to linguistic typology is its non-generative orientation: typology is functionalist (Croft 1995; Van Valin 2017) and “nonaprioristic” (Haspelmath 2014). For the latter characterization see below. Furthermore, the very basic methodological tenet of the contemporary linguistic typology concerns the use of semantically and functionally based comparative concepts (or *tertia comparationis*) distinct from descriptive categories (Lazard 2005; Haspelmath 2010; 2018; cf. Stassen 2010). Crucially, comparative concepts are the analyst’s construct and are designed specifically for the purposes of comparison. Comparative concepts are often

¹⁰³ Hence the name of the discipline.

established on a case by case basis by the analyst, drawing on the existing knowledge of the meanings/functions that occur frequently in the languages of the world (Haspelmath 2010: 664). They need to be defined by “clear explicit definitions” (Lazard 2005: 8). They cannot be right or wrong, only more or less productive, “in that they allow the formulation of more or less interesting subdivisions and generalizations” (Haspelmath 2010: 678). The productivity guides the choice of the comparative concept made by the researcher. If a comparative concept does not lead to interesting discoveries, it is discarded and replaced by another comparative concept (cf. Lazard 2005: 8).

Comparative concepts are considered the fundamental element of typological (Greenbergian) scientific enterprise, as they ensure the phenomena compared are “identified by the same criteria in all languages” (Haspelmath 2018: 93). More on comparative concepts will be said later this section as well as in subsequent chapters, most specifically in §4.1.2.1 and §5.1, where both the actional meanings as well as the aspect grams used to investigate aspect-actionality interactions across languages will be defined as comparative concepts.

The word *typology* can be used in another sense: typologists’ work (in the Greenbergian sense) results in **a typology** of the linguistic feature under investigation (or a **typologization** of it), which includes all the elements enumerated above: comparison of a linguistic feature across genetically, areally and culturally independent languages by making use of comparative concepts; classification of languages and/or features into types and establishing their geographic distribution; establishing universals (or generalizations) and if possible, providing explanations for these universals (or generalizations). The latter two can be difficult to accomplish if the investigation in question is the first of its kind.

As noted above, linguistic (Greenbergian) typology is not the only linguistic subdiscipline with interest in investigating crosslinguistic diversity. **Generative grammar/linguistics** (also **Chomskyan linguistics, formal linguistics/grammar**)¹⁰⁴ shares with linguistic typology the goals of establishing and explaining universals, albeit by adopting a separate set of assumptions and by deploying a different methodology (Polinsky 2010; Haspelmath 2014).

Generative grammar (GG) began in the late 1950s with English as its sole focus; later, the research was extended to other Western European languages (Dutch, German, Italian etc.). The

¹⁰⁴ For the history of the term *formal linguistics/grammar* see §2.2.

reasons for its initial focus on English will be explained in a moment. GG has evolved in this respect in recent times, when a growing number of generative linguists have become interested in broadening the empirical base with “exotic” languages (Daniel 2010: 48–50; Matthewson 2011: 269, 278–279). In that sense, generative enterprise has grown more similar to linguistic typology, and for that reason we can speak of (formal) generative typology (Baker 2010) as a generative grammar practiced on a larger and more diverse empirical basis. The empirical basis in generative typology nevertheless continues to be much (numerically speaking) more restricted than in Greenbergian typology (Daniel 2010: 47).

Nevertheless, both approaches can be rightly considered “typological” in the broadest sense of the notion – more precisely, they are both “comparative” (Daniel 2010: 46–47). I will however avoid using the term *typology* in referring to generative approaches to language comparison. Only the adjectives *generative*, *formal* and *aprioristic* will be used here for that purpose, whereas the term *typology* will be used for the former approach, as will be the adjectives *Greenbergian*,¹⁰⁵ *functional-typological*, *typological* and *nonaprioristic*.

Let us turn to the distinction *aprioristic* – *nonaprioristic* evoked above. As said, the generative approach to language comparison is based on a set of different premises than the functional-typological one. Most important for us here is that GG utilizes a restricted set of preestablished categories – Universal Grammar (UG). Crucially, such a set is assumed to be a priori universal – instantiated in all languages (or at least universally available – for this point see Haspelmath 2010: 667). Categories considered universally instantiated or at least universally available are often referred to as crosslinguistic categories or category types. Since its set of universal categories is preestablished and assumed to be a priori universal, the generative approach to language is *aprioristic* (Haspelmath 2014). Universal Grammar (UG) is assumed to be an innate property of the human mind (Daniel 2010: 46). Categories of UG allow for parametric variation (Smith 1997: 13–14), i.e. “along certain dimensions they are realized differently in individual languages” (ibid., p. 60). Language-specific categories are always considered subordinated

¹⁰⁵ The use of this designation does not imply that Greenberg accepted or was aware of all the views which define the contemporary typology. These include, for instance, the positions on categorial particularism as well as the use of comparative concepts, both of which have developed within typology since the 1960s and 1970s, when Greenberg was most active in the field of typology.

instances of the categories of UG. This means that language-specific and universal categories stand in a taxonomic relationship.

Generative linguistics thus assumes that all languages are underlyingly similar or identical since what is manifested in individual languages reflects the biologically innate UG (Daniel 2010: 49):

[G]enerative ideology does not accept that language-specific facts can be truly diverse, but always derives them from underlying principles of universal grammar. Generative grammar assumes that languages are essentially identical in their structure (...).

This assumption is explicitly formulated as Chomsky's Uniformity Principle, which states (Chomsky 2001: 2):

In the absence of compelling evidence to the contrary, assume languages to be uniform, with variety restricted to easily detectable properties of utterances.

This principle is reflected in the methodology employed in GG under the heading of “no variation null hypothesis”, which states that one should “assume universality in the absence of evidence to the contrary – and then go and look for evidence to the contrary,” since “all languages are the same”¹⁰⁶ (Matthewson 2011: 277). On this principle, concepts and framework presumed to be universal can be developed based by in-depth investigations of the grammar of a single language, and afterwards tested against other languages – this is what W. Croft calls the “one-language-at-a-time” approach to universals (Song 2018: 69–70). This makes GG a *deductive* approach (Daniel 2010: 50; Song 2018: 63). Put differently, universals are assumed based on one language and then modified based on the evidence from other languages. I will return repeatedly to this underlying principle of generative grammar for reasons explained in §1.6.2 below.

The language that has been the basis for most of the universals and on which much of the structure of UG is modeled is English, especially in the early GG (cf. Bach 2004: 56–57). This used to be the basis for much of the criticism of the generative Eurocentrism (Comrie 1989: 1–

¹⁰⁶ Matthewson emphasizes that saying that “all languages are the same” does not mean that all languages are like English.

15; Daniel 2010: 46–47). In §2.2.4 and §2.3.2 more will be said of Eurocentrism in the context of the topic pursued here.

In contrast, Greenbergian typology is more cautious about formulating and testing universals, even though in principle it does not exclude that possibility.¹⁰⁷ Universals are never assumed *a priori* (“in advance”) and must be based on a much broader and structurally more diverse empirical basis – linguistic typology is an *inductive* approach (Daniel 2010: 50; Song 2018: 63). Theory is approached in a similar manner – it can be constructed only “after the structural diversity in the world’s languages has been fully documented, analysed, and explained” (Song 2018: 66). The role of theory in crosslinguistic semantics is briefly touched upon in §2.2.4.

Apart from “no variation null hypothesis” and its methodological ramifications, there is another defining property of generative linguistics which sets it apart from Greenbergian typology and was formulated rather recently. Namely, according to Haspelmath (2018), in the generative approach, universal linguistic categories (elements of UG) are taken to be natural kinds (like species in biology, or chemical elements found in the periodic table). This stems from the assumption, explained above, that there is a set of *a priori* universal categories, which exist independently of languages and are considered at least “universally available” to languages (Haspelmath 2010: 664). This means that they “need not be defined, but can be recognized by their symptoms, which may be different in different languages” (Haspelmath 2018: 83). Thus, comparison in generative linguistics can be equated with looking for instantiations of universally available categories in different languages.¹⁰⁸ All that needs to be done is to “diagnose” them in different languages. Sometimes different languages have different diagnostics, and among other things, the researcher’s goal is to uncover the language-specific diagnostics (Haspelmath 2018: 101–102).

The general approach to crosslinguistic comparison typical of GG is called **categorial universalism** (Haspelmath 2010). Categorial universalism can be more broadly conceived as the procedure of recruiting universal (crosslinguistic) categories among prominent grammatical

¹⁰⁷ After all, typology is “the quest for invariants” (Lazard 2005: 1), that is, universals.

¹⁰⁸ This then implies that UG is used both for language comparison and for language description, i.e. GG conflates theory (i.e. explanation), comparison and description. The importance of the distinction between description, comparison and explanation (“theory”) for typology and the lack of the same distinction in generative linguistics is in particular emphasized by M. Haspelmath.

terms, as “linguists¹⁰⁹ often assume that [a prominent grammatical term] stands for a general category that exist independently of the term and of particular languages” (Haspelmath 2018: 101). Often the reason for it is that “there are obvious resemblances between languages” for certain categories (Lazard 2005: 5): the perfect is a good example of the verbal category that is consistently similar across many languages.

Generative grammar assumes that universal categories are innate, but many linguists, including those subscribing to formal syntactic theories, accept the existence of crosslinguistic categories “without any cognitive commitment” (Haspelmath 2010: 667).¹¹⁰

Thus, in generative linguistics (and other approaches espousing **categorial universalism**), language comparison is not considered problematic. All languages are similar, and in order to compare them, the linguist is required to look for instantiations of universal categories in different languages. In §1.6.2., it is argued at length against such an approach in the context of typology of actionality. What is adopted instead is a derivative of the approach that is outlined next.

Many typologists¹¹¹ assume a position opposite to categorial universalism, namely that each language is a system of its own and its language-specific categories have values determined with that system. This position inherits the Boasian and structuralist position of language incommensurability (Daniel 2010: 51–54; Haspelmath 2010: 664), and is also called **categorial particularism** (Haspelmath 2010). This position entails that language-specific categories, however similar, cannot be equated across languages nor “compared with each other in a direct way” (Johanson 2000: 45). This implies that we are faced with “the lack of a secure independent standard for comparing languages” (Lazard 2005: 1). From this arises the main methodological concern in linguistic typology – the problem of crosslinguistic identification (e.g. in Stassen 2010). This problem cannot be overstated for typologists – one frequently warns of “the serious risk of comparing data that are essentially incomparable” (Stassen 2010: 91).

¹⁰⁹ Including non-generative linguists: “Categorial universalism has been uniformly adopted in generative typology since its beginnings, and it appears to be implicitly assumed by many other linguists as well (...).” (Haspelmath 2010: 664). Categorial universalism is also adopted by some typologists (Haspelmath 2010: 677), in particular by some TAM typologists – e.g. Bybee (1998) and Plungjan (2011a) (see §5.1).

¹¹⁰ Müller (2018: chap. 13) is an excellent overview.

¹¹¹ See fn. 109. Greenberg’s position with this respect to this issue is less straightforward.

Incommensurability does not, however, preclude crosslinguistic comparison (cf. Johanson 2000: 49).

In order to deal with this problem, many typologists employ independent standards of comparison – comparative concepts or *tertia comparationis* (Haspelmath 2010; Lazard 2005: 7–9),¹¹² the notion defined earlier in the section. Comparative concepts are means typologists use for comparison and are unlike the categories of generative grammar in several respects (Haspelmath 2010). Comparative concepts are distinct from descriptive categories and do not correspond to any language-specific descriptive category. They are not crosslinguistic or universal entities generalized on the basis of language-specific descriptive categories (Lazard 2005: 5ff.) – that is, “there is no taxonomic relationship between [comparative concepts and descriptive categories]” (Haspelmath 2010: 680; see also Haspelmath 2018: 94–97). They lack psychological reality (Dahl 2016: 432) and exist exclusively for the purposes of comparison. Comparative concepts are often based on meanings and categories figuring in traditional grammar or those frequently found in the world’s languages (cf. Dahl 2016: 428). This means that in constructing comparative concepts typologists draw on the existing linguistic variation (Lazard 2005: 8), i.e. they “use variation in order to recognize invariants” (Johanson 2000: 49).

The contrast between the functional-typological (nonaprioristic) and generative approach to language comparison has been almost exclusively relevant for the realm of morphosyntax, where competing analyses and predictions have been offered for many phenomena (see Haspelmath 2014 for some of the examples).¹¹³ This is hardly surprising since generative linguistics is in essence a theory of *syntax*. In the following subsection I extend the distinctions between Greenbergian and generative typology to the domain of meaning, or more specifically to the phenomenon of actionality. In addition, the next section applies the distinction between the comparison based on comparative concepts (as in typology) and the one based on universally instantiated or available categories (as in generative grammar) to the typology of actionality.

¹¹² In lexical typology these are called “etic grids” (cf. Moore et al. 2015: 191–192).

¹¹³ The overlap in interest concerns many well-researched grammatical domains: agreement, alignment, argument structure, differential object marking, and so forth.

1.6.2. Comparison of meaning

The contrast between Greenbergian and generative typology in the domain of meaning is more difficult to pinpoint, but this should not be mistaken for the lack of a distinction. It will be argued here that the two approaches are as distinct here as they are in the domain of morphosyntax.

Before we begin, it is important to emphasize that there is no Chomskyan theory of meaning – generative linguistics is a syntactic theory and semantic elements of the theory are those presupposed by syntactic rules, i.e. semantic distinctions need to be syntactically relevant to be included in the theory. There is however a theory of semantics which shares many of its features with generative grammar. This semantic approach is called formal semantics.

Formal semantics is “the discipline that employs techniques from symbolic logic, mathematics, and mathematical logic to produce precisely characterized theories of meaning for natural languages (i.e. naturally occurring languages such as English, Urdu, etc.) or artificial languages (i.e. first-order predicate logic, computer programming languages etc.)” (King 2008: 557). More about how formal semantics approaches meaning will be said in §2.2.2 and §2.2.3; here I limit myself to remarks on affinities between formal semantics and generative grammar. Most importantly, formal semantics can be characterized, as can generative grammar, by its bias for Western European languages, aprioristic approach to comparison and restrictive framework. The similarities appear to be largely accidental as aprioristic approaches to syntax and semantics are, historically speaking, of distinct origins. The former originated in the works of N. Chomsky, while the development of the latter can largely be attributed to the work of the American philosopher Richard Montague (see §2.2.2).¹¹⁴ However, the two traditions to a large extent synthesized into a single enterprise in the 70s and 80s (Matthewson 2011: 269; cf. Partee 1996: 32–33; Partee 2005), when generative linguistics “absorbed model-theoretic semantics as a more adequate theory of (some aspect of) meaning” (Bach 2004: 57).¹¹⁵ The synthesis is

¹¹⁴ Some historical connection can nevertheless be established – a number of “disaffected generative semanticists” (including Bach and Dowty) switched to Montague Grammar, a more promising semantic theory, after the collapse of Generative Semantics in the early 1970s (Harris 1993: 230, 303n26).

¹¹⁵ This synthesis is explicitly documented in the following quote from E. Bach, one of the most influential early practitioners of formal semantics: “The general framework for descriptions of natural language that I start from draws upon two traditions: that of generative theory as developed in the last several decades under the leadership of Noam Chomsky and others; that of model-theoretic semantics as inspired especially by Richard Montague.” (Bach 1986a: 574). Bach also provides a brief comparison of Montague’s and Chomsky’s approach to language (ibid.: 574–577). Bach & Chao’s (2012) overview of semantic universals

most evident in investigations of syntax-semantics interface, that is, “the semantics of various linguistic elements, categories, features” (Bach & Chao 2012: 2542).

Still, formal semantics and generative (formal) grammar can be distinguished as two fields, despite some overlap.¹¹⁶ Position relative to innateness of universals is a major contrast to GG. According to Partee (1996: 26), in Montague’s original conception there are no innate categories and many formal semanticists adhere to that position (e.g. Bach 2004). Moreover, Cover & Tonhauser (2015: 313) note that “theory does not presuppose UG,” and theory is seen as a general hypothesis and as a means of assuring methodological rigor. What is more, Bohnemeyer’s (2014: 920) position that “English is a starting point, but universality of English evidence is not assumed” runs counter to Matthewson’s “Assume Universality” principle (see §1.6.1 above). Matthewson’s position belongs to a minority of formal semanticists who adhere to Chomsky’s view of an innate UG. Most formal semanticists appear to see universality as “a set of semantic distinctions from which languages may choose” (Bach & Chao 2012: 2542).¹¹⁷ An additional discussion of semantic universals from a formal perspective is found in von Stechow & Matthewson (2008: 139–148).

Position towards universals is related but distinct from the treatment of linguistic diversity, to which I return in §2.2.4. For now, it suffices to note that formal semantics until recently showed little interest in crosslinguistic diversity, meaning that formal semantic typology (or formal comparative semantics) is a relatively recent discipline.

As there is a semantic counterpart of GG, there is a semantic counterpart of morphosyntactic typology. Semantic typology of the non-formal kind is a relatively young discipline, and its

freely combines Montaguean and Chomskyan elements.

¹¹⁶ The two disciplines also share the designation *formal*, which originally applied only to generative grammar (Haspelmath 2019; see also Pullum 1991). In that sense, the *formal* in *formal grammar* is synonymous with Chomskyan, which is not true of *formal* in *formal semantics*. Formal semantics was originally called Montague Grammar and later Montague Semantics (e.g. in the title of Dowty, Wall & Peters 1981). It is unclear how the name *formal semantics* came around in the first place. One suggestion comes from A. Andrews in a Twitter response to Haspelmath (2019) where he hypothesizes that the term “formal” was extended to Montague semanticists by Chomskyans in “the declaration of a (rather successful) non-aggression pact between aspiring formalizers” (<https://twitter.com/AveryAndrews/status/1095112045760925696>)

¹¹⁷ This idea is further discussed in §4.1. A similar position is taken by some TAM typologists, for which see §5.1.

theoretical and methodological foundations are still being developed.¹¹⁸ This is reflected in the fact that the term itself has various uses associated with different research interests and objectives within the field. There are at least three strands of research that can be subsumed under the heading of semantic typology (Katunar 2017). Grammatical semantics deals with grammatical meanings and is traditionally associated with Soviet and Russian linguistics (Plungjan 2011a). Lexical typology is concerned with the lexicon and conceptualization and is therefore focused on lexical meanings (Koptjevskaja-Tamm, Rakhilina & Vanhove 2016 is a recent informative overview; cf. also Talmy 2007). A third strand within semantic typology, termed **lexicogrammar** (Behrens & Sasse 1997), was already introduced in §1.2.2 above. In this line of research, much attention is given to recognizing regularities in the lexicon, which is seen as “a complex structure built upon categories and relations,” and this “systematic aspect of the lexicon is just the aspect that is relevant to the grammar” (Lehmann 1990: 161).

Among these, it is lexicogrammar that is of most interest to the present research. As noted in §1.2.2 above, actionality is a lexicogrammatical phenomenon, since actionality is one of the lexical features which partitions the verbs in the lexicon into distinct classes based on their grammatical behavior. The research project presented here (see also §1.8 below) fits well the main goal of lexicogrammar, viz. “to investigate crosslinguistically significant patterns of interaction between lexicon and grammar.” (Behrens & Sasse 1997: 1).

The two approaches to the comparison of meaning, formal and typological, are difficult to compare. Formal semantics is interested in a rather narrow set of topics such as generalized quantifiers, event structure, conditionals etc. (cf. Cann 1993: xiii) and is based on a restrictive type of evidence (e.g. truth-conditions and entailments – see §2.2.2). In contrast, none of the three research strands of semantic typology are shared with formal semantic typology. Semantic typology, especially lexical typology, inherits many of its interest from traditional (non-formal and structuralist) semantics, whereas at the same time formal semantics has had little interest in lexical semantics. In consequence, little opportunity for contrasting the two approaches has arisen, exactly the opposite of what occurred in the domain of morphosyntax.

This is at full display in the literature on semantic typology. Formally-oriented authors do not discuss the non-formal approaches (von Stechow & Matthewson 2008; Bach & Chao 2012; Moore

¹¹⁸ Methodological aspects of semantic typology relevant for the present investigation are discussed in §6.1.

et al. 2015), and vice-versa (Behrens & Sasse 1997; Koptjevskaja-Tamm, Rakhilina & Vanhove 2016).

Nonetheless, there is one topic, I argue, where the two approaches have met, namely **actionality**. Actionality has been one of the most researched topics in formal semantics (see also §2.2) and at the same time, it has attracted attention in nonaprioristic typology for its implicational relations with aspect meanings (see also §2.3). Actionality is a topic with a potential to elucidate the differences of formal and non-formal approaches to meaning and lexicogrammar, and to test their competing methodologies and results. However, no systematic comparison of differences between the two traditions is undertaken here.

1.6.3. Nonaprioristic approach to actionality

This section outlines some of the prerequisites for a nonaprioristic approach to actionality, which are drawn from the nonaprioristic typological methodology introduced in §1.6.1 above. Since most of the work on semantic typology of actionality has been done in an explicitly or implicitly aprioristic perspective, a new model of a typologically oriented approach to actionality was needed. While nonaprioristic elements are found in the pioneering work of Russian semanticist Sergei Tatevosov, his framework deals more specifically with aspect-actionality interactions and is therefore presented in §3.2. What is missing is a more general discussion of what a nonaprioristic and inductive approach to actionality might look like and how it would differ in a practical sense from the approach to actionality practiced in formal semantics. This section discusses exactly that.

The goal here is not to develop a formalized framework (a “theory” or “model”) that would compete with the models of formal semantics. Instead, my goals are more aligned with the stated goals and interests of nonaprioristic linguistics – as summed up by Daniel (2010: 51), formalized theory plays “a secondary role” in typology and typology is generally “shallow,” that is “closer to the empirical data”. Accordingly, the goals include sketching a workable framework for the comparison of meanings in the domain of actionality *compatible* with the assumptions of nonaprioristic linguistics; documenting, at least preliminary, linguistic diversity in this domain; and typologizing it in a way that can be captured by such a framework. I leave more ambitious goals, such as challenging the assumptions of the dominant (formal) approaches, to subsequent work.

In what follows, I will say more about how the two fundamental differences between typology and generative grammar are reflected in differing methodologies of crosslinguistic research of actionality. However, I limit myself to presenting arguments against aprioristic approaches and outlining the idea that nonaprioristic comparison of actionality should be based on carefully crafted comparative concepts representing actional meanings and aspect grams. Other details are worked out in Chapters 4 and 5 and then put into application in Chapter 7.

Recall from the preceding section the two fundamental assumptions of the generative approach to language. The first one involved the assumption that preestablished (apriori) universal categories are universally instantiated (or at least available). The second one had to do with the assumption that comparison of languages is conducted by diagnosing universals in different languages, if needed, by using language-specific tests. This second assumption follows from the first one and revolves around the idea that grammatical and semantic universals are discovered by in-depth investigations of individual languages. Following that principle, universals are assumed on basis of evidence from a single language and then modified based on the evidence from other languages.

These two properties are crucial here because they also characterize the research of actionality within formal semantics. As expected, the most important language from which the universals are derived is English, which leads to universals that are Anglocentric (see §2.2 for a more extensive discussion).¹¹⁹

An important consequence of these assumptions is the view that manifestations of allegedly universal grammatical and semantic features can be different in different languages. With respect to actionality, this implies that from the standpoint of formal semantics the actional meanings that have been discovered in English starting with Vendler (e.g. telicity, durativity etc., see §1.2.3) simply need to be rediscovered in other languages. This is done by either using the same diagnostics as in English, or by using the diagnostics that are available in the languages under investigation. Further discussion is found in §4.2.4.2.

¹¹⁹ In the broadest sense, Anglocentrism is an instance of ethnocentrism, the term that refers to “the distortions that can arise when the concepts, values, or practices of people of one culture are described through the prism of concepts from an alien culture (the culture of the investigators)” (Goddard 2011: 14).

In contrast to this approach, the alternative approach proposed here incorporates important insights from the aprioristic approaches¹²⁰ but rejects the two assumptions that were just discussed. The nonaprioristic approach adopted assumes no pre-established universally instantiated categories. In practical terms, this means that actional meanings **cannot be** discovered in different languages by using tests which are idiosyncratic and language-specific; instead, comparable tests need to be employed. I elaborate on this point in what follows. What is more, the nonaprioristic approach denies English the central position in the theory and cautions against biases in theory that are inherited from structural properties of English (see also the discussion in §2.2.4).

Typology works with no preestablished universals, as already suggested, which makes comparison difficult. Therefore, in typology different realizations of actional meanings cannot be simply compared across languages (cf. “problem of crosslinguistic identification” mentioned in §1.6.1). In what follows I illustrate how typologists deal with this methodological issue and outline how that kind of approach would be applied to the research of actionality.

The problem of crosslinguistic identification is related to the issue alluded to in the previous section – for typologists phenomena investigated need to be identified by the same criteria in all investigated languages. This dictates a different approach to crosslinguistic investigations. To address this concern typologists start their crosslinguistic investigations by employing semantic or functional criteria to identify the relevant phenomenon across languages (Greenberg 1963: 74). Semantic-functional definitions are typically “supplemented by one or more criteria of a formal nature, so that the domain definition becomes ‘mixed’” (Stassen 2010: 95). Thus, “the phenomena that are compared across languages are delimited by both functional (or semantic) and formal conditions” (Haspelmath 1997a: 5). The formal expression of meanings needs to be held constant, i.e. the meanings or functions are compared with respect to a small predetermined set of formal realizations.

For instance, Haspelmath (1997a: 6–7) notes that his investigation concerns (in semantic terms) expressions of “temporal qualification”, i.e. those answering questions such as ‘when?’, ‘how long?’ or ‘how often?’. Temporal qualification can be indicated by a variety of linguistic means, including NP-based adverbials (*in the springtime*), adverbials based on adverbs or adjectives

¹²⁰ The relevant findings are listed in §2.2.3.

(*much later*), tense (*I visited*), as well as temporal adverbial clauses (*while ...*). Such purely semantic definitions “have the disadvantage that they tend to pick out quite heterogeneous expressions” (Haspelmath 1997b: 9) and investigating all of them would not be possible nor productive. For that reason, mixed definitions serve to keep the domain investigated manageable (Stassen 2010: 96). Haspelmath in his case limits the investigation to the adverbials of temporal qualification based on noun phrases and excludes all other types of expression.

These reasons for including formal criteria are in some sense practical. However, I would like to emphasize that reasons for using mixed domain definitions go beyond practical considerations. As noted above, in typology there is a concern about comparing apples and oranges, and comparing a set of meanings across a fixed and coherent set of formal expression helps to mitigate this problem – formal expression allows typologists to compare phenomena that are both semantically similar *and* are identified by the same grammatical criteria across all languages investigated.¹²¹ Stassen thus concludes that “most typologists working today seem to agree that mixed functional-formal domain definitions constitute the best strategy for ensuring cross-linguistic comparability” (2010: 99). The goal of typology is thus, at least in principle, to discover generalizations over form-meaning pairings: “invariants are neither forms nor meanings; they are relationships appearing in the correlation between forms and meanings” (Lazard 2005: 16).

How would this work for actionality? What would be form-meanings pairings which would serve to typologize actionality and over which we discover generalizations?

Actionality involves very basic conceptual distinctions (duration, telicity, dynamicity), which are presumably cognitively prominent and therefore universal (Boogaart 2002: 1169). It appears to occur in many, if not most, of the world’s languages – Filip claims actional distinctions to be “universally available” (2012: 726). It can be assumed that actionality has “a certain cognitive reality” (Stassen 2010: 95) because it “reflects human experience, capacities, needs, and interests, as well as the nature of the nonhuman world” (Gill 1993: 383) and it based in “human perceptual and cognitive abilities” (Smith 1997: 16). According to Smith (1997: xv), concepts related to actional distinctions, e.g. the concept of time, are formed by humans

¹²¹ Stassen and Haspelmath diverge in this point – my interpretation of Haspelmath’s recent work is that purely semantic definitions in typology are bound to lead to comparing apples and oranges, unless we are dealing with lexical items, perhaps.

independently of language (much evidence for this claim comes from first language acquisition).

Thus, there is no reason not to assume that actional features belong to “a set of basic terms which cannot be defined or reduced further” (Goddard 2011: 13). In other words, they are kinds of universal semantic concepts, semantic primes or primitives (cf. Wierzbicka 1996). However, as noted by Stassen, such concepts being typically unclear and fuzzy¹²² makes “the [semantic] grounding of the domain demarcation (...) problematic in itself” (2010: 94; cf. Johanson 2000: 46–47 for similar concerns), even though “[it] does not automatically bar this concept from figuring in a typological domain definition” (2010: 95). I expand on this in §4.1.2.

Furthermore, as noted before, actionality, just like expressions of temporal relations, has varied modes of manifestation in the language, which implies that a typological investigation that would include every one of these manifestations would not be viable. For that reason, typologizing actionality implies, as in the case of temporal relations, a reduction of the combinatorical explosion by focusing on some manifestations, ideally those that are most systematic and those where actionality has most impact on grammatical behavior. As alluded to in §1.1 above, the manifestation of actionality that best fits that description is grammatical aspect. As a result, the object of typology of actionality in this work is the aspect-sensitive classes resulting from the interaction of actional meanings and aspect grams.¹²³ This is explained in greater detail in §4.1.3 (cf. also §3.2).

A good analogy for the typology of actionality based on the relationship between aspect and actionality is a familiar example from the nominal domain – the count-mass noun distinction discussed in §1.2.2 above. To typologize the mass-count distinction, one would need to focus on a small set of forms known for their sensitivity to the mass-count distinction. Then we observe how these nouns behave when used with certain formal expressions. For instance, we may want to examine what happens with nouns when they are used in the plural and/or dual or with numerals or quantifiers. Typically, a small set of nouns from a predetermined list would

¹²² I would not go as far as Lazard, and claim that semantic concepts of this kind are essentially “amorphous” (Lazard 2005: 7).

¹²³ Note that strictly speaking, aspect does not *express* or *indicate* actionality, at least not in the sense that *in the spring* indicates temporal qualification. Still, I continue to use the term *actional expression*, as defined in §1.2.4.3 and §1.5.4.

be tested.¹²⁴ In such an investigation, mass and count nouns, plural/dual, numerals and quantifiers would need to be defined as comparative concepts, as would be typical noun meanings (nouns such as ‘sand’, ‘beans’ as typical mass nouns; ‘tree’, ‘house’ as typical count nouns etc.).¹²⁵

A similar approach would be posited for actionality, with two sets of values for comparison. The first one would include the most commonly attested actional meanings (as defined in §4.1.2.1). This is the semantic part of form-meaning correspondences. The second one contains the list of inflectional aspectual grams (briefly introduced in §1.3 above and expanded in §5.1). These aspect grams are the formal part of form-meaning correspondences. The aspect-sensitive classes resulting from the interaction of actional meanings and aspect grams are the invariants evoked before, the generalizations over form-meaning pairings.

Both semantic and formal criteria of the domain definition are conceived as comparative concepts, but procedure for formulating comparative concepts differs between the two kinds of criteria. Thus, in the case of semantic criteria, often very general cognitive concepts are invoked, or the ones recurring frequently across languages – that is also the case with actionality. As for formal criteria, these are formulated in a different way. In the case of aspect, contexts from Dahl’s TMA and PROG Questionnaires (Dahl 1985; Dahl 2000a, respectively) have proven themselves to be most suitable for this purpose (see §5.1 below).

Since many languages do not have aspect in the sense used here (see §1.3 above), restricting of the domain definition to inflectional aspect morphology effectively limits the present investigation to only a subset of languages of the world, which is not uncommon in a typological investigation (Stassen 2010: 97). This is a consequence of the introduction of the formal element in the domain definition. Therefore, comparison in the typological sense is always partial and need not be exhaustive (Haspelmath 2018: 92–94).

Lastly, in order to provide further justification for this kind of procedure, I will point out potential pitfalls of the crosslinguistic approach to actionality that does not adhere to the principle of the mixed domain of investigation as defined in this section. To that end, I will present the crosslinguistic investigation of the “achievement” verb ‘die’ in Botne (2003). This

¹²⁴ This is also done in some typologies of actionality – e.g. by J. Nichols (see fn. 257).

¹²⁵ On standardized lexical meanings as comparative concepts see Haspelmath (2010: 668).

work is characterized by a lack of concern for the issues pointed out above as crucial for a meaningful crosslinguistic comparison of actionality. Consequently, Botne's crosslinguistic investigations have two fatal flaws and can be argued to constitute an instance of comparing "apples with oranges."

First, Botne fails to name the exact grammatical environments in which the actional character of the verb is diagnosed (our "formal criterion"). As the reader learns in the course of the article, different sets of diagnostics are used for each language, even though the main criterion of diagnosing actional properties of the verb *die* appears to involve various verbal forms. For instance, for English, the diagnostics discussed include the Progressive and the Simple form, entailments with perfect, compatibility with the adverb *still*, the existence of the adjective *dead*, and so on (pp. 240–243). Botne invokes some of these criteria rather consistently for other languages (e.g. "the progressive"), while introducing new ones: "stative form" and "completive construction" for Hausa (p. 245), construction with the reflexive marker for French (p. 247), "indicative" form for Dinka (p. 257–258), and so on. In many cases, Botne cites language-specific categories without explaining them as if he assumes their functions can be easily deduced from the labels they carry. Of course, one cannot know what the category lies behind a language-specific label, such as the Dinka "indicative", the Hausa and Kinyarwanda "completive" or the three Korean constructions.¹²⁶ All this makes comparison less reliable.

This is also problematic when dealing with a well-known gram such as the progressive. One cannot be sure that the grammatical value is comparable across languages without a proper definition of the progressive as a comparative concept. For instance, the progressive aspect is used as a diagnostic for English, Norwegian and Assiniboine, among other languages, but without clear definitions of each of these forms and a definition of a comparative concept *progressive aspect* one cannot be sure that one is not comparing "apples with oranges." The reason why it is crucial to provide explicit definitions of aspectual grams is to minimize the possibility of the actional properties having to do with aspect morphology, rather than being related to lexical actionality. If the "progressive" forms compared across languages are not similar enough, then different properties of progressive may be responsible for various actional

¹²⁶ Two of these are named ("progressive", with scare quotes in the original, and "anterior"). For the third one only a citation providing vague description of the form is given: it is the form "which expresses 'static duratives including resultant states'" (pp. 261–262).

effects in different languages.¹²⁷ This problem can be controlled only to the extent we make sure that the meanings of the progressive in this case are comparable across different languages.¹²⁸

As argued before, the use of different criteria for different languages is methodologically unacceptable under the assumption that there are no crosslinguistic (universal) categories. However, it is implicit in Botne's approach to achievements that they are considered as a natural kind, and in that case, achievements simply need to be recognized in different languages. The implicit view of actional classes as natural kinds means that if the verb *die* is an achievement in English, it will be an achievement in Dutch and Norwegian as well. If the same tests are not applicable, then some others must be found. These assumptions have however been challenged to some extent recently but are still permeating the crosslinguistic research of actionality.

This is probably not seen as problematic by Botne, if achievements are assumed to be natural kinds. If they need to be simply diagnosed in different languages, then it is not necessary to make the formal element constant.

Interestingly, Botne's approach would not meet the standards of formal comparative semantics either – it does not offer in-depth case studies of each of the languages. Instead, it offers only the most obvious linguistic and grammatical manifestations derived from the actional character of the verb in individual languages. In most cases the grammatical consequences concern verbal forms. In that sense, Botne's approach resembles the one that is advocated here, that is, it is more typological (i.e. Greenbergian) than it is formal.

To sum up, Botne's approach assumes that actional classes (like achievements) are natural classes with constant membership (like the verb 'die'). The researcher's goal is to uncover crosslinguistic variation by looking at one member of this class ('die') in different languages.

In contrast, under the approach advocated here the investigation would start with the assumption that there is no such crosslinguistic concept as "achievements" since, as posited above, actional classes cannot be regarded as natural kinds. Instead, the verb *die* would be compared in languages with the PROG and/or IPFV aspect grams. These grams would be defined as

¹²⁷ Or, alternatively, one could claim that it is the actional character of the verb 'die' that is the same, whereas it is the progressive that varies across languages.

¹²⁸ To be fair, the forms labeled "progressive" employed by Botne for comparison appear to be consistent across languages. Despite that, the lack of proper definition of progressive makes it difficult to be sure.

comparative concepts. The investigation would uncover the same kind of crosslinguistic variation as Botne did, but the conclusions would differ from Botne's – the investigation would claim that the verb can belong to different classes in different languages. In some languages, 'die' is punctual, in others it is not, etc.

1.7. Orthographic and terminological conventions

The following orthographic conventions are used throughout this work. Following the conventions established by Comrie (1976: 10), labels for language-specific grammatical meanings are capitalized (e.g. the Simple Past, the Imperfective) and language-independent comparative concepts are not (the perfective, the progressive). In most cases, the labels for comparative concepts are abbreviated by glosses in small capitals (PFV, PROG).

Also following the convention established by Comrie (1976; cf. also Lyons 1977: 483), the term **situation** is used here as a cover term for state, event, action, process, etc. and a synonym to eventuality (cf. Binnick 1991: 179). Some authors (e.g. Levin & Rappaport Hovav 2005) use the term "event" in that meaning. The term **event** is used instead as a cover term for all non-stative situations. The term situation is understood to be a real-world, non-linguistic happening. When referring to a linguistically encoded situation (normally by verbs), the term **situation description** is used. In Functional Grammar, the term "state of affairs" ("SoA") is used in a similar sense (Dik 1989: 89).

I consistently distinguish between **actional meanings (or features)** and **actional classes**. The distinction does not become crucial until Chapter 4, where its importance is fully explained. For the time being, it will suffice to say that actional features are smaller units of meaning, from which actional classes are built. In the present work, a variety of terms are employed to refer to actional features, including *actional primitive*, *actional building block* and *actional interpretation*. Other terms employed in this work to refer to actional class are *actional character* and *actional configuration*. The noun *actionality* can also be used in that sense, when one speaks of the actionality of the verb.

Any classification that rests upon actional features is considered *actional*. If a traditional classification based on Vendler is specifically meant, such a classification is referred to as *Vendlerian* or *Aristotelian*.

Verb is another notion in need of further specification. In the present work I mostly refer to verbs as objects of actional classification. We have seen that this is not precise enough since actional meanings are in fact attributable only to verb senses. Accordingly, in the present work, if a verb's actionality is referred to, *verb* is to be taken as a shorthand for *verb sense*. However, referring to verbs is also imprecise because actionality is not the exclusive property of verbs (i.e., verb meanings), but of all predicators. Predicate is a term which encompasses verbs and other argument-taking lexical items (Levin & Rappaport Hovav 2005: 7, 33n1). In the rest of the text, the reference is made either to **predicates** or **verbs** with little or no difference in meaning. Of course, only the term *predicate* is used if a non-verbal predicator is discussed.

1.8. Goals of the present study

Having discussed in §1.2-§1.6 the key notions of the present study (actionality, aspect, their interactions and typology), now is the right moment to formulate its goals in a more straightforward way.

Let us begin with an observation by Klein, according to whom “of at least 90% the world's languages, we have only vague ideas on how they express time” (Klein 2009a: 42). Accordingly, one of goals of this dissertation in the broadest sense is to contribute to our understanding of two “devices” used to linguistically encode time, viz. aspect and actionality, as well as their interactions from a crosslinguistic perspective.

A more specific goal of this study is to develop an approach to the comparison of actionality in accordance with the tenets of the Greenbergian typology laid out in §1.6. In that respect, the present work draws on the inductive and non-aprioristic approach to aspect-actionality interactions developed by S. Tatevosov (§3.2). Interactions of actionality and aspect are used as a convenient starting point and serve as a case study for future work on the typology of actionality which goes beyond aspect and which also includes aspectless languages like German.

The present work expands on Tatevosov's and other crosslinguistically oriented works in several respects. First, it looks more closely into the various methodological issues which naturally arise in comparative work dedicated to meaning but are rarely explicitly discussed. These include, among others, questions about the universality of actional classes (§4.1.2.1), variation in class membership across languages (§4.1.2.2), reliability and transferability of

diagnostic tests (§4.2.4), collection of semantic evidence (§6.1), and so forth. An overview of these issues is still lacking, with a partial exception of Bar-el (2015). An important related issue concerns formal semantics, the framework which dominates the literature on actionality. Formal semantics is discussed in Chapter 2, which contextualizes its place within the research on actionality and examines its relevance for the present study.

By that kind of broad coverage, the present work will hopefully contribute to the development of more refined methods for the study of actionality in both individual languages as well as crosslinguistically (cf. Arkadiev 2009: 58, who points out the need for such methods). It will also provide additional arguments in favor of the existing models, e.g. the one put forward by Tatevosov. It occasionally takes into considerations many of the challenges for the theory of actionality and methods of research brought by the evidence from a wide variety of languages, even though such issues are not of central importance in this work.

Furthermore, there have been very few attempts to systematically document on a larger sample the various ways in which interactions of aspect and actionality are manifested linguistically. Some of these effects were illustrated in §1.5.3, where it was observed that interpretations listed there are nowadays also regularly found in semantics textbooks. However, it was pointed out that the list of interactional meanings has never been subject to a true crosslinguistic investigation, and that generalizations made about interactions of aspect and actionality are based on limited crosslinguistic evidence. This is addressed in Chapter 7, which presents a crosslinguistic investigation on a sample of 16 languages.

Another area where the present work expands on the existing literature is the method of comparison of aspect-actionality interactions across aspect systems. Since the existing models of aspect-actionality interactions are almost exclusively concerned with PFV-IPFV languages, little is said in the literature on how to compare aspect-actionality interactions attested in PFV-IPFV languages with interactions attested in languages with other types of aspect systems (including the PROG-NONPROG system of English). A method of comparison that does so is brought forward in Chapter 5. This method will allow expanding the empirical basis of this investigation in Chapter 7 to a more diverse set of aspect languages.

In general, the goals of the present study are exploratory or “taxonomic” (Majsak 2005: 135), i.e. directed at documenting variations in the domain in question. It does not have an ambition to be explanatory. However, some of its findings challenge may have a potential to challenge

widely held theoretical assumptions or shed a new light on them. Still, to reiterate, theoretical questions are of lesser concern here and the focus of the dissertation remains primarily exploratory.

Some important aspects of this topic were disregarded due to the limitations of space and time. The findings from language acquisition and experimental linguistics are barely mentioned. I also decided to leave out the complex topic of interaction of actionality with other lexicogrammatical phenomena, in particular causation. Some basic remarks are nevertheless given in §4.3.5.

1.9. Outline of the dissertation

The text is organized as follows. This chapter touched upon each of the four central notions: actionality, aspect, their interactions, and typology (with particular reference to comparison of meaning). The following four chapters deal in more depth with each of them, but in a somewhat different order.

Chapter 2 deals in greater detail with the two traditions of research into actionality and aspect, formal and non-formal. The history of each tradition is outlined and its relevance for the present work is assessed.

Chapter 3 looks more specifically into the treatment of aspect-actionality interactions in four approaches deemed best equipped to deal with crosslinguistic diversity, viz. approaches by W. Brey, S. Tatevosov, C. Smith and L. Johanson. The former two approaches serve as a point of departure for the framework developed here and are for that reason more extensively discussed.

Actionality and aspect are dealt with in Chapter 4 and Chapter 5, respectively. These two chapters include an extensive discussion on how to approach actionality and aspect from a typological (Greenbergian) point of view. There are two prerequisites for an investigation of the crosslinguistic diversity in the domain of aspect-actionality interactions (or in any domain, for that matter). First, a method of comparison needs to be formulated. Second, a set of criteria needs to be established in order to decide what language-specific evidence is considered relevant for the purposes of crosslinguistic comparison. A framework to deal with these issues is developed for both actional classes as well as grammatical aspect.

The next two chapters are devoted to the typological investigation of the aspect-sensitive classes which were established as crosslinguistically relevant in Chapter 4. Chapter 6 discusses the choice of sources and the design of sample. Chapter 7 presents a crosslinguistic investigation of aspect-sensitive classes on the sample of 16 languages; that investigation serves as a case study for the framework proposed in Chapters 4 and 5.

Finally, Chapter 8 concludes the text with a summary of main points and offers suggestions for future work.

2. Aspect and actionality: research traditions

Having introduced the most relevant concepts related to actionality, aspect and their interactions in the previous chapter, this chapter will explore the history of research of aspect and actionality. The chapter aims to further clarify the theoretical positions adopted in this work, and to provide a sketch of the current state of crosslinguistic research in the domain of actionality, including the typological research of aspect-actionality interactions. Most importantly, it seeks to explain the Anglocentric bias that underpins the mainstream research of actionality, and to link it to the lack of interest for the topic of aspect-actionality interactions. An excellent overview with similar coverage is found in Sasse (2002), which is referenced throughout the chapter.

2.1. Anglo-American and Continental tradition

I follow Sasse (2002) in dividing the research on actionality and aspect and its history into two traditions, the philosophical Anglo-American tradition and the philological Continental tradition (cf. Timberlake 2007: 330–331). Each of the two traditions is associated with distinct research foci. The Anglo-American tradition largely focuses on actionality, and the Continental tradition on grammatical aspect (which is equated with the PFV-IPFV opposition there).

Our understanding of the relationship between aspect and actionality, as sketched in the previous chapter, has formed quite recently, in the last 30 or so years, as the two traditions grew closer.

The two traditions overlap to an extent with the distinction between generative/formal and functional-typological approaches to language comparison introduced in §1.6. In that sense, the Anglo-American tradition is inextricably linked with the development of formal semantics. The non-generative and originally structuralist orientation of the Continental tradition is one of the sources of the modern functional-typological approach to aspect.

In what follows, the main characteristics of these two traditions are reviewed, as is their relevance for the present work. This overview relies in most of its contents on Section 2 (pp. 201–231) of Sasse (2002), which is supplemented by insights given in Binnick (1991), Filip (2011: 1186–1190) and Filip (2012).

2.2. Anglo-American formal tradition

2.2.1. Aspect and actionality in the Anglo-American tradition

As explained in §1.2.3, the most commonly cited actional classification is the one by the American philosopher Zeno Vendler (§1.2.3), who divided English verbs and verb phrases into four actional classes (accomplishments, achievements, activities, and states). This classification has its origins in the works of Aristotle and his distinction between *kinesis* and *energeia*, hence the name *Aristotelian* classification/classes (Dowty 1979: 54). The initial interest for the Aristotelian semantic distinctions developed among the Anglo-American philosophers, including Vendler, working within the philosophy of action and intention in the mid-twentieth century (Binnick 1991: 172; Filip 2012: 722). The concept of actionality was thus originated by philosophers and was only later on taken up by linguists (Comrie 1976: vii; Filip 2011: 1187).

Vendler and the philosophers of the same tradition were not the only ones who dealt with the semantic classification of verbs. There were several other independent traditions, to be mentioned in §2.3 below, but the Vendlerian one remains the most influential.

After Vendler's seminal paper, the topic of actionality, more precisely, the actional classification of verbs and verb phrases, began to generate much interest among linguists, resulting in a massive body of literature. The landmark moment in linguistic research on actionality was Dowty's (1979) book, which is widely credited with introducing Vendler's classification into linguistics (Filip 2011: 1193). Vendler's and Dowty's work has since served as a starting point for virtually all research on actional classifications. The importance of their work is further reviewed in §2.2.3 below, as are some of the major developments in the field that ensued.

Dowty is credited with another important development in the history of the research on actionality – the introduction of Vendlerian classification into formal semantics. His 1979 book provides one of the first comprehensive analyses of Vendlerian classes within the framework of Montague Grammar, the approach to semantics that relied heavily on the formalizations of language adopted from logic and mathematics (later known as formal semantics, see §1.6.2). Actionality and more generally the topic of time has been one of the most researched areas in formal semantics (Partee 1996: 28–29). I provide some basic information on formal semantics in §2.2.2 below.

For the purposes of this overview, the Anglo-American tradition is considered synonymous with formal semantics. The label ‘Anglo-American’ is appropriate since initially, during the 1960s and 1970s, almost all the research activity in this field was situated in North America. Formal semantics remains to be strongly associated with North American linguistics. Still, one finds the strong and influential research tradition within this family of frameworks that was established in Europe beginning with Verkuyl (1972).¹²⁹

Even though the formal approach to actionality is not adopted as a theoretical framework in this work (see §1.6.2), it plays a large role in the present investigation for several reasons. The most important of these is the sheer volume of work on actionality in this framework, and it would not be amiss to say that crucial findings about the nature of actionality and actional distinctions were accomplished with formal semantics as the theoretical background (cf. Binnick 1991: 217). Therefore, no serious study of actionality, whatever its theoretical orientation, cannot afford to disregard some of the basic concepts developed within formal semantic frameworks. Some of these concepts, to the extent they are relevant for the present study, will be introduced in §2.2.3 below and integrated into my theoretical framework in Chapter 4.

In §1.6.2, another important development in the history of formal semantics was briefly mentioned, namely its alliance with generative grammar (Matthewson 2011: 269; cf. Partee 1996: 32). This development was associated in §1.6.3 with two assumptions which formal semantics shares with generative grammar: the assumption about the existence of preestablished (*a priori*) universal categories and the assumption that comparison of languages is conducted by identifying preestablished universals in different languages.

Accordingly, the bulk of the work within formal semantics shares one particular property, namely, that it has almost exclusively been devoted to investigating English and its related languages, such as Dutch and German (Sasse 2002: 230; Evans 2010: 529; cf. Matthewson 2004: 370). This concerns different topics of interest in formal semantics, including actionality. The topic of Anglocentrism and more generally Eurocentrism in formal approaches is addressed in §2.2.4 below.

¹²⁹ Verkuyl’s approach derives from an attempt to integrate a theory of “Aspects” with early transformational syntax. Interestingly enough, Verkuyl’s concept of “Aspects” draws almost exclusively on early European aspectology, in particular the early research on what is nowadays called actionality (see fn. 153).

The English and European bias in formal semantics has had important consequences for the research on aspect-actionality relationship, and consequently for the work here. First, the focus on English meant that only a negligible share of research has involved non-Indo-European and non-European languages. What is more, not much attention has been paid to the interaction of the actional properties of verbs and verb phrases with aspect grams and to the existence of aspect-sensitive classes.

The lack of interest in the topic of aspect-actionality interactions within this research tradition can be explained by the fact that English has an aspect system of a different kind than most of the aspect languages (see §1.3.7, §5.4.2), whereas its closest Germanic relatives, such as German and Dutch, do not have the category of grammatical aspect at all (for this explanation see Sasse 2002: 213, 217).¹³⁰ As for English, this does not mean that grammatical aspect is completely irrelevant for the actional classification. The Progressive was already recognized by Vendler as an important test in the actional classification of English, whereas in Dowty's work the Progressive occupies an important place in the actional classification (see §2.2.3 below).

In contrast, aspect was the main point of interest in the Continental tradition (see §2.3 below), where numerous languages under investigation (Romance, Latin, Greek, Slavic) have grammatical aspect systems of the PFV-IPFV kind (see §1.3.7, §5.4.1). Anglo-American semanticists were largely unaware of the research within that tradition and the notion of grammatical aspect as developed in the Continental aspectology. The same is true of the founding figures of the formal approach to actionality, such as Kenny and Vendler, who were not familiar with the work of Continental aspectology (Mourelatos 1978: 418). This started to change soon and, according to (Filip 2011: 1188):¹³¹

In the late 1960s and the early 1970s, philosophers, logicians and formal semanticists who studied the progressive vs. non-progressive contrast in English (...) in dependence on the Aristotelian classes became increasingly aware of the studies devoted to grammatical aspect in the continental philology of the 19th and

¹³⁰ This is also apparent from the fact that in De Gruyter's three-volume handbook of semantics (Maienborn, Heusinger & Portner 2011), running over almost 3000 pages and containing over 100 chapters, the only aspectual grams with a dedicated chapter are Perfect and Progressive (Portner 2011).

¹³¹ Cf. Mourelatos (1978: 419), who notes that in the late 1970s the notions of imperfective/perfective had only started gaining currency among Anglo-American semanticists.

early 20th century, and in later descriptive and structuralist traditions.

This development is evidenced indeed, for instance, in Mourelatos (1978: 417–421; cf. Filip 2011: 1188), who included aspect among the six elements influencing the actionality of the predicate. However, grammatical aspect has never been a prominent topic in Anglo-American formal semantics. Instead, the focus of research settled early on the grammatical consequences of actionality as manifested in English (cf. Sasse 2002: 213). This above all concerns the ways actionality is manifested and modified at the syntactic level (e.g. the role of adverbials, argument structure etc.), and, in particular, on the phenomenon of actional (aspectual) composition, introduced in §1.2.4 (see also §2.2.3, §4.4.6). It is precisely in this area that formal approaches have contributed the most to our understanding of actionality and more generally aspectuality (Sasse 2002: 218–219). The contribution of the syntactic level to the actional make-up of sentence is not in the strict sense the focus of the present investigation, but it will be invoked at multiple occasions in the text.

The lack of interest in grammatical aspect and its marginal role or outright absence from the grammatical systems of English, Dutch and German is most probably the cause for practice of not making a clear distinction between actionality and aspect in many works within this tradition, with some notable exceptions (e.g. Smith 1997). This theoretical position was referred to in §1.5.1 as **unidimensionality**.

In the next three sections various properties of formal semantics relevant for the present investigation are discussed in greater detail. After that in §2.3, I turn to the Continental (European) aspectology.

2.2.2. Formal semantics: basics

In the previous section, a brief history of research of actionality and aspect-actionality interface within the Anglo-American tradition was presented. It was emphasized that this tradition is for all practical purposes synonymous with formal semantics. In this section, I will say more about formal semantics more generally. First, I explain briefly assumptions about the nature of meaning and its representation, and contrast these with other approaches in semantics, most notably Conceptual Semantics. Afterwards, I discuss the role of formalism.

Formal semantics was already defined as an approach to meaning that relies heavily on the formalizations of language adopted from logic and mathematics.¹³² A key figure in its history is the American philosopher **Richard Montague**, who was the first logician to try to convincingly argue that the apparatus used by logicians to describe formal languages is also applicable to natural languages, i.e. “that English should after all be amenable to the same kind of formal treatment as the formal languages of logic” (Partee 1996: 14). Before Montague, it was widely assumed that the formal languages of logic and natural languages are fundamentally different (Abbott 1999: sec. 1.3). Montague’s theory, commonly known as Montague Grammar, was laid out in the early 70s in Montague’s three seminal papers (Montague 1974). After his premature death in 1973, Montague Grammar spread in North America in the 70’s largely due to the efforts of semanticist Barbara Partee. The approaches to semantics based on Montague’s work quickly diversified, and this family of post-Montague approaches to semantics is better known, at least since the 1980s, as **formal semantics** (for more on the history of formal semantics see Partee 1996; Abbott 1999; King 2008).

The adjective *formal* in that designation is often taken to mean ‘explicit, precise’, but formal semantics is more than that: *formal* is to be taken to mean “expressed in terms of logical or mathematical formalism” (Bach 1989: 9), as already pointed out in the definition of formal semantics in §1.6.2. For that reason, the name “formal semantics” is often substituted by the more suitable and more precise “model-theoretic semantics” or “truth-conditional semantics,”¹³³ as well as “denotational semantics” (Kroeger 2019: 16–17)

The name “model-theoretic semantics” refers to the defining characteristics of formal semantics whereby semantics is seen as “the study of the relation between language on the one hand and whatever language is *about* on the other, some domain of interpretation which might be the real world or a part of it, or a hypothesized model of it (...)” (Partee 1996: 12, emphasis in original). In formal semantics, “interpretations for expressions (...) are assigned relative to a model” (Abbott 1999: sec. 1.3). Model can be understood as “an abstract representation of the world” (Jacobson 2014: 27) and “the explicit description of a situation,” which is the prerequisite for

¹³² The fundamental logical concepts employed in formal semantics are explained in Goddard (2011: 47–51). See also Lyons (1977: chap. 6) and Saeed (2016: chap. 4).

¹³³ Truth-conditional and model-theoretic semantics are mostly synonyms, even though some authors note that not all truth-conditional semantics is model-theoretic (Abbott 1999). These details will not be of concern here.

the investigation of meaning of any given expression and its interpretations (Kroeger 2019: 229).¹³⁴ Since it is mostly concerned about the links between linguistic expressions and the world, formal semantics is above all interested in reference, understood as “the speaker’s use of words to ‘point to’ something in the world” (Kroeger 2019: 17). Some authors even equate semantics in general with “a system mapping a linguistics expression to something in the world” (Jacobson 2014: 28).¹³⁵

The name “truth-conditional semantics” refers to the assumption that meaning of a sentence (or a proposition) equals its truth-conditions, i.e. the conditions under which the sentence or expression is true in the real world (or some model of the real world) (Binnick 1991: 224; Goddard 2011: 7–8, 45).¹³⁶ In formal semantics, “truth-conditions and entailment relations are the basic data, the phenomena that have to be accounted for to reach observational adequacy” (Partee 1996: 17).¹³⁷ The focus on the truth of propositions is inherited from logic (Goddard 2011: 44). The notion of entailment relations is important in the context of tests for actionality and is discussed in §4.2.3.

Lastly, “denotational semantics” refers to the fact that outsized attention has been given to how meanings work in actual contexts. Formal semantics thus emphasizes denotation, i.e. the contextual meaning, even though it also recognizes the importance of other aspects of meaning (Kroeger 2019: 21–22).

As explained, formal semantics is interested in establishing conditions under which a sentence is true in some possible world, i.e. its truth-conditions. Unsurprisingly, not all semanticists subscribe to this view of meaning: “[n]ot all linguists are convinced that truth-conditions should have the central place (or any place at all) in linguistic semantics that formal semantics gives them” (Partee 1996: 27).¹³⁸ Many of these linguists criticize this “objectivist attitude towards

¹³⁴ For an accessible introduction to the model-theoretic approach to meaning see Kroeger (2019: 229–247). More technical introductions are in Lyons (1977: 167–173), Saeed (2016: chap. 10) and Bach (1989).

¹³⁵ Hence the name “referential semantics” for formal semantics (e.g. in Binnick 1991).

¹³⁶ Cf. the common adage in (formal) semantics, cited by Jacobson (2014: 28): “To know the meaning of a (declarative) sentence is to know *what it would take to make it true*” (emphasis mine).

¹³⁷ Much attention in formal semantics is also devoted to felicity conditions (Matthewson 2004: 372–374; Kroeger 2019: 45–47).

¹³⁸ For instance, this is argued already by Dahl (1985: 12–13), who points out that truth conditions cannot

meaning” (Goddard 2011: 8), objecting that it reduces meaning to truth by ignoring other aspect of meaning, e.g. expressive meaning or the role of metaphor. Many semanticists argue against equating meaning with reference (e.g. Goddard 2011: 4–5).

At the same time, the importance of the links between language and “mental constructs that somehow represent or encode speakers’ semantic knowledge” is pointed out in these critiques (Chierchia & McConnell-Ginet 2000: 11, cited in Goddard 2011: 46; cf. also Kroeger 2019: 16–17). Meaning is conceived “as a structured idea, or ‘concept’ in the mind of the person using that expression” (Goddard 2011: 8). Such mentalist approaches are often called “conceptual” or “conceptualist” (Goddard 2011; Bach & Chao 2012: 2537).¹³⁹ The two best known conceptual approaches to meaning are Cognitive Semantics (e.g. Croft & Cruse 2004; Talmy 2011; Croft 2012)¹⁴⁰ and Jackendoff’s and Pinker’s Conceptual Semantics (Jackendoff 2011).¹⁴¹ The focus on truth and reference in formal semantics has no direct bearing on the present topic and will not be discussed any further.

Another foundational idea in formal semantics is the principle of compositionality (de Swart 2011: 574).¹⁴² Compositionality is “the ability to assemble signs recursively into complex structures which gives language the power to express an infinitude of meanings” (Evans 2010: 530). One of the major goals of formal semantics is to understand the compositional nature of meaning, i.e. “the knowledge which allows speakers to correctly predict how word meanings will combine in complex expressions” (Kroeger 2019: 229). Focus on truth and denotation in formal semantics is motivated by the successful application of these concepts in accounting for compositionality of meaning (Kroeger 2019: 17). It is widely recognized that were it not for the principle of compositionality, “language could hardly be used to communicate with” (Binnick 1991: 218).

account for the semantics of TAM categories.

¹³⁹ For an overview of non-formal approaches to meaning other than conceptual semantics, the interested reader is referred to Goddard (2011). As pointed out in §1.6.2, generative approaches to meaning can also be considered ‘conceptual’.

¹⁴⁰ Croft (2012) also addresses actionality and aspect from a cognitive linguistic perspective.

¹⁴¹ The potential for a synthesis of the two approaches is explored in Hamm, Kamp & Lambalgen (2006) and Croft (2012). Bach & Chao (2012) consider the two approaches complementary.

¹⁴² For recent technical introductions to compositionality see Pagin & Westerståhl (2011), Jacobson (2014) and Goldberg (2016).

In the broader sense, formal semantics can also be understood to include all approaches to meaning that use less formalized theories of meaning to arrive at empirical generalizations about meaning. Among these approaches we can mention various neo-Reichenbachian theories of tense,¹⁴³ including Klein's (1994) theory of time (for overviews see Bohnemeyer 2014: 922–928; Cover & Tonhauser 2015: 308–314; Tatevosov 2015: 65–69; cf. also Klein 2009a: 52–59). Such less formalized theories of meaning can serve as a basis for strictly formalized analyses (Cover & Tonhauser 2015: 307).

In this overview formal semantics in the narrow sense will only be discussed because the most important contributions to an understanding of actional semantics were made primarily within that theoretical setting. Reichenbachian and Klein's approaches are more relevant to discussions of the semantics of aspect and tense grams (cf. §1.3).¹⁴⁴

Another characteristic of the formal semantic approach to meaning is the use of formalizations. Formalized representation of meaning is contrasted with descriptive generalizations about meaning. The latter are taken to be “statements of empirical generalizations about the form-meaning mapping in a particular language” which then “form the basis for, and are therefore distinct from, formal semantic and pragmatic analyses, which rely on tools from set theory and logic to formulate compositional models of the form-meaning mapping” (Cover & Tonhauser 2015: 307). Formalizations are thus technical elaborations of descriptive generalizations and are captured by way of notation adopted from logic.

This study is conceived as purely descriptive and does not attempt to provide formalizations. The position adopted here is that purely descriptive studies contribute on their own in significant ways to what is known about meaning in natural languages. What is more, given the wide coverage of this work and that much more can be said about meaning descriptively than it can be formalized, I find the use of formalizations counterproductive. The findings of this study can of course be used in subsequent formally oriented studies.

¹⁴³ The theory of temporal references put forward by the German physicist, logician and philosopher Hans Reichenbach in 1947 (Reichenbach 1947). Reichenbach was probably the first logician to claim that the apparatus of logic can be applied to natural languages, at least before Montague's seminal work (Partee 1996: 12). For an overview of Reichenbach's theory of tense see Comrie (1981) and Dahl (1985: 29–31).

¹⁴⁴ See also Kroeger (2019: 394–397), who employs Klein's notions to explain some elements of aspect-actionality interactions.

This attitude is neatly summarized in the following quote about the semantic feature of “homogeneity” (Khanina 2008: 175fn16), discussed in §2.2.3 below:

I am using the term ‘homogeneity’ in an intuitive, i.e. non-formalized, way; the term may thus invite further specification in a formal aspectual framework (...). The present study is purely descriptive and aims only to provide evidence for such specification, not to formulate the specification itself.

The paper by Tatevosov & Ivanov (2009) is on the other hand a representative example of combining careful and maximally explicit descriptive generalizations, which are then followed by “technical elaboration” (p. 121).¹⁴⁵

2.2.3. Brief history of formal research on actionality

This section summarizes the most influential contributions to the development of the formal semantic approach to actionality. The overview is limited to less technical aspects, with more weight given to the contributions directly relevant to the investigation here. This in particular concerns the semantic features relevant for actional classification, which are adopted in their non-formalized forms. The section leans heavily on overviews in Sasse (2002: sect. 2) and Filip (2011; 2012).

Modern research on actionality begins with Vendler’s (1957) paper.¹⁴⁶ Elements of Vendler’s approach were presented in §1.2.3, including the four basic actional classes (states, activities, achievements, and accomplishments), the three semantic primitives implicit in Vendler’s account (telicity, dynamicity and punctuality), and the diagnostic tests. Vendler’s paper was the first that came up with the four-way classification which is still widely cited today.

Apart from the four-way classification, the most important contributions of Vendler include the introduction of the test with *in-PP* and *for-PP* adverbials, as well as the semantic property of homogeneity (Vendler 1957: 145–146; cf. Filip 2011: 1189–1190). Vendler also discusses the role of the progressive as a test for actionality.

¹⁴⁵ The work on the semantic typology of pluractionals by Wood (2007) is similar as it incorporates findings from formal semantics, more specifically Event Semantics, including the use of some basic logical metalanguage while adhering to basic tenets of cognitive (conceptual) semantics (pp. 23–25). Karvovskaya (2018) uses formal semantic approach to formalize the findings of the typological investigation of adnominal possession.

¹⁴⁶ For history of the research in North America before Vendler see Dowty (1979: 52–54), Binnick (1991: 171–173), and Filip (2011: 1189).

Homogeneity distinguishes activities, which are homogenous, and accomplishments, which are not (i.e., they are heterogeneous). This property was introduced by Vendler (1957) specifically in connection with activities and accomplishments (Filip 2011: 1190). Vendler observed that situations such as “running and its kind go on in time in a homogenous way; any part of the process is of the same nature as the whole” (Vendler 1957: 146). States can also be understood as homogeneous: “two episodes of knowing something together form a larger episode of knowing something” (Tatevosov 2002a: 330). The property of homogeneity is related to the subinterval property (Filip 2011: 1194; Filip 2012: 731–732), a concept developed within interval semantics (see below).

The ideas laid out in Vendler’s paper have been criticized and revised in many respects. According to Filip (2011: 1191–1193), the most important points of criticism include the question of what is being classified in the classification – verbs, verb phrases or sentences – an issue addressed at some length in §1.2.4, and the question of the temporal grounding of Aristotelian classes, which is not pursued here.

In addition to Vendler, it was Dowty (1979) who has had the most considerable influence on the development of the research of actionality. As noted in §2.2.1 above, on a general level Dowty’s contribution was twofold: he was the first linguist to fully integrate Vendlerian classification in the current linguistic research, as well as the first formal semanticist to systematically apply Montague Semantics to describe Vendlerian distinctions.

More technical aspects of Dowty (1979) include a decompositional analysis of the verb, which combines Montague Semantics with interval semantics (see below) and Generative Semantics approach to lexical decomposition (cf. Filip 2012: 732; Partee 2005). This resulted in his theory of Logical Forms, another of Dowty’s major contributions to the field, in which he attempts to capture Vendlerian oppositions by positing a limited number of semantic features (cf. Filip 2011: 1196–1201). His approach will be taken up by many other authors, notably in the *Role and Reference Grammar* (see §2.3.2 below) and in the generative approach developed by B. Levin and M. Rappaport Hovav (e.g. Rappaport Hovav & Levin 1998).¹⁴⁷ Another contribution

¹⁴⁷ Lexical decomposition in broadest terms “involves paraphrasing verbs in terms of primitive elements in a well-defined semantic metalanguage” (Van Valin & LaPolla 1997: 90). In this dissertation the issue of lexical decomposition and representation of actionality will not be covered in any further detail. The interested reader can find a wealth of relevant information in Dowty (1979: chap. 2), Foley & Van Valin (1984: 36–53), Van Valin & LaPolla (1997: 90–129), Rappaport Hovav & Levin (1998), Engelberg (2011), Levin & Rappaport Hovav (2011), and Tatevosov (2015: chap. 4). Dowty’s decomposition will be briefly

of his is the formulation of the Imperfective Paradox, a largely technical issue with significant ramifications for formal theories of meaning (Dowty 1979: 133–138).¹⁴⁸

In addition, it is rarely recognized (cf. Filip 2011: 1193) that Dowty proposed an alternative classification of English verbs and verb phrases that departs in considerable details from Vendler's – Dowty's "revised classification" (for a summary see Dowty 1979: 180–186). The classification is to a large extent based on the interactions of verbs and verb phrases with the English Progressive. In that sense, Dowty's revised classification is an early instance of a classification relying on the concept of aspect-sensitive classes.

Dowty's book is probably the first full scale work which incorporates Vendlerian distinctions in language analysis; it abounds in examples, and the descriptive presentation of data is intertwined with theoretical considerations. His work is in that sense far more than just an application of Montague's Grammar on English – it is also of interest to the descriptively oriented approaches to actionality, such is the one advocated in this work (see §2.2.2 above).

In connection to Dowty's work, one should also mention interval semantics or tense logic, Bennett & Partee's (1972) revision of Montague's analysis of the English Progressive, in which the truth of a progressive sentence is established in relation to intervals and not moments of time (Filip 2011: 1194–1195). Dowty's analysis of the English Progressive is also situated within interval semantics.¹⁴⁹ Studies of actionality within this approach were influential throughout the 1970s and 1980s (Filip 1999: 23).

Post-Dowty research on Aristotelian classes quickly diversified, and contributions to the theory are too numerous to list here. Instead, the focus will be on a set of notions that originate in investigations of the similarities between verbal actionality and the semantics of nouns, specifically between the mass/count and atelic/telic distinctions. These investigations were inspired by Davidson's (1967) idea that "events, similarly as individuals do, may often serve as referents of linguistic expressions in a semantic model" and ultimately led to the development of mereological approaches within event semantics.

mentioned again in §4.4.2.1. The system of actional features introduced in Chapter 4 can also be understood as a basic lexical decomposition, which is however restricted to information about actionality.

¹⁴⁸ The Imperfective Paradox will be briefly addressed in §4.4.2.2.

¹⁴⁹ On interval semantics and actional classes see also Dowty (1986: 41–45).

Under this proposal, first formulated by Taylor (1977), “principles of individuation that apply to denotations of nouns can be used as the basis for a theory of events” (Filip 2011: 1196). In other words, crucial is “the idea that the aspectually relevant properties of predicates of eventualities (time-occupying entities) can be motivated in terms of analogies to objects (space-occupying entities)” (Filip 2012: 735). Following Taylor, Mourelatos (1978) attempts to motivate the properties of actional classes by establishing analogies between mass nouns and atelic classes (that is, states and activities) on the one hand, and count nouns and telic classes (accomplishments and achievements) on the other.¹⁵⁰ In the work of E. Bach (Bach 1986b) the analogy mass:count = atelic:telic received a formalized treatment.¹⁵¹

The main contribution of the approach consists in two pairs of important non-technical and descriptively valuable properties, which characterize both nominal and verbal predicates. The first pair of properties, additivity/antidivisibility was introduced by Bach (1981), and the second pair, cumulativity/quantization, by Krifka (1989). The relationship between the two pairs of notions is explained by Tatevosov (2002a: 351, boldface emphasis is mine):

A predicate is cumulative iff it possesses the property of **additivity**: whenever it applies to an entity *x* and to an entity *y*, it also applies to the sum of *x* and *y*. Thus, two distinct portions of juice poured together are juice, so juice is **cumulative**. Besides, *juice* is **subdivisible**: a portion of juice separated from a larger portion of juice is still juice. In contrast, two distinct cups cannot add up to one cup, so *cup* is not cumulative, it is **quantized**. Quantized predicates are **antidivisible**: no part of a cup is a cup.

Thus, mass nouns such as *juice* are cumulative and subdivisible (additive), as are indefinite plural NPs. The identical properties are shared by atelic predicates such as *walk*, since “any part of any walking event is also a walking event” (ibid.).

On the other hand, singular count nouns such as *cup* (both definite and indefinite), plural definite NPs as well as measures expressed by measure phrases like *a bowl of soup/apples*, *a liter of wine* (Filip 2011: 1206) are quantized and antidivisible. Both properties are shared by telic predicates such as *disappear*, since “two disappearing events cannot add up to one

¹⁵⁰ For more details on Taylor’s and Mourelatos’ proposals see Gill (1993: 366–373). The analogies are summarized in Filip (2012: 736).

¹⁵¹ For a very basic introduction and further references on the technical details of Bach’s proposal the interested reader is referred to Filip (2011: 1203–1204).

disappearing event, and no proper part of a disappearing event is a disappearing event” (Tatevosov, *ibid.*). As pointed out by Tatevosov (*ibid.*), cumulativity and subdivisibility (additivity) are close equivalents of Vendler’s homogeneity property, introduced earlier in this section.

Summing up, atelic predicates are cumulative, subdivisible and homogeneous. Conversely, telic predicates are quantized, ant subdivisible and heterogeneous.

Departing from these notions, mereological approaches¹⁵² were developed in particular to deal with the issue of actional (aspectual) composition in English, i.e. the role of referential and quantificational properties of objects in determining telicity of the predicate (see §1.2.4.2 and §4.4.6).¹⁵³ The key concept here is **incrementality**. The notion is explained as follows by Tatevosov (2002a: 351):

[A]n incremental predicate is a predicate that denotes events standing in a one-to-one relation with their participants. Thus, for example, if somebody eats an apple, the apple gradually disappears, and the change that happens to the apple corresponds to the progress of the event. Every part of the apple eaten corresponds to some part of the event ‘eat the apple’ and vice versa. When the whole apple is eaten, the event necessarily ends. Arguments that relate to events in the same way as *an apple* to *eat an apple*, are called the INCREMENTAL THEME.

Informally, incremental predicates are the ones whose telicity is influenced by the quantization property of its argument, termed the incremental theme.¹⁵⁴ This argument, which determines the telic or atelic reading of the verb, “denotes a participant undergoing a ‘gradual’ or ‘cumulative change’” (Filip 1999: 99).

With incremental predicates, the cumulative reference of the object (e.g. in the indefinite plural *apples*) entails the atelicity of the predicate (e.g. in *He ate apples for/*in ten minutes*), and the

¹⁵² Mereological approaches are concerned above all with “the relations between part and whole (cf. Greek *meros*, part of fraction)” (Smith 1997: 20), hence the name.

¹⁵³ Another approach to actional (aspectual) composition was developed by Henk Verkuyl (Verkuyl 1972; 1989; 1993). See Tatevosov (2002a: 350–351) for a brief overview. Verkuyl’s theory is unique by being almost exclusively syntactic. It describes actional phenomena solely on the sentence level in terms of verb + NP configurations, thereby abandoning the Vendlerian classes and denying adverbials a role in the realization of the actional makeup of a sentence.

¹⁵⁴ Filip (2012: 739) mentions that this incremental argument is typically a direct object, but can also be a subject, as well as that incrementality can be a property of non-arguments, such as PPs, in which case we speak of the Incremental Path Theme. In this work, incrementality is only considered in connection with direct objects.

quantized reference (e.g. in the indefinite singular *an apple*) entails its telicity (e.g. *He ate an apple in/*for ten minutes*) (Tatevosov 2002a: 352; Filip 2011: 1206). Another example of this phenomenon is example (2) from §1.2.2.

Incrementality is therefore relevant because it is precisely the property that defines the subset of (English) predicates such as *write* and *eat* that show the effects of actional (aspectual) composition. Incrementality is further discussed in §4.4.6 and is particularly relevant for the discussion about achievements and accomplishments in §7.3.

The concept of incrementality was developed in the work of M. Krifka (1989; 1992; 1998) in an effort that resulted in “the first model-theoretic and mereologically based analysis of aspectual composition” (Filip 2012: 737). Dowty (1991) is another important contribution, which introduced the term Incremental Theme mentioned above.¹⁵⁵

Mereological approaches to actional (aspectual) composition generated a lot of activity in the 1990s and early 2000s. Recent trends, on the other hand, are best represented by scalar approaches, whose main empirical focus are so-called “degree achievements” (see §4.4.5 and §7.3.3). For a discussion of scalar approaches, the interested reader is referred to the very informative overviews in Filip (2011: 1207–1210; and 2012: 741–745).

2.2.4. Formal semantics and crosslinguistic diversity

In §2.2.1 above it was noted that much of the work in formal semantics is Anglocentric and Eurocentric. The discussion was limited to pointing out that the Anglocentrism (and more broadly Eurocentrism) of formal semantics has had for its consequence a lack of interest for aspect-actionality interactions, and grammatical aspect in general. In this section the Anglocentrism and Eurocentrism of formal semantics are addressed in more detail. I will refer to Eurocentrism in the rest of the section, even though in many cases we are dealing with it more narrowly, that is, with Anglocentrism.

The Eurocentrism of formal semantics can be understood in two ways. First, formal semantics is Eurocentric in the sense that its architecture and formal apparatus are critically shaped by the structure of English and other European languages. Second, formal semantics is Eurocentric in the sense that, for most of its history, European languages have been its primary interest and

¹⁵⁵ For more on Dowty’s and Krifka’s contributions see Filip (2012: 737–740). A more extensive discussion is found in Filip (1999: 83–99). See also Tenny (1994), Jackendoff (1996) and Rothstein (2004: 53 et passim).

source of empirical evidence. Each of the two aspects is discussed, starting with the former. Despite these historic trends, formal semantics has recently opened to evidence from a wider variety of non-European languages. This section is concluded with a brief review of these efforts but does not address the merits of the application of formal approaches to typologically diverse languages.

2.2.4.1. Eurocentrism of formal semantics

From early on, Montague Semantics and later formal semantics have been accused of “the possible bias implicit in Montague’s work (and others) toward English and other Indo-European languages” (Partee 1996: 27).¹⁵⁶ One often encounters complaints among linguists that “many of the phenomena discussed in formal semantic literature depend on contingent aspects of linguistic structure that happen to be present in English” (Evans 2010: 530; cf. Sasse 2002: 264; Tatevosov 2002a: 319). This results in that formal models “often predict meanings that are not systematically reflected in natural languages, and, on the other hand, fail to predict meanings that are actually expressed” (Johanson 2000: 46).

This criticism is accepted by some formal semanticists, most notably E. Bach. He states that “[th]e initial empirical base [of formal semantics, J.P.] was English and as this base was broadened to include more and more different languages these categories [inherent to the theory] were naturally taken over for the ‘new’ languages” (2004: 56–57). This echoes the assessment of generative grammar from §1.6.

The European bias in semantic typology¹⁵⁷ was criticized more broadly by Behrens & Sasse (1997: 5–6), who note with respect to the mass/count distinction (§1.2.2, §1.6.3) that:

the scientific concepts of such categories are often based on the language-specific clustering of components in a limited number of well-studied languages which historically constituted the empirical input of linguistic theories.

Likewise, Tatevosov (2002a: 319) observes that the most prominent actional classifications found in the literature are similar in one fundamental respect, namely “their language-specific

¹⁵⁶ The adjective “implicit” is crucial here. As noted by Goddard (2011: 14), Anglocentrism and similar biases are often unintentional and points out that “it is only natural, after all, to describe the unknown in terms of the known.” As we will see later in the section, the realization that there is an implicit bias in formal semantics has recently led to substantial changes in the attitudes towards crosslinguistic diversity.

¹⁵⁷ On semantic typology see §1.6.2. and §6.1.

orientation”. The language-specific orientation of existing actional classifications is dealt with in greater detail in §4.1.

Behrens & Sasse (ibid.) advance a general argument against Eurocentrism, which resides in the observation that:

when investigating the equivalents of such categories in other languages, one finds that their ingredients may be distributed in quite a different way across the different levels of analysis, often resulting in formidable dissimilarities in the overall lexico-grammatical organization.

It is also fitting to recall Ö. Dahl’s “Great Dane” analogy, in which the assumption that the categories of European languages are the most typical ones crosslinguistically is compared to the assumption that Great Dane is the most typical breed of dog. Dahl thus warns that the linguist “who studies one language or a couple of languages from a restricted area may be unlucky enough to meet grammatical phenomena that turn out to be very untypical from a universal point of view” (Dahl 1985: 20).

A good illustration of this bias can be found in Vendler’s and later formal semantic treatment of inchoative states (§4.4.2.1, §7.1.4). They are defined as the verbs that depending on the context and inflectional form can refer either to a state or to the entry into that state; that is, these are predicates that can mean both *sleep* (a state) and *fall asleep* (an entry into the state of “sleeping”).

Vendler was perfectly aware of the existence of such verbs in English (1957: 153–155). Specifically, he notes that many state verbs, such as *know*, *understand* and *see* can in special contexts behave like achievements initiating a state (p. 158), i.e. they can refer to the entry into that state. Some of the examples include:

(25) And suddenly I knew (Vendler 1957: 153)

(26) Once Lisa understood (grasped) what Henry’s intentions were, she lost all interest in him. (Mourelatos 1978: 419)

(27) At the moment I saw him. (Vendler 1957: 155)¹⁵⁸

This double nature of some English stative verbs is widely acknowledged and routinely mentioned in the literature (Dowty 1979: 68; Dowty 1986: 38; Bertinetto 1994a: 398–399; Smith 1997: 18; Filip 1999: 64 among many others). What is rarely addressed is the fact that stative verbs

¹⁵⁸ Vendler refers to this use as the “spotting” sense of *see*.

allowing for an entry-into-state reading are not included among the original Vendlerian classes. One reason may lie in the fact that the entry-into-state reading of English statives is considered to be derived, in the sense discussed in §1.2.4.3 (Smith 1997: 49; Filip 1999: 64) and is confined to specific contexts, typically involving temporal subordinate clauses or so-called point adverbials (e.g., *suddenly* or *at the moment*). This appears to be only partially true, as it is often noted that an entry-into-state reading can arise without contextual cues (e.g. by Smith). The objection that the status of state verbs with entry-into-state readings in English is unsatisfactorily resolved is only rarely raised (but see Mourelatos 1978: 419).

The fact that entry-into-state readings are considered derived appears to have to do with certain language-specific properties of English. The first one involves the widely held belief that some forms of the English verb system are less marked than others, as was noted in §1.2.4.3 for Simple forms in contrast to Progressive forms, and by that virtue represent the “pure” lexical meaning. As noted by Tatevosov (2002b: 473), the same is often true for the distinction between Present Simple and Past Simple, whereby the former is considered basic and the latter one derived and more marked. This explains the tendency to consider entry-into-state readings derived, since they occur only in the Past Simple form, whereas the state interpretation occurs both in the Present and Past Simple forms. The second property is that the diagnostic that singles out entry-into-state predicates does not involve the Progressive nor the test with *for*-PPs and *in*-PPs. The lack of relevance for the Progressive appears to be particularly significant.

Unlike in English, the class of verbs that combines stative and entry-into-state interpretations is readily recognized in languages with the PFV-IPFV aspect system, such as Italian or French. The main reason is that the entry-into-state reading is associated with a specific form, namely the past PFV aspect gram, and therefore more readily isolated (de Swart 1998: 367). This is discussed in greater detail in §7.1.4.

Returning to the question of Anglocentrism more generally, it should be noted that formal semanticists demonstrate an increased awareness of the implicit bias that comes with the use of a theoretical toolkit based on European languages, as they try to provide meaning descriptions of different languages “without being excessively influenced by preconceived notions about better-studied languages” and “by the informed and cautious use of theory” (Cover & Tonhauser 2015: 306). Along similar lines, Bach, after explicitly disputing Chomsky’s

assumption that all languages are the same (see §1.6), asserts that theories that do not take into account the linguistic diversity of the phenomenon at stake “are not adequate” (2005: 176).

The use of theory in the description of meaning is defended by arguing that the “qualities of theoretically informed descriptive fieldwork far outweigh any potential dangers” (Cover & Tonhauser 2015: 313).¹⁵⁹ Eurocentrism can also be defended on the grounds that topics of interests in formal semantics require in-depth analyses which were until recently almost impossible to conduct on non-European languages. The need to carefully develop and test the suitable framework first is also invoked (cf. von Fintel & Matthewson 2008: 140fn2). Some formal semanticists defend Eurocentrism with the observation that English is a well-studied language, while insisting that “English does not have any priority over other languages” (Matthewson 2011: 277–278).

Let us now turn to the issue of the empirical basis. As in generative grammar (§1.6.1), recent years have seen more interest in crosslinguistic diversity in formal semantics (Matthewson 2004: 370; Evans 2010: 530; Matthewson 2011: 269). Semantic universals and their proposed falsifications based on a variety of languages are collected and reviewed for the first time in von Fintel & Matthewson (2008).

Early attempts at bringing together formal semantics and non-European languages include Stein’s (1981) dissertation on Thai, Gil’s (1982) paper on Dutch, Hebrew and Bengali,¹⁶⁰ and multiple investigations by E. Bach on a variety of languages of Native North America (e.g. Bach 1993). The first proper crosslinguistic investigation of a phenomenon of central interest in formal semantics is the collection of studies of quantification (Bach et al. 1995), where evidence drawn from a wide range of languages falsified some of the earlier proposed universals.¹⁶¹ The collection had a strong impact as it demonstrated that formal semantics theory cannot continue without expanding its empirical base, which was also argued for in series of

¹⁵⁹ According to Cover & Tonhauser (2015: 307) these qualities include: “(i) theory can guide fieldwork on meaning, and when it does, more comprehensive descriptions of meaning result, and (ii) compared to linguistic fieldwork that is not theoretically informed, theoretically informed descriptive fieldwork has greater potential for revealing the “genius” of the language under investigation (how it differs from other languages), for improving theories, and also for increasing our knowledge of language variation and universals.”

¹⁶⁰ D. Gil later became very critical of Eurocentrism as manifested in formal theories (Gil 2001).

¹⁶¹ Evans (2010: 530–531) provides a brief overview.

papers by E. Bach (Bach 2004; 2005; Bach & Chao 2009; 2012). Similarly important is the work of Maria Bittner (e.g. Bittner 1994) and Carlotta Smith (see §3.3.1).

Languages of Native North America occupy the central place in the expansion of the empirical basis of formal semantics. Consider the pioneering work of Emmon Bach on Haisla (Wakashan, British Columbia), Eloise Jelinek on Straits Salish languages (Salish, British Columbia), Maria Bittner on Kalaallisut, or West Greenlandic (Eskimo-Aleut, Greenland) and Lisa Matthewson on St'át'imcets or Lillooet (Salish) and Gitxan (Tsimshianic), both spoken in British Columbia. The interest in crosslinguistic semantics is also strong among formal semanticists in the broader sense (see §2.2.2 above), as explained in the next section.

2.2.4.2. Crosslinguistic research on actionality in formal semantics

The general trend of interest in crosslinguistic diversity in formal semantics is also reflected in the treatment of aspect and actionality. As noted in §2.2.1 above and in the previous section, research on actionality since its inception up until recently has in most part been based on English and other closely related languages. This has changed in the meantime as various frameworks within the Anglo-American tradition have been increasingly concerned with crosslinguistic variation in encoding of actional notions (von Stechow & Matthewson 2008: 153–154; Filip 2011: 1187; cf. also Bach & Chao 2012). The interest in semantic variation and universals naturally led to a greater interest in non-Western European and non-Indo-European languages. This in turn fostered the development of methods of semantic fieldwork (§6.1.3), led primarily by formal semanticists.¹⁶²

This is a reversal of a long-term trend, still observable in the early 2000s. Sasse, for instance, laments about “a tremendous gap between descriptive and theoretical work” (2002: 200) and wonders “how such [i.e. formal, J.P.] theories cope with languages with heavy aspect morphology of the perfective/imperfective type” (2002: 217).

Since then, the topic of aspect-actionality interactions has also become more prominent in formal approaches (e.g. Cipria & Roberts 2000 for Spanish). This has led to the application of formal approaches to typologically diverse sets of languages with rich aspectual morphology (e.g. Bar-el 2005; Koontz-Garboden 2007; Wilhelm 2007; Kiyota 2008). In this connection, the

¹⁶² This development concerns not only the domain of aspect and actionality, but also other semantic domains of interest in formal semantics (tense and temporal reference, quantification, etc.).

work of Sergei Tatevosov should be mentioned; his work is in essence non-aprioristic and inductive but has since the mid-2000s steadily incorporated more and more elements of formal semantics (see §3.2 and Chapter 4).

The interest in crosslinguistic variation is also apparent among formal semanticists (in the broadest sense of the word) who focus on aspect and TAM categories more generally, for instance Jürgen Bohnemeyer (2002; 2014) and the team of the MelaTAMP project, led by Manfred Krifka and Kilu von Prince.¹⁶³

2.3. Continental and descriptive-structuralist tradition

Having dealt with the Anglo-American formal tradition, this section turns to the history of the aspectological research in Europe, more specifically in Continental Europe. In §2.3.1, a brief history of traditional aspectology in Continental Europe is outlined, and it is shown that the predominant point of interest lay in the grammatical aspect and in the phenomenon of derivational Aktionsarten. The connection of this tradition to the contemporary typological and descriptive approaches to grammatical aspect is pointed out. This leads us to §2.3.2, where the non-formal approaches to aspect-actionality interactions are introduced and situated within the same typological and descriptive tradition.

2.3.1. Focus on grammatical aspect and morphology

The Continental European aspectological tradition, most active at the end of the 19th and during the first two-thirds of the 20th century, was predominantly focused on grammatical aspect and its definitions (Filip 2011: 1187–1188).¹⁶⁴ The term *aspect* was often used to refer exclusively to the opposition between the PFV and IPFV aspects, in particular in Slavic languages (for instance Jespersen 1924: 286–289; cf. Lyons 1977: 705).¹⁶⁵ Much effort was devoted to

¹⁶³ For more on the project and its outputs see <https://www.projekte.hu-berlin.de/en/melatamp>.

¹⁶⁴ The overview and lists of the most influential works of early European aspectology are given in numerous publications (e.g. Jespersen 1924: 286fn2; Gonda 1962: 1–53; Brinton 1988: 3, 19–22; Bache 1982: 64; Szemerényi 1987). Dressler (1968: 39–51) provides an excellent overview of the state-of-the-art research at the period of its publication. Another valuable overview is Pollak (1988).

¹⁶⁵ Another much discussed topic was the issue of affinity between the Slavic perfective-imperfective opposition and aspectual systems of Latin and Romance languages. Many scholars believed that the two systems are fundamentally different and that the term *aspect* should be reserved for Slavic aspect only (Bache 1982). Binnick (1991: chap. 5) provides a useful historical overview. The controversy was effectively put to an end by Dahl's description of "Slavic-style aspect", wherein he clearly demonstrated that despite certain differences, the perfective-imperfective opposition in Slavic and similar oppositions in other languages do

providing definitions of these two aspects, but such attempts were largely judged as unsuccessful, mainly due to the vagueness and opacity of the proposed definitions (Jespersen 1924: 286; Sasse 2002: 209). Some of these early conceptions of aspect nevertheless crept their way into modern aspectology and continue to plague the field; the two most notorious ones were discussed in §1.3: the viewpoint metaphor and the “subjective” nature of aspect.

Despite much research devoted to aspect during the said period, the notion of grammatical aspect was “less familiar to non-linguists than the notions of tense and mood”¹⁶⁶ and was routinely confused with tense (Lyons 1977: 705). The same period is also characterized by constant confusions or inconsistent distinctions between aspect and actionality in the modern sense (cf. Sasse 2002: 208), as evident in works on English verbs, characterized by Brinton as “maddeningly inconsistent” (1988: 19).

At this juncture, it would be beneficial to emphasize that the notion of actionality, despite being vaguely familiar to European aspectologists, was understood in a different manner than in the later Anglo-American tradition. Actional distinction was generally treated under the concept of “Aktionsarten”, the term coined by the Slavic scholar S. Agrell (1908). This term was predominantly used to refer to rather specific meanings expressed by means of derivational preverbs (verbal prefixes) in Slavic and Germanic languages (Binnick 1991: 139–149).¹⁶⁷ Only some of these meanings are actional in the modern sense. This implies that notions related to actionality were primarily understood in association with an overt expression in derivational morphology (Filip 2011: 1187).¹⁶⁸ Nowadays, however – as pointed out repeatedly (e.g. in §1.2) – it is known that actionality has a variety of structural correlates and derivational morphology (and word-formation in general) is only one of them (see §1.2). This was already noted by

constitute a single phenomenon. See also fn. 61.

¹⁶⁶ Binnick (1991: 135) speculates that this is so because for speakers of Western European languages tense is intuitively clearer than aspect.

¹⁶⁷ The term is also used to refer to the meanings of Hungarian preverbs (Kiefer 2010).

¹⁶⁸ This is, to an extent, an oversimplification. Overviews from Verkuyl (1972: 1–9) and Brinton (1988: 19–22) show that a number of scholars of English and other Germanic languages of the first half of the 20th century were aware of the fact that verbs can be classified into different groups based on their temporal properties. This is also evident in Jespersen’s discussion of passive (1924: 272–275; based on Diez 1876), which shows that at the time scholars of aspectuality were familiar with the lexical feature that determines temporal interpretation of passive forms. In Jespersen’s work the feature is called conclusive/non-conclusive and corresponds to what we know today as the telic/atelic contrast. After a productive period starting in the 1890s, the interest for this topic in European aspectology abruptly ended around 1935 (Verkuyl 1972: 6).

Dressler (1968: 40), who, drawing on Continental and Soviet aspectology, distinguishes between *Aktionsart* as a morphological-derivational, and “Verbalcharakter (Handlungscharakter)” as a lexicosemantic phenomenon (cf. Binnick 1991: 170–171 et passim). Still, it is unclear how widespread such views were at the time.

In the early 1970s, this “derivational” understanding of *Aktionsarten* was conflated with the Anglo-American concept of actional classes by early European generative linguists (e.g. Platzack 1979). These authors coopted the traditional term *Aktionsart* and used it to refer to actionality (see Filip 2011: 1188). This led to the widespread double use of the term – i.e. to refer to the lexical phenomenon and to the derivational phenomenon¹⁶⁹ (e.g. Brinton 1988: 3). The double use has continued,¹⁷⁰ despite being cautioned against as early as in Comrie (1976: 6–7, n. 4) and Lyons (1977: 706), and has generated much terminological confusion.¹⁷¹ This was the main reason for the decision to avoid the term *Aktionsart* in favor of the terminologically unburdened term *actionality* (see §1.4).

In the Continental tradition, actionality (perceived primarily through the concept of *Aktionsarten*) was seen as a side-issue in comparison to aspect (Sasse 2002: 208–211) and investigations of aspect grams were preferred over the research of the interaction between aspect grams and lexical properties of the verb and the research of actionality itself.

By the second half of the century, this tradition had largely integrated the structuralist view of language, which gave way to elaborate theories of aspect based on the notions of opposition and markedness (Binnick 1991: 149–169). Often the goal of the theory was to find *Gesamtbedeutung*, “a structurally determined, context-independent basic meaning meaning”, of each aspect (Lindstedt 2001: 769; cf. Binnick 1991: 156; Plungjan 2011a: 83–86). At its peak it was practiced predominantly in Europe, including the Soviet Union, with some representatives in North America as well. Major contributions within this framework are Bull

¹⁶⁹ The use of *Aktionsart* to refer to subsituation aspect, noted in §1.4, adds to the further confusion. This use is an extension of its derivational use.

¹⁷⁰ The term *Aktionsart* (or *mode of action*) in its original, derivational, meaning is still found in many works dealing with non-European languages, for instance in the work on Ainu (Refsing 1986; 1994), Belhare (1996), Cavineña (Guillaume 2008), and East Greenlandic (Mennecier 2016).

¹⁷¹ Nowadays, the two meanings are normally clearly kept apart, but the conflation of the two meanings can be found even in most recent works, such as Desclés (2016: 45).

(1968), Friedrich (1974), Coseriu (1976; 1980), and Cohen (1989), and various Soviet authors (see below).

The Continental tradition never found its way into modern theoretical and formal approaches to aspectuality. By contrast, with its important contributions to the research on aspect, the Continental tradition has played an enormous role in descriptive practice and consequently in typology of aspect (Sasse 2002: 211); see also §6.1.1. This is mainly due to the role of descriptive linguistics in the development of linguistic typology. Specifically, the most important investigations into typology of grammatical aspect can be considered more recent renditions of the same tradition. Modern typological investigations of aspect were initiated by Comrie's 1976 book, which draws in many respects on the work of Continental aspectology.¹⁷² Two groundbreaking studies of crosslinguistic patterns in the domain of aspect and other TAM categories, independently conducted by Joan Bybee and Östen Dahl and published in 1985 (Bybee 1985; Dahl 1985), explicitly refer to Comrie's work as a main starting point of their work. The results Bybee and Dahl presented in their books were "strikingly similar" (Dahl 2000b: 6). They are summarized in the following quote (Bybee 1998: 260; cf. also Bybee & Dahl 1989: 53–55; Lindstedt 2001: 769–770):

Two more ambitious and systematic crosslinguistic studies of tense and aspect, Bybee (1985), a reference-grammar survey of fifty languages, and Dahl (1985), a questionnaire survey of sixty-four languages, conclude that the most common categories occurring crosslinguistically – perfective, past, imperfective, present, progressive, perfect, and future – have very similar meanings and distributional ranges in the languages in which they occur.

In their joint paper (Bybee & Dahl 1989), Bybee and Dahl outlined a crosslinguistic approach to TAM categories, which came to be known under the name of the "Bybee and Dahl approach" (Dahl 2000b). The fundamentals of the approach are briefly summarized in Dahl (2000b: 6–8) and at more length in Bybee, Perkins & Pagliuca (1994: chap. 1). The research was fruitfully continued, resulting in further major publications (Bybee, Perkins & Pagliuca 1994; Dahl 2000a; Dahl & Velupillai 2013b etc.). Since the works by Comrie, Dahl and Bybee are still standard in the field, the traditional descriptive-structuralist approach in which they are essentially rooted continues to exert considerable influence. Elements of the Bybee-Dahl

¹⁷² Friedrich's study of Homeric aspect (1974) is also typological in its orientation.

approach to aspect are also adopted in this investigation, as laid out in more detail in Chapter 5.

Finally, an important offshoot of the Continental and descriptive-structuralist tradition is Soviet and later Russian aspectology. Y. Maslov (e.g. Maslov 2004) and A. Bondarko (e.g. Bondarko 1987) are considered to be the two most influential authors within that tradition. Plungjan (2011a) is a recent textbook summarizing many of its results. This tradition has also much contributed to the typology of aspect and TAM more generally (see, e.g., Čertkova 1998; Plungjan 2012) and therefore plays an important role in this work as well.

2.3.2. The descriptive and typological research on aspect-actionality interactions

In the course of this chapter, two relevant research traditions have been introduced. The Anglo-American tradition was more concerned with actionality and its syntactic manifestations. In contrast, the Continental tradition was more oriented towards grammatical aspect. In both traditions, little attention was paid to the interactions between aspect and actionality. Still, there was a certain awareness in both traditions that actionality is intricately interconnected with aspect.

At this point, it must be made clear that the scholars allied with the Continental tradition became aware of the distinction between aspect and actionality and the importance of actionality independently of Vendler's work (e.g. Garey 1957; Zandvoort 1962: 1–60).¹⁷³ In that sense, the research of aspect-actionality interactions in European aspectology was inaugurated much earlier than within the Anglo-American tradition. Moreover, understanding of the importance of actional properties of the verb for meanings of aspect grams was independently established within the Russian and Japanese linguistic traditions. In Soviet and Russian aspectology, research into actionality and aspect was initiated early on with the publication of Maslov (1948). In Japanese linguistics, the actional distinctions were introduced in the work of Haruhiko Kindaichi.¹⁷⁴

¹⁷³ Interesting early ideas about the ways to disentangle aspect and actionality were put forward by Jespersen (1924: 286–289; see Brinton 1988: 21–22 for an interpretation).

¹⁷⁴ On Kindaichi's classification of Japanese verbs see §5.4.3.2.

At first, a major hurdle to research of aspect-actionality interactions was the ubiquitous terminological confusion. This was to a great extent remedied through the widespread reception of Comrie (1976) and Dowty (1979), both of which clarified the distinction between aspect and actionality to the European and Anglo-American public, respectively. By clarifying the distinction, scholars, especially semanticists, of different traditions also became increasingly aware of the interrelatedness of aspect and actionality. This includes formal semanticists, as shown in §2.2.1 above.

As noted in §1.5.3, Comrie's work and other early works also include early non-exhaustive lists of the most common interactional meanings. The fact that aspect and actionality interact in complex ways is nowadays well recognized; the already mentioned discussions of aspect-actionality interactions in recent semantics textbooks testify to that. What is more, references to actionality in reference grammars of typologically diverse languages have become more common,¹⁷⁵ making typological investigations, such as the one presented here, more comprehensive, and their generalizations consequently more plausible.

Despite these developments, aspect-actionality interactions have become a full-fledged research topic only in European aspectology, whereas in the Anglo-American tradition the grammatical aspect as a topic is completely subsumed under actionality and aspect-actionality interactions have largely remained outside the mainstream of formal semantics (cf. Sasse 2002: 231). Given these circumstances, the most important contributions to the research of aspect-actionality interactions have been developed by scholars unaffiliated with formal semantics and the Anglo-American tradition. For that reason, in the remainder of the section the focus is mostly on the approaches to aspect-actionality interactions that have roots in Continental aspectology, including various descriptive and typological approaches.

Most important among these approaches were developed by typologists and descriptively oriented linguists based in Europe, in particular in German-speaking countries. These approaches are characterized by the coupling of the insights of traditional aspectology with the findings of the Anglo-American tradition. The focus of interest was the application of the Vendlerian classification (and variants thereof) to typologically different languages and subsequent development of theoretical frameworks better equipped to deal with typological

¹⁷⁵ This includes English and various "exotic languages" (for more see §6.1).

diversity in the domain of aspectuality. Most of the languages investigated in these approaches are aspect languages – that is, languages with grammaticalized aspect oppositions (Sasse 2002: 264–265). Accordingly, it comes as no surprise that interactions between aspect and actionality as manifested in aspect-sensitive classes were of central interest in majority of these frameworks. Another important property of these approaches is their relative independence of truth-conditional approaches, and none of these works are couched in the framework of formal semantics.

The origins of this strand of research into aspect-actionality interactions can be traced to the influential discussion of aspect-actionality interactions found in Comrie (1976: chap. 2), based on Vendler's classification. Another early statement to the importance of the aspect-actionality relationship is found in Lyons (1977: 706), who was one of the first to explicitly state that the uses of aspect are determined by the actional character of the predicate. The research into the aspect-actionality relationship began in earnest in the early 1980s with the early works of C. Bache (1982; 1985), C. Smith (1983) and W. Breu (1985). An insightful early discussion is also found in Brinton (1988: chap. 1). The importance of actional meanings for aspect became widely assumed in the typological work on aspect (e.g. Dahl 1985: 27–29), even though the role of actionality was not understood in every respect.

Among the first to develop a full-fledged theory of aspect-actionality interface was Slavicist W. Breu in the 1980s, who based his work mainly on the material of Romance and Slavic languages (his approach will be covered in greater detail in §3.1). Another important model of aspect-actionality interactions which belongs to this tradition was developed by S. Tatevosov, on which see §3.2. The phenomenon of aspect-actionality interactions is also of central importance in the influential theory of C. Smith (see §3.3.1) and in the model developed by L. Johanson (1971; 2000) (see §3.3.2). Similar approaches were developed in the 1990s and early 2000s in the publications edited by Sasse (1991a), Bertinetto et al. (1995), Breu (2000), Ebert and Zúñiga (2001), and others.

All the above works are characterized by theoretical deliberations based on analyses of aspectual systems of various languages, including many non-Indo-European languages. As such, they constitute the bulk of the sources for this typological investigation (for more detail see §6.1 and §6.2 below). All authors mentioned in the previous two paragraphs subscribe to

bidimensional approaches to aspect-actionality interface (see §1.5.1). The most important approaches to aspect-actionality interactions are discussed in the next chapter.

Before turning to the next chapter, two typologically oriented syntactic theories should be briefly mentioned, viz. the *Role and Reference Grammar* [RRG] (Van Valin & LaPolla 1997; Van Valin 2005) and the *Functional Grammar* [FG] (Dik 1989). They are relevant here because of their typological orientation.

Both theories have developed a model of lexical representation which incorporates actionality; they also strictly distinguish aspect and actionality, but their interactions are not of central concern.¹⁷⁶ I have little to say about the FG here since to my knowledge the FG was never used in practice to investigate actionality in different languages. In contrast, the RRG approach to actionality has been applied to a typologically diverse set of languages and is for that reason briefly reviewed in what follows.

In the RRG, a revised Vendler-Dowty classification is used. Actional oppositions are captured by means of an adapted version of Dowty's Logical Forms (see §2.2.3 above). Some effort was put into demonstrating the crosslinguistic validity of actional classification by applying it to a variety of languages. For instance, the first major publication on the theory, Foley & Van Valin (Foley & Van Valin 1984), which introduced Dowty's approach into the theory, seeks to prove its cross-linguistic validity by applying it to the Lakota (Siouan, USA/Canada; lkt) verb system.¹⁷⁷ The actional classification was repeatedly modified based on the input from a range of typologically diverse languages. Thus, the theories of actionality oppositions and logical forms were considerably modified in Van Valin & LaPolla (1997). Minor additions have been made in Van Valin (2005), which adds the class of semelfactives and relevant tests adopted from the work of C. Smith (see §3.3.1).¹⁷⁸ The work on actionality within the RRG is virtually unknown beyond the practitioners of the theory.¹⁷⁹

¹⁷⁶ A very basic overview of FG is given in Sasse (2002: 226–227). The taxonomy of situations used in the Functional Grammar is summarized in Dik (1994: 28–29) and Boland (2006: 25–34), and in more detail in Dik (1989: 183–209).

¹⁷⁷ The languages to which the system was applied are listed in Van Valin (2005: 32). Some of these sources are included in the sample used here (see §6.2).

¹⁷⁸ The history of changes in the classification is summarized in Van Valin (2005: 45fn8).

¹⁷⁹ A rare instance where it is (briefly) mentioned outside the publications dealing specifically with the RRG is

The theory is characterized by being primarily interested in the actional distinction realized in grammar (in syntactic constructions and derivational patterns),¹⁸⁰ due to which it is more coarse-grained than the approach adopted here, which is interested in a wider variety of manifestations of actionality. This helps explain, at least to an extent, why apart from a few modifications, the Vendlerian classification is largely adopted unchanged in RRG. The few modifications that were made were mostly motivated by syntactic evidence (e.g. the introduction of the class of active accomplishments).

My general impression is also that RRG shows little awareness about the numerous issues (many of which are discussed in this work) that arise when a Vendlerian classification is transferred to languages other than English. This entails that the theory inherited at least some of the English bias implicit in Vendler's and Dowty's classifications and the problems associated with it, as discussed in the course of this chapter.¹⁸¹

Evans (2010: 529).

¹⁸⁰ This is also characteristic of the similar approach developed by B. Levin and M. Rappaport Hovav (e.g. Rappaport Hovav & Levin 1998; Levin 2000).

¹⁸¹ The RRG is not unique in this respect – see §4.1.2.1 for a discussion.

3. Approaches to aspect-actionality interactions

This chapter expands on the topics discussed in §1.5, where the distinction between the bidimensional and unidimensional approaches was introduced.

This chapter serves as an overview of the main approaches dealing with aspect-actionality interactions. Two of these approaches have already been mentioned as central in this work: the approach developed by W. Breu and the approach by S. Tatevosov. These two approaches are discussed in detail in §3.1 and §3.2, respectively. Elements of both approaches will be further discussed in Chapter 4.

Two other approaches, all with explicit crosslinguistic orientation, are reviewed in §3.3 below. Even though these approaches are less central to this work in terms of their theoretical positions, they are still significant in terms of descriptive evidence they provide from a variety of languages.

There are several approaches that are explicitly bidimensional but are not covered here for lack of space. They will be briefly mentioned here. One is the approach developed by the Danish linguist C. Bache in a series of publications (1982; 1985; 1995; 1997). Bache's approach is an instance of composite theory of aspect (§1.5.1) (cf. Sasse 2002: 226) and he strictly distinguishes aspect and actionality on semantic level (cf. Bache 1982: 70–71). In that respect, Bache's approach is similar to the bidimensional approach developed by Pier Marco Bertinetto, e.g. Bertinetto (1997) (see also Sasse 2002: 243–252 for an overview).

Another bidimensional approach worth mentioning was developed by the German Slavicist Volkmar Lehmann in numerous publications (e.g. 2009; 2017). His approach is language-specific as it was developed to deal specifically with the Slavic aspect. Lastly, it bears mention the work of L. Brinton, who despite not having developed a specific theory of aspect-actionality interaction in a principled way distinguishes between aspect and actionality on a descriptive level (see Brinton 1988: 52–57).

3.1. Walter Breu and Radical Selection Theories

In this section, I describe the major properties of the bidimensional model of aspect-actionality interactions developed principally by W. Breu from the early 1980s (Breu 1980; 1984; 1985; 1988; 1994; 1996; 1998; 2007; 2019; Breu, Berghaus & Scholze 2016). Here the classic early

1990s model is sketched. Subsequent revisions to that version of the model are discussed to the extent to which they are relevant for the present work.

An important contributor to Breu's model was Hans-Jürgen Sasse, who fully embraced the model in the late 1980s, and was particularly active in both its dissemination (Sasse 1991b; Sasse 1991c; Sasse 2002) and, as a typologist, in broadening its applications to typologically diverse languages (see the end of this section). Hence the commonly used name "the Breu-Sasse approach." A third important name in this context is that of Balthasar Bickel, who sketched out his own model inspired by Breu's work (Bickel 1997).

Breu's and related models are the main representatives of **Radical Selection Theories** of bidimensionality (see §1.5.1). Apart from the role of grammatical aspect, which is common to all bidimensional approaches, Radical Selection Theories insist on "a strict correspondence relationship (called an operator-operandum relation by some scholars) such that [grammatical aspect] operators are phase-selectors that 'pick out' or 'select' matching phases (...) provided by [actionality]" (Sasse 2002: 223). Such a model of aspect-actionality relationship necessitates a method of decomposition of actional classes in order to find the semantic features that grammatical aspect markers can select and operate over.

Breu's model of decomposition revolves around "[t]he basic idea (...) that states of affairs may or may not be conceived of as having boundaries" (Sasse 1991c: 33; cf. Breu 1994: 24–26). Situations exhibit the potential for denoting boundaries or change (Ger. *Veränderung*), so-called "degree of temporal dynamics" (Ger. *Grad an temporale Dynamik*) (Breu 2007; Breu 2019; Breu, Berghaus & Scholze 2016). The decomposition model assumes two general semantic elements of the actional kind: SITUATION BOUNDARY (or situation CHANGE) and the PHASE occurring between two situation boundaries (changes). Boundary and phases are symbolized here with the 'τ' and 'φ' symbols, respectively, following Bickel (1997).¹⁸² Actional classes feature different τ + φ configurations, which define their properties on time axis. Breu found that there are five such configurations,¹⁸³ which can be equated with **actional classes** and

¹⁸² The choice of the Greek letter τ (tau) for 'boundary' is presumably meant to be reminiscent of the notion of telicity. However, the notion of 'boundary' ('τ') is broader than telicity and encompasses both arbitrary and natural endpoints (see §1.5.2). Telicity is a separate notion in Breu's model and is typically referred to as terminativity – *Terminativität* or *Grenzbezogenheit* in German (Breu 2007).

¹⁸³ Sasse (1991b: 6) makes a strong prediction that these five classes constitute the maximum range of possible actional classes. As we will see below, this claim does not stand up to closer scrutiny.

are referred to as such here. The list of these five classes with Breu's original terms¹⁸⁴ and abbreviations, Bickel's (1997) symbols, and Vendlerian equivalents are all brought together in Table 7.¹⁸⁵

Breu (1994)	Breu's abbreviation	Bickel (1997)	Vendler (1957)
totally static	TSTA	[φ]	state
inceptively static	ISTA	[$\tau\varphi$]	n/a
activity	ACTI	[$(\tau)\varphi(\tau)$]	activity
gradually terminative	GTER	[$\varphi\tau$]	accomplishment
totally terminative	TTER	[τ]	achievement

Table 7. Actional classes in Breu's model.

In the rest of the text, Breu's actional classes will be referred to by their better known Vendlerian names, even though they are not, strictly speaking, equivalent.¹⁸⁶ As explained in §1.5.3, the class of inceptively static verbs (ISTA), referred to as **inchoative states** there, is lacking in Vendler's classification.¹⁸⁷

The five actional classes from Table 7 are in fact identical to the five aspect-sensitive actional classes from §1.5.3 (see Table 5 and Table 6 there). Recall that aspect-sensitive actional classes are those recognized based on interactions between actional character of the verb and aspect grams this verb occurs with. In Breu's model, interaction is worked out in terms of boundaries ' τ ' and phases ' φ '. Recall that actional classes are defined in terms of different $\tau + \varphi$ configurations, and that aspect grams "pick out" or "select" elements of such configurations. The PFV aspect gram is thus associated with boundary (i.e. ' τ '), and the IPFV aspect gram with phase (i.e. ' φ '). This is illustrated with examples from Modern Greek in Table 8 (based on Sasse 1991c: 37).¹⁸⁸

¹⁸⁴ The original terminology was coined in German. The English equivalents are adapted from Sasse (1991c), Breu (1994) and Breu (2019).

¹⁸⁵ A comparison with Vendlerian classes is adapted from Sasse (1991c: 16), Breu (1994: 41n6) and Sasse (1997: 63). Note that this comparison is restricted to the original Vendlerian classification and does not reflect its later modifications.

¹⁸⁶ This concerns above all the GTER class, which in fact encompasses some Vendlerian achievements.

¹⁸⁷ Recall that in the same section, I referred to Vendlerian states (Breu's totally static verbs (TSTA)) as **total states** in order to more distinguish them more clearly from inchoative states.

¹⁸⁸ The last three columns repeat Table 5 from §1.5.3.

Breu (1994)	Bickel (1997)	Label used here	Past IPFV	Past PFV
TSTA	[φ]	total state (Vendler: state)	<i>iksere</i> 'he knew'	n/a
ISTA	[τφ]	inchoative state	<i>agapúse</i> 'he loved'	<i>agápise</i> 'he fell in love'
ACTI	[(τ)φ(τ)]	activity	<i>dhúleve</i> 'he was working'	<i>dhúlepse</i> 'he worked (and then...)'
GTER	[φτ]	accomplishments	<i>péthene</i> 'he was close to death'	<i>péthane</i> 'he died'
TTER	[τ]	achievements	<i>évriske</i> 'he used to find'	<i>vrike</i> 'he found'

Table 8. Breu's (1994) actional classes illustrated with Modern Greek forms.

Let us now discuss these classes in turn (note that this repeats in many respects the discussion in §1.5.3). With the class of total states (TSTA), there is no boundary 'τ' for which the PFV aspect can be used; hence the form *iksere* 'he knew' has no PFV counterpart in Modern Greek. With inchoative states (ISTA), the IPFV verb encodes the state 'φ' ('he loved') resulting from the change of state ('he fell in love'), i.e. the boundary 'τ', which is expressed by the PFV aspect. Since the inchoative component 'τ' ('fall into love') precedes the resultant state 'φ' ('love') on time axis, the configuration is presented as [τφ]. With activities (ACTI), the IPFV aspect encodes the ongoing activity 'φ', and the PFV aspect expresses the arbitrary boundaries that can be forced onto the verb – hence the use of parentheses with 'τ' to symbolize the arbitrariness of boundaries.¹⁸⁹ The PFV aspect presents the situation as temporally delimited. This reading of the PFV was called delimitative in §1.5.2. With accomplishments (GTER), the IPFV represents the preparatory phase 'φ' ('was dying, was approaching death') leading to the natural endpoint 'τ' ('died') expressed by the PFV. Finally, with achievements¹⁹⁰ (TTER) the PFV aspect is the expected choice and expresses the boundary 'τ'. According to Sasse (1991c: 37), these verbs are generally mono-aspectual in Modern Greek, and the IPFV forms usually have some 'special' nonepisodic readings, such as the habitual ('used to'). Breu generalizes this claim and posits

¹⁸⁹ Recall from fn. 182 the use of the same symbol 'τ' to refer both to the arbitrary and the natural boundaries (endpoints). In my opinion, this obscures the fact that the boundaries found with activities are of a different kind than those found with other classes. With these other classes (accomplishments etc.) the boundary 'τ' indicates the natural endpoint. In contrast, with activities it indicates the arbitrary endpoint.

¹⁹⁰ Achievements and semelfactives are not distinguished in this model.

the rule that the IPFV aspect when applied to achievement predicates has the “habitualizing” function (Breu 1994: 28).

An important claim put forward by Breu is that, despite these different readings that are available to the PFV and IPFV aspect grams, it is possible to characterize all readings of each of these aspect grams in terms of just two features. In the case of the PFV aspect, that feature is [+boundary], whereas with the IPFV aspect it is [–boundary]. Thus, all different readings of the PFV aspect can be shown to be related to expression of the boundary, and all of the readings of the IPFV aspect can be shown to convey the absence of the boundary. It is important to note that this view of aspect can explain only two aspect grams (the PFV and IPFV), whereas other aspect grams (e.g. PROG) require alternative characterizations, which are not discussed in Breu’s model.

There are two mutually interrelated issues in this model that deserve further comment. First, regarding the analysis of activities as situations conceptualized as “having potential boundaries” (Sasse 1991c: 36), symbolized by $[(\tau)\phi(\tau)]$, we may note that the same interpretation (i.e., the ‘delimitative’) can be found with at least some state predicates when used in the PFV (such examples were already pointed out in §1.5.2). Breu admits the existence of such cases but dismisses them without much discussion.

A related issue has to do with the fact that the feature of inchoativity (entry into a state) as found with inchoative states $[\tau\phi]$ can also be found with activities. Breu appears to recognize such cases only in Slavic, but they are attested in Romance as well as crosslinguistically, e.g. in Tatevosov (2002: 331–332), where this class is called “Ingressive-Processual.”¹⁹¹ Breu claims that such meanings of activity predicates are not part of the meaning of the lexeme (1994: 42n13):

While in these cases ‘sing for a period of time’ is lexically the same as ‘sing’ (because ‘for a period of time’ results automatically from viewing this state of affairs as a whole), ‘start singing’ is not.

Crosslinguistic evidence however does not corroborate this claim, as it will be shown in §7.2.2 (cf. also the next section). Thus, there is at least one actional class which is not predicted in

¹⁹¹ Tatevosov calls activities “processes” (2002a: 330), hence the name. This class is adopted in this work as well, but I use the more transparent term *ingressive activities* (see §7.2.2).

Breu's model, which effectively disproves Sasse's prediction cited above about the set of only five possible actional classes.

One can remark that Breu bases his model, which distinguishes states and activities based on their respective $\tau + \phi$ configurations,¹⁹² on the following observation. From a world-knowledge viewpoint, activities often have a potential boundary, which is a consequence of human actions normally having an arbitrary beginning, and then some temporal spread and finally an end (e.g. *work* or *sing*). This is similar to Comrie's observation that activities normally require a continuous input of energy (1976: 49). As soon as the input is used up, the activity cannot be continued. The same applies equally to all activities regardless of the animacy of its effector. However, this model, while rooted in our world knowledge, does not seem to affect the position of activities in the aspectual systems of PFV-IPFV languages, as the aspectual behavior of activities in PFV-IPFV systems bears strong resemblance to the aspectual behavior of state predicates. This is why I strongly disagree with Breu's claim above. Moreover, the two just mentioned interpretations shared by both states and activities (inchoative – 'to start to...' and delimitative – 'for some time') should come as no surprise, since both classes share the feature of atelicity. It is well-known from the literature that the boundary between state and activity predicates is by no means firm, and that there is a grey area where predicates can be claimed to be both states and activities (see some discussion in §4.3.1). Still, it means that there is no principled reason why one would rule out the possibility of inchoative reading of the PFV form of an activity predicate.

It should be also pointed out that apart from the existence of the class of inchoative states, there are other differences between the Vendlerian and Breu's model. For example, Sasse observes the following (1991c: 36–37):

However, the significant differences between the Vendler-Dowty approach and the classification proposed here resides in the fact that the former is not a classification of lexical verb meanings but confuses lexical semantics with sentence aspect and therefore ignores the importance of the interaction between lexically established boundaries and the semantics of aspect grammemes.

¹⁹² That is, states can only be found in the $[\tau\phi]$ configuration and activities only in the $[(\phi)\tau(\phi)]$ configuration.

A similar point is raised by Breu (1994: 41n6), who observes that the object of classification in his model is the lexeme,¹⁹³ whereas in Vendler, it is the verb *in context*. This crucial element differentiating Breu's approach from Vendler's stems from the fact that Breu's approach is primarily based on the meanings of aspect grams, i.e. it classifies lexemes into aspect-sensitive classes. In other words, Breu's classification is based on the interpretation of different aspectual forms of the same lexeme.¹⁹⁴ In contrast, Vendler's classification relies primarily on a variety of contextual syntactic clues and only to a lesser degree on grammatical aspect.

Breu's model has seen a number of adjustments over the years. In the 1990s, Breu introduced the distinction between totally static verbs (TSTA) and a new class of 'relatively static verbs' (RSTA) (e.g. Breu 1996). The difference between the two is similar to the opposition between permanent and temporary states. This is discussed in more detail in §4.3.1.

In Breu (1996, 1998), the distinction between simple and complex classes (German *elementare/komplexe Klassen*) is introduced. Simple classes are TSTA, RSTA, ACTI and TTER. These are utilized to build complex classes, except for TSTA, which cannot be combined with other simple classes. Simple classes in that way become similar to basic actional meanings or primitives.¹⁹⁵ Thus, the GTER class is decomposed into TTER + RSTA, and ISTA into TTER + RSTA. As mentioned above, the model does not posit a class which would combine TTER and ACTI (my 'ingressive activities').

This model of decomposition parallels the one put forward by Bickel with the 'τ' and 'φ' symbols. The concept of boundary and the 'τ' symbol correspond to Breu's TTER, whereas the concept of phase and the 'φ' symbol are of three kinds and correspond to Breu's TSTA, RSTA, and ACTI.¹⁹⁶

In Breu (1996, 1998), a new complex class of incorporative verbs (INCO) was introduced.¹⁹⁷ The class is unique in combining three simple classes: ACTI + TTER + RSTA. Put more

¹⁹³ More precisely, the verb meaning – see §1.2.4.1 (cf. Sasse 2002: 223).

¹⁹⁴ In these respects, Breu's approach is not unlike the systems developed by Tatevosov (2002), for which see the next section.

¹⁹⁵ Cf. Tatevosov's model of decomposition in the next section.

¹⁹⁶ For that reason, I have introduced a separate symbol to reflect this subdivision of phases (see §4.3.1).

¹⁹⁷ Originally, the class was named "Inchoativa," which created much confusion because the same term is used

explicitly, verbs of the INCO class encode both the preparatory phase (ACTI) leading up to the natural endpoint (TTER), as well as the resultant phase (RSTA) that follows after that natural endpoint has been reached. The class is adopted here under the name of **two-phase verbs** (see §4.4.2.3, §7.4). It can be illustrated with the Russian verb *krasnet* ‘be(come) red’ (Breu 1996: 46; cf. Breu 1998: 66–67). The sentence *Višni krasnejut* (cherries, be(come)_red.IPFV.PRS.3PL) can be translated either as referring to the preparatory phase (‘Cherries are turning red’) or to the resultant phase (‘Cherries are red’).

There are two assumptions in Breu’s model that were already discussed in Chapter 1, namely that the unit of actional classification is the verb meaning rather than the verb lexeme (discussed in §1.2.4.1), and aspect-actionality interactions are of three kinds – actional expression, actional shift and cooccurrence restrictions (discussed in §1.5.4).

The model has been applied to a large number of diverse languages. Breu originally developed the model as a description of European languages featuring the PFV-IPFV opposition (Slavic, Romance and Modern Greek). The model was also applied beyond this group of languages, mainly as a result of the efforts by H.-J. Sasse. He edited a volume (Sasse 1991a), which provides descriptions, modelled after Breu’s earlier work, of aspect systems of Albanian, Spanish, Japanese, Maa(sai), Mandarin and Samoan. The description of Maa was later expanded into a book-length analysis (König 1993), supervised by Sasse. Sasse himself contributed a study on aspect in Cayuga (Iroquoian) in Sasse (1997). Bickel on his part produced a book-length study of aspect in Belhare (Sino-Tibetan) in Bickel (1996), and a shorter article, also on Belhare (Bickel 2000). Breu rarely directly addressed these crosslinguistic applications and resulting findings.¹⁹⁸ He also edited a volume (Breu 2000) with contributions dealing with a variety of languages. Breu’s model was also utilized in a number of descriptions of the aspect systems of Bantu languages.¹⁹⁹

Breu’s model was designed to deal with PFV-IPFV languages. However, its application to the non-PFV-IPFV aspect systems of languages such as Japanese and Cayuga demonstrates its wide crosslinguistic applicability.

for the [τφ] class of verbs in some models (including here).

¹⁹⁸ Breu (1996: 64–70) is one notable exception.

¹⁹⁹ See pp. 5–7 of the Appendix in Crane & Persohn (2019) for an overview.

3.2. Sergei Tatevosov

After discussing Breu's and related models in the previous section, I now turn to the approach, even more central to this study, developed by Sergei Tatevosov. Note that, as with Breu's approach, aspects of Tatevosov's approach have already been discussed in the previous chapters. Many of Tatevosov's ideas are incorporated in the model developed here in Chapter 4.

Breu's and Tatevosov's approaches are alike with respect to their fundamental assumptions: bidimensionality and the central position of grammatical aspect (Tatevosov 2002a: 318). There is a superficial difference regarding the languages dealt with by the theories. Breu's model, as explained in the previous section, was designed to deal with European languages (above all, Romance and Slavic), whereas Tatevosov built his model to deal with Eurasian languages of different genetic affiliations (see below). Nevertheless, both theories deal with aspect systems of the same type – languages with the canonical PFV-IPFV system.

Tatevosov has been developing his approach to actionality in numerous publications over the last 20 years: from an earlier statement of the model in Tatevosov (2002a), to the two recent comprehensive accounts of actionality (Tatevosov 2015; Tatevosov 2016a), based on his habilitation thesis. Over the years, his approach has been integrating elements from formal semantics. However, the ideas about aspect-actionality interactions have seen little change and precisely these are the focus of this section.

Unlike most other authors working within the nonformal, bidimensional family of approaches, Tatevosov is interested in “wider theoretical parallels” (Tatevosov 2002a: 392) (Sasse 2002 is another exception).

Tatevosov's approach is designed with crosslinguistic comparison in mind, which makes it one of the very few fully typologically oriented theories of actionality. Unlike Breu's approach, it contains an explicit formulation of the criteria which should allow for crosslinguistic comparability (see below) and explicitly describes the methodology of research. Equally important is the fact that he has tested his model on a diverse set of Eurasian languages, including Russian, Mari (Uralic), Bagvalal (Nakh-Dagestanian), three Turkic languages – Karachay-Balkar, Tatar and Tuvan (more recently, his work has focused on Tundra Nenets). What is more, his framework has been used by other Russian scholars in the descriptions of a variety of languages, including Adyghe (Arkadiev 2009; Arkad'ev 2009), Lithuanian (Arkadiev

2011), Tundra Nenets (Khanina 2008), Nanai (Oskolskaya 2017) and in a number of publications by A. Shluinsky (e.g. Šluinskij 2008). It is precisely the crosslinguistic applicability of Tatevosov’s model that makes it so relevant for the investigation here.

The overview here is based on Tatevosov (2002a) and all references are to that work, unless otherwise noted. A book-length exposition of the approach is Tatevosov (2016a). A brief but informative overview in English is given in Arkadiev (2009: 58–60).

As said, Tatevosov’s model is a typical bidimensional one. It is built around the interaction of two crosslinguistic (universal) aspect grams (perfective/PFV and imperfective/IPFV)²⁰⁰ and five universal actional meanings. Interactions between the two phenomena allows one to establish the list of actional classes in any given language, provided that it has grammatical aspect. The presumed universality of the two components allows for a comparison of actional classes across languages.

Tatevosov posits five universal meanings (pp. 329–338, cf. 2016a: 42–96), which are listed in Table 9, together with the closest Vendlerian equivalent.²⁰¹ A comparison with elements of the Vendlerian classification is taken up later in this section.

Actional meaning	Symbol	Correspondence in Vendler
state	S	state class
process	P	activity class
entry into a state	ES	feature of telicity / achievement class
entry into a process	EP	feature of telicity / achievement class
multiplicative process	M	n/a (a subtype of the activity class)

Table 9. Universal actional meanings in Tatevosov’s model.

In Tatevosov’s system, each actional class can be decomposed into these five actional meaning. Tatevosov’s list of features is very similar to the list used here. I compare the two in §4.3.²⁰² These actional meanings are considered crosslinguistically relevant by Tatevosov (“universal”) and are taken as primitives (p. 334). As Arkadiev (2009: 58fn2) puts it, „[t]his set (...) is not

²⁰⁰ The conception of PFV and IPFV as crosslinguistic grams is adopted from Dahl’s approach (see §5.1).

²⁰¹ The reason why some of Tatevosov’s actional meanings correspond to Vendler’s classes and others to Vendler’s feature is clarified in §4.2.1.

²⁰² Cf. also Breu’s “simple actional classes” in the previous section.

wholly aprioristic: the meanings which are assumed to belong to it have proved to be necessary for the description of actionality in several languages.”²⁰³ The procedure employed to establish actional classes in individual languages will now be illustrated.

The aspect grams PFV and IPFV are each associated with certain actional meanings. Verbs differ with respect to which actional meanings are available to the aspect grams. The meanings available to each verb are grouped into two sets (one for the PFV, the other for the IPFV). The two sets form an ordered pair which constitutes the actional characteristic of a verb or predicate.²⁰⁴ A set of verbs with identical actional characteristics constitute an actional class (Arkadiev 2009: 59). The method of defining actional classes via aspect-based actional characteristics is very similar to Breu’s notion of the aspect-sensitive class.

As an illustration of the author’s approach, consider a subset of verb classification from Mari (Uralic), which involves the actional meanings ‘state (S)’ and ‘entry into a state (ES)’ (pp. 366–367).

Representative of the class	Actional meaning(s) in the (past) PFV	Actional meaning(s) in the (present) IPFV	Actional characteristic
<i>užaš</i> ‘see’	entry into a state (ES), state (S)	state (S)	⟨{ES, S}, S⟩
<i>purlaš</i> ‘bite’	entry into a state (ES)	state (S)	⟨ES, S⟩
<i>kijaš</i> ‘lie’	state (S)	state (S)	⟨S, S⟩

Table 10. Actional characteristics of the three Mari actional classes.

More specifically, the verb *užaš* ‘see’ in the PFV means ‘saw’ (S) and ‘caught sight’ (ES), whereas in the IPFV it means ‘sees’ (S). The verb *purlaš* ‘bite’ in the PFV means ‘bit (ES)’, whereas in the IPFV it means ‘holds in teeth’. It cannot mean ‘held in teeth (S)’ in the PFV, in which respect it differs from *užaš* ‘see’. The difference between these two verbs (and their respective classes) is captured in terms of the weak-strong class distinction, which will be explained in §4.4.3. The final example, the verb *kijaš* ‘to lie (= to be in a horizontal position)’ means ‘lay (= was in a horizontal position)’ in the PFV and ‘lies (= is in a horizontal position)’

²⁰³ The nature, inventory, and universality of actional meanings are discussed in greater detail in §4.1.

²⁰⁴ A more formalized exposition of the method is given on pp. 324–329.

in the IPFV. It differs from the former two verbs by the absence of the ES meaning – it cannot mean ‘lay down (= moved into, adopted a horizontal position)’.

An actional characteristic is, as said, a pair of sets, e.g. $\langle ES, S \rangle$ for *purlaš* ‘bite, which can also be represented by words: $\langle \text{entry into a state, state} \rangle$. The pair of sets is enclosed in angle brackets and its members are separated by a comma. The first member is always the set available to the PFV ($ES \rightarrow PFV$), and the second to the IPFV ($S \rightarrow IPFV$). Both sets (PFV and IPFV) can contain more than one element. In Table 10, the verb *užaš* ‘see’ allows for two meanings in the PFV form (state – S, and entry into a state – ES). In such cases, members of the set are enclosed in curly brackets: $\langle \{ES, S\}, S \rangle$. This can also be stated in full words: $\langle \{ \text{entry into a state, state} \}, \text{state} \rangle$.²⁰⁵ A set can also be empty. For instance, the verb *pizedalaš* ‘stick’ (not shown in Table 10) has the IPFV set empty, whereas the PFV set contains the meaning ‘entry into a state (ES)’. Accordingly, its actional characteristic is $\langle ES, - \rangle$.

The actional characteristic is an innovation with respect to the traditional formal approaches. As discussed by Tatevosov (p. 341), in the traditional approaches some of Tatevosov’s actional primitives are treated like classes on their own (cf. Table 9). In practical terms, this means that verbs such as *užaš* ‘see’ will either be analyzed as actionally hybrid, i.e. combining properties of several Vendlerian classes (in this case, states and achievements), or one class will be claimed to be basic, and the other derived (in this case, the state class is normally seen as basic). Tatevosov discusses in some detail the problems with such analyses (cf. also §1.2.4.3). More on the differences with respect to the Vendlerian approach is said below.

Actional classification for individual languages is typically established based on a sample of 100 verb meanings from different semantic classes, listed on p. 358:

In the present study of actionality in Bagwalal, Tatar, and Mari, I use a sample of 100 predicative meanings of the following thematic groups: being and possession; motion; physical processes and changes; physiological states and processes; labor and everyday life; speech and sound production; perception, emotions, and intellectual activity; phasal and modal verbs.

²⁰⁵ The rules for presentation reported here are laid out explicitly only in Tatevosov (2016a: 518).

He further notes that “[a]lthough no formal sampling procedure has been adopted, I believe that 100 items cover the basic verbal lexicon, and no actional types will remain unrecognized” (ibid.).

As already pointed out, Tatevosov’s approach is specifically built to facilitate crosslinguistic comparison. The crucial element is the universality of actional primitives (S, P, ES, EP, M) and the universality of aspect grams (PFV and IPFV). This allows for a comparison of aspect-sensitive classes (as defined above) across languages. For instance, the class ⟨S, S⟩ in one language can be compared to the class ⟨S, S⟩ in another language.

Tatevosov’s method of actional description resulted in disparate inventories of classes for each language he investigated (e.g. 19 in Mari, 11 in Bagvalal, 15 in Tatar and 9 in Russian). This led Tatevosov to differentiate between the classes that can be viewed as language-specific and those that are crosslinguistically relevant. Crosslinguistically relevant are the classes that consistently recur in one language after another (Arkadiev 2009: 59). For these, he introduces the term *crosslinguistic actional types* (CLATs), in parallel to the term *crosslinguistic gram types* of Bybee and Dahl (see §5.1).

In turn, this shows that “crosslinguistic actional types should be viewed as a generalization over the actional systems of individual languages, and not as semantic primitives” (p. 324; cf. 326). There are ten provisionally established CLATs, which are given in Table 11 (p. 376, cf. Arkadiev 2009: 60).

Actional class	Actional characteristic	Vendlerian classes
Stative	⟨S, S⟩	states
Atelic/Processual	⟨P, P⟩	activities
Strong Telic	⟨P, ES⟩	accomplishments
Weak Telic	⟨P, {ES, P}⟩	accomplishments?
Punctual	⟨−, ES⟩	achievements
Strong Inceptive-Stative	⟨S, ES⟩	n/a
Weak Inceptive-Stative	⟨S, {ES, S}⟩	n/a
Strong Ingressive-Processual	⟨P, EP⟩	n/a
Weak Ingressive-Processual	⟨P, {EP, P}⟩	n/a
Strong Multiplicative	⟨M, Q⟩	n/a
Weak Multiplicative	⟨M, {Q, M}⟩	n/a

Table 11. The ten crosslinguistic actional classes established by Tatevosov (2002a).

The last column in Table 11 matches the CLATs with their closest Vendlerian equivalents. There are many more CLATs than Vendlerian classes, which clearly demonstrates that the Vendlerian classification is insufficient and cannot capture the existing crosslinguistic variation.²⁰⁶

The procedure just described is inherently non-aprioristic and inductive²⁰⁷ (p. 324; cf. also Arkadiev 2009: 59). One of the most important consequences of Tatevosov's approach is that, under his approach, classes are **expected** to be subject to variation. Moreover, this also entails that the behavior of predicates of the same or comparable meaning in different languages is subject to variation as well (§4.1).

Another innovation of the approach just illustrated, as pointed out by Plungjan (Plungjan 2011a: 119), is in that Tatevosov, unlike most other researchers, focuses mainly on establishing the actional character on the level of the lexical entry (lexeme).²⁰⁸ By contrast, most approaches to actionality, including Vendler's, are based on determining the actional character of a **word-form** of the predicate occurring in a context, and (more often than not implicitly) this actional character is interpreted as the actional class of the predicate. On the other hand, as we have seen in the example from Mari, Tatevosov's approach integrates the actional meaning of multiple grammatical forms (specifically PFV and IPFV) of the same predicate in a single characterization, which is then interpreted as the actional class of that predicate. In other words, the actional class of the predicates is defined not on the level of the predicate in context, but rather as a sum of actional meanings available to the predicate in various contexts. Consequently, actional classes in Tatevosov approach are of a different order than Vendlerian classes. What is more, there is no "basic" form, upon which the actional class would be established, as is the case in many formal approaches to actionality in English, where the actional character of the Past Simple form is seen as basic, and the actional character of the predicate in Progressive is seen as derived

²⁰⁶ Some of the non-Vendlerian classes were known before Tatevosov. For instance, the Inceptive-Stative class is posited in Johanson's (§3.3.2) and Breu's models (Breu's inceptively static or ISTA class – see the previous section). On the other hand, the Ingressive-Processual and Multiplicative class did not figure in actional classifications before Tatevosov. Recall that in Breu's model, the Ingressive-Processual class is not allowed.

²⁰⁷ See §1.6 for these notions.

²⁰⁸ This is very similar to Breu's approach (see the previous section). However, Tatevosov, unlike Breu, does not distinguish explicitly between the lexical entry and individual meanings of that lexical entry. See §1.2.4.1 for the importance of the distinction.

(cf. §1.2.4.3). Based on these characteristics, Plungjan distinguishes Tatevosov's approach from the other (traditional) approaches, and calls it an actional characterization of predicates, as opposed to the traditional approach, which is primarily concerned with the actional properties of particular word-forms in their contextual use. Here, the traditional approach to classification is called **context-based** and the approach as typified by Tatevosov **sense-based**; the distinction is also mentioned in §4.2.1.

Some elements of Tatevosov's approach are open to criticism. First, Tatevosov uses only the PFV and IPFV grams for his classification and leaves aside other aspect grams that can be found in the languages he uses as a basis for his classification. This is a potential issue with the languages of his sample, because they have rich paradigms of auxiliary verb constructions (see pp. 358–362 for samples of paradigms). Arguments for this practice are however found in the fact that only the PFV and IPFV are manifestations of universal aspect gram-types (pp. 342–343) (cf. also §1.3 and §5.1). This is crucial because it allows for crosslinguistic comparison²⁰⁹ since one cannot compare language-specific actional classes if they are built upon aspect grams which are language specific (cf. §1.6.3). I examine this question further in §4.2.2.

Furthermore, Tatevosov does not consider other kinds of aspect systems. This appears to stem from the belief that aspect is to be equated with the PFV-IPFV opposition (cf. Arkadiev 2009: 57). As noted in §1.3, the PFV-IPFV system may be the most common kind of aspect, but it is certainly not the only one. Chapter 5 is devoted to the examination of this issue. Both issues are also evident in Breu's model (see the previous section), as well as in C. Smith's approach (§3.3.1) and L. Johanson's (§3.3.2).

A final point of criticism concerns the lack of discussion about the identification of actional primitives in individual languages. There is a general discussion on the state of knowledge about each of the primitives (traditional tests, semantic characterization), but no discussion is devoted to language-specific tests, methods of elicitation and related issues (cf. §6.1.3).

²⁰⁹ Note that this opens the possibility of including PROG into aspect classification (cf. pp. 343–345).

3.3. Other approaches

3.3.1. Carlotta Smith

The theory of aspectuality put forward by Carlotta Smith is reviewed here based on the 1997 edition of her book *The Parameter of Aspect* (the first edition was published in 1991), and the review by H. J. Sasse (Sasse 2002: 253–259). All quotes and citations come from that book, unless otherwise noted. Other influential publication by the same author include the paper laying out an early version of her theory of aspectual choice (Smith 1983), the paper on the ontology of events (Smith 1999), as well as an influential analysis of the Navajo verb system (Smith 1996). Smith’s 1997 book is one of the most comprehensive contributions to the study of aspect-actionality interactions, both in theoretical and empirical sense. Sasse calls it “monumental” (2002: 253).

The basic orientation of the book is the generative-parametric approach. A major goal of her inquiry is to develop an adequate theory of aspect which is “general enough to account for the similarities, and yet has sufficient precision for particular systems and variations” (p. xiv, p. 1).²¹⁰ The formal aspects of Smith’s theory are couched in the terms of Discourse Representation Theory.²¹¹ As in other formal frameworks, “aspect” is a cover term that includes both actionality and grammatical aspect. However, Smith consistently distinguishes between the two phenomena within this domain – she coined the terms **situation aspect** for actionality, and **viewpoint aspect** for aspect (pp. xiii–xiv). Smith’s terms are widely used. The types of viewpoint aspect (perfective, imperfective and neutral) are treated as categories of Universal Grammar, and thus allow for parametric variation (p. 60). Language-specific viewpoint aspects are “instances” of the general (universal) category. For this and other reasons, viewpoint aspect types fit only imperfectly into the conception of grammatical aspect adopted in this work.

Even though Smith adopts generative ideas about parametric variation, her model is built around a number of premises originating in rather different traditions. These include concepts of markedness (pp. 8–11), which combine insights of the Prague school with insights about categorization taken from psychology, as well as elements of prototype theory, developed by

²¹⁰ This goal is not unlike the goals of this study, as stated in §1.1 and §1.8.

²¹¹ The influential theory of meaning developed by Hans Kamp in the early 1980s as an alternative to Montague Semantics and its descendants (Partee 1996: 33). See Sasse (2002: 229–230) and Smith (1997: chap. 7) for a basic introduction.

E. Rosch (pp. 11–12). These are incorporated into a model of basic and derived actional meanings (see §1.2.4.3). Smith’s model makes extensive use of the idea of “aspectual choice,” which incorporates the ideas about the subjective nature of grammatical aspect²¹² and extends it to actionality (pp. 6–8, p. 15n2).

Smith’s approach is a true bidimensional one. Grammatical aspect and actionality are distinguished terminologically and notionally. They provide two independent semantic contributions and are stated in separate sets of terms. Smith posits three viewpoints (perfective, imperfective and neutral) and five situation types (states, activities, accomplishments, achievements and semelfactives). The aspectual²¹³ meaning of a sentence is built up in a composite manner from two consistently distinguished components, viz. aspect and actionality (p. 1). Hence the designation “composite theories” for this kind of bidimensional approach used in §1.5.1. Aspectual meaning is in effect a property of sentences (p. 4). The actional contribution to the composite aspectual meaning of the sentence originates in “verb constellations” and can be further enriched by adverbials (p. 2, p. 4). It is considered essential that “viewpoint must be stated independently.”

The list of situation types employed by Smith is the standard Vendlerian one, with the exception of semelfactives, for which see §4.3 and §4.3.3. Situation types are defined and described in Chapters 2 and 3 in the book by way of well-known diagnostic tests.

While Smith’s views of actionality are rather conventional, Smith’s conception of the viewpoint aspect merits some further discussion. There are three viewpoint types, viz. perfective, imperfective and neutral, all of which assumed to be universal. It is explicitly stated (p. 62) that the conception of perfective and imperfective viewpoint is inherited from Comrie (1976) and Dahl (1985). This is evident from the definitions of these two viewpoints:

Sentences with a perfective viewpoint present a situation as a whole. The span of the perfective includes the initial and final endpoints of the situation: it is closed informationally. (p. 66)

Imperfective viewpoints present part of a situation, with no information about its endpoints. Thus imperfectives are open informationally. (p. 73)

²¹² This idea is criticized in §1.3.

²¹³ Aspectual in the sense of ‘relating to *aspectuality*.’

More extensive characterizations are provided on pp. 66–77.

Following the same tradition, Smith assumes that “[v]iewpoint aspect is expressed by a grammatical morpheme associated with the main verb of a sentence” (p. 66). She also uses interactional meanings of viewpoints as their definition, which is typical of bidimensional approaches, as discussed in §1.5.3 (cf. also §1.3.5).

Still, there are some important differences Smith’s approach and other bidimensional approaches, which can be attributed to the parametric understanding of viewpoint aspect types. One relevant difference involves a lack of distinction between the PFV-IPFV and PROG-NONPROG systems. The English PROG and NONPROG are considered instances of two universal viewpoints (imperfective and perfective, respectively).²¹⁴ The English NONPROG is taken to be a non-canonical perfective, since it can be combined with statives (p. 69).²¹⁵ This is in keeping with Smith’s parametrical generative approach, which assumes that “perfectives vary considerably across languages” (p. 72).²¹⁶ On the other hand, it is also in direct contradiction with her definition of the perfective viewpoint given above because, when used with statives, the English “perfective” does not present a situation as a whole nor is it “closed informationally” (cf. Sasse 2002: 258 for a similar remark).

Another major element of her approach is the introduction of a neutral viewpoint, which “extends the range of the theory to languages without grammaticized viewpoints” (p. 62), as well as to the aspect-neutral tenses in languages that otherwise have aspect (e.g. the future tense in French).²¹⁷ It is defined as follows: “[n]eutral viewpoints include the initial point and at least

²¹⁴ I.e. there is a taxonomic relationship between the two (cf. §1.6.1 and §5.1).

²¹⁵ Despite the fact that the English “perfective” is unlike many other instances of the perfective viewpoint, Smith in the course of her book often presents it as a default case and statives are repeatedly characterized as having “the perfective viewpoint.” This is reflective of the English bias typically found in formal literature (§2.2.4.1).

²¹⁶ This also leads to some very specific assumptions, like the one that the perfect is an instance of the perfective viewpoint (p. 71–72).

²¹⁷ As is the case in many languages, in French the PFV-IPFV distinction is available only with past time reference.

one stage of a situation” (p. 62). Empirical and theoretical reasons for positing the neutral viewpoint are given on pp. 77–81.²¹⁸

Regardless of the specifics of semantics of the three viewpoints, it is clear that the interaction between the two components, viewpoint and situation aspect, is envisaged in a manner parallel to other bidimensional approaches.

In her work, Smith expresses explicit interest in crosslinguistic variation. For instance, in the 1997 book, her model is used to analyze aspect-actionality interactions in a variety of languages, viz. English, French, Mandarin Chinese, Russian and Navajo. Her analysis of Navajo is further developed in another paper (Smith 1996). Smith’s approach has also been adopted by other authors, for instance by Shirai (2000) for Japanese and Lai (2009) for Iquito (Zaparoan, Peru; iqu).

3.3.2. Lars Johanson

This overview of the approach to aspect, actionality and their interactions developed by Lars Johanson relies on Johanson (2000). All quotes and citations come from that work, unless otherwise noted. That publication is the most recent and the most comprehensive account of his framework in English. It was initially conceived from a model of description of aspect in Turkish and first presented in Johanson (1971: 194–223). In that sense, Johanson’s approach is in certain points shaped by the structure of Turkish and its applications were mostly confined to Turkic languages in numerous publications by Johanson²¹⁹ and his students (e.g. Buder 1989). In the 2000 paper, the model is applied to a wide range of languages considered European “in a broad geographical sense” (pp. 27–28).

Even though Sasse (2002: 225) classifies Johanson’s model as an instance of selection theory of bidimensionality (see §1.5.1), his approach also includes certain traits more typical of composite theories of bidimensionality. Most importantly, Johanson unequivocally adopts the position that aspect and actional categories “do not represent semantic distinctions of the same kind” (p. 28), which is characteristic of composite theories (cf. Smith’s approach in the previous section). According to him, aspect and actionality “tend to be intertwined and closely allied” but separate and logically independent (p. 30). As a consequence, no semantic domain of

²¹⁸ A critical assessment is provided by Tenny (1993: 488) and Sasse (2002: 254).

²¹⁹ The full list of references is available at <http://www.turkiclanguages.com/www/LarsJohanson.html>.

aspectuality is assumed. Note that grammatical aspect is called viewpoint (viewpoint aspect is considered to be a tautological expression, p. 28) and aspect grams are called “viewpoint operators.” Situations are called “events” and their actional content is specified in the “internal phrase structure” (p. 58), the notion which can be taken to be synonymous with lexically determined actionality.

While it is assumed that aspect categories (more precisely, viewpoint operators) operate over actional contents (p. 28), it is observed that “the[ir] main function (...) is not to select phases present of lexemes” (p. 30). Instead, the function of viewpoint operators is to “offer different choices for envisaging and presenting events as such, for opening perspectives on them and their internal phrase structure” (ibid.). This means that Johanson adopts the traditional viewpoint definition of aspect (see §1.3); he also recognizes the discourse role of viewpoint operators (pp. 42–44). Furthermore, viewpoint operators are denied a role in actional shifts (see §1.5.4), since they “cannot (...) change the actional content they are chosen to operate on” (p. 31), and since “[t]he actional content is *left intact* and remains identical under different aspects” (ibid., emphasis mine).

Since aspect and actionality are logically independent, they also involve distinct sets of primitives. Let us now briefly discuss these two sets of primitives.

Johanson’s actional classification is outlined on pp. 58–66. The object of classification is stated less clearly than in Breu’s model (where it is the meaning of the verb). The actional character is said to classify “linguistic units expressing actions, rather than actions as such” (p. 59). Units of classification are called “actional phrases, consisting minimally of a verbal lexeme” (ibid.). Johanson is explicit in saying that objects of classification are not verbs (ibid.).

Johanson’s system makes use of a similar set of primitives as in the Vendlerian classification. These include transformation [$\pm t$], which divides situations into transformative [$+t$] and nontransformative [$-t$]; duration [$\pm mom$], which divides situations into momentaneous [$+mom$] and nonmomentaneous [$-mom$]; and dynamicity [$\pm dyn$], which divides situations into dynamic [$+dyn$] and static [$-dyn$]. An additional dimension concerns the distinction between initial transformation [ti], where transformation indicates the starting point of the situation, and final transformation [tf], where transformation indicates the natural endpoint of the situation. This means that the feature transformation [t] is conceived more broadly than telicity, which

typically refers only to final transformation. See §4.3.2 for a similar point in my system of classification.

A list of actional classes is comparable to the one used in Breu’s approach (see §3.1 above and Table 7). Correspondences between the two sets together with a comparison with Vendlerian classes are all given in Table 12 below.

Breu	Vendler	Johanson
TSTA (totally static)	state	non-dynamic nontransformative [-t, -dyn]
ISTA (inceptively static)	state + achievement	initiotransformative [ti]
ACTI (activity)	activity	dynamic nontransformative [-t, +dyn]
GTER (gradually terminative)	accomplishment achievement	nonmomentaneous finittransformative [+tf, -mom]
TTER (totally terminative)	achievement	momentaneous finittransformative [+tf, +mom]

Table 12. Correspondences between actional classes in the models by Breu and Sasse, Vendler, and Johanson (adapted from Sasse 1997: 63 and Johanson 2000: 58–66).

The idiosyncrasy of Johanson’s model lies largely within its model of grammatical aspect. Aspect distinctions are built around three dimensions (p. 29): intraterminality (“envisaging the event within its limits”), postterminality (“envisaging the event after the transgression of its relevant limit”) and adterminality (“envisaging the event in the attainment of its relevant limit”). These are treated as three different semantic features which can have positive or negative values: intraterminality vs. nonintraterminality [\pm INTRA], postterminality vs. nonpostterminality [\pm POST], and adterminality vs. nonadterminality [\pm AD]. The features can also be neutralized, and then they are marked with the sign $^{\circ}$: +INTRA $^{\circ}$, +POST $^{\circ}$ (p. 33). The three pairs of features are however “not conceived of as freely combinable minimal semantic building blocks” (p. 33), as there are important constraints on their combinability, which are empirically determined.

There is a certain overlap with traditional aspect grams (pp. 29, 32–33, 44–45 and in much detail 169ff.). The feature [\pm INTRA] corresponds to the traditional PFV-IPFV and PROG-NONPROG opposition, [\pm POST] to the distinction between perfect and nonperfect verb forms,

whereas [\pm AD] is specifically designed to capture the perfective-imperfective opposition as realized in the aspect systems of Slavic languages.

Interactions between the two sets of primitives are examined in some detail on pp. 145–169. They draw on a wide empirical basis of European languages and these findings will be incorporated, where relevant, into Chapter 7.

This brief overview is admittedly limited in its scope to the matters related to aspect-actionality interactions and cannot do justice to the full complexity of Johanson's model, which extends beyond interactions of aspect and actionality to the domains of interactions between aspect and tense (pp. 34–38 *et passim*) and examines the role of various less grammaticalized and/or derivational means in expression and recategorization of verb's actionality (mentioned in §1.2.4.3 and §1.5.4). The concept of focality (pp. 38–39 *et passim*) is briefly discussed in connection with the PROG gram in §5.4.2.2. Full appreciation is also made difficult by a certain number of unclear points, an overwhelming wealth of terminological neologisms, as well as by some inconsistencies in presentation.

4. Actional classification

The present chapter addresses various issues relevant for actional classification. The chapter expands on the introductory discussions about actionality (in §1.2), and its interactions with aspect (in §1.5).

The actional classification presented here specifically targets aspect languages and relies heavily on the notion of the aspect-sensitive class. Despite this basic orientation, a whole range of issues regarding actional classification is also discussed. Emphasis is placed on documenting a wide set of issues and questions that need to be addressed when approaching actionality from a non-English and crosslinguistic perspective. This is done here since exhaustive and comprehensive overviews of issues related to crosslinguistic research of actionality are lacking, and the methodology of research is still developing (cf. Arkadiev 2009: 58). Some of these questions are often discussed in the literature, whereas other are rarely mentioned explicitly.

The chapter opens with §4.1, which discusses the universality of actional distinctions and the ways of comparing actionality across languages. It builds upon the discussions in §1.6.3 and Chapter 2, and incorporates many of the ideas put forward by S. Tatevosov from §3.2. After that, §4.2 delves into questions of how to arrive at an actional classification in aspect languages. In this respect, the properties of aspect discussed in §1.3 will prove to be of importance. The role of aspect in actional classification in general is discussed, as is the role of other layers of the actional architecture of the sentence, in particular the role of traditional tests (adverbials and entailments). In §4.3 and §4.4, actional primitives as building blocks of actional classes are introduced and discussed, as well as actional classes built from these more basic elements. These two sections serve as an introduction for the crosslinguistic investigation of aspect-sensitive classes in Chapter 7.

4.1. Universality and comparison of actionality

The issue of universality of actionality relates to two separate questions. One question asks if actionality as a phenomenon is found in all natural languages. This is impossible to answer with certainty; however, since verbs are descriptions of real-world situations, they must have specific

temporal properties. It seems reasonable then to concur with Talmy, who notes that “[i]t is doubtful that any verb root can have a meaning wholly neutral to aspect”²²⁰ (2007: 108).²²¹

Another way of asking about universality implies that actionality is found in all natural languages, asking instead if the same actional features are found in all natural languages, and whether the actional systems are built up in the same way in all languages. The mainstream view is that features are universal and can be instantiated in all languages. On the other hand, the idea is disputed that these features are used in the same way in all languages to build up actional classes.

4.1.1. Linguistic and extralinguistic classification of predicates

In §1.2.2 it was argued that, for the purposes of this investigation, only linguistic realizations of actionality are of interest to us. Also, in §1.6.3, it was briefly noted that actionality is a cognitively prominent semantic domain, one which is not arbitrary because it reflects important and arguably universal elements of human experience.

In this section, more is said about actionality itself and its ontological foundations in the extralinguistic reality. Actionality as analyzed in this work is not only defined by its linguistic realizations, rather it is also defined by the distinction between linguistic knowledge (our knowledge of a language) and non-linguistic (encyclopedic, extralinguistic) knowledge (our other knowledge) (Goddard 2011: 16–17).²²² According to Klein, maintaining such a strict distinction “is of primordial importance” in investigations of temporal semantics (1994: 9).

Even though “[i]t is not entirely clear whether [actional distinctions as posited by Vendler] are of linguistic or ontological nature” (Filip 2011: 1190; cf. Boogaart 2004: 1170), for the purposes of this work I assume the position of authors like Filip that actional distinctions are “inherent in descriptions, in predicates of natural languages,” and not “in nonlinguistic things in the world” (Filip 2011: 1190).²²³

²²⁰ *Aspect* is taken to mean *actionality* here.

²²¹ Sasse’s (1991c) analysis of Samoan as a language where verbs are actionally neutral was disproved by Mosel (2000).

²²² Extralinguistic is understood here as a virtual synonym of *encyclopedic*, *ontological*, *metaphysical*, *real-world*, etc., all of which occasionally occur in my text and in quotations from other authors.

²²³ In other words, I assume “the psychological view” rather than “the realistic view” (Klein 1994: 10).

This implies that what is linguistically encoded (or *lexicalized*) through **verbs** is descriptions (“construals”) of real-world situations, rather than extralinguistic situations as such (Levin & Rappaport Hovav 2005: 19). In that regard, verbs “offer us different choices in the description of the world’s phenomena and (...) impose certain categorization schemas on the world” (Filip 2011: 1191; cf. Filip 1999: 71). In other words, “linguistic meaning proper is a *selective* description of a situation” (Klein 1994: 11; emphasis mine) and represents “an idealization” of actual (real-world) situations (Smith 1997: 6–7). Situation descriptions are thus conceived as “conceptual entities, not something that can be located in extramental reality, or be said to exist in the real world” (Dik 1989: 89; cf. Bache 1982: 70).

With respect to actionality, if extralinguistic situations are not directly lexicalized by verbs, it then follows that “[i]t is not the case that the division of verbs into classes directly reflects ontological properties of the world and therefore can be taken as the point of departure for further theorizing“ (Tatevosov 2002a: 393). Along similar lines, Holisky (1984: 129) uses “punctual” verbs as an illustration to argue that:²²⁴

an aspectually²²⁵ punctual verb is NOT defined as one that refers to a punctual event in the real world. A punctual verb, rather, is one coded in the grammar (...) for a category of punctuality. It is, of course, necessary to demonstrate that the language has such a category and, furthermore, to provide explicit, nonintuitive criteria for deciding whether a given form is punctual or not.

Still, it is not the case that there is no link between extralinguistic and linguistic knowledge; rather, they are linked indirectly. As suggested above, verbs contain descriptions of extralinguistic situations. This in turn means that actional and other properties of situation descriptions are rooted in the real-world properties of situations (cf. Filip 1999: 70; Hobbs 2011: 755–760). As such, they need not faithfully reflect the properties ascribed to the real-world situations, and these properties can be quite distinct from what those situations objectively are (Moens & Steedman 1988: 16; cf. Bache 1982: 65). This imperfect balance is summarized by Lyons (1977: 449):

It follows that the grammatical structure of languages may be partly, though not wholly, determined by semantic distinctions; and that semantic distinctions of the kind that are relevant to the definition of parts-of-speech and expression-classes

²²⁴ Cf. Klein (2009a: 61) for a similar example.

²²⁵ I.e., an *actionally* punctual verb.

may be themselves determined by ontological distinctions that are, in part at least, independent of the structure of particular languages.

By way of example, Botne remarks the following with respect to the situation of dying: “[a]lthough conceptually I have identified *five* stages of a natural DIE event, in most cases it is linguistically necessary to analyze DIE verbs only in terms of *three* general temporal phases” (Botne 2003: 237; emphasis mine). This clearly demonstrates that the verb ‘die’ and its temporal properties are related to but cannot be equated with the real-world situations it describes.²²⁶

The numerous references in this section demonstrate that the distinction between extralinguistic situations and their linguistic descriptions is widely acknowledged. Still, there is a certain degree of confusion between the two.

The main point of confusion has to do with the following. While it is true that actionality is a linguistic phenomenon and is encoded by verbs, it is not completely independent from extralinguistic factors, as noted above. Actionality, as any other linguistic property of situation description, “reflects human experience, capacities, needs, and interests, as well as the nature of the nonhuman world” (Gill 1993: 383). As for actionality specifically, the same is essentially noted by Breu (1994: 24), who maintains that the speaker’s world knowledge is reflected in situation descriptions:

Verbs can express states of affairs which correspond to the states or events in the real world as they are conceptualized by the speakers of a language. The beginning or the end of a state of affairs can be conceived of as probable or improbable on the basis of the speaker’s knowledge of the world. These probabilities are reflected in the lexical semantics of the corresponding verbs. Verb meanings, as a result, have different boundary characteristics.

This assumption seems reasonable enough – a situation description will not of course contain elements that are implausible in the extralinguistic reality or in the speaker’s world knowledge. In Lyons’ words, one needs to make “some minimal ontological assumptions: i.e. assumptions about what there is in the world” (Lyons 1977: 442). When it comes to actionality, one of the best-known instances of the role which the world knowledge plays in determining the actional character of a verb concerns the ambiguity between the accomplishment (durative) and

²²⁶ For further examples of the mismatch between linguistic and extralinguistic knowledge see, among others, Gill (1993: 372, 382 et passim), Klein (1994: 10–11), Filip (2011: 1191–1192).

achievement (punctual) interpretation of many telic verbs (see §4.4.1.2). Another interesting example, of a telic interpretation being virtually impossible when the verb has an object with cumulative reference, is discussed in §4.4.6 below.

It is an empirical question of how strong the role of non-linguistic knowledge is in determining actional classes and to what extent the “real-world plausibility” affects the way actional character is manifested in a language. For instance, the verb ‘explode’ is a description of a situation which is, according to our world knowledge, completely punctual. If the role of world knowledge were that strong, then any verb lexicalizing that particular situation description in any language should be banned from on-going (episodic) contexts as it is in English: **The bomb is exploding (right now)*. It is difficult to say if this is the case in all languages.

Another point of confusion was mentioned in §1.2.2 and also in the above quote from Holisky; it is often the case that actionality is determined by intuition, rather than by linguistic tests. This is inadmissible in my view because “determining the *Aktionsart* of a verb is not a matter of looking at the state of affairs it depicts” (Van Valin & LaPolla 1997: 106). Instead, the actional character of a verb, being part of our linguistic knowledge, should be tested by linguistic means.

Furthermore, the assumption that verbs and their actional characters reflect selective situation descriptions has important ramifications for a crosslinguistic investigation of actionality. If it is assumed that verbs as lexicalizations of situation descriptions reflect the extralinguistic properties of situations only imperfectly, in the sense that they reflect a selective carving up of our extralinguistic reality, then it is expected of verbs to reflect different subsegments of the same extralinguistic experience both within and across languages. To put it differently, verbs referring to similar or analogous extralinguistic situations can be expected (but need not) to have different actional properties within and across languages. A full discussion of the ramifications of this assumption is deferred until §4.1.2.2. Here it will suffice to cite a couple of examples.

With respect to crosslinguistic differences, it suffices to recall the behavior of the Modern Greek verb *kséro* ‘to know’, which allows only the past IPFV (*iksere* ‘(s)he knew’) but not the past PFV form (§1.5.3). Lack of a PFV form means that this verb cannot encode the entry-into-state actional meaning (‘come to know, realize’). In contrast, the verb with a comparable meaning in many Romance languages does not show the same constraint (Breu 1994: 28). Thus, the French verb *savoir* ‘to know’ has both the IPFV (*il savait* ‘he knew’) and PFV past (*il sut* ‘he knew, he

realized’), as do the cognate verbs in Italian (*sapere*) and Spanish (*saber*). Similarly, the Russian verb *prinadležat’* ‘belong’ does not have a perfective partner (Breu 1994: 28). In contrast, the Croatian verb *pripadati* with the same meaning (‘belong’) has the perfective partner *pripasti* ‘come into possession.’ Such differences are obviously to an extent arbitrary,²²⁷ but they should not be overstated. This is discussed in more detail in §4.1.2.2 below.

As for intralinguistic differences, consider the English example from Talmy (2007: 107) that involves two closely related verbs, *study* and *learn*:²²⁸

(28) We learned/*studied French in three years.

(29) We *learned/studied French for two years.

The two verbs are near synonymous in this context – they have “the same core meaning” (ibid.),²²⁹ but exhibit divergent actional properties: *learn* is telic (compatible with *in-PPs*, but not with *for-PPs*), while *study* is atelic (compatible with *for-PPs*, but not with *in-PPs*). Such divergences also reflect other semantic components – *study* is in general more associated with a greater degree of involvement in learning and consequently implies that learning takes a longer time. These properties are reflected in the atelicity of the verb.

Another example is from Russian, where there are two verbs with the meaning ‘take place’, *slučit’sja* (PFV) / *slučat’sja* (IPFV) and *prijti* (PFV) / *proishodit’* (IPFV).²³⁰ It is the latter but not the former that allows a preparatory phase with an on-going episodic interpretation. That is, *proishodit’* (IPFV) can be used in the context such as ‘it is taking place right now,’ whereas *slučat’sja* cannot.

Lastly, I leave aside the issues related to the ontological properties of actionality. In formal semantics, considerable interest has been generated around this issue (cf. also Bach 1986a; Gill 1993). A summary of questions is given by B. Partee (1996: 28):

²²⁷ Still, some authors draw hasty conclusions based on examples from individual languages. For instance, Gardenghi (2000: 115–116) claims that the verbal meaning ‘belong’ is a prototypical totally (non-inchoative) stative verb meaning, which means it cannot be used in the perfective aspect. This claim is almost exclusively based on the Russian imperfective verb *prinadležat’* ‘belong.’

²²⁸ Talmy cautions that intuitions regarding the verb *learn* are valid “for some speakers, though not for all.”

²²⁹ In Croatian, both verbs would be translated by the same verb (*učiti* ‘learn, study’) in this context.

²³⁰ This aspectual pair is suppletive.

[T]he question [is] what metaphysical assumptions, if any, are presupposed by the semantics of natural languages (individually and universally). In the domain of time, one can ask whether a tense and aspect system requires any assumptions about whether time is discrete or continuous, whether instants, intervals, or events are basic, whether the same “time line” must exist in every possible world, etc.

These and related issues will not be pursued here. Instead, the focus here will only be the well-documented linguistic consequences of actionality, as explained in §1.2.2, whereas “the task of clarifying the status of semantic, i.e., conceptual categories considered independently of their linguistic embodiment” is left to philosophers (Lazard 1999: 105).

Summing up, in this section I argued that actionality is not a property of extralinguistic situations, but rather their descriptions. Situation descriptions are what is lexicalized through verbs, and crucially, situation descriptions lexicalized in the language need not faithfully match the objective properties of situations, including actionality. As a consequence, verbs with comparable meanings both within and across languages can have diverging actional properties. Finally, these divergences need not always be arbitrary since situation descriptions are not completely independent of the real-world situations they represent (lexicalize).

4.1.2. Misconceptions about the comparison of actionality

We saw in §1.2.2 and in the previous section that the basic idea underlying any crosslinguistically oriented approach to actionality is that actional properties need to be identified by linguistic means; that is, if one wants to achieve any kind of classification in a principled way, the examination has to be based on linguistic facts, not on our world knowledge or on the ontological properties of a situation. In practice, this means that the actional character of any individual verb in any language cannot be recognized based on some perceived extralinguistic properties of the situation that is described (lexicalized) by the verb. What is more, it certainly cannot be recognized by assuming that the actional class is the same as in the metalanguage or the mother tongue of the researcher. This section critically discusses the assumption that actional classifications of verbs can be transferred from one language to another with minimum modifications.

A discussion of these matters is warranted because one frequently comes across works that erroneously make such assumptions, e.g. when the researcher takes the Vendlerian or some other current classification at face value and then simply assumes that the verbs of the languages under investigation perfectly match the perceived ontological properties of the analogous verb

in the researcher's metalanguage or mother tongue. One example that can be cited in this connection is Vallejos' grammar of Kukama-Kukamiria (2016: 194ff), where the author adopts the classification of predicates from Vendler (1957) and Chafe (1970) without qualification. The classification is then deployed to describe various verbs of the language without previously checking if there is a language-internal basis for such a classification. The classification is thus applied ontologically, and the predicates are probably classified according to the ontological properties that are inherent to the language(s) the author has knowledge of.²³¹

Furthermore, recall from Chapter 2 that literature on actionality historically leans towards English and the formal semantic framework. For instance, Dowty's actional classification, as one of the most influential ones, is explicitly framed as "classes of verbs in English (1979: 37), even though he suspects that some of the phenomena he discusses are the same "in many if not all languages" (1979: 64).²³² This suggestion is often extended into a tacit assumption that English-based concepts and even whole classifications can relatively straightforwardly be transferred into other languages, more or less without modification (cf. Bar-el 2015: 76–77).²³³

There are several claims and misconceptions that underlie the assumption about the transferability of actional classification.²³⁴ One is the claim that there is a small list of classes which should be recognized in all human languages. The second is the misconception that verbs of the same or equivalent meaning will belong to the same class, e.g. the meaning 'die' would belong to the achievement class in all languages. A final misconception is the assumption that the tests found to be valid for English should be applicable to other languages and yield the same results. The former two misconceptions will be discussed in the rest of this section, in

²³¹ An analogous fallacy would be if someone assumed that there are adjectives in the language under investigation and that *fat* is an adjective in that language based on the observation that *fat* is an adjective in English.

²³² Here Dowty specifically refers to the actional (aspectual) composition.

²³³ Many works dealing exclusively with English in fact do not feel compelled to address this issue (e.g. Rothstein 2004).

²³⁴ These misconceptions are inextricably linked with Eurocentrism, most notably in formal semantics. This was discussed in §2.2.4, where examples were cited regarding how formal semantics attempts to transfer and apply the Vendlerian classification to languages other than English. Despite being in many ways emblematic of formal semantic approaches, these misconceptions are not limited to them.

§4.1.2.1 and §4.1.2.2, whereas the third misconception will be discussed separately in §4.2.4.2 in connection with tests for actionality.

4.1.2.1. Classes are not universal

There is an assumption in some of the work on actionality that the Vendlerian aspectual classes (or some other revised classification originating in Vendler's work) are universal (Tatevosov 2002a: 322). For instance, Smith (1997: 2) explicitly states that “Universal Grammar also defines the principal situation types [i.e., actional classes, J.P.]” Furthermore, consider, for instance, Van Valin (2005: 32), who comments that “Vendler proposed this taxonomy based solely on the analysis of English verbs, and yet it has proved to be of great cross-linguistic validity,”²³⁵ or Chelliah and de Reuse (2011: 292), who endorse Vendler’s classification by observing that it “has stood the test of time.”²³⁶ Thus, in practice many scholars “take Vendler’s classification as a linguistic fact, or at least a convenient point of reference (...)” (Filip 2011: 1193) and there are numerous language-specific studies conducted on that premise, including, among others, Holisky (1984) on Georgian, Cover (2010) on Badiaranke, as well as various works within the framework of the Role and Reference Grammar (see §2.3.2).²³⁷

On the other hand, many authors voice reservations about Vendler’s classification, e.g. Filip (2011: 1193), who observes that:

(...) while Aristotelian aspectual classes are now established as generalizations over classes of predicates in the grammar of natural languages, their exact number and kind is not, and certainly Vendler’s classification, despite its prominence, cannot be taken for granted.

This observation is supported by broader crosslinguistic evidence.²³⁸ Many prominent authors who worked with a diverse set of languages discuss critically the idea of universality of actional classes (von Stechow & Matthewson 2008: 153–154; Bar-el 2015; Bach & Chao 2012). For instance, von Stechow & Matthewson (2008: 154) write that they are “skeptical of the idea that there is some universal set of Aktionsarten,”²³⁹ whereas Arkadiev notes that “actional classes

²³⁵ Cf. also the claims from Van Valin (2006: 177) cited in von Stechow & Matthewson (2008: 153–154).

²³⁶ Cf. also Dowty’s comment above.

²³⁷ For further examples see also Tatevosov (2002a: 322).

²³⁸ Including from the evidence from English (cf. Bar-el 2015: 105). Some examples are discussed in §4.2.4.1.

²³⁹ Aktionsarten is here a synonym of actional classes.

are not identical in different languages.” Instead, actional classes are assumed to be language-specific since they are established separately for each language (see §4.1.3 below).

More to the point, it is often observed that there are actional classes not found in Vendlerian classifications of English, e.g. non-culminating accomplishments (see §7.3.3) and inchoative states (see §2.2.4.1 and §7.1.4).²⁴⁰ A similar sentiment is echoed by Sasse (2002: 263), who observes that “Vendler classes do not suffice,” and who lists several additional distinctions that can be recognized in addition to Vendler’s.²⁴¹ In a similar vein, Boogaart (2004: 1170) expects that “other, or more, Aktionsart distinctions than the ones discussed thus far may be needed to account for other data or other languages.”

Given the crosslinguistic evidence, a consensus appears to have emerged in recent years that, in the words of Matthewson, “the semantics we traditionally attribute to ‘accomplishments’ and to ‘states’ are not primitives of the grammar” (2011: 281). In that respect, the crosslinguistically-minded literature is in general agreement that, instead of holistic classes such as ‘accomplishments’ and ‘states,’ one should posit as universals smaller semantic elements that constitute these classes. The main idea is, in the words of von Stechow & Matthewson (2008: 154), that “what is universal may not be the classes themselves, but perhaps the smaller building blocks from which event structures are composed.”²⁴² The same position is adopted by S. Tatevosov, who posits universal elementary actional meanings (see §3.2). It is also echoed in Sasse’s call to “define a number of conceptual primitives” (2002: 263).

In this chapter, I am interested in exactly these “building blocks,” which are part of a universal set of actional properties. Here they are referred to indiscriminately as *actional (semantic) primitives*, *actional meanings* and *actional building blocks* (see also §1.7).

²⁴⁰ Both classes can in fact be recognized in English, the former more unequivocally than the latter.

²⁴¹ Cf. also his claim from another paper: “[a]ll languages (...) probably operate with additional distinctions at the syntactic, phraseological, or discourse level” (Sasse 1991c: 37).

²⁴² This position does not preclude the possibility that at least some actional classes are universally attested; instead, it assumes that variation regarding actional classes is better understood if we assume another analytical level, which contains actional primitives that constitute actional classes. In the quote from von Stechow & Matthewson *universal* is best taken to mean ‘an element of Universal Grammar that cannot be further decomposed,’ rather than ‘universally instantiated.’ This meaning is also at display in Matthewson’s quote earlier in the paragraph.

Focus on actional primitives is warranted for various reasons. First, it is noted in the literature that features are more useful than classes in explaining linguistic facts (Boogaart 2004: 1170). More importantly, by resorting to the notion of actional primitives, various aspects of crosslinguistic variation in the domain of actionality can be explained. First and foremost, actional primitives are “a set of semantic distinctions from which languages may choose” (Bach & Chao 2012: 2542). This means that crosslinguistic variation lies in the fact that “[l]anguages can differ as to how distinctions that can be constructed from this basic metaphysical ‘stuff’ enter into their lexical and grammatical systems” (Bach 2005: 170), and that “the details of just how this basic stuff is exploited varies a lot from language to language, in semantics as in phonology” (ibid.: 177).²⁴³

This implies that the actional primitives from the universal set are not necessarily featured in all languages, something acknowledged by one of the most prominent authorities in the field, Carlotta Smith (1997: xvi), who noted that “[t]he aspectual distinctions explored in this book appear in the grammars of many strikingly different languages, although not all distinctions are honored in all languages,” as well as by Boogaart (2004: 1170), who remarks that “[n]ot all Aktionsart features used in the analysis of one language necessarily have grammatical ramifications in every other language.” Thus, if “not all distinctions are honored in all languages,” some crosslinguistic variation is naturally expected. This explains the fact that one comes across actional classes which are not attested in Vendlerian classifications of English.

The theoretical status of actional primitives also deserves some attention. So far, I have mentioned several times that actional primitives are *universal*.²⁴⁴ This statement can be understood in several ways. First, actional primitives constitute a limited set of actional meanings that occurs over and over in a variety of languages. This conception is adopted from the work of Tatesosov (see §3.2) (cf. Haspelmath 1997a: 10). This view is also advanced by Matthewson (2011: 280):

²⁴³ A distinct but related idea is put forward by Botne (2003), who, in his discussion of the semantics of the verb ‘die,’ differentiates between the potential underlying temporal components of ‘die’ verbs, which are the same for all languages (i.e. universal) and the language-specific selection of specific components, which allows individual languages to “pick” the components to lexicalize.

²⁴⁴ The existence of universals of meaning is controversial (cf. Goddard 2011: 13–14). However, in what follows I assume their existence without further discussion.

Restrictions on variation are known in the formal literature as ‘parameters’, but the relation between parameters and universals is so tight that restricted sets of options from which languages choose can be classified as a type of universal.

Actional primitives can also be considered universal in the sense that they are based on “universal-semantic concepts” which presumably reflect the prominent properties of extralinguistic situations in the language, as already explained in §1.6.3.²⁴⁵ This makes it possible to recast actional primitives as comparative concepts, which in the broadest sense can relate “to the world at large” (Lazard 2005: 8; cf. Haspelmath 2010: 680).

Actional meanings included in the study are thus those that are recurrent in the languages of the world, i.e. they have been isolated as linguistically and grammatically relevant in a significant number of languages. They are introduced and discussed at length in §4.3.

4.1.2.2. Variation in actional class membership

It is often assumed that equivalent verbs in different languages should belong to the same class, that is, that they should behave in the same manner with respect to tests in cases where English tests are applicable. This is nowadays regularly recognized as false, and it is instead assumed that it does not suffice to equate the predicates of a given language with their nearest English translational equivalents (Ebert 1995: 186; Tatevosov 2002: 338; cf. also Wilhelm 2007: 90). Tatevosov summarizes the consensus in the following manner: “[o]ne of the most evident crosslinguistic observations is that it is not predictable what actional classes will be present in a given language and how verbs are distributed over these classes” (2002a: 388).

This follows from the assumption stated in the previous subsection that languages, so to speak, have the freedom to pick elements from the restricted set of actional primitives and arrange them in a language-specific manner. This leads not only to language-specific actional classes, but also to the language-specific membership of these classes. Let us illustrate this with some examples.²⁴⁶

One of the best-known examples is the verb ‘die’ discussed in Botne (2003).²⁴⁷ Despite the criticism levelled at Botne’s method in §1.6.3, it can be adduced from some of the examples

²⁴⁵ This is in keeping with the assumption discussed in §4.1.1 that linguistic phenomena often have an ontological (extralinguistic) basis.

²⁴⁶ Note also the examples with the verbs ‘know’ and ‘belong’ in §4.1.1.

²⁴⁷ A brief discussion of the crosslinguistic differences among different ‘die’ verbs is also found in Van Valin &

cited in his article that the linguistic properties of the verb meaning ‘die’ do indeed differ across languages. The clearest example of the difference is the compatibility with PROG. Whereas in some languages the verb ‘die’ is acceptable with PROG, as in English in (30), in others it is not, as in Assiniboine in (31).²⁴⁸

(30) The old man is dying. (Botne 2003: 240)

(31) *t’a-hã [die-PROG] (Botne 2003: 270)

Another example concerns the verbs roughly corresponding to the English verb ‘lie (be in a horizontal position)’ in Bagvalal (*helli*) and Mari (*vozaš*), cited in Tatevosov (2002a: 388). The range of actional meanings available to the Bagvalal verb *helli* is illustrated in (32).

(32) Bagvalal *helli*

a. past PFV (‘Preterite’)

maHammad helli

Mohammed lie(_down).PFV.PST

‘Mohammed lay down / was lying (for some time).’

b. present IPFV (‘Present’)

maHammad helli-rã-x ek’ã

Mohammed lie(_down)-IPFV-CONV AUX.PRS

‘Mohammed is lying down / is lying.’

In (32)a, the past PFV refers to the natural endpoint or transition (that is, the moment of the transition into the horizontal position), as well as to the resultant state with delimitative (‘for some time’) meaning. In (32)b, the present IPFV refers both to the process preceding the transition (‘is lying down’) as well as the resultant state (‘is lying’). Accordingly, this verb belongs to the class of two-phase verbs (§4.4.2.3, §7.4).

In contrast, the set of actional meanings available to the Mari verb of similar meaning *vozaš* is less rich. They are illustrated in (33).²⁴⁹

LaPolla (1997: 106).

²⁴⁸ Assiniboine or Nakota [asb] is a Siouan language spoken in the USA (Montana) and Canada (Saskatchewan). The meaning of PROG *-hã* was doublechecked in Cumberland’s grammar (Cumberland 2005: 313–314), where it is written as *-hq*.

²⁴⁹ Tatevosov’s original examples contained transliteration mistakes. I corrected them by consulting a grammar of Mari (Riese et al. 2019) and the Paradigm Generator available at The Mari Web Project at the University of Vienna (www.mari-language.com). I am grateful to Edyta Jurkiewicz-Rohrbacher, who pointed out these errors to me. I have kept Tatevosov’s transliteration of the Cyrillic ⟨в⟩ as ⟨v⟩ even though its phonetic value more closely resembles /β/.

- (33) Mari *vozaš*
- a. past PFV ('Preterite')²⁵⁰
jivan voz-ən.
 Ivan lie_down-PFV.PST
 'Ivan lay down / *was lying.'
- b. present IPFV ('Present')
jivan voz-eš.
 Ivan lie_down-IPFV
 'Ivan is lying down / *is lying.'

In (33)a, it can be seen that the Mari verb *vozaš*, like the Bagvalal *helli*, can refer in the past PFV to the transition, but unlike its Bagvalal counterpart, it cannot refer to the resultant state with delimitative ('for some time') meaning. In (33)b, the present IPFV of the same verb is limited to denoting the process preceding the transition ('is lying down') and cannot refer to the resultant state ('is lying'). It thus belongs to the strong subtype of the accomplishment class (see §7.3.3).

Differences in encoded actional meanings between Bagvalal *helli* and Mari *vozaš* are summarized in Table 13. The meanings not available to Mari *vozaš* are expressed by a separate verb *kijaš* (Tatevosov 2002a: 366).²⁵¹ The two verbs pattern in their meanings with the English *lie down* (*vozaš*) and *lie* (*kijaš*), respectively.

Aspect gram	Past PFV ('Preterite')		Present IPFV ('Present')	
	transition	resultant state	preparatory phase	resultant state
Bagvalal <i>helli</i>	yes	yes	yes	yes
Mari <i>vozaš</i>	yes	no	yes	no

Table 13. The range of meanings of Bagvalal *helli* and Mari *vozaš*.

Further interesting examples are found in Breu (1994: 34), who discusses the divergent behavior of verbs meaning 'arrive' and 'take place' in Russian and Italian, as well as in Crane & Persohn (2019: 309–310), who compare the verbs translated into English as 'get angry' in Spanish and Squamish²⁵² (Salish, Canada; *squ*).

²⁵⁰ The Preterite is called "Simple Past Tense II" in the grammar of Mari by Riese et al. (2019).

²⁵¹ This verb was also mentioned in §3.2. I doublechecked the meanings of both Mari verbs in the Mari dictionary compiled at The Mari Web Project at the University of Vienna (www.mari-language.com).

²⁵² In recent times, it is often referred to by its First Nations name *Skwxwú7mesh*.

Interestingly, parallels regarding differences in membership can be drawn between actionality and other lexicogrammatic features, such as agentivity and control (see §4.3.5 below). For instance, when discussing the class membership with respect to split intransitivity, Mithun notes that “the classifications of verbs are not equivalent crosslinguistically: a verb may pattern one way in one language, but its translation may pattern the opposite way in the next” (Mithun 1991: 511).

Crosslinguistic variation is made possible for at least two reasons. The first one has to do with the differences between linguistic and real-world classifications, and languages partition real-world scenarios in different ways (see §4.1.1 above). The other reason for differences in actional classifications can be traced back to historical contingencies and internal linguistic developments, which can lead to diverging lexicalization patterns even between closely related languages. Sasse (1997: 31–33) cites examples of etymons that have different actional properties (telicity vs. atelicity) in Cayuga and closely related Seneca, for which language-internal explanations can be provided, such as change of meaning, including loss and development of polysemy. Needless to say, in many cases the explanations are not available, either in Cayuga or Seneca.

That being said, it is safe to assume as a starting point that there will be variation in actional class membership. Still, the crosslinguistic differences in actional classification should not be overstated since actionality is certainly not completely arbitrary or unconstrained. One of the most important factors limiting possible variation in terms of lexicalization patterns is the fact that situation descriptions lexicalized as verbs are rooted in the real-world properties of situations, as noted in §4.1.1 above.

The existence of differences in actional classification of verbs in individual languages, as well as the fact that these differences are constrained by certain principles, make a typology of actionality possible because they allow us to observe constraints on diversity.

Constraints on crosslinguistic variation in actional membership are still underexplored. Breu (1994: 23, also 34–35) suggests that actional classes (of the crosslinguistic type, presumably) have central and peripheral members, i.e. “[t]he grouping of verbs into aspect sensitive semantic classes is only stable in the center of the classes, but we find language-specific peculiarities on

their peripheries” (ibid.: 23).²⁵³ Breu does not cite any data to back this assumption, which has not been subject to a cross-linguistic study. He only mentions verbs of “inert perception” (ibid.: 34) as an instance of the verb group which always belongs to the group of inchoative stative verbs. However, since Breu’s theory in general is based on a small sample of European languages (see §3.1), it is not difficult to find languages that do not conform to his prediction. For instance, in Laz, the prototypical perception verb *maziren* ‘to see’ does not belong to the class of inchoative stative verbs (Mattissen 2001: 22). I provide some comments in this connection throughout Chapter 7, mainly based on Tatevosov (2016a).

4.1.3. How to compare language-specific actional classes

In §4.1.2.1, universality of actional classes was rejected and it was argued that Vendlerian actional classes are in fact language-specific classes of English. It was shown that this view is widely held, regardless of theoretical persuasions. Universal or language-independent status was instead attributed to smaller elements, so-called actional (semantic) primitives or actional building blocks.

More specifically, it is assumed that each language uses the same set of primitives in a language-specific way to build their own actional classes. Consequently, it is assumed that “strict lexical verb classification is language-specific” (Sasse 1991c: 37) and that the actional classes that emerge within such a classification are also language-specific. This also entails that each language has its own battery of tests (Smith 1996: 228). A discussion about this topic together with more specific examples is deferred until §4.2.4.

Instead, I will discuss some properties of language-specific actional classes and a method of their comparison. There is one desideratum regarding language-specific classification – they should be exhaustive and comprehensive, employing numerous tests and covering as many verbs as possible (Bar-el 2015: 106–107). Adherence to this principle often results in multifactorial classifications more complex than the Vendlerian one.

Furthermore, complex multifactorial classifications are a result of the fact that commonly used diagnostic tests “do not converge on coherent categories, such as Vendler’s, but identify overlapping clusters which merely distinguish subsets of such categories (...) or supersets”

²⁵³ In that sense, actional classes would resemble word classes such as adjectives, whose “core membership is stable [and] it is only the peripheral members that vary across languages” (Evans 2010: 528).

(Filip 2011: 1192).²⁵⁴ The problem was anticipated by Vendler, who observes: “This division has an air of completeness about it. Perhaps it is more than a mere presumption to think that all verbs can be analyzed in terms of these four schemata.” (Vendler 1957: 149). Likewise, Dowty draws attention to the fact that “the syntactic tests given for distinguishing the four [i.e. Vendlerian, J.P.] categories do not give totally consistent results for all examples below” (1979: 65).²⁵⁵

Examples of such complex classifications abound in the literature. Consider two classifications for English, namely Dowty’s revised classification, which features ten classes instead of four (1979: 184), and the classification proposed in Quirk et al. (1985: 200–209), who posit 11 classes. Both classifications include non-actional elements (§4.3.5), such as transitivity and agentivity. Similar complex classifications are proposed for Spanish (Gorbova 2010), Italian (2000), Japanese (Mori, Löbner & Micha 1992; Alpatov, Arkad’ev & Podlesskaja 2008: 73–84), and other languages.

In linguistic typology (§1.6.1), a distinction is made between description and comparison. Ideally, description is exhaustive (Haspelmath 2018: 92) and in that sense, there is nothing wrong with exhaustive multifactorial analyses of the actional classification systems of individual languages. However, such analyses cannot serve as a basis for comparison, and considering language-specific classifications in full detail would make comparison effectively impossible.

Given these facts, an important question poses itself: if it is assumed that there are language-specific actional classes, is there a way to compare them? Furthermore, does the language-specific status of Vendlerian classes mean that we should abandon the quest to find crosslinguistic (“universal”) actional classes?

The answer to these two questions was in fact already provided in in §3.2, where the approach to comparison of language-specific actional classes by Tatevosov was introduced.²⁵⁶ The

²⁵⁴ The reasons for inconsistent results have to do in part with the tests themselves. This is discussed in §4.2.4.1.

²⁵⁵ As suggested in §1.2.3, actional classes are non-discrete and I strongly suspect that many verbs that do not fit perfectly the four Vendlerian classes based on standard diagnostics could be in fact arranged along different scales (of telicity, stativity, durativity etc.).

²⁵⁶ Regarding what was said in fn. 255 about non-discreteness of actional classes, it should be pointed out that this model is not well-equipped to deal with the said phenomenon. For that reason, even though it is of

approach to comparison of actional classes adopted here thus adopts with little modification the said method.²⁵⁷ Here I repeat the elements relevant for the discussion. Recall that Tatevosov's method is based on the empirical results from a comparison of actional classes in Bagvalal, Mari, Tatar and Karachay-Balkar, conducted by Tatevosov himself (Tatevosov 2002a; 2016a).

The starting point of Tatevosov's method are two sets of universal concepts, namely, two universal aspect grams (PFV and IPFV) and five universal actional semantic primitives (state, process, entry into a state, entry into a process, multiplicative process). In this work, I make similar assumptions. I thus posit a set of actional meanings very similar to Tatevosov's (see §4.3) and introduce a number of aspect systems (Chapter 5).²⁵⁸

Verbs can be grouped into actional classes depending on which actional primitives can be targeted by aspect grams with each verb. The number of possible combinations is in principle unlimited. Therefore, each language investigated by Tatevosov arranges these primitives in different ways and has a different selection of actional classes (19 in Mari, 11 in Bagvalal, 15 in Tatar). The membership of these classes also varies. Crucially, these classes differ, as some of them occur in all the investigated languages and are already known from the literature, whereas others are basically language-specific. Furthermore, while some of the classes have rich membership, others have only one or two members. Based on these differences, Tatevosov assumes that only some of the attested classes are crosslinguistically relevant, and he calls such classes *crosslinguistic actional types* (CLATs). There are ten provisionally established CLATs. Tatevosov (2002a: 394) explains that:

considerable interest to typology of actionality, I largely disregard the topic of non-discreteness and scales in the present work and defer dealing with it to some future work.

²⁵⁷ A similar method is being developed by Johanna Nichols (p.c.). Her method aims to capture crosslinguistic variation in lexicalizations of a small set of verbs and focuses on three primitives, viz. resultant state (*be yellow*), change of state (*become yellow*) and causation (*make yellow*). Her specific focus is to determine the direction of derivation, that is, to determine whether the forms encoding one primitive more frequently serve as a basis for derivation of the forms encoding the other two meanings.

²⁵⁸ One of the differences between the approach adopted here and Tatevosov's approach is that my approach considers a wider range of aspect systems. This results in a less symmetrical crosslinguistic calculus than Tatevosov's, and a less straightforward comparison, but it allows me to consider a greater number of languages. In addition, actional classification in languages with an aspect system other than the PFV-IPFV one poses significant challenges for crosslinguistic comparison. In Chapter 7, I refer to some of these challenges, most notably in §7.4, where actional classifications of Bantu languages are considered.

Language-specific actional classes are more numerous and their relations to each other are more complicated than appears in light of the traditional classes of Vendler's (1957/1967). Yet crosslinguistic regularities between actional systems are fairly visible, which allows one to identify crosslinguistic actional types (...).

In this work, in principle, only these ten CLATs were considered and the crosslinguistic analysis in Chapter 7 is centered around them. I return to actional classes in §4.4.

Note that the status of CLATs is different from that of universal classes as CLATs are not semantic primitives, but rather generalizations over language-specific classes of individual languages. They are a product of an inductive typological method, where comparison comes after fine-grained analysis of language-specific manifestations (Sasse 2002: 264).

At last, it should be pointed out once again that, while language-specific verb classification is expected to have certain language-specific idiosyncrasies, the building blocks and the rules of their composition recur across languages and are widely attested (cf. Sasse 1997: 1). The procedure adopted here thus targets recurrent patterns and is interested in identifying what is common and uncommon across languages, rather than in assessing the universality of certain phenomena. This is in line with the goals of contemporary linguistic typology as a branch of linguistics (see §1.6). Furthermore, the typology of actionality is based on a limited number of building blocks. These building blocks cannot be found in all logically imaginable combinations. Combinations of actional building blocks are subject to possibly universal constraints, probably originating in properties of the real-world situations (§4.1.1).

4.2. Principles of actional classification

This section establishes the principles of actional classification employed in the present work. As already explained in Chapter 1, in particular in §1.5.3, the basis of the classification is the notion of aspect-sensitive class. This section expands on that discussion by further emphasizing the importance of aspect for actional classification and weighs various ways in which aspect can be introduced into a model of actional classification (§4.2.1, §4.2.2). Furthermore, since every actional classification relies on linguistic diagnostic tests, in §4.2.3 and §4.2.4 I devote some space to issues with diagnostic tests.

4.2.1. Actional primitives and actional classes

This section addresses how to build an actional class from actional primitives based on the notion of aspect-sensitive classes. The fundamentals of the procedure were already laid out in §1.5.3, with further remarks in §3.1 and §3.2.

I start out from the set of five actional primitives: state (φ_S), process (φ_P), transition (τ), multiplicative process (M) and quantum of a multiplicative process (Q). They will be described in detail and their choice explained in §4.3 below.

Different verb senses in the lexicon of a language are characterized by different sets of actional primitives. The distribution of primitives within the lexicon is not random, and the researcher's goal is to develop a method to capture the regularities in their distribution.

The method employed here makes use of so-called aspect-sensitive classes (§1.5.3), which is appropriate only for aspect languages. It consists of projecting actional primitives onto inflectional aspect grams. For the sake of simplicity, I discuss only the past PFV and the present IPFV here.

To illustrate this method, I will repeat the Mari examples from Table 10 in §3.2. There we saw that three Mari predicates, *užaš* 'see', *purlaš* 'bite', and *kijaš* 'lie', differ with respect to the number of primitives that they encode as well as with respect to the way primitives are distributed over aspect grams.

Thus, we saw²⁵⁹ that the verb *kijaš* 'lie' encodes only one actional primitive, state (φ_S). In contrast, *užaš* 'see' and *purlaš* 'bite' encode two primitives, state (φ_S) and transition (τ). Still, they differ with respect to the distribution of these primitives. With *purlaš* 'bite', the IPFV is associated with state (φ_S) and the PFV with transition (τ). The structure of *užaš* 'see' is more complex. As with *purlaš* 'bite', the IPFV is associated with state (φ_S), but the PFV can express both transition (τ) and state (φ_S). This means that *užaš* 'see' can mean two things in the PFV: the transition into the state of seeing ('caught sight, noticed') and the state itself ('saw').

The differences among three classes are captured in terms of two notions which will be important for the remainder of this text. The first is the distinction between simple and complex

²⁵⁹ In §3.2 I used Tatevosov's set of primitives, while here I switch to my own labels. Tatevosov's state (S) is adopted with no changes except for the symbol: state (φ_S). Tatevosov's entry into a state (ES) is replaced by the semantically equivalent transition (τ). A full set of correspondences is given in §4.3.4.

actional classes, adapted from the work of W. Breu (§3.1). **Simple actional classes** (*elementare Klassen*) consist of only one actional primitive. An example is *kijaš* ‘lie’, which consists of state (φ_s). Conversely, **complex actional classes** (*komplexe Klassen*) consist of two or more actional primitives. Such are *užas* ‘see’ and *purlaš* ‘bite’, which consist of two primitives, state (φ_s) and transition (τ).

The other notion is the distinction between strong and weak actional classes. It applies only to complex classes, which are distinguished with respect to the number of primitives available to the PFV or related boundedness aspect grams. Thus, the complex class is considered **strong** if the PFV is only associated with transition (τ), and **weak** if it allows a phase primitive – state (φ_s) or process (φ_p) – in addition to transition (τ). The verb *purlaš* ‘bite’ illustrates a strong class and *užas* ‘see’ a weak class. The distinction is adopted from the work of Tatevosov (§3.2).

Accordingly, the three verbs belong to three different aspect sensitive classes. The labels for classes together with all discussed properties of the three Mari predicates are summarized in Table 14.

Verb with translation	Actional class	Actional primitive(s) in the PFV	Actional primitive(s) in the (present) IPFV	Properties of the class
<i>užas</i> ‘see’	weak inchoative state	transition (τ), state (φ_s)	state (φ_s)	complex, weak
<i>purlaš</i> ‘bite’	strong inchoative state	transition (τ)	state (φ_s)	complex, strong
<i>kijaš</i> ‘lie’	total state	state (φ_s)	state (φ_s)	simple

Table 14. Actional character of the three Mari verbs

The case of actionally simple verbs like *kijaš* ‘lie’ highlights the importance of distinguishing between actional features and actional classes. It shows that a label such as ‘state’ can be used for both a feature and a class. In this work, the class and the feature are consistently distinguished, both notionally and terminologically (see the introduction to §4.4).

A lack of distinction between features and the class is the root of much confusion in theories of actional classification. One of the best-known instances is the classification of a subset of English stative predicates such as *see* in contexts such as *At the moment I saw him*, where *see*

has the sense of ‘spotting’ (Vendler 1957: 155).²⁶⁰ Vendler and most of the subsequent literature assume that stative verbs, such as *see*, should be classified as statives, but they can be used as achievements in contexts such as the one cited above. Thus, verbs such as *see* are actionally hybrid (cf. Bertinetto 1994a: 399), that is, they belong to two different classes – the stative class and the achievement class. This analysis proceeds from the assumption that states and achievements are actional classes. Still, it misses the fact that ‘state’ and ‘achievement’ can be taken as primitives as well,²⁶¹ that is, that they can be combined in a complex actional class of inchoative states. Accordingly, *see* is analyzed in the present work as a verb which consists of two actional primitives, state (ϕ s) and transition (τ) (Vendler’s achievement).²⁶²

This is also an excellent illustration of another property of the model of actional classification adopted here. It is **sense-based**, rather than **context-based** (see §3.2). Sense is understood here as in §1.2.4.1, that is, as a unit of classification more appropriate than the verb lexeme. The actional classification used here is sense-based because the actional class of the verb or predicate is a sum of actional meanings available to one sense in various contexts. Different aspect forms can take on different meanings in various contexts, such as syntactic environments etc. Here I assume that the actional class associated with a verb (i.e., a verb sense) is a sum of actional meanings available to this verb across its inflectional aspect forms. This was illustrated above and summarized in Table 14.

In contrast, as already pointed out in §3.2, the Vendlerian model is context-based and classifies sentences uttered in context, as observed by Moens & Steedman (1988: 16):

Propositions conveyed by English sentences uttered in context can, following Vendler, be classified into temporal or aspectual types, partly on the basis of the tenses, aspect, and adverbials with which they can co-occur.

The differences between the two approaches in this respect can be illustrated by means of the treatment of multiplicative activity verbs like *flash* (§4.3.3, §4.4.3). Multiplicative activities in IPFV-like and PROG-like contexts pattern with activity predicates (Van Valin 2005: 36), i.e. they

²⁶⁰ The stative sense of *see* is apparent in sentences like *I can see you*. Verbs like *see* were already mentioned in §2.2.4.1, where more such verbs are listed. See also §7.1.4.

²⁶¹ Achievement as a feature corresponds to my transition (τ).

²⁶² The analysis of the achievement component of *see* as a primitive is effectively adopted in both Breu-Sasse’s and Tatevosov’s model as well. Consider the analysis of the Modern Greek verb *agapáo* ‘to love’ in §1.5.3.

are atelic and durative. However, a sense-based approach demonstrates that, despite these similarities, the two should be kept apart. The reason is that multiplicative activities differ from plain activities in their interpretation in the PFV and similar boundedness aspects, where they have a semelfactive (‘once’) interpretation, unlike activities, which do not.

4.2.2. The place and role of aspect in actional classification

In §1.2.4.2, it was observed that information about the actional properties of a situation is spread over different levels in the sentence, and that grammatical aspect is one of the layers that contributes to that information (cf. Sasse 2002: 217).²⁶³ Other layers on which actionality can be signaled or modified include the lexical, derivational, operator, phrase, and clausal levels.

The exact position of grammatical aspect within the actional architecture of the clause is a matter of some controversy (Sasse 2002: 219; Swart 2012: 765–767). Here aspect is assumed to belong among “predicate operators” in the Functional Grammar (cf. §2.3.2), which “provide additional specification of the [situation]” lexicalized by the verb (Dik 1994: 35).²⁶⁴ Likewise, in the Role and Reference Grammar (cf. §2.3.2), aspect is one of the “nuclear operators,” which “modify the action, event or state itself without reference to the participants” (Van Valin 2005: 8–9). Tense is in both frameworks considered to be fundamentally different from aspect, and is counted either among “predication operators,” which “do not change the internal semantics of the predication” (Dik 1994: 36) or among “clausal operators,” which “modify the clause as a whole” (Van Valin 2005: 9). These claims are supported by crosslinguistic evidence and are in line with the conclusions about the nature of aspect by Bybee (1985), discussed in §1.3.1. For that reason, grammatical aspect is one of the linguistic elements most deeply involved in modifying actionality and determining the actional makeup of the sentence.

Even though “[a]t least seven strands or ‘aspectual tiers’ have to be taken for a typologically adequate treatment of aspect” (Sasse 2002: 262–263), this typology of actionality focusses almost exclusively on the role of grammatical aspect in actional classification.

The first and most obvious argument is pragmatic. It is impossible to investigate on a crosslinguistic level the interaction of lexically determined actional character with more than

²⁶³ The place of grammatical aspect in this system was noted early on (cf. Friedrich 1974; Mourelatos 1978; Freed 1979; cf. also Brinton 1988: 36–38).

²⁶⁴ For more on operators in Functional Grammar see Hengeveld (1989).

one or two other aspectual “tiers” (layers), let alone to investigate all seven. The level of our knowledge about these different layers is still inadequate for a full typology since evidence about interactions of multiple tiers is available for only a couple of languages.²⁶⁵ Where available, such multifaceted interactions paint a rather complex picture.²⁶⁶

It is thus opportune to focus on one or, at most, two layers. The contribution of grammatical aspect is sufficiently known to warrant a typological investigation, as it will be shown in Chapter 6, where the sources for this study are discussed. Other layers cannot be completely shut out from the investigation. Accordingly, while I decided to disregard the role of adverbials, §4.4.6 briefly addresses the three-way interaction of lexically determined actional character, grammatical aspect and the quantificational and referential properties of arguments.

Furthermore, even though the role of grammatical aspect in actional classification is viewed in different ways across frameworks (Sasse 2002: 202), I want to argue here that its impact is quite substantial in aspect languages, which makes it a logical first step in a broader typological investigation of the interactions between different actional layers.

The main reason for the importance of grammatical aspect in aspect languages lies in the fact that was already pointed out in §1.3, namely that grammatical aspect is an obligatory, paradigmatic category. This entails that, in many contexts where a verb occurs, grammatical aspect marking is present, and actionality is bound to be perceived via aspect morphology. In the words of Tatevosov (2002a: 339; caps in original):²⁶⁷

Being lexical items, verbs are abstract, and their properties thus cannot be observed directly. What can be observed are properties of a verb IN USE, when it is combined with a certain gram.

Moreover, as pointed out repeatedly, grammatical aspect, unlike tense, is closely intertwined with actionality. This is evidenced, for instance, in the way that actionality predetermines the

²⁶⁵ Even if the evidence were available for a significant number of languages, it would be a Herculean task to come up with a method to compare this evidence in accordance with the Greenbergian principles in §1.6. because, as Sasse observes, “all of these [tiers] interact in peculiar, language-specific ways in determining the aspectual values of predications in utterances [and] the hierarchical relationship between these components may differ considerably between languages” (2002: 263).

²⁶⁶ Consider, for instance, Huddleston & Pullum (2002: 164), who discuss the interaction of “measure phrases” such as *five miles*, *two book* or *twice* and the Progressive in English.

²⁶⁷ Cf. Smith (1997: 62), Croft (2012: 28, 32) for similar observations.

range of interpretations available to an aspect gram, as well as in the way it restricts combinability of aspect grams with certain verbs. Both phenomena show that “it is often the morphological verb form that determines a sentence’s aspectual reading” (Sasse 2002: 265). In other words, grammatical aspect effectively forces a verb to reveal its actional character. It is in that sense that grammatical aspect is different from other extra-lexical contributors to the actional architecture of the sentence.

This being said, it is implied that aspectless (or “tense”) languages are different, as noted by Sasse (2002: 265):

(...) absence of overt morphosyntactic marking devices for aspectual distinctions has an enormous impact on the aspectual interpretation of a sentence. (...) Such fundamental distinctions as that between “tense languages” and “aspect languages” define typologically relevant constellations of potential interaction between the different layers of the domain.

This is not to be taken to mean that aspectless languages have fundamentally different sets of actional classes than aspect languages. Instead, the two kinds of languages differ in the ways these classes are expressed, but the set of available actional classes and rules of their composition should remain largely similar. This is, for instance, shown by Bar-el & Petzell (2019) in their investigation of a subset of Bantu languages which exhibit reduced aspect morphology. They found that the range of actional classes for which they could find linguistic evidence is similar to Bantu languages with preserved aspect morphology.

4.2.3. Types of diagnostic tests

So far, we have assumed that there are actional primitives that constitute the basic building blocks of actional classes. In this section, I discuss the diagnostics employed to test the presence of these items of meaning in individual verbs. The question of “what constitutes valid empirical evidence” for actional classification is one of the central and most fraught ones in the field (Filip 2011: 1193).

Before turning to that discussion, two issues need to be addressed. First, diagnostic tests differ with respect to whether they target actional primitives or classes (Walková 2013: 15–17).²⁶⁸ The distinction is observed in the discussion of actional primitives and actional classes in §4.3 and §4.4. Second, tests for actional classes should in principle be distinguished from expressions

²⁶⁸ The distinction is also made implicitly in Smith (1997).

that serve as actional shifters. The distinction is made following the criteria laid out in §1.2.4.2. and §1.2.4.3. I discuss only the cases where linguistic expressions *reveal* rather than *shift* the lexically determined actional properties of a verb.

In what follows, the major types of diagnostic tests are introduced, and their properties are discussed. Tests used for individual features and classes will be discussed in §4.4.3, with some overlap with this section.

I assume that diagnostic tests for actionality can roughly be categorized into three broad groups.²⁶⁹ Ontological or extralinguistic tests constitute the first group. Here the actional character of a verb or predicate is assumed to be based on “semantic intuitions” (Klein 2009a: 62), that is, the perceived properties of the situation it lexicalizes in the real world. For example, the actional character of *explode* is “punctual” since the event of explosion is punctual. Ontological tests, in general, should be avoided. As discussed elsewhere (§1.2.2, §4.1.1), not only is the kind of knowledge tested in this way non-linguistic, but semantic intuitions are also known to be generally unreliable and fuzzy (Klein, *ibid.*).

The second group of tests consists of what I call *semantic tests* following Wilhelm (2007: 2), which reveal “how a verb (or VP) can be used, and what kinds of entailment patterns it has.” The quote anticipates the most important kinds of semantic tests, viz. cooccurrence tests with adverbials and entailments. There are other cooccurrence tests, for instance, the tests with *finish* and *stop*, and the test with phasal verbs such as *begin* etc.

Another kind of semantic test is paraphrase, a description of meaning by means of words or combinations of words with the same or similar meaning. Paraphrase is almost never discussed in the literature in connection with actionality, even though it is said to be “the most important relationship for the whole enterprise of linguistic semantics” (Goddard 2011: 22).

There are further kinds of semantic tests, which do not fit the classification given above. For instance, the test with the questions “What happened / What is happening?” (§4.3.1), which is often employed to distinguish states and events, is an instance of the semantic test.

The third group of tests involves what is called here *morphosyntactic tests*, and is again modeled after Wilhelm’s (2007) distinction between semantic and “grammatized” or “grammatically

²⁶⁹ A similar division is proposed by Klein (2009a: 62) and Walková (2013: 12–13)

relevant” actional contrasts. They are referred to as “grammatical co-occurrence tests” by Walková (2013: 13). Morphosyntactic tests in that sense are those that uncover actional features evident in some sort of consistent and/or productive morphosyntactic pattern (cf. Wilhelm 2007: 6–8). Such tests are, however, less central than the semantic group of tests since, as noted in §1.2, actionality is linguistically and grammatically relevant, but manifested in the language and grammar unsystematically and it rarely exhibits one-to-one morphological correspondence. Still, there are two well-known instances where actionality is reflected morphosyntactically. The first one concerns the defectiveness of verb paradigms, where the actional character blocks the verb from forming a cell in the paradigm.²⁷⁰ This was already illustrated in §1.5.3, where the Greek verb *kséro* was cited, which lacks the PFV form. Such restrictions are often telling, but need to be employed with caution; examples are discussed in §7.1.1 and §7.1.2. The other case, pointed out by Walková (2013: 13), concerns the acceptability of occurrence of the verb in a grammatical construction, e.g. in pseudo-cleft constructions with *do* (*What John did was run*).²⁷¹

Two kinds of tests are more important than others, namely the tests with temporal adverbials and the tests with entailment. Temporal adverbials, in particular the tests with *for*-PPs and *in*-PPs, have already been repeatedly discussed, and they will be discussed again in §4.4 in connection with different actional classes.

Entailments, on the other hand, deserve a separate discussion. Entailment is a relationship that “applies between two sentences, where the truth of one implies the truth of the other because of the meanings of the word involved” (Goddard 2011: 23; cf. also Kroeger 2019: 37–38).²⁷² The opposite of entailment is contradiction. Consider the two sentences in (34) and (35), discussed in Jacobson (2014: 32–33).

- (34) Mitka killed the bird that had been trapped on the porch.
 (35) The bird that had been trapped on the porch died.

²⁷⁰ This was already introduced under the heading of *cooccurrence restriction* in §1.5.4.

²⁷¹ Admittedly, the tests with *finish* and *stop* as well as the tests with phasal verbs (*begin* etc.) could also be considered under the heading of morphosyntactic tests rather than semantic tests.

²⁷² A more technical definition is given by Jacobson (2014: 32): “we can say that a sentence S_1 entails S_2 if and only if every world mapped to true by S_1 is mapped to true by S_2 .”

According to Jacobson, sentence (34) entails (35) because “set of worlds in which [(34)] is true is a subset of worlds in which [(35)] is true.” In other words, the killing of the bird entails that the bird has died. The reverse does not hold.

Entailments are an extremely useful way of determining the actional character of verbs and predicates. The role of entailments in diagnosing actional features can be illustrated by the well-known difference in entailments between atelic (activity) and telic (accomplishment) predicates. The entailment relation specifically concerns the English Present Perfect and Present Progressive. The following examples are taken from Comrie (1976: 44),²⁷³ with similar examples found across the literature. The verb *sing* is **atelic** because *John is singing* entails *John has sung*. In other words, if it is true that *John is singing*, then it is also true that *John has sung*. Atelicity is demonstrated by the existence of an entailment relation between the Present Progressive and Present Perfect.

Conversely, the phrase *make a chair* is **telic** because *John is making a chair* does not entail *John has made a chair*. In other words, if it is true that *John is making a chair*, that does not entail that *John has made a chair* is true. Thus, the absence of an entailment relation between the Present Progressive and Present Perfect signals telicity.²⁷⁴

The entailment test is often formulated as the “interruption” test. An activity verb, which tests positive to the entailment test, can also be interrupted: e.g. *I was running when I fell* entails *I run* (Walková 2013: 4). The opposite is true of accomplishments: e.g. *I was running a mile when I fell* does not entail *I ran a mile*.²⁷⁵ This version of the entailment test appears particularly suitable to PFV-IPFV languages and languages with perfects different from the English Present Perfect. It is found in the sources discussing Italian (Gardenghi 2000: 116), Spanish (Chapado Chorro & García García 1991: 65–66), Portuguese (Sarić 2014: 34, 88–95 et passim), Cayuga (Sasse 1997: 38), Japanese (Mori, Löbner & Micha 1992: 339), Belhare (Bickel 1996: 195, 208ff.), and Laz (Mattissen 2001: 29–31).

²⁷³ The test is formulated as early as in Vendler (1957) and Garey (1957).

²⁷⁴ A slightly different formulation of entailment is found in Johanson (2000: 61), where it is said that an accomplishment cannot occur in constructions such as ‘has V-ed, and is still V-ing’ (cf. also *ibid.*: 64).

²⁷⁵ Cf. also Smith (1997: 25, 28–29).

Entailments are seen by some (e.g. Walková 2013: 33–34) as more reliable and straightforward than the tests with adverbials (see §4.2.4.1 for examples with adverbials). Still, Walková points out that entailments are not suitable when testing a large number of verbs because they are demanding for language consultants. Adverbials are in that sense a more appropriate choice for testing actional features. Apart from distinguishing accomplishments and activities, entailments of different kinds can be used to establish other distinctions as well.

4.2.4. Issues with tests

This section discusses reliability of some standard diagnostic tests for actionality. In §4.2.4.1, it is shown that there is a disagreement with respect to the interpretation of the results of some diagnostic tests for English, which in part stems from variation in the intuitions of native speakers. In §4.2.4.2, the transferability of English-based tests is discussed. It is shown that, despite the fact that in many cases the tests based on English can be replicated in other languages, it is strongly advised against assuming *a priori* that they *are* transferable. I discuss some cases which reaffirm the need for caution.

4.2.4.1. Are tests reliable?

In the literature on English, comparatively little attention is paid to the well-documented fact that the application of certain diagnostic tests does not provide straightforward results, and that as a consequence scholars often provide “varying descriptions of the results of the same test” (Bar-el 2015: 78; cf. Tenny 1994: 41; Smollett 2005; Walková 2013: 15). Consider the sentences in (36) and (37), which when found with an *in*-PP and a *for*-PP, respectively, are often described by adjectives such as “marked,” “odd,” or “infelicitous,” whereas in fact the exact meaning of these designations is rarely explicitly described.

(36) Mary ate soup/blueberries ^{??}in an hour / for an hour. (Filip 1999: 5)

(37) John wrote a letter ^{??}for an hour / in an hour. (Filip 1999: 54)

The lack of clarity about the acceptability of such sentences is also reflected in inconsistent marking of acceptability in otherwise virtually identical contexts. Consider the sentence in (38), which is virtually identical to (36), but where the *in*-PP is starred, in contrast to the *in*-PP in (36), where it is marked with two question marks.²⁷⁶

(38) John ate soup/apples for ten minutes / *in ten minutes. (Filip 1999: 60)

²⁷⁶ Note that the examples come from the same source.

Rare are also discussions about the intuitions of naïve speakers regarding such sentences, which is crucial here because differences in interpretations of the results of diagnostic tests can in fact be attributed to variation in native speakers' intuitions. Variation in intuitions is not unexpected since phenomena of interest to formal semantics, including actionality, are of the kind that “speakers of a natural language do not always (in fact cannot always) have reliable intuitions about” (Partee 1996: 12). The controversy over intuitions is in part attributed to the influence of actional shift (§1.2.4.2), especially when the shift is introduced via pragmatic implicature.²⁷⁷ This may explain the difference between (36) and (38), where the plausibility of a reinterpretation may differ because of the difference in time spans between *in an hour* and *in ten minutes*. This is only a guess since as a non-native speaker I cannot make judgements about these sentences.

Instead, I turn to another phenomenon, for which much information can be found on interspeaker variation and conditions that govern acceptability. Consider the example (39), which again contains the verb *eat*.

(39) John ate an/the apple^(?) for ten minutes / in ten minutes. (Filip 1999: 60)

Unlike in (36) and (38), its object is quantized (*an/the apple*) and not cumulative (*apples*).²⁷⁸ Quantized direct objects with verbs such as *eat* strongly prefer telic interpretation, hence the limited acceptability with the *for*-PP in (39). Still, how limited is the acceptability with a *for*-PP is a matter of some controversy. A standard claim is that *for*-PP cannot occur in such sentences. However, as discussed by Smollett (2005), while verbs like *eat* do normally favor the telic interpretation, sentences with *for*-PPs, which yield an atelic interpretation, in fact become more acceptable “with the addition of adequate context, or by changing the actual entities referred to” (ibid.: 49). In that connection, she cites the sentences in (40) and (41), which speakers typically find quite natural. The change of context appears to be particularly significant

²⁷⁷ While I focused on durative adverbials (*for*-PPs and *in*-PPs) here, there are other tests that do not give perfectly straightforward results. One such test is the test with *stop* and *finish*. It is well-established that atelic predicates are compatible with *stop*, but not with *finish*: *Mary stopped* / *?finished walking in the park* (Bar-el 2015: 19; cf. Smith 1997: 43). Again, it is unclear what is meant by “compatible/incompatible” and how to interpret the question mark attached to the phrase *finished walking*. Walková (2013: 100–109) examines native speakers' intuitions regarding this test.

²⁷⁸ For these notions see §2.2.3 and also §4.4.6.

since most judgements about *eat* with quantized objects are based on sentences with little extra context.

- (40) Kathleen ate an apple for a couple of minutes while talking on the phone.
- (41) Kathleen ate an apple for a couple of minutes, and then she read her novel.

Similar results were obtained by Bar-el (2005), who elicited judgements of seven non-linguist native speakers of English about the acceptability of sentences such as *Mary ate an apple (yesterday) but didn't finish it*. Such sentences contain the same atelic reading brought about by a *for*-PP. She found that such sentences are acceptable to four and unacceptable to three speakers. Bar-el also recorded speakers' comments, which reveal even more about their intuitions and reasons for variation between different speakers. For instance, consider the comments provided by three speakers who were asked whether *Did she finish it?* when shown the sentence *Mary ate an apple*. The first two speakers are more open to accepting this interpretation, unlike the third one, who is more reluctant:

Speaker 1 (Bar-el 2005: 343)

"*Ate* doesn't tell you if she finished the apple, so this seems fine"

Speaker 2 (Bar-el 2005: 343)

"Seems ok because people frequently eat things but then don't eat the entire thing."

Speaker 3 (Bar-el 2005: 343)

"Eating an apple doesn't take long."

Crucially, Smollett and Bar-el base their observations on elicited data.²⁷⁹ This is only natural since introspection in these matters cannot be relied upon. As Bar-el candidly puts it, introspection in such instances becomes "too tainted in light of the research [one] ha[s] been conducting" (2005: 305).

Another issue that may affect the reliability of tests is that adverbials used as tests are sometimes ambiguous – that is, they may have several distinct readings (Sasse 2002: 248–249). In English, a well-known instance is the adverbial *for*-PP which can either indicate the duration of some situation, as in *She walked for two hours*, or "the duration of the resulting state," as in *She opened the window for two hours* (Klein 2009a: 63; cf. also Smith 1997: 47; Levin & Rappaport

²⁷⁹ Cf. also Xiao & McEnery (2006), who investigate durative adverbials based on corpus data.

Hovav 2005: 113–114). In the latter example, *for two hours* does not refer to opening of the window, but rather to the time during which the window stayed open.²⁸⁰

A similar example is the sentence *Hank came to the youth group for two hours*, provided by Walková (2013: 28), who paraphrases it as ‘Hank came to the youth group and stayed for two hours.’ The ambiguity of the *for*-PP is also explicitly pointed out by Moens & Steedman (1988: 21), who in their discussion of the sentence *John left the room for a few minutes* observe that “[i]t is merely by accident that English uses the same device to convey these different meanings” since in French and German the two meanings of the English *for*-PP adverbial are conveyed by different constructions.²⁸¹

The example of the *for*-PP is significant because one could be tempted to conclude that *open*, *come* and *leave* contain a durative component due to their compatibility with a *for*-PP without considering the semantic nuance observed in the sentence discussed above.

In fact, both *for*-PPs and *in*-PPs have a range of meanings, of which only one is relevant as a test for (a)telicity, as shown in detail by Xiao & McEnery (2006: 4–10).

All of the examples discussed in this section²⁸² were brought together in order to demonstrate that there is a need to better understand “how to evaluate the results of these tests” (Bar-el 2015: 78) and that linguists still have a lot to do in order to arrive at a proper understanding of “[h]ow and why these various tests work” (Binnick 1991: 178). While I concur with Filip that “[i]t is not always entirely clear what exactly the diagnostic criteria used by various researchers test for in linguistic expressions” (2011: 1192), it would be remiss to cast doubt upon the whole scientific enterprise devoted to investigating actional semantics. Instead, I follow Klein in assuming that all these difficulties “[do] not speak against an application of such tests – but [they speak] *against a blind application*” (2009a: 64, emphasis mine). Likewise, Van Valin & LaPolla conclude that “[t]hese tests are not perfect, but taken together they enable the analyst to distinguish the classes” (1997: 96). In most cases, one could simply decide to ignore the

²⁸⁰ The Belhare expression *ek chin* ‘for one moment’ exhibits the same kind of ambiguity (Bickel 1996: 230–231).

²⁸¹ The same is true in Croatian. German is further discussed in Engelberg (2000).

²⁸² For further examples, see the summary of issues with each of Dowty’s tests provided in Walková (2013: 32–33).

unintended meanings or to choose only tests that do not have unintended meanings (Walková 2013: 33).²⁸³

Still, as pointed out by Bar-el (2015), the lack of clarity about the results of (some) standard tests in English and their interpretations has ramifications for crosslinguistic comparison as it makes it trickier to rely on English tests in other languages (cf. Crane & Persohn 2019: 337). The transferability of the English-based tests to other languages is the topic of the next section.

4.2.4.2. Are tests consistent across languages?

In §4.1.2, three common misconceptions regarding crosslinguistic comparisons of actionality were cited. Two of them were discussed in that section (universality of classes and class membership), whereas the third one, namely the idea that classes can be recognized by using the same tests in different languages, will be discussed now. In the same section, it was argued that the so-called Vendlerian classes are nowadays seen as language-specific classes of English. Therefore, the same can be claimed regarding the tests used to diagnose these classes (Bar-el 2015: 75). In other words, the reason that actional classes of English are language-specific is exactly because the tests used to identify these classes are language-specific.

In the literature, it is often tacitly assumed that the tests for English have cross-linguistic validity and that they are *a priori* applicable to other languages, with some qualifications (cf. Van Valin & LaPolla 1997: 93). However, many prominent voices caution against making such assumptions, e.g. Filip (2011: 1192), who observes that:

since the most common linguistic tests were developed based on English data (...), not all the tests are transferable across natural languages, due to language-specific properties, and those that seem to be require some clarification whether they in fact access the same aspectually relevant properties in different languages (...)

However, this is not to be taken to mean that English-based tests are useless, misleading and that they should be abandoned – a similar point is made in the previous section. It is instead argued that English-based tests must be applied with utmost caution without assuming *a priori* that they will work in the same way as in English (cf. Crane & Persohn 2019: 338 for a similar point).

²⁸³ See also Chapter 5 of Walková's dissertation where she puts into use some of her prescriptions.

The caution is warranted because it is known that analogous tests in fact may yield different results. Probably the most conspicuous case is the use of the PROG aspect as a diagnostic to distinguish between states and dynamic (eventive) predicates.²⁸⁴ Relevant examples are discussed in §6.1.1 and in greater detail in §7.1.1. This issue also concerns adverbials. As we have seen in the previous section with the English *for*, adverbials can exhibit language-specific ambiguities which are often not easy to pinpoint. An interesting illustration of this issue involves the differences in properties of the English adverbial *almost* and its closest equivalent *kilh* ‘almost’ in Squamish (Salish, Canada; squ). The English adverbial *almost* is ambiguous with accomplishments between the two readings illustrated in (42).²⁸⁵

- (42) John almost painted a picture.
 1. John did not paint at all.
 2. John painted but did not quite finish.

The reading #1 is called “event cancellation” because the whole event of painting is cancelled – i.e., it did not start at all. The reading #2 is called “event non-completion” because it entails that the event has started but has not been finished – i.e., it was stopped sometime before completion.

Interestingly, the Squamish adverbial *kilh* ‘almost’ does not exhibit the same kind of ambiguity (Bar-el 2005: 105–109). According to Bar-el’s consultants, (43) can only refer to event cancellation, that is, it can only mean that no painting has occurred.

- (43) Squamish *kilh* ‘almost’ is not ambiguous with accomplishments (Bar-el 2005: 106)
- | | | | | |
|-------------|-----------|--------------------------|----------------|-------------|
| <i>kilh</i> | <i>na</i> | <i>yetl’k’-ant-as ta</i> | <i>lam’ ta</i> | <i>John</i> |
| almost | RL | paint-TR-3ERG DET | house DET | John |
- ‘John almost painted the house.’

Bar-el explains this finding by ascribing Squamish accomplishment a different lexical representation, which excludes natural endpoints. However, she also entertains the possibility that the meaning of the Squamish *kilh* ‘almost’ is different from the English *almost* (Bar-el 2005: 114–115), along the lines of the analysis of the German *fast* ‘almost’ by Rapp & von Stechow (1999).

²⁸⁴ Cf. also Van Valin & LaPolla (1997: 654n9).

²⁸⁵ The example is taken from Table 2 in §1.2.3. The test with *almost* is listed under number 14 in that table. The test is further discussed in connection with the accomplishment class in §4.4.2.2.

Furthermore, one is often faced with the situation that an equivalent of the English-based test is not available for the language under investigation. Possibly the most conspicuous examples come from Chipewyan (or Dënesųłiné), Navajo and other Athabaskan languages. According to Wilhelm (2007: 58–65) for Chipewyan and Smith (1997: 243ff.) for Navajo, most standard tests for telicity cannot be used in these languages. More specifically, there is no distinction between *for*-PP and *in*-PP adverbials, the verbs *finish* and *stop* are not distinguished, and there are no means to distinguish between cumulative and quantized references (as in English *She ate porridge* – cumulative vs. *She ate the porridge* – quantized reference), because there is no number marking and no articles. The contrast between *for*-PPs and *in*-PPs is also lacking in Squamish and other Salish languages (Bar-el 2015: 78), as well as in Badiaranke (Cover & Tonhauser 2015: 334) and Kabardian (Ranko Matasović, p.c.), whereas Japanese lacks number marking and articles and, accordingly, cannot distinguish between quantized and cumulative NPs (Mori, Löbner & Micha 1992: 243). These are only some of the examples.

Finally, examples of truly language-specific tests are provided. Probably the best-known language-specific test concerns Japanese and the clear-cut division of the lexicon provided by the availability of the ongoing episodic (“progressive”) reading with the progressive-resultative aspect gram *-te i-*. The distinction is traditionally interpreted to signal the distinction between durative and punctual non-states and in many ways crosscuts the classification established in Vendlerian tests (Mori, Löbner & Micha 1992). This means that the language-specific classification of Japanese verbs incorporates an additional distinction which is not comparable to other languages. This will be covered in greater detail in §5.4.3.2 and §7.3.1.

Another case of a language-specific test involves interpretation of the aspect grams called Stative and Habitual in Northern Iroquoian languages. Their interpretations are governed by the split in the verbal lexicon between consequential and non-consequential verbs (Chafe 1980; 2015: 24–26), which can be equated with the telic (= consequential) and atelic (= non-consequential) distinction (Sasse 1997: 35–36). Their interpretations are summarized in Table 15.

	with ATELIC verbs	with TELIC verbs
Stative	ongoing-episodic (“progressive”)	resultative-perfect
Habitual	habitual	habitual & progressive

Table 15. Interpretations of the Stative and Habitual grams (Northern Iroquoian)

This distinction is observed in all Northern Iroquoian languages (Sasse 1997: 28–29), and is “recht scharf”, i.e. ‘very sharp’ (Sasse 1997: 33). More details are provided in §5.4.3.4, where the aspect system of Northern Iroquoian languages is described.

Other instances of language-specific tests include the test with persistive (‘still’) aspect in numerous Bantu languages (Persohn 2018: 8). A variety of other language-specific tests are discussed for Maltese (Spagnol 2009), Belhare (Bickel 1996: chap. 12), and Chipewyan (Wilhelm 2007: 91–92).

4.3. Description of actional primitives

In §4.2.1 the set of five actional primitives was posited, viz. state (ϕ_s), process (ϕ_p), transition (τ), multiplicative process (M) and quantum of a multiplicative process (Q). In this section, the temporal properties, semantic descriptions, as well as diagnostic tests are provided for each of the five primitives.

The list of actional primitives adopted in this work bears similarity to the lists of primitives posited in Tatevosov’s (§3.2) and Breu’s (§3.1) models (cf. also Bickel 1996: 195–196). It has been informed by a feedback loop (for the notion see §1.5.3). It thus incorporates insights from classifications based on Vendlerian distinctions and is expanded with new actional distinctions suggested in the literature and observed in the sample of languages consulted in the present study. The list of actional primitives used here is assumed to provide means for a productive typology of actionality in accordance with principles described in §4.1.2 and §4.1.3.

The actional primitives adopted here bear only partial similarity to the features that constitute the Vendlerian classification (see Filip 2012: 726–728). Telicity and dynamicity, the two Vendlerian features for which there is a consensus that they are crucial in categorizing situations (Rothstein 2004: 7), also play a role in the model used here, albeit with certain modifications.²⁸⁶

²⁸⁶ This above all concerns telicity. As discussed in §4.3.2, telicity is a narrower notion than transition (τ).

The outward appearance of actional classes built upon these primitives is consequently different from standard Vendlerian classifications (see §4.4). Temporal extent (or durativity), the third Vendlerian feature, is not part of the decomposition employed in the present work. Instead, the opposition between Vendlerian accomplishments and achievements is handled in terms of the existing actional primitives (see §4.4.2.2, §7.3). The same view is adopted by Tatevosov, who observes that “punctuality is an entity of a different level of abstraction from [other actional primitives], and this is the main reason for not counting punctuality as an elementary actional meaning” (2002a: 338).

4.3.1. Phases (φ)

The first two primitives are state (φ_S) and process (φ_P). They are collectively referred to as **phases (φ)**. The term *phase* is taken from Bickel (1996).²⁸⁷ States can further be divided into permanent states and temporary states. These two are not adopted as actional primitives; instead, only state is accorded that status and assigned the symbol (φ_S). I use the following visualization to distinguish between processes and the two kinds of states:²⁸⁸

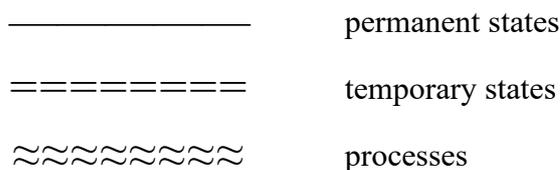


Figure 1. Visualizations for the three subtypes of phases (φ).

All three share the property of homogeneity (Vikner 1994; Tatevosov 2002a: 329–330), explained in §2.2.3.²⁸⁹ The fact that this property is shared by all types of phases is often overlooked, and most authors (e.g. Smith 1997: 23) discuss this property only in connection with processes.²⁹⁰ In the course of the section, I briefly discuss the tests employed to identify

²⁸⁷ The term *phase* is found appropriate as a cover term for states and processes because it eliminates the confusion created by other cover terms such as *state* (cf. Klein 1994; Botne 2003) and *process* (cf. Moens & Steedman 1988).

²⁸⁸ The visualization for permanent states is from Smith (1997). The visualizations for the other two types are from Ebert (1995).

²⁸⁹ For processes, this is a bit complicated since it has been pointed out in the literature that some processes are not strictly homogenous, e.g. the verb *waltz* – “making only two steps cannot be counted as waltzing” (Tatevosov 2002a: 330; cf. also Dowty 1979: 166–172; Smith 1997: 23; Rothstein 2004: 18–20).

²⁹⁰ Filip (2012: 730–731) is one exception. Cf. also Rothstein, who characterizes states as “totally homogeneous” (Rothstein 2004: 14).

each of the three primitives, and sketch their importance for actional classification developed in this work. I also explain why permanent and temporary states are not adopted here as actional primitives.

Let us begin with state (ϕ_s). The distinction between states and all other actional elements (collectively referred to as events) is considered fundamental, and it is often related to the distinction between stasis and motion (e.g. Smith 1997: 19; cf. Rothstein 2004: 2). States are said to obtain in time even though they do not take time (Taylor 1977: 206). They “may begin or end at some point in time, but as long as they are holding, they remain the same throughout, at every moment of their duration” (Boogaart 2004: 1168). Accordingly, in English a state “holds, obtains,” whereas an event “occurs, happens, takes place” (Smith 1997: 19). However, Filip comments about states that “their semantic and ontological status is significantly more puzzling than that of most non-state predicates, and their relation to temporal notions is often unclear” (2011: 1197; cf. Vendler 1957: 152). She is critical of Dowty’s claim that states are “aspectually simple and unproblematic” (Dowty 1979: 71).

In the Vendlerian system, states are taken as a class *sui generis*. No distinction is made between what I call permanent and temporary states. **Permanent states** are true at all moment of time, e.g. *know French* or *be hirsute* (Filip 2012: 728). In contrast, **temporary states** hold for a limited time and can end, e.g. *The socks are lying under the bed* (Dowty 1979: 175). The original, Vendlerian, conception of states as stated above refers to permanent states rather than temporary states.

The distinction between the two was first suggested in Carlson (1980),²⁹¹ as the distinction between individual-level predicates (permanent states) and stage-level predicates (temporary states). Drawing on Carlson’s work, Dowty (1979: 184) proposes a similar distinction between momentary (permanent) and interval (temporary) states. I opt here for the less technical but self-explanatory terms *permanent state* and *temporary state* (also used in Kroeger 2019: 385).

The term used here	Carlson (1980)	Dowty (1979)
permanent states	individual-level states	momentary states
temporary states	stage-level states	interval states

Table 16. Two types of states: terminology.

²⁹¹ More precisely, in his 1977 dissertation.

The distinction is here posited on an ontological basis. The distinction has several linguistic manifestations, at least in English. The most conclusive is *there*-insertion: permanent states disallow it (**There are firemen altruistic*), while temporary states allow it (*There are firemen available*). Even though authors like Kratzer (1995: 125–126) and Chierchia (1995: 176–181) discuss a variety of diagnostics, this distinction is nonetheless seen by many, including Kratzer and Chierchia, as mainly pragmatic, even though there are opposing views as well (e.g. Fernald 1999: 50–51).²⁹² I return to diverging the properties of permanent and temporary states in English later in the section. Additional discussion is provided in §7.1.5.

Processes (ϕ_P) correspond to the traditional activities. The distinction between states and processes often relies on notions of dynamism (Smith 1997: 36) or dynamicity (Van Valin 2005: 33) and change over time (Filip 2012: 728–730; Tatevosov 2002a: 330): process is a situation that “will only continue if it is continually subject to a new input of energy” (Comrie 1976: 49). After the input of energy is exhausted, the process terminates or stops (Smith 1997: 23). In that sense, processes have “clear beginnings and ends” (Johanson 2000: 64). Processes are also dynamic in the sense of “internal processual evolution,” that is, “they involve some progress observable in gradually produced effects” (Johanson 2000: 64; cf. Comrie 1976: 49). In contrast, states are stable over time (Bertinetto 1994a: 404) and will go on if uninterrupted; they require external agency for change (Smith 1997: 32, 36). States are thus “a class of indefinitely extending states of affairs” (Moens & Steedman 1988: 17).

Another difference revolves around the idea of “happening”: sentences with stative verbs like *know* cannot be the answer to the question ‘what is happening?’. This is in fact a consequence of the property of states whereby all phases of a stative situation like *know* / *I know John* are identical. In other words, states “hold for their arguments at *any single* moment within larger intervals at which they are true” (Filip 2011: 1195). On the other hand, with processes like *run* / *John is running*, phases of the situation are different. This is related to Bertinetto’s observation that states are “dense,” that is, they “cannot be interrupted without causing the cessation of the state referred to” (1994a: 402). Thus, the sentence *Yesterday, between 2 and 3 o’clock, John was very hungry* means that during each instant of the interval John was hungry. In that respect,

²⁹² See also Smith (1997: 222) for examples of lexically determined permanent states from French.

it contrasts with *Yesterday, between 2 and 3 o'clock, John was working hard*, which allows for breaks in the process of working.

The distinction based on dynamicity is however often insufficient to establish clear boundaries between processes and states. According to Filip (2012: 730), “state and dynamic do not constitute two clearly disjoint classes.” Above all, this concerns **temporary states**, which sometimes pattern with **processes** (ϕp).²⁹³ Temporary states are not dynamic in the sense that they involve no change over time (Comrie 1976: 49) but still allow for a possibility of time when they do not hold (Klein 1994: 5–6), in which respect they pattern with processes. For instance, *The book is on the table* contains a predicate which describes a situation which can cease to obtain, for instance, if the book is moved to another position. Similarly, the sentence *John is running on the treadmill* contains a process predicate which can also cease to obtain.

Problematic cases such as these point to a certain affinity between at least some states and processes. For that reason authors like Klein (1994) depart from the mainstream position by collapsing temporary states and processes into “1-state situations,” and by contrasting them with “0-state situations” (i.e. permanent states). Thus, in Klein’s system, the distinction is not drawn between traditional states and activities, but rather between permanent and temporary situations (cf. Tatevosov 2002a: 321, Table 1; cf. also Bohnemeyer 2014: 925). Likewise, the distinction based on the feature of (in)stability of a situation is used in Durst Andersen (1994) to contrast permanent states (his “states”) with temporary states and processes (his “activities”).

In my view, both ontological and linguistic evidence (§4.1) point to a three-way distinction between permanent (stable) states, temporary states, and processes.²⁹⁴ The former two share the property of not being dynamic (change over time), and the latter two share the property of temporariness. Different parts of grammar are more responsive to the distinction between permanent states, on the one hand, and temporary states and processes, on the other.

Despite these findings, which point to the conclusion that “the precise differentiation between stativity and atelic dynamic duration is at present somewhat speculative” (Bache 1982: 69), I

²⁹³ Cf. also Fábregas & Marín (2017), who document affinities between processes and temporary states in Spanish.

²⁹⁴ In reality, the situation is probably more complex in the sense that the distinction between states and processes is scalar.

follow the mainstream position that a more fundamental opposition is between states and processes, rather than 0-states and 1-states, as Klein does. For that reason, in the present work only states (ϕ_S) and processes (ϕ_P) are accorded the status of actional primitives.

In the terms of aspect-actionality interactions, the distinction between states and processes has proven to be of more significance for the aspect-sensitive classes in the PFV-IPFV systems (§7.1.5). In contrast, the property of temporariness as a dividing line between states and process is shown to be crucial for explaining the interaction of stative verbs with PROG (§7.1.1).

In the literature, the most important tests to distinguish between states and processes are Dowty's tests 1-6 from Table 2 in §1.2.3 (Dowty 1979: 55–56).²⁹⁵ They are reproduced in Table 17.²⁹⁶

No	Test	States	Activities
1	habituality in a nonprogressive	NO <i>John knows the answer.</i>	YES <i>John runs.</i>
2	occurs with <i>deliberately, studiously, carefully, etc.</i>	NO <i>*John deliberately knew the answer.</i>	YES <i>John ran carefully.</i>
3	occurs as complement of <i>force/persuade</i>	NO <i>*John forced Harry to know the answer.</i>	YES <i>John persuaded Harry to run.</i>
4	occurs in pseudo-cleft constructions with <i>do</i>	NO <i>*What John did was know the answer.</i>	YES <i>What John did was run.</i>
5	occurs in the imperative	NO <i>*Know the answer!</i>	YES <i>Run!</i>
6	occurs in the progressive	NO <i>*John is knowing the answer.</i>	YES <i>John is running.</i>

Table 17. Tests that distinguish between states and processes. Reproduced from Table 2.

²⁹⁵ The earliest discussion of these tests is found in Lakoff (1966).

²⁹⁶ In the original table, “processes” are called “activities.” The distinction between the two terms is explained in the introduction to §4.4.

The crosslinguistic applicability of these tests is rarely addressed. I will not pursue this matter any further here, except for the test with the Progressive, on which see §7.1.1.²⁹⁷

Among other tests cited in the literature, the test with adverbs such as *quickly* appears to be sensitive to dynamicity (change over time) (Dik 1989: 91–92; Van Valin 2005: 35–36). It is acceptable with all (durative) classes²⁹⁸ except for states, and can thus single out state predicates. Examples (44) and (45) show that the adverb *quickly* is unacceptable with permanent and temporary states alike, respectively.

- (44) The substance was red (*quickly).
- (45) John was sitting in his father's chair (*quickly).

Some of the tests listed in Table 17 are problematic since it can be shown that they are sensitive to non-actional semantic features of agentivity and control (see §4.3.5), rather than dynamicity and change of time (Smith 1997: 40; Filip 1999: 19; Walková 2013: 17–18). The confusion arises since most stative verbs are non-agentive and non-controllable, whereas processes are often agentive, but need not be (Johanson 2000: 64). More specifically, this concerns imperatives, which are in fact sensitive to agentivity, rather than to stativity, as demonstrated by the incompatibility of nonagentive and nonstative verbs with the imperative, e.g. **Roll down the hill, ball* and **Babble, stream!* (Levin & Rappaport Hovav 2005: 89). The same is true for tests with control predicates (*persuade, force*) and the test with some of the adverbials of manner (*deliberately, vigorously*) (Kroeger 2019: 382). Thus, the sentence **Max is vigorously tall* (state) is as unacceptable, and so is the sentence **The snow is melting vigorously* (process), as both predicates are non-agentive.²⁹⁹

The independence of agentivity and dynamicity is demonstrated by instances of nonstative (dynamic, eventive) verbs which are non-agentive, e.g. *shiver* as in *The dog shivers in the cold*, or *shake* as in *The house shook during the earthquake* (Van Valin 2005: 36).³⁰⁰ The opposite

²⁹⁷ The evidence of crosslinguistic differences is largely anecdotal. For instance, Bertinetto (1994a: 400–401) mentions differences between English and Italian regarding the behavior of states with the imperative. More information is available on French (Martin 2008: chap. 2; cf. Smith 1997: 214, 223).

²⁹⁸ Therefore, such adverbs are also only marginally acceptable with achievements (Smith 1997: 42; Van Valin 2005: 36).

²⁹⁹ Examples are taken from Van Valin (2005: 36).

³⁰⁰ Cf. also some achievements such as *find*, which are non-volitional, as in *I've found a 100\$ banknote on a sidewalk!* (Walková 2013: 18).

combination, that is, stative and agentive is also possible. While it is sometimes claimed that “participants of states never exhibit agent-like properties” (Tatevosov 2002a: 330; citing Chung & Timberlake 1985), it appears that this is true only for permanent states. Agentive or controllable temporary states are mentioned, among others, by Dowty (1979: 184), e.g. *sit*, *stand* and *lie* with human subjects, and by Dik (1989: 97), e.g. the sentence *John kept his money in an old sock*. Dowty (1979: 184, 185–186) also mentions predicates such as *be polite* and *be a hero*, which can occur in imperatives and control complements, e.g. *Be careful!* *He is trying to be good.* and *I persuaded her to be less formal* (Kroeger 2019: 382). However, in the case of predicates with *be*, we are in fact dealing with instances of actional coercion, whereby an otherwise stative predicates *be careful* and *be polite* are coerced into a dynamic reading. This also entails creation of a new verb sense, as in *Be polite!* the predicate *be polite* means ‘behave polite.’

4.3.2. Transition (τ)

Transition (τ)³⁰¹ represents a natural endpoint of a process and a starting point of a new state or process. Transition is typically discussed in the literature in the context of final endpoints, where it is known as telicity. However, transition is a broader notion than telicity because telicity concerns only the final endpoints (cf. §3.3.2, Johanson 2000: 58–59).³⁰² In that sense, we can distinguish between the right-edge transition (or telicity) and the left-edge transition.

The distinction between two kinds of transitions is reflected in the fact that, to my knowledge, no test can be used to register every instance of transition (τ) in the lexical representation and sentence context. Instead, the presence of transition is established separately for different groups of classes, that is, the specific test that is employed depends on the configuration in which transition (τ) is found. There are four configurations in which transition (τ) occurs. Since transition (τ) is best understood in the context of the configurations that it forms part of, further discussion about its properties is deferred until §4.4.³⁰³

The decision to posit one transition as a primitive, regardless of the evidence that suggests the existence of at least two kinds of transition points (the right-edge one or telicity, and the left-

³⁰¹ Also referred to as “transformation” in Johanson’s model (§3.3.2).

³⁰² Telicity is sometimes referred to as transition.

³⁰³ Telicity is specifically covered in §4.4.2.2.

edge one), is based on the observation that positing only one primitive allows us to explain more elegantly the crosslinguistic differences in lexicalization patterns of similar verb senses (e.g. ‘die’) and to observe more easily the parameters of variation. If we were to posit two or more transition primitives, the connection between lexicalization patterns of several actional classes could not be observed. An example with the verb sense ‘die’ is provided in the introduction to §4.4.2. In addition, positing only one transition primitive helps us better understand the properties of the class of two-phase verbs. Thus, while I do not deny that my transition (τ) has multiple (or at least two) linguistic realizations, it is represented in the model as a single primitive because this way it has a greater explanatory power.

4.3.3. Multiplicative process (M) and semelfactive quantum (Q)

The final two actional primitives, multiplicative process (M) and semelfactive quantum (Q), are rarely explicitly posited in the literature. The **multiplicative process (M)** primitive, adopted from Tatevosov (2002a: 332–334), is exemplified by sentences such as *John is coughing*. It resembles a “plain” process (ϕp) in terms of its actional properties; hence the terminological affinity.³⁰⁴ A key difference between a multiplicative and plain process lies in the fact that the former, but not the latter, consists of repeated occurrences of individual smaller elements of very short duration (Tatevosov 2016a: 79–82). This element is called a **quantum** of a multiplicative process or a **semelfactive quantum**; it is symbolized by (Q).³⁰⁵ For instance, in the sentence *John is coughing*, the situation consists of multiple occurrences of coughs. The quantum of multiplicative process (Q) resembles transition (τ) but differs crucially from it by lacking a resultant state (see below).

As just suggested, the primitives (M) and (Q) normally appear in tandem as the multiplicative process (M) by definition consists of a series of semelfactive quanta (Q). This is reflected in the

³⁰⁴ Cf. also Smith’s (1997) term “Multiple-event Activities.” Multiplicative processes are also called “series” by Freed (1979), “full-cycle resettable verbs” by Talmy (2007: 106–107), and “intrinsically cyclic” by Timberlake (2007: 284).

³⁰⁵ The term *quantum* is suggested by Arkadiev (2009)), but is also used by Tatevosov (2016a). I added *semelfactive* to *quantum* to avoid the cumbersome term *quantum of the multiplicative process* used by Arkadiev and Tatevosov, and to preserve the terminological connection to a well-established term (“semelfactive”) (Comrie 1976: 42; Smith 1997: 29). Another term for *semelfactive quantum* is *point* (Moens & Steedman 1988: 16).

visualization in Figure 2.³⁰⁶ The symbol \approx is meant to represent the process-like properties of (M).

$$[\approx Q \approx Q]M$$

Figure 2. A visualization for the multiplicative process (M), which consists of a series of semelfactive quanta (Q).

This means that there is a class of verbs which encode both (M) and (Q). This class will be referred to as the **multiplicative activity** class and represented as [M+Q]. Typical examples of English verbs that encode (M) and (Q) are *knock, kick, slap, tap, blink, flash, nod, bang, fire (a gun), sneeze, bounce* etc. (Quirk et al. 1985: 201). The aspect-sensitive class which incorporates these two elements will be described in §4.4.3 and §7.5.

The semelfactive quantum (Q) is a punctual feature, but differs from transition (τ) as it entails no resultant state or process (Moens & Steedman 1988: 16; Smith 1997: 29; Boogaart 2004: 1169; Levin & Rappaport Hovav 2005: 88; Filip 2011: 1201). In English, this is reflected in the inability of [M+Q] verbs to be used as stative modifiers, e.g. **the tapped window, *the flashed light* – cf. *the shattered window, the burst blood vessel* (Van Valin 2005: 38). Another indicative property of these verbs is that they are “rather odd in combination with the perfect,” as in *#Harry has hiccupped* (Moens & Steedman 1988: 16).³⁰⁷ The fact that (Q) does not entail a result may explain why (Q) is inseparable from the multiplicative process (M). The connection is explained as follows by Van Valin (2005: 38): “because the subject of a semelfactive verb does not undergo a change of state, it can repeat the action, hence the possibility of a [multiplicative] reading” (cf. Quirk et al. 1985: 208).³⁰⁸

³⁰⁶ The visualization is in part inspired by Bickel (1997: 118–119), who proposes an analysis according to which multiplicative verbs such as *flash* are derived from semelfactives by simple superimposition of the (M) operator (that is, an imperfective marker) that dominates the (Q) feature in the lexical item. In other words, he analyses a multiplicative situation as a phase (M) that can be broken down into multiple situations (Q). Note that Bickel refers to multiplicatives as “iteratives” and semelfactives as “achievements.” The features (M) and (Q) are referred to as (ϕ) and (τ), respectively, that is, Bickel does not distinguish between transition (τ) and semelfactive quantum (Q).

³⁰⁷ Further diagnostics are discussed in Smith (1997: 46).

³⁰⁸ The distinction is sometimes not drawn, and it is claimed that punctual verbs in general acquire an “iterative” interpretation in PROG or IPFV (e.g. Kroeger 2019: 385).

As already explicated, the (M) meaning patterns with plain processes (Smith 1997: 24, 50; Levin 1999: 230–231; Van Valin 2005: 36) in most respects, and consequently passes many of the tests associated with them, for which see §4.3.1. What separates them is the existence of a semelfactive (Q) interpretation with multiplicative processes (M).

A terminological note is in order. The term *multiplicative* is adopted from Tatevosov (2002a: 332), who specifically uses it to refer to “situations that repeat many times with the same participants and occupy a single time span” or, put differently, to “repeating simplex situations that constitute one complex situation.” This kind of “repetition” is different from the one in which “situations occupy (...) different time spans (...) e.g. *Every morning he walked in the garden*” (ibid.). The latter is most commonly referred to as *habitual*. The difference between the two is that only some verbs are multiplicative, and multiplicativity is therefore a lexically determined characteristic. In contrast, the habitual meaning is available to most verbs, and it is usually conveyed by aspect morphology, rather than lexically (Tatevosov 2002a: 333; cf. Huddleston & Pullum 2002: 124). I avoid the term *iterative*, which is indiscriminately used in the literature to refer either to the lexical property of verbs (i.e. as a synonym of *multiplicative*) or to the habitual.³⁰⁹

4.3.4. Summary and comparison with Tatevosov and Breu

This rounds up the presentation of actional primitives. The five actional primitives used in the present work are: state (φ_S) and process (φ_P), which are collectively referred to as phases (φ), transition (τ), multiplicative process (M) and semelfactive quantum (Q). The latter two are always found combined in a single class.

The system of actional primitives presented here is probably closest to the system of actional meanings (primitives) proposed by Tatevosov (§3.2) and simple actional classes by Breu (§3.1). My system is an adaptation of these two models. A comparison is provided in Table 18, where it is made evident that the three systems slightly differ terminologically but capture in essence the same set of semantic distinctions.

³⁰⁹ Comrie (1976: 27) and Shirai (2000: 334) make the same distinction, but use “iterative” instead of “multiplicative” for the lexically determined property. Alternatively, *iterative* can be used (if necessary) as a notion superordinate to both habituality and multiplicativity (Khakovskij 1997).

Actional primitives in the present work		Actional meanings from Tatevosov (2002a; 2016a)	Simple classes from Breu (1996; 1998)
phases (φ)	state (φ_S)	state (S)	TSTA
	process (φ_P)	process (P)	RSTA
transition (τ)		entry into a state (ES)	TTER
		entry into a process (EP)	
multiplicative process (M)		multiplicative process (M)	n/a
semelfactive quantum (Q)		n/a	n/a

Table 18. Actional meanings in the present work compared with Tatevosov and Breu.

Tatevosov’s system does not include the semelfactive quantum of the multiplicative process (Q), which is subsumed under ES. However, in Tatevosov (2016a: 89–90), he considers including such an actional meaning, which he calls *entry into a multiplicative process*,³¹⁰ but ultimately decides against it, citing a lack of crosslinguistic evidence.³¹¹ Tatevosov does not consider the fact that his ES (our transition) differs from the semelfactive quantum by the absence of a result state, as we discussed in §4.3.3 (cf. also Tatevosov 2016a: 246).

4.3.5. Excursus: non-actional features in actional classification

The primitives (building blocks, meanings) discussed in the previous sections are taken to be “temporal,” i.e. actional. There are other features that are often invoked in actional classifications but are today considered to be nontemporal and thus orthogonal to actional classification. The best known are agentivity and causation; another one is control. The three are briefly discussed in this section.

A successful actional classification distinguishes temporal properties from other lexical features of the verb. This is important, as it is often unclear whether certain routinely used tests for actional classes instead test for other semantic components. It is important to recognize that “[i]n fact, we can use a number of quite different combinatoric batteries to set up verbal subclasses on virtually orthogonal dimensions” (Evans 2010: 529). That is, there is a recognition of the fact that actionality, causation, etc. belong to only one of the many types of

³¹⁰ Ru. *vxoždenie v mul'tiplikativnyj process*.

³¹¹ But the very same actional meaning is added to Tatevosov’s model in Arkadiev’s (2009) analysis of Adyghe for reasons of conceptual symmetry.

verbal classes, the others being classes based on, for instance, argument structure, or spatial disposition. This is useful since it helps us keep in mind that actionality often does not reveal itself in a distilled form, but it is rather intertwined with other semantic properties of the verb.

Agentivity was mentioned in §4.3.1 in connection with states and processes. It was shown that most, but not all, stative verbs are nonagentive, whereas dynamic verbs can be both agentive and nonagentive. It thus follows that agentivity is orthogonal to the actional classification as agentive and nonagentive verbs are found in all actional classes. This insight is attributed to Dowty (1979: 183–184) and is “today accepted across a wide range of theoretical frameworks” (Filip 2011: 1198; see also Brinton 1988: 56; Levin & Rappaport Hovav 2005: 89).

Causation also has a long history of being conflated with actional features. The most prominent example is Dowty’s CAUSE operator, which was part of his decompositional analysis of actional classes. CAUSE in Dowty’s analysis distinguished accomplishments from achievements. This analysis is largely rejected today (see Filip 2011: 1199–1200 for an overview; cf. also Bickel 1997: sec. 3; Levin & Rappaport Hovav 2005: 89–90; Tatevosov & Ivanov 2009: 99–104; Filip 2012: 732–735), mostly on the grounds that all actional classes include causative and noncausative verbs in (as shown by Van Valin & LaPolla 1997: 97; Van Valin 2005: 38–42).

Despite being conceptually distinct, actionality and causation (maybe more so than actionality and agentivity) can be inseparable in some languages in terms of verb classifications, for instance in Kokota (Palmer 2009) and Samoan (Mosel 2000), both Austronesian languages of the Oceanic branch. Talmy (2007: 117–127) provides an overview of the interactions of actionality and causation, drawing from a variety of languages (cf. also Van Valin 2005: 41–42). This is why, in many approaches, verb classifications and lexical representations include elements of both actionality and causation (e.g. Croft 2012). This is not unlike the classification of verbs in Functional Grammar, which combines actionality with control, a feature discussed next.

Control is similar to agentivity and it is unclear if it is possible to consistently distinguish it from it. It is posited in Functional Grammar (see §2.3.2) as one of the features upon which the classification of situation descriptions (“state of affairs”) is based. Dik (1989: 96) thus notes that control crosscuts the actional distinctions based on the features of dynamicity, telicity and momentaneousness (punctuality). In FG it is defined as the feature determining “whether or not

the [state of affairs] can be initiated/ended by one of the participants” (Dik 1994: 28). Control can be isolated through co-occurrence tests with adverbs such as *deliberately* or *carefully*. This test is sometimes used as a diagnostic to distinguish dynamic from nondynamic verbs (see §4.3.1), but some authors caution against it since it is noted that even some dynamic verbs are odd modified by them, e.g. *?John deliberately found his watch* (Smith 1997: 31, Van Valin 2005: 36). This clearly demonstrates that actional classification and control are orthogonal (Smith 1997: 32). Van Valin for that reason suggests replacing these adverbs with similar adverbs that do not require a controlling subject, such as *vigorously*, *gently*, *powerfully* or *violently* (e.g. *the dog shivered violently/*deliberately*). The distinction is subtle and appears to be largely language-specific.

4.4. Actional classes in this study

This section addresses the question posed by Filip: “what is the most fitting actional classification for natural languages?” (Filip 2011: 1193). The answer crucially hinges upon the goal of the classification, that is, whether its purpose is to achieve a language-specific classification schema, or rather to discover crosslinguistic patterns (see §4.1.3). Only the latter is the goal in the present work.

The classification proposed here is posited with aspect-languages in mind. It draws from proposals by W. Breu and S. Tatevosov, which dictates a somewhat different arrangement of basic building blocks – or actional primitives – into actional classes. This implies that actional classes are not taken as holistic concepts, but as configurations of actional features (cf. Sasse 2002: 214). Of course, possible configurations of actional primitives are somewhat restricted, and only a small number of attested configurations are crosslinguistically relevant. In §4.1.3, the crosslinguistically relevant configurations of actional primitives were referred to as crosslinguistic actional types or CLATs. The list of actional classes used in this work corresponds closely to Tatevosov’s list (see Table 11 in §3.2 and Table 19 below). For the sake of completeness, an illustration of a rare and language-specific configuration is provided in §4.4.4.

The presentation of classes follows the distinction between the conception of W. Breu introduced in §4.2.1, in which actional primitives can build actional classes in two ways. Some classes are built from only one actional primitive – these are referred to as simple actional classes. Others are built from a combination of primitives – these are referred to as complex

classes. The former ones are covered in §4.4.1, and the latter ones in §4.4.2 and §4.4.3.³¹² The defining properties in terms of actional primitives and tests are given for each class. The relationships between classes are also discussed.³¹³

Actional classes will be referred, whenever appropriate, by existing Vendlerian terms (e.g. activities, accomplishments, achievements). They will be represented by combinations of symbols for actional primitives (φ_S , φ_P , τ , M, Q) enclosed in square brackets, e.g. $[\varphi_P\tau]$ for accomplishments or $[\tau]$ for achievements. This allows us to neatly distinguish between actional primitives, e.g. transition (τ), and simple actional classes, e.g. achievements $[\tau]$. I also distinguish between primitives and simple classes terminologically. A summary is provided in Table 19. Inchoative states $[\tau\varphi_S]$ and ingressive activities $[\tau\varphi_P]$ are collectively referred to as initiotransformatives $[\tau\varphi]$.

Class	Simple / complex	Symbol [...]	Equivalent in Vendler	Equivalent in Tatevosov ³¹⁴
total states	simple	$[\varphi_S]$	state	Stative
plain activities	simple	$[\varphi_P]$	activity	Atelic/Processual
achievements	simple	$[\tau]$	achievement	Punctual
inchoative states	complex	$[\tau\varphi_S]$	n/a	Inceptive-Stative
ingressive activities	complex	$[\tau\varphi_P]$	n/a	Ingressive-Processual
accomplishments	complex	$[\varphi_P\tau]$	accomplishment	Telic
two-phase verbs	complex	$[\varphi_1\tau\varphi_2]$	n/a	n/a
multiplicative activities	complex	$[M+Q]$	similar, but not identical to semelfactives	Multiplicative

Table 19. Actional classes investigated in the present work.

The classes listed in Table 19 are examined in Chapter 7 on a broader sample of 16 languages.

³¹² Similar conceptions are discussed by other authors (e.g. Durst-Andersen 1994; Walková 2013: 7 etc.), but they normally extend only to accomplishments (Tatevosov & Ivanov 2009: 99–100 is an overview). The notion of complex class is substantially different from the notion of complex event (Levin & Rappaport Hovav 2005: 112–117) and should not be confused with it.

³¹³ The issue of whether actional classes are distinguished “on an equal footing or form a hierarchy” is largely disregarded here (Tatevosov 2002a: 319; cf. Brinton 1988: 56), as is the question of whether the boundaries between classes are better understood as non-discrete and fuzzy (cf. remarks in fn. 255 and 256).

³¹⁴ Cf. Table 11 in §3.2. For now, the division between weak and strong classes cited in that table is disregarded. The list of CLATs is somewhat modified in Tatevosov (2016a). These differences are addressed in sections dealing with individual classes.

Among these classes, all are also included in Tatevosov's (2002a) list of CLATs, except for two-phase verbs [$\varphi_1\tau\varphi_2$]. The reasons for including that class in the investigation here are explained in §4.4.2.3. Most of these classes can further be subdivided into strong and weak types, as discussed in §4.4.4.

4.4.1. Simple actional classes: [φ_S], [φ_P], and [τ]

Simple actional classes consist of a single actional primitive. These classes are total states [φ_S], plain activities [φ_P], and achievements [τ].

4.4.1.1. Total states and plain activities

The tests that distinguish total states [φ_S] and plain activities [φ_P] overlap with the tests used to distinguish the primitives they contain; the state (φ_S) and the process (φ_P). These were discussed in §4.3.1.³¹⁵ Except from contrasting with one another, total states [φ_S] and plain activities [φ_P] also contrast with related classes of the initiotransformative kind, inchoative states and plain activities, respectively, which contain an initial transition point. The means to identify transition points are briefly discussed in §4.4.2.1 and again in Chapter 7. Plain activities are also contrasted with multiplicative activities [$M+Q$] in §4.4.3, and accomplishments in §4.4.2.2.

As actional classes, total states [φ_S] and plain activities [φ_P] are generally available with both the PFV and IPFV aspects. The meanings of state and process, respectively, are kept in both aspects. The PFV aspect normally brings out the delimitative meaning. A more detailed examination is provided in §7.1.3 for total states [φ_S] and in §7.2.1 for plain activities [φ_P]. In a PROG-NONPROG system, the behavior of plain activities [φ_P] does not change, in contrast to total states [φ_S], which exhibit restrictions when combined with PROG. The latter issue is addressed in §7.1.1.

4.4.1.2. Achievements

Achievements [τ] consist of the actional primitive transition (τ). For that reason, achievement verbs cannot refer to the process that possibly precedes them (that is, a preparatory process). This is nicely summarized by Binnick (1991: 195):

An achievement is all culmination; though the achievement is possibly preceded by some activity, [. . .] the verb refers only to the achievement phase, not to the preceding activity.

³¹⁵ For further properties of these classes, see Smith (1997: 44–45, 47).

Achievements [τ] most notably contrast with accomplishments, which can refer to a preparatory process. The lack of a preparatory process is often referred to as “punctuality.” The absence of a preparatory process is most clearly identified by the following tests.³¹⁶ They test the behavior of achievements in the Simple form, whereas the behavior of achievements with the PROG (and the IPFV) is more complex and will be discussed in §7.3.1 and §7.3.2.

The first test is with *for*-PPs and the construction *spend X time* (Rothstein 2004: 24–25). They are also used as tests for telicity (see §4.4.2.2 below).

- (46) #Bill arrived for half an hour.
- (47) #Bill spent half an hour arriving.

In this property, they contrast with initiotransformatives, which can be combined with a *for*-PP when referring to a resultant phase, for which see 4.4.2.1.

Achievements have duration if they occur with plural arguments, normally with the subject (Dowty 1979: 63, 82; Rothstein 2004: 25; Walková 2013: 26–27).³¹⁷

- (48) Guests arrived for two hours. (Rothstein 2004: 25)
- (49) Refugees arrived at the border for weeks. (Kroeger 2019: 384)

Like accomplishments, achievements are compatible with *in*-PPs and *take X time* expressions (Rothstein 2004: 26–27).

- (50) The critic noticed the picture in a few minutes.
- (51) It took the critic a few minutes to notice the picture.
- (52) Dafna fell asleep in ten minutes.
- (53) It took Dafna ten minutes to fall asleep.

However, *in*-PPs have different meanings with achievements than with accomplishments (e.g. *Dafna read a book in twenty minutes*). With accomplishments, *in*-PPs refer to the time within which the event occurred, that is, it is appropriate to say that “reading” occurred during the twenty-minute period. In contrast, with achievements *in*-PPs “assert (...) that the achievement event happened at the end of the relevant time period” (Rothstein 2004: 26) and not during that period as it is the case with accomplishments (Van Valin & LaPolla 1997: 96; cf. Smith 1997:

³¹⁶ Tests with *finish* and *almost* are discussed in §4.4.2.2.

³¹⁷ The same effect is found in Adyghe (Arkadiev 2009: 71).

41).³¹⁸ In other words, with *notice* and *fall asleep* an *in*-PP means ‘after X time’ and not ‘during the every moment of X time,’³¹⁹ e.g. (50) means ‘The critic noticed the picture *after* a few minutes’ (Filip 1999: 22; cf. Walková 2013: 28).³²⁰ The reinterpretation is attested across languages, for instance in Laz, cited in (54), Adyghe (Arkadiev 2009: 68), and Japanese (Mori, Löbner & Micha 1992: 256–257; Shirai 2000: 339–340).³²¹

(54) Laz: *in*-PPs with achievements mean ‘after X time’ (Mattissen 2001: 25)

a saat'i-ša nena gomandinu
 one hour-MOT voice get_lost.>1SG.PFV.PST
 ‘After one hour I lost my voice.’ (context: I yelled and yelled)

The ‘after’ meaning of *in*-PP is also found with inchoatives (see example (62) in §4.4.2.1) and semelfactives (Smith 1997: 46).

This difference is reflected in entailment patterns (this is Test #11 from Table 2 in §1.2.3). Consider an accomplishment verb in (55).

(55) Dafna read that book in twenty minutes **entails**
 Dafna was reading that book during twenty minutes.

In contrast, that entailment is not valid with achievements *notice* and *fall asleep*, as shown in (56) and (57).

³¹⁸ For more details see Rothstein (2004: 40–42). The difference was already recognized by Vendler (1957: 147), who observed that “[e]ven if one says that it took [someone] three hours to reach the summit, one does not mean that the ‘reaching’ of the summit went on during those hours.”

³¹⁹ This meaning is not a result of a reinterpretation, but rather part of the meaning of any *in*-PP. This means that *in*-PPs are generally ambiguous between the meaning ‘within X time’ and ‘after X time’ (Sasse 2002: 257 and references therein).

³²⁰ According to Van Valin (2005: 37), there are achievements which are incompatible with *in*-PPs expressing longer duration, e.g. **The window shattered in an hour*. In contrast, *The window shattered in a fraction of a second* is acceptable. It is unclear if he takes into account that an *in*-PP can mean ‘after’ with achievements.

³²¹ For Japanese, see also §7.3.1.

(56) Dafna fell asleep in ten minutes **does not entail**
Dafna was falling asleep during ten minutes.

(57) The critic noticed the picture in a few minutes **does not entail**
The critic was noticing the picture during a few minutes.

Another test where achievements and accomplishments diverge is the test with point adverbials such as *at X time* (Rothstein 2004: 25).³²² Achievements, unlike accomplishments, can occur with them.

(58) The guest arrived at midnight. (achievement)

(59) #Mary painted a picture at midnight. (accomplishment)

The oddity of (59) indicates that the test is sensitive to the fact that “painting” in its linguistic representation requires time to reach its endpoint, that is, it has a preparatory phase. In contrast, *arrive* lacks a preparatory phase. Two further tests that specifically distinguish between accomplishments and achievements in the Simple form are discussed in §4.4.2.2 below.

Another relevant property of achievements is that they do not behave uniformly with respect to tests sensitive to agentivity and control. For instance, the achievement verb *notice* is odd with *deliberately* and unacceptable as a complement of *persuade*. These are Tests #2–3 from Table 2 in §1.2.3 (cf. also §4.3.1 above).

(60) ??John deliberately found a penny.

(61) *John persuaded Bill to notice a stranger.

This characterization is valid only for a subset of achievements termed “purely lucky” achievements by Ryle (1949; cf. Dowty 1979: 53; Smith 1997: 31–32; Filip 1999: 23).

Other tests mentioned in the literature in connection with achievements include incompatibility with *stop* (except in a habitual interpretation), e.g. (*)*John stopped noticing the painting* (Filip 1999: 22) and incompatibility with phasal (or “aspectual”) verbs such as *start*, *continue* and *finish*, e.g. **John started/continued/finished reaching the summit* (Dik 1989: 95; cf. Smith 1997: 41–42).

Given all this, achievements are characterized as an aspect-sensitive class by a restricted range of interpretations with the IPFV aspect (no ongoing episodic meaning available) and the

³²² Also known as “punctual adverbials” (Smith 1997: 46). Rothstein refers to them as “punctually locating expressions”.

straightforward incompatibility with PROG. As we will see in §7.3, this characterization applies only to a subset of traditional achievement verbs, termed **strict achievements**.

The existence of a class of achievements distinct from accomplishments is disputed by some authors, most notably by Verkuyl (1989; 1993). This is based on the observation that many verbs can be construed both as achievements or accomplishments, depending on the type of object and contextual cues, e.g. *type the letter p* is an achievement, whereas *type the letter* is an accomplishment Verkuyl (1989: 59). The argument is further exemplified by Tenny (1994: 16):³²³

Duration is relative, however. Cracking a pane of glass may take only an instant, but cracking the bough of a tree might take a few minutes. A bomb explodes instantaneously but the explosion of a supernova may take millions of years. And in slow motion photography, the cracking of glass or a bombs' exploding could take some time, during which we could see the event evolving and the glass and the bomb undergoing some gradual change.

For that reason, the relevance of the notion of “punctuality” is often disputed and it is assumed that it is inessential and determined by world knowledge (cf. also Smith 1997: 19; Wilhelm 2007: 197). The issue is summarized by Tatevosov (2002a: 338): “punctuality is too relativistic a notion: whether or not a certain verb is interpreted as punctual depends mainly on extralinguistic, ontological relations and on our knowledge of these relations.”

However, it is my view that, as shown by the tests here and in §4.4.1.2, achievements can be clearly identified among other actional classes, in particular if they are studied in contexts under “normal” pragmatic conditions (Tatevosov 2002a: 382). This means that achievements and punctuality, if understood as the absence of the preparatory phase, are “a valid linguistic category” (Comrie 1976: 44), despite the difficulties with distinguishing punctual and durative situations with some verbs.³²⁴ Further arguments for the existence of achievements will be put forward in §7.3.1.

³²³ Further illustrative examples are discussed in Shirai (2000: 341) and Van Valin & LaPolla (1997: 105–106).

³²⁴ Again, it is exactly this “fluidity” that so many authors take issue with when discussing achievements (e.g. Tenny 1993: 490)

4.4.2. Complex classes with transition

Complex classes discussed in this section are built from a **phase** actional primitive, i.e. state (ϕ_S) or process (ϕ_P), and from the **transition** (τ) primitive. The idealized situation description involving transition always presupposes two phases. Namely, such situations always incorporate a process leading up to the transition on the one hand, and a temporary state or a process resulting from the transition on the other. For instance, consider the situation description of ‘dying,’ which consists of three components. The first is the process of dying, and this is the phase that leads up to the second component, i.e. the transition. The transition concerns the moment when the process of dying ends. This moment introduces the third component, the state of being dead. This is the second phase, which obtains after the moment of transition. This conception of complex situation descriptions involving transitions follows similar proposals found in Moens & Steedman (1988: 18), Klein (1994: 7–8),³²⁵ and Botne (2003: 236–240).³²⁶ All proposals have the three components in common, but they use a different terminology. Here I adopt the following terminology and visualization.

The phase preceding the **transition** (e.g. the moment of death) is called the **preparatory phase** (e.g. ‘dying’), and the one following the transition is called the **resultant phase** (e.g. ‘being dead’) (cf. Moens & Steedman 1988).³²⁷ The two phases are related by the notion of **contingency**, which refers to a “very general class of dependencies between events” and which is “related, but not identical to a notion of causality” (Moens & Steedman 1988: 16). The phases are joined in one situation precisely because there is a perceived dependency between the two. This was a major reason for positing a single transition primitive (τ), which allows us to link the two phases in a single idealized situation. If two transition primitives were posited, the connection would be lost, as explained in §4.3.2. An illustration is provided at the end of this introductory section.

In addition, Moens & Steedman (*ibid.*) insist that the relationship of contingency involves more than simple temporal sequentiality, and this is what distinguishes the transition between two

³²⁵ Klein’s term is “2-state situation.”

³²⁶ Botne’s representation was designed specifically to represent the situation description of dying.

³²⁷ Botne uses terms borrowed from phonology (originally from Freed 1979). The transition is called NUCLEUS, the preparatory phase ONSET, and the resultant phase CODA. I find the terms very confusing, and I prefer using the more intuitive descriptive labels preparatory phase, transition and resultant phase. Klein (1994: 8) uses the terms source state and target state.

contingent situations from the transition between two non-contingent ones. In the latter case, we are dealing with what was in §1.5.2 called the arbitrary endpoint.

A transition brings out “some kind of change of state in a particular argument, generally the patient or theme” (Kroeger 2019: 382).³²⁸ This change of state is followed by “a specific outcome (or result state)” concerning that particular argument (Boogaart 2004: 1168; cf. Smith 1997: 26). This new state can denote a literal physical change, where an object is affected (*break a pot, paint a house*), constructed (*build a house, write a letter*) or consumed (*eat an apple, destroy a house*) (Smith 1997: 27; cf. Rothstein 2004: 21). However, the change can be understood in the broadest sense and refer to a variety of less literal and less tangible result states,³²⁹ which include “a particular (deictically determined) location” with *arrive someplace* and something along the lines of ‘be aware’ with *notice something* (Rappaport Hovav & Levin 1998: 123), as well as various mental states as in *amuse Mary* (Smith 1997: 27), and so forth (see also Breu 1998: 59; Kroeger 2019: 383).³³⁰ The only condition is that the result state must not be trivial, i.e. that the result state of walking is having walked. In other words, there has to be a contingency relation between the preparatory process leading up to the transition and the ensuing result phase.

In Figure 3 and Figure 4, the transition (τ) is represented by the symbol \parallel ³³¹ and the preparatory phase is represented in the same way as the process ($\approx\approx\approx\approx\approx\approx$) in Figure 1 (the two are ontologically and linguistically very similar). Occasionally, the preparatory phase will be represented by the symbol (ϕ_{P1}). The resultant phase is either similar to a process or a state, and two distinct visualizations are used accordingly: Figure 3 represents when the resultant phase is a state (=====), and Figure 4 when the resultant phase is a process ($\approx\approx\approx\approx\approx\approx$). This distinction necessitates a terminological distinction: the **resultant state** and the **resultant**

³²⁸ The references cited in this paragraph generally refer only to accomplishments, but the properties of accomplishments they discuss can be extended to all event descriptions that encode the transition component.

³²⁹ Some authors, like Sasse (1997: 33–36) refer to the narrower concept as *resultativity* (*Resultativität, Zustandlichkeit*) and the broader one as *terminativity* (*Terminativität*).

³³⁰ English resultative constructions are sensitive to the distinction between physical and non-physical change of state: *She broke the planks apart* is acceptable, in contrast to the ungrammatical **She walked the street across* (Spencer & Zaretskaya 1998: 2–3).

³³¹ Ebert uses the letter Teth adopted from Johanson’s classification (see §3.3.2). Botne and Moens & Steedman use a single horizontal line. I adopted double horizontal line for visual distinctiveness.

process are distinguished. For the latter, I will occasionally use the symbol (φ_{P2}) to distinguish it from the preparatory process (φ_{P1}).

In the first visualization, the resultant phase is a (temporary) state (=====):³³²

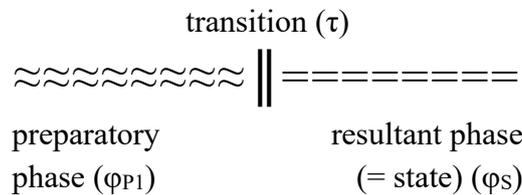


Figure 3. Visualization for the idealized situation description with a transition, where the resultant phase is a state.

The example is the situation of ‘becoming red.’ The preparatory phase is a process of becoming red. The transition corresponds to the point of reaching the state of being red or the moment of becoming red. The resultant phase corresponds to the state of being red.

In the other, the resultant phase is a process (~~~~~):

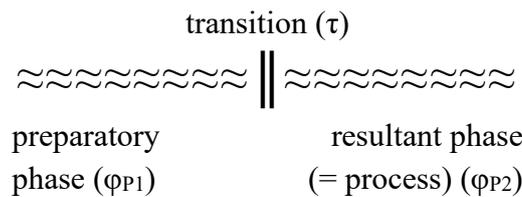


Figure 4. Visualization for the idealized situation description with a transition, where the resultant phase is a process.

The example is the situation of ‘boiling’. The preparatory phase refers to the heating up of water. The transition is the moment when the water reaches 100°C. The resultant phase corresponds to the situation where the water has already reached 100°C and is brought to a boil.

It is important to note that the temporal structure represented in Figure 3 and Figure 4 is rarely lexicalized in its maximum range. This means that the descriptions of real-world situations with a transition can potentially have all three stages but encode only some of them. For instance, there are four possible lexicalizations of the real-world event of dying (Botne 2003: 238), which can be equated with four actional classes that can be derived from the maximum schema, one elementary, ad A), and three complex, ad B)–D).³³³

³³² Cf. the representation by Brey (1998), which is more complex.

³³³ Cf. also the example discussed in Klein (1994: 7–8).

A) Only transition (τ). The verb analogous to the English *die* will only mean something like the English ‘(s)he died’ in its inflectional forms,³³⁴ but cannot mean ‘(s)he is dying’ or ‘(s)he is dead.’ This corresponds to the elementary class of **achievements** [τ], discussed in §4.4.1.2 above.

B) Only transition (τ) and resultant phase, either a resultant process (φ_{P1}) or resultant state (φ_S). The verb analogous to the English *die* will only mean something like the English ‘(s)he died’, ‘(s)he is dead’, but cannot mean ‘(s)he is dying’. This corresponds to the actional classes referred to collectively as **initiotransformatives** [$\tau\varphi$] in §4.4.2.1 below. Depending on the characteristics of the resultant phase, we speak of inchoative states [$\tau\varphi_S$] and ingressive activities [$\tau\varphi_P$].

C) Only preparatory phase (φ_{P1}) and transition (τ). This corresponds to the English verb *die*, whose inflectional forms can refer to the transition ‘(s)he died’ and the preparatory phase ‘(s)he is dying’, but cannot refer to the resultant phase, for which a separate (but etymologically related) lexeme *dead* is used. This is the class of **accomplishments** [φ_{PT}], discussed in §4.4.2.2 below.

D) A full range of components is lexicalized, transition (τ), and both the preparatory phase (φ_{P1}) and resultant phase, either a resultant process (φ_{P2}) or resultant state (φ_S). The verb analogous to the English *die* refers to something like the English ‘(s)he died’, ‘(s)he is dead’, as well as ‘(s)he is dying’ in its inflectional forms. This is the class of **two-phase verbs** [$\varphi_1\tau\varphi_2$], discussed in §4.4.2.3 below.

The complex actional classes described ad B)–D) are discussed in the remainder of this section.

4.4.2.1. Initiotransformatives [$\tau\varphi$]

Initiotransformatives refer to all verbs which consists of a transition (τ) and a resultant phase (φ) (the term is from Johanson 2000).³³⁵ Among initiotransformatives, two classes are distinguished, inchoative states and ingressive activities. With inchoative states [$\tau\varphi_S$], the resultant phase has properties of states, whereas with ingressive activities [$\tau\varphi_P$] the resultant phase has properties of processes (see §4.3.1). As for the labels, I follow the distinction between the terms *inchoative* and *ingressive* established in Nedjalkov (1987).³³⁶

As noted in §2.2.4.1, initiotransformatives (i.e., specifically inchoative states) are not one of the original Vendlerian classes, and are not normally mentioned among the actional classes in

³³⁴ The notion of inflectional form follows the conception laid out in §1.3.

³³⁵ Bickel (1996) uses the term “ingressive phasal verbs.”

³³⁶ Cf. Tatevosov (2002a: 335–336) and Breu (1998: 60fn4). Among scholars of Bantu languages, the label *inchoative state* is used to refer to a group of classes which encode at least a transition and a resultant state (Persohn 2017: 19–22, 113–117). This notion is largely coextensive with my inchoative states but can be broader than that and include two-phase verbs as well.

English. In most accounts, inchoative states are analyzed as states with a derived achievement (punctual) reading, whereas ingressive activities are rarely distinguished from plain activities. I return to the status of these classes in English in §7.1.4 and 7.2.2, respectively.

In contrast, in bidimensional and typological literature, initiotransformatives (that is, at least inchoative states) are routinely included among actional classes, e.g. by Breu (§3.1), Tatevosov (§3.2), Johanson (§3.3.2), and others (cf. also Tatevosov 2016a: 253, 256; Johanson 2000: 62–63). They are also mentioned in Comrie (1976: 50–51).

Some authors explicitly argue in favor of considering initiotransformatives as a class of their own and are against the traditional analysis of inchoative states as a hybrid class of states and achievements. Johanson (2000: 63), for instance, observes that initiotransformatives are “certainly ambiguous, but their ambiguity is systematic, distinguishing them from all other classes.” I would like to reiterate that an Anglocentric bias is certainly at display here because, in my view, initiotransformatives are no more ambiguous than accomplishments, which could be analyzed as a hybrid class of activities and achievements. The only difference is that, in English, the two components of an accomplishment (preparatory process and transition) are encoded by two different aspect forms (PROG and Simple/NONPROG, respectively), whereas the two components of an initiotransformative (transition and result state/process) are both encoded by the same aspect form, viz. Simple/NONPROG.

As an actional class, inchoative states $[\tau\phi_S]$ behave in the following way. The PFV aspect form encodes the transition point (τ) and the IPFV form the resultant state (ϕ_S). Their structure can be visualized as in Figure 5.

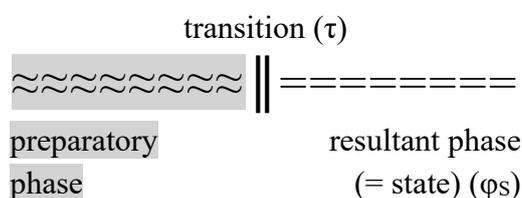


Figure 5. Visualization for inchoative states $[\tau\phi_S]$.
The preparatory phase is not encoded (in gray).

For instance, in Laz (Mattissen 2001: 24, 26) the PFV form *mamşkorinu* is translated as ‘I became hungry,’ that is, it refers to a transition (τ) into the new state of being hungry. The IPFV form *mamşkorinen* accordingly means ‘I am hungry’ and refers to that new state (ϕ_S).

In the Breu-Sasse model, it is claimed that the resultant state has the properties of a temporary state (Breu’s relatively static) rather than the permanent state (Breu 1998: 60–62). This matter is revisited in §7.1.5.

According to Tatevosov (2002a: 331–332), the class of ingressive activities $[\tau\phi_P]$ was first suggested by Ebert (1995: 191). In Tatevosov’s work, the class is established as one of the crosslinguistic actional types (CLATs).³³⁷ The class is absent from Breu’s (cf. below) and Johanson’s models.³³⁸

As an actional class, ingressive activities behave in the following way. The PFV aspect form encodes the transition point (τ) and the IPFV form the resultant process (ϕ_P). Their structure can be visualized as in Figure 6.

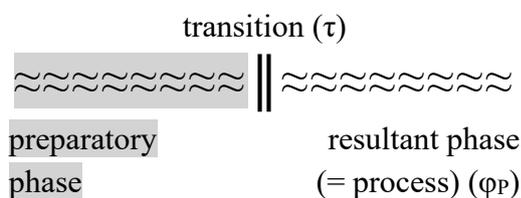


Figure 6. Visualization for ingressive activities $[\tau\phi_P]$.

The preparatory phase is not encoded (in gray).

For instance, in Tatar (Tatevosov 2002a: 385) the PFV form *kajna-dʁ* is translated as ‘came to boil,’ that is, it refers to a transition (τ) into the new state of boiling. The IPFV form *kajna-ʁj ide* accordingly means ‘it is boiling’ and refers to the resulting process (ϕ_P).

It is sometimes noted in the literature that an initial (left-edge) boundary which manifests in the PFV aspect is natural for states only, whereas for activities it is not. Instead, activities are then assumed to be more naturally associated with the delimitative meaning in the PFV aspect. This position is most prominently assumed in the Breu-Sasse model (cf. also Bache 1982: 69).³³⁹ Crosslinguistic evidence against this claim is considerable; it is discussed at various places in Chapter 7 (e.g. §7.1.3, §7.2.2).

³³⁷ Tatevosov refers to ingressive activities as “ingressive-atelic.” The label *ingressive activities* was preferred in the present work to keep the terminological connection with the Vendlerian activities.

³³⁸ That is, Johanson’s original conception of “initiotransformatives” is restricted to inchoative states, while ingressive activities are seen as a special reading of activities (e.g. 2000: 157–158).

³³⁹ The absence of ingressive activities is observed by other authors (e.g. Ebert 1995: 202fn5).

Discussions about tests for initiotransformatives are rare, which is explained by the absence of this class from the traditional Vendlerian classification. The following properties can be adduced from the literature. First, initiotransformatives normally pattern with both achievements with respect to the tests for “duration.” This shows that tests for achievements do not test for “punctuality” in the narrow sense, but rather the absence of the preparatory phase. The clearest example is the meaning of ‘after’ for *in*-PPs in the PFV, which occurs with achievements and initiotransformatives. This is illustrated for Laz in (62) and Adyghe in (63) and is parallel to what we have seen with achievements in §4.4.1.2.

(62) Laz (Mattissen 2001: 24)

cu saati-ša mamşkorinu
 two year hungry.>1SG.PFV.PST
 ‘After two hours I became hungry.’

(63) Adyghe (Arkadiev 2009: 67)

č’ale-r taqjəq-jə-š’ə-č’e ča-ke
 boy-ABS minute-INF-three-INS run-PFV.PST
 ‘The boy started running in three minutes.’ (after his father called him)

Likewise, initiotransformatives should be acceptable with punctual adverbials, but I have found no examples confirming this prediction in the PFV-IPFV languages I consulted. One important test for identifying a resultant phase which can be used to identify initiotransformatives is that they may continue into the present (Smith 1997: 195). A sentence such as *Marie a été heureuse à la vue de son fils* ‘Marie was (got) happy at the sight of her son’ would not be contradicted by the assertion that Marie may still be happy. Apart from French, a similar test has also been successfully applied to distinguish between noninitiotransformatives and initiotransformatives in Belhare (Bickel 1996: 214). This is illustrated by the ingressive activity verb *hapma* ‘(start to) cry, weep’ in (64) and (65), where the former is compatible with the assertion in the latter.

(64) Belhare initiotransformative verb

hab-he
 weep-PT
 ‘S/he started to cry.’

(65) Belhare initiontransformative verb

hapbhet
 weep.TEMP
 ‘S/he is crying now.’

In contrast, such a continuation is not possible with the plain activity verb *khəns-e* [play-PT] ‘s/he played’.

The presence of the resultant phase can also be tested by the construction ‘(has) V-ed and is still V-ing’ (Johanson 2000: 63). Finally, the resultant phase (i.e., IPFV forms) is of course compatible with *for*-PPs.

4.4.2.2. Accomplishments [φPT]

Accomplishments are a complex actional class; they consist of the preparatory process (φP) and transition (τ) components. Thus, accomplishments [φPT] “have successive stages in which the process advances to its natural final endpoint” (Smith 1997: 26). Put differently, the accomplishment is a process which “moves toward a finishing point” (Rothstein 2004: 21). This property is called **telicity**,³⁴⁰ and the point at which an accomplishment ends is called by a variety of terms: right-edge boundary, natural endpoint, natural final point, intrinsic bound, culmination, completion, (definite) change of state, transition component, set terminal point, telic point (Smith 1997: 19; Rothstein 2004: 21; Filip 2011: 1200–1201, *inter alia*).³⁴¹ Telicity is independent from agentivity as transition need not be brought about by a willful agent, e.g. *flow from X to Y* (Dowty 1979: 184 et passim; Smith 1997: 19). Recall that in this work, telicity is subsumed under the broader notion of transition (τ), which encompasses both the left-edge boundary, as well as the right-edge boundary, i.e. telicity (see §4.3.2 and the introduction to this section).

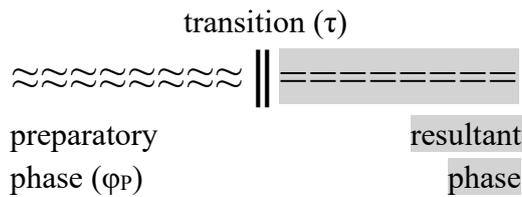
It is important to point out that even though, due to the presence of an endpoint, accomplishments **imply** a result, they **do not encode** it. Accomplishments are in that sense “resultative.” For instance, in the sentence *John ate a sandwich*, there is a resultant phase of the sandwich being eaten, but this cannot be expressed by any inflectional form of the verb *ate*. That is, the resultant state is implied.³⁴²

The structure of accomplishments can be visualized as in Figure 7. The resultant phase is only implied and is shaded gray.

³⁴⁰ The term is normally attributed to Garey (1957) but was apparently attested earlier (Dixon 2012: 44).

³⁴¹ In the literature, one also finds *bounded* and *boundedness* used as synonyms of *telic* and *telicity* (e.g. Van Valin & LaPolla 1997: 93; Van Valin 2005: 31ff.). In §1.5.2, however, I used *boundedness* in a broader sense, encompassing both natural (i.e., telicity) and arbitrary endpoints.

³⁴² Some authors hold a different view – Levin & Rappaport Hovav (2005: 92–93) provide a critical overview.



*Figure 7. Visualization for accomplishments [$\phi_P\tau$].
The resultant phase is only implied (in gray).*

The presence of the natural endpoint contrasts accomplishments with activities. Activities are atelic, accomplishments are telic. Telicity, and in particular the distinction between accomplishments and activities, has been at the center of interest in formal semantics (Filip 2012: 721).

It should be noted that some authors restrict (e.g. Comrie 1976: 47) the notion of telicity to verbs denoting a process leading up to the terminal point (that is, accomplishments), and accordingly do not regard achievements as telic (cf. also Walková 2013: 7–8).

Furthermore, the presence of the preparatory process is what distinguishes accomplishments from achievements, where the preparatory process is absent. However, the boundary here is not completely clear and deserves further discussion. For that reason, the discussion about the distinction between these two classes is expanded on in §7.3.

Here, I mainly discuss only the tests that distinguish between accomplishments and activities. The classic tests are the Dowty tests 8-10 and tests 12-14 from Table 2 in §1.2.3. They are reproduced in Table 20.

No	Test	Activities	Accomplishments
7	x is V-ing entails x has Ved	YES John is running. → John has run	NO John is building a house. ↗ John has built a house
8	occurs with <i>for an hour/ spend an hour</i> V-ing	YES John walked for an hour.	YES John spent an hour painting a picture. ?John painted a picture for an hour.
9	V <i>for an hour</i> entails at all times in the hour	YES John walked for an hour. → John walked at any time of the hour	NO ?John painted a picture for an hour. ↗ John painted a picture at any time of the hour
10	occurs with <i>in an hour/ take an hour to</i> V	NO #John walked in an hour.	YES John painted a picture in an hour.
12	occurs with <i>stop</i>	YES John stopped walking.	YES John stopped painting the picture.
13	occurs with <i>finish</i>	NO *John finished walking.	YES John finished painting a picture.
14	ambiguity with <i>almost</i>	NO John almost walked. → John did not walk	YES John almost painted a picture. → (1) John did not paint at all, (2) John painted but did not quite finish.

Table 20. Dowty's test contrasting accomplishments with activities.

In fact, two of the six tests target accomplishments specifically because they determine a combination of both telicity (the right-edge boundary) and the preparatory process phase, namely the complement of the *finish* test (Test #13) and ambiguity with *almost* (Test #14) (Walková 2013: 16; Bar-el 2005: 71–72). Therefore, they can also be used to distinguish accomplishments from achievements. In contrast, the other three tests (Nos. 7–9)³⁴³ appear to be primarily sensitive to the presence of the natural endpoint and thus distinguish activities, on the one hand, from accomplishments and achievements, on the other.

³⁴³ The test with *stop* is normally used in conjunction with the test with *finish* and will be disregarded here. The same is done regarding Test #9, which is used to show that accomplishments are heterogeneous, unlike activities, which are homogeneous (for more on this test see Filip 1999: 21, 25ff.).

I begin with the tests with *finish* and *almost*. With respect to these tests, accomplishments are contrasted with activities and achievements.³⁴⁴ As can be observed in Table 2 and Table 20, accomplishments can serve as complements of the verb *finish*, as in (66), whereas activities and achievements cannot, as in (67) and (68). English examples are from Walková (2013: 16).

- (66) John finished painting a picture. (accomplishment)
 (67) *John finished walking.³⁴⁵ (activity)
 (68) *John finished noticing the painting. (achievement)

For this reason, one says that activities “*terminate* or *stop*, but they do not *finish*” (Smith 1997: 23).

Outside English, the test is sometimes unavailable (see §4.2.4.2), but there are languages where it can be replicated, e.g. in Maltese, where we find the same contrast with complements of the verb *spicċa* ‘finish’ illustrated in (69) and (70) (Spagnol 2009: 24–25).³⁴⁶

- (69) Test with *finish* in Maltese: accomplishment verb
Għad=ni kif spicċ-ajt n-ikteb ittra
 still=1SG how finish-PFV.1SG IPFV.1SG-write letter
 ‘I just finished writing a letter.’
- (70) Test with *finish* in Maltese: activity verb
 **Għad=ni kif spicċ-ajt n-idħaq*
 still=1SG how finish-PFV.1SG IPFV.1SG-laugh
 ‘I just finished laughing.’

The test with *almost* was already briefly discussed in §4.2.4.2,³⁴⁷ where it was observed that accomplishments exhibit ambiguity with the adverb *almost* as in example (42), repeated here as (71). The reading #1 is called “event cancellation” (no painting occurred); the reading #2 is called “event non-completion” (some painting occurred, but a picture was not finished).

³⁴⁴ Two other tests that specifically distinguish achievements from accomplishments were already discussed in §4.4.1.2, namely the difference in interpretations of *in*-PPs and difference in entailments relations between the Simple and the Progressive.

³⁴⁵ *John finished walking* is acceptable when it is understood that John walked a particular distance (Walková 2013: 16).

³⁴⁶ No examples were provided for achievement verbs.

³⁴⁷ For more on this test see Dowty (1979: 241–244). Cf. also Dik (1989: 93), Smith (1997: 28, 43–44).

- (71) John almost painted a picture.
 1. John did not paint at all.
 2. John painted but did not quite finish.

In contrast to accomplishments, activities and achievement exhibit no ambiguity with *almost* (Walková 2013: 17).³⁴⁸ Instead, as illustrated in (72) for activities and in (73) for achievements,³⁴⁹ they only allow the “event cancellation” reading (reading #1), whereas the “event non-completion” reading (reading #2) is excluded.

- (72) John almost ran. (activity)
 1. John was close to running but he did not run.
 2. #John started running but he did not finish.

- (73) John almost won the race. (achievement)
 1. John was close to winning the race but he did not win the race.
 2. #John started winning the race but he did not finish.

A similar test can be used in other languages, provided that the semantics of the adverb employed as an equivalent of *almost* is sufficiently well understood. For instance, this is reported for the French adverb *presque* ‘almost’ and the construction *faillir V* ‘almost V’ by Smith (1997: 214, 220).

Interestingly, in Maltese, the expression *kwazi* ‘nearly’ is different from English *almost* as it only bears the meaning of event non-completion (‘some X occurred but was not finished’). Taking this into consideration, it is expected for the adverb to function well with accomplishments, but not with activities. The prediction is borne out, as seen in (74) and (75) (Spagnol 2009: 25).

- (74) Accomplishments in Maltese are fine with *kwazi* ‘nearly’
Oħt=i kwazi gra-t=u l=ktieb
 sister=my nearly read-PFV.3SG.F=OBJ.3SG.M DEF=book
 ‘My sister has nearly read the book.’

- (75) Activities in Maltese are odd with *kwazi* ‘nearly’
 ??*Oħt=I kwazi lagħb-et*
 sister=my nearly play-PFV.3SG.F
 ‘My sister has nearly played.’

A similar test is available in Chipewyan.

³⁴⁸ The same is true of states.

³⁴⁹ For more on the behavior of *almost* with achievements and accomplishments see Shirai (2000: 349).

Test #7, which uses entailment relations, was already discussed in §4.2.3 above.

Test #8 (with a *for*-PP and *spend X time*) and Test #10 (with an *in*-PP and *take X time*) are arguably the best-known tests deployed to distinguish between activities and accomplishments.³⁵⁰ The examples cited in what follows are from Rothstein (2004: 24–27).

Activities (and states), on the one hand, are compatible with *for*-PPs and *spend X time*, as in (76) and (77); on the other hand, they are incompatible with *in*-PPs and *take X time*, as in (78) and (79).³⁵¹

- (76) John ran for half an hour.
- (77) John spent half an hour running.
- (78) *John pushed the cart in an hour.
- (79) *It took John an hour to push the cart.

In contrast, accomplishments are, on the one hand, incompatible with *for*-PPs and *spend X time*, as in (80) and (81); on the other hand, they are perfectly acceptable with *in*-PPs and *take X time*, as in (82) and (83).

- (80) #Mary built a house for years.
- (81) ?I spent an hour writing a letter. (Smith 1997: 43).
- (82) Mary painted a picture in an hour.
- (83) It took Mary an hour to paint a picture.

Interestingly, *for*-PP and *spend X time* expressions occasionally occur with accomplishments, in which case they are atelic. One instance is when there is a cumulative argument (indefinite plural or mass noun), normally the object. In (84), it is the indefinite plural object *Moomintroll books* that allows atelic reading.

- (84) Dafna read Moomintroll books for some years.

In other cases, the atelic reading is possible even with quantized objects. Consider the contrast between (85) and (86). The verb *build* with a quantized object is unacceptable with a *for*-PP, unlike *read*, where unacceptability is not as straightforward.

- (85) #Mary built a house for years.
- (86) ?Jane read a book for half an hour.

³⁵⁰ See Rothstein (2004: 24–25, 26–27) for a useful overview.

³⁵¹ I replaced *run* with *push the cart* in the latter pair of examples because *run* can be interpreted in such contexts as ‘run a specified distance,’ in which case it is telic.

Even though Rothstein puts a question mark next to (86), other sources show that such examples are rather acceptable, and more accomplishment verbs allow atelic read than it is normally acknowledged in the formal literature. The discussion of this matter is continued in §7.3.3.

The distinction between *for*-PPs and *in*-PPs is considered “a highly manageable test for assessing aspectual values” across languages (Bertinetto & Delfitto 2000: 194). Even though the formal expression of these adverbials is not consistent across languages, their semantics is. Following Arkadiev (2009: 66–67), the *in*-PP adverbials can be non-technically defined as those denoting “the duration of a situation with a specified terminal point,” whereas the *for*-PP adverbials are on the other hand identified as those which “specify the (maximal) duration of the situation denoted by the predicate and thus impose external boundaries on it.” The abbreviations *in*-PP and *for*-PP are used as a shorthand for any expression in any given language with equivalent semantics.

Their usefulness has been repeatedly demonstrated in a variety of languages. The two types of adverbials are not universal (see §4.2.4.2 above), but are crosslinguistically well attested in languages as diverse as Maltese (Spagnol 2009), Cayuga (Sasse 1997), Adyghe (Arkadiev 2009), Japanese (Mori, Löbner & Micha 1992), French (de Swart 1998: 373–374), Mandarin (Xiao & McEnery 2006: 10–17) and others. An illustration comes from Japanese, where the verb *oboeru* ‘memorize, learn by heart’ is shown to be compatible with the *in*-PP *zip-punkan de* ‘in ten minutes’ in (87), but is unacceptable with the *for*-PP *zip-punkan* ‘for ten minutes’ in (88).

(87) Japanese *oboeru* is fine with an *in*-PP (Mori, Löbner & Micha 1992: 256)
zip-punkan de sono shi o oboe-ta
 in ten minutes this poem ACC memorize-PST
 ‘(She) memorized this poem in ten minutes.’

(88) Japanese *oboeru* is unacceptable with a *for*-PP (Mori, Löbner & Micha 1992: 253)
 **zip-punkan uta no kashi o oboe-ta*
 for ten minutes song GEN lyrics ACC memorize-PST
 ‘(She) memorized the song lyrics for ten minutes.’

As an aspect-sensitive class, accomplishments have the following properties. Within the $[\varphi\text{PT}]$ configuration, the IPFV aspect form refers to a preparatory process (φP) leading up to the transition (τ), which is encoded by the PFV aspect. This is illustrated with the examples from French.

(89) Elle écrivait sa thèse. (IPFV.PST) → (φ_P)
'She was writing her thesis.'

(90) Elle écrivit sa thèse. (PFV.PST) → (τ)
'She wrote her thesis.' (the thesis is finished)

In the aspectual systems with a PFV-IPFV (also PROG-NONPROG) contrast, the IPFV (and PROG) forms, as in (89), has the properties of an atelic situation, giving rise to the so-called Imperfective Paradox (Dowty 1977; Dowty 1979: chap. 3). This refers to the fact that otherwise telic accomplishment verbs in an IPFV or PROG form carry no implication of completion since they can be interrupted before their natural endpoint (cf. Comrie 1976: 44). Thus, the transition into a new state does not exist in the actual world, but instead in an inertia world. This is considered paradoxical.³⁵² Here I do not pursue this question any further. However, I follow a number of authors in assuming that accomplishments do not detelicize in the IPFV and the PROG since they always refer to a potential endpoint (Bertinetto & Delfitto 2000: 192–193; Sasse 2002: 245–246; Boogaart 2004: 1166; Wiemer & Seržant 2017: 249). The main argument for this position, at least in English, is the fact accomplishments and activities in PROG differ in acceptability when modified by the adverb *gradually*, as shown in (91) and (92) (from Bertinetto 1994a: 394).

(91) Mary was painting the wall gradually. (cf. Mary painted the wall gradually.)

(92) *Mary was dancing gradually. (cf. *Mary danced gradually.)

These examples can be interpreted as showing that accomplishment verbs keep their reference to an endpoint even in PROG since accomplishments can function with *gradually* in both PROG and NONPROG, as seen in (91), whereas the opposite is true with activities in (92).

4.4.2.3. Two-phase verbs [φ₁τφ₂]

The aspect-sensitive class of two-phase verbs is rarely discussed in the literature. The term *two-phase verbs* is taken from Bickel (1996).³⁵³

Recall that, in more general terms, all extralinguistic situations with a transition can be conceived as consisting of three components: a transition point and two phases. Two-phase

³⁵² The reason why this is considered “paradoxical” is rather technical and obscure to the uninitiated. The shortest explanation I have found so far is provided by Rothstein (2004: 38–39).

³⁵³ Also called “diphasic” (Zúñiga 2001) and confusingly “inchoative” (Germ. *Inchoativa*) by Breu (1998). A more recent term by Breu is “incorporative” (Breu 2019); cf. also §3.1. In Ebert (1995; 1999) and Johanson (2000: 63) the term “two-phase verbs” refers to what is here called inchoative statives.

verbs are unique in that they encode all three: the durative phase (ϕ_1) of the event *leading up to* the event transition (τ), as well as the durative phase (ϕ_2) *resulting from* the event transition. Hence the representation as $[\phi_1\tau\phi_2]$. The former was termed the **preparatory phase** and the latter the **resultant phase**. This general scheme is visualized in Figure 8 with the extralinguistic situation of ‘be in a horizontal position’ transposed onto it.

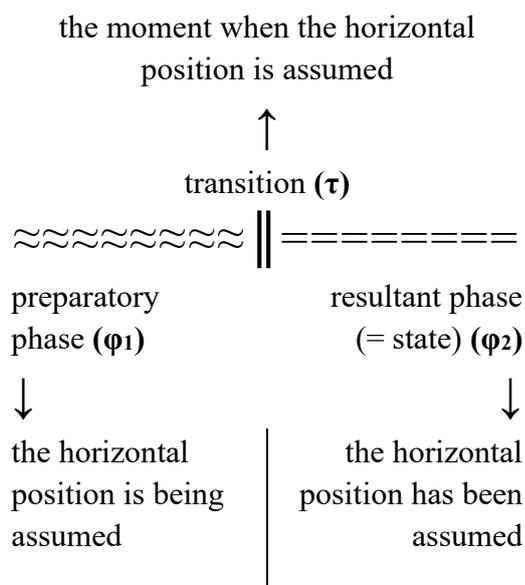


Figure 8. Situation description ‘be in a horizontal position’ when lexicalized as a two-phase verb $[\phi_1\tau\phi_2]$.

Two-phase verbs are defined here as an aspect-sensitive class. This means that I identify two-phase verbs only as those verbs that can refer to a transition point and, crucially, to both two phases in their inflectional aspect forms. Typically, phases are referred to by forms resembling IPFV and PROG grams (see §5.4). The PFV form refers to the transition. This definition is specifically meant to exclude cases where the resultant phase can be encoded by a non-inflectional aspect form. For instance, the verb is not identified as two-phase if IPFV can encode only the preparatory phase (‘is lying down’), whereas the resultant phase (‘is lying’) is encoded by a resultative or a similar form dedicated to derivation of resultant states.

Two-phase verbs can be illustrated with the Bagvalal verb *helli*, which was already mentioned in §4.1.2.2, example (32)b. This verb encodes all three components of the situation description ‘be in a horizontal position’ given in Figure 8. This is established via an interaction with two inflectional aspect grams. The transition is referred to by means of the past PFV form (the ‘Preterite’). Both phases are encoded by means of the present IPFV, as seen in example (93).

- (93) Bagvalal (Tatevosov 2002a: 388)
- | | | |
|-----------------|----------------------|--------------|
| <i>maHammad</i> | <i>helli-rā-x</i> | <i>ek'ōa</i> |
| Mohammed | lie(_down)-IPFV-CONV | AUX.PRS |
- ‘Mohammed is lying down / is lying.’

More precisely, its present IPFV form refers both to the activity of adopting the lying position (i.e. to the phase leading up to the event transition), as well as to the resultant state of the lying position (i.e. to the phase resulting from the transition). In (93), the former is rendered as ‘is lying down’, the latter as ‘is lying’.

The class is also attested in English, but it contains a single verb, *hide*, illustrated in (94).

- (94) English (Bickel 1996: 212)³⁵⁴
- a. The kids were just hiding in the garden when she came back.
(preparatory phase)
 - b. The kids were hiding in the garden for some time.
(resultant phase)

A crucial criterion for identifying two-phase verbs is that the verb needs to be able to refer to both phases within a single verb sense. This is an important distinction to make as it is often the case that a verb can refer to a preparatory phase and a resultant phase, but in different senses of a single verb lexeme, which are respectively associated with distinct argument structures (Breu 1998; Breu 2019). In (95), the verb *okružat'* is used in two different senses which also differ in their argument structure. The sense at display in (95)a is associated with a three-place argument structure and can be paraphrased as ‘put, place around something.’ In contrast, the sense in (95)b is associated with a two-place argument structure and can be paraphrased as ‘be around something.’ The former sense is associated with a preparatory phase, and only the latter with a resultant phase.

- (95) Russian *okružat'* (Breu 1998: 71)
- a. preparatory phase: three-place predicate
- | | | | |
|---------------|-------------------------|-----------------|-----------------|
| <i>Mat'</i> | <i>okružala</i> | <i>lob</i> | <i>dočeri</i> |
| mother.NOM.SG | surround(IPFV).PST.SG.F | forehead.ACC.SG | daughter.GEN.SG |
- cvetami*
flower.INS.PL
- ‘Mother was placing a wreath on daughter’s forehead.’
- b. resultant phase: two-place predicate

³⁵⁴ Cf. also Ebert (1995: 189).

<i>Cvety</i>	<i>okružali</i>	<i>lob</i>	<i>dočeri</i>
flower.NOM.PL	surround(IPFV).PST.PL.M	forehead.ACC.SG	daughter.GEN.SG
‘A wreath was on daughter’s forehead.’			

There is only one specific diagnostic targeting two-phase verbs discussed in the literature, the so-called 10 o’clock test (Breu, Berghaus & Scholze 2016: 84). The test is only discussed in connection with Molise Croatian and has limited applicability outside that variety. In other languages, two-phase verbs are identified by an ambiguity of the IPFV or PROG aspect gram. Ambiguity is effectively recognized by paraphrase or by translation, since many two-phase verbs are often lexicalized by unrelated verbs in the metalanguage (English or Russian). A good example is the Bagvalal verb *b-iṣ̌i*, which corresponds to the English verbs *catch* and *hold* (Tatevosov 2002a: 363) and the Russian verbs *lovit* ‘catch’ and *deržat* ‘hold’ (Tatevosov 2016a: 241).³⁵⁵

In addition to Bickel (1996), who describes actional classes in Belhare, two other authors have dealt explicitly with this class: Breu (1996; 1998) and Tatevosov (2002a; 2016a). Breu’s work is virtually unknown, and deals specifically with the actional class of two-phase verbs in Russian within the ILA (Breu-Sasse) model of aspect-actionality interface. Tatevosov independently identifies the class of two-phase verbs in the four languages he investigates (Bagvalal, Mari, Tatar (only in the 2002 paper) and Karachay-Balkar (only in the 2016 book)). Together with Breu, this is the only extant description of this class in PFV-IPFV languages.

Tatevosov is also the only author who observes that the resultant phase can also have dynamic properties (Breu only considers verbs whose resultant phase has stative properties). Accordingly, two-phase verbs are split into two subtypes, **two-phase verbs with a stative resultant phase** [$\varphi_{P1}\tau\varphi_S$] and **two-phase verbs with the dynamic resultant phase** [$\varphi_{P1}\tau\varphi_{P2}$].³⁵⁶ The verb ‘lie (down)’ from Figure 8 and example (93) is an instance of a two-phase verb with a stative resultant phase. An instance of a two-phase verb with a dynamic resultant phase is the Bagvalal verb *eta* ‘fly’ (Tatevosov 2002a: 363), whose present IPFV can refer either to the

³⁵⁵ Cf. also Breu (1998: 63fn6), who translates Italian *indossare* with German verbs *anziehen* ‘put on’ and *tragen* ‘wear’.

³⁵⁶ Tatevosov (2016a) uses the terms extended ingressive-processual (*rasširennyj ingressivno-nepredel’nyj*) for two-phase verbs with a dynamic resultant phase, and stative-processual (*stativno-processnyj*) for two-phase verbs with a stative resultant phase.

preparatory process ('is taking off') or to the resultant process ('is flying'). The past PFV naturally refers to the transition point ('took off').

Two-phase verbs are the only aspect-sensitive class discussed in Chapter 7 which is not included among crosslinguistic actional types (CLATs) in Tatevosov (2002a). Nevertheless, it was included in the study here because two-phase verbs are a reasonably well attested non-Vendlerian class and provide some insights into the limits of lexicalization of actional meanings.

Note also that an actional class with identical actional properties can be identified across Bantu languages. In the framework developed by R. Botne and T. Kershner to deal specifically with Bantu languages,³⁵⁷ two-phase verbs are referred to as "transitional achievements" (Botne 2003; Botne 2008; Botne & Kershner 2008). A more detailed description will be given in §7.4.

Two-phase verbs $[\varphi_1\tau\varphi_2]$ are contrasted with initiotransformatives $[\varphi\tau]$ and accomplishments $[\varphi\text{PT}]$, which are one-phase verbs. One-phase verbs allow only one of the two phase components to be encoded by the IPFV/PROG form. For instance, the present IPFV of the Bagvalal verb *b-ič* 'die' is an accomplishment $[\varphi\text{PT}]$ as it refers exclusively to the phase leading up to the transition ('is dying') and cannot refer to the resultant phase (*'is dead'). Conversely, the present IPFV of the verb *heri* 'become frightened' is an initiotransformative (that is, inchoative state) as it refers exclusively to the resultant phase ('is afraid') and cannot refer to the phase leading up to the transition (*'is becoming frightened').

4.4.3. Multiplicative activities [M+Q]

In §4.3.3, it was noted that the actional primitives M and Q are normally lexicalized in tandem as the multiplicative activity [M+Q] class. This class is posited most prominently in Tatevosov (2002a; 2016a), but also less explicitly in Quirk et al. (1985: 208–209) for English.

In the literature, the verbs that belong to the [M+Q] class are treated in different ways. In earlier works (Vendler 1957, Dowty 1979), verbs like *knock* were classified as a subtype of achievements. The same is done in Walková (2013: 9), while Rothstein (2004: 29) considers them a subtype of activities. In Smith (1997: 29–30 et passim) and Moens & Steedman (1988), the class is conceived differently than here. The semelfactive quantum is assumed to represent

³⁵⁷ For more on this model of actional classification, see the online appendix of Crane & Persohn (2019).

a class, whereas the multiplicative reading is considered derived and is treated as secondary. Rothstein (2004) assumes the opposite – the multiplicative process reading is basic and the semelfactive quantum one derived. As argued in §1.2.4.3, there is little evidence, in English and elsewhere, that would justify such an assumption.

Tests for this class of verbs are identical to the tests used for the primitives (M) and (Q). The multiplicative process (M) is indistinguishable in terms of tests from the plain process (ϕ_P). Still, unlike the plain process (ϕ_P), the multiplicative process consists of atomic subparts, i.e. semelfactive quanta (Q). The semelfactive quantum (Q) resembles transition (τ) in its properties but lacks a result.³⁵⁸

According to Tatevosov (2002a: 387–388), the [M+Q] class as an aspect-sensitive class is manifested in one specific configuration. In PFV-IPFV languages, represented in (96) by Tatar, the PFV refers to either the (Q) in Translation #1, or to (M) with an additional delimitative nuance in Translation #2. The meaning of the verb form that refers to (M) is referred to as “multiplicative” and the one that refers to (Q) is called “semelfactive.”

(96) Tatar PFV refers to both (Q) and (M) (Tatevosov 2002a: 387)

- | | | |
|---|-----------------|---------------|
| <i>daut</i> | <i>mišen-gä</i> | <i>at-tr</i> |
| Daut | target-DAT | shoot-PFV.PST |
| 1. ‘Daut shot in the target (once).’ | | |
| 2. ‘Daut shot in the target (for some time).’ | | |

In contrast, the IPFV can only refer to (M): ‘Daut is shooting.’ Tatevosov (2002a: 334) posits the requirement that the (M) meaning be assigned to a verb only if “plurality of situations emerges in null context.” In this way, it is made clear that neither interpretation, (M) or (Q), can be considered basic or underived.

As for English, this was already discussed in §1.2.4.3. The multiplicative reading in English is always expressed by the Progressive aspect as in *the light is flashing* (**once*), where the multiplicative meaning is the only possible one (Van Valin 2005: 37). The Simple (NONPROG) form can have both multiplicative and semelfactive readings. The multiplicative meaning is shown unambiguously by the fact that the simple form naturally occurs with *for*-PPs (Smith 1997: 30, 50; Rothstein 2004: 29; Walková 2013: 8): *John jumped for a few minutes*.

³⁵⁸ For further information on tests with this class see Smith (1997: 46).

Thus, the multiplicative activity class is characterized by the same set of properties in English and in PFV-IPFV languages. The IPFV/PROG forms encode (M), while the PFV/NONPROG forms are ambiguous between (Q) and (M). The crosslinguistic evidence cited in in §7.5 shows that this configuration is widely attested.

4.4.4. Exceptional kinds of complex classes

The eight aspect-sensitive classes from §4.4.1, §4.4.2 and §4.4.3 above represent, crosslinguistically speaking, the most prominent actional classes based on the criteria of their crosslinguistic frequency (they are well attested across investigated languages) and membership (there are many verbs in individual languages that belong to these classes). In addition to these classes, there is a number of other classes attested across languages which are confined to individual languages and whose membership consists of very few verbs, one or two at best. In that sense, such classes are considered exceptional.

Verbs belonging to exceptional classes often exhibit rather egregious lexicalization patterns. Consider the case of “bitelic” verbs (Ru. *dvupredel'nye glagoly*) discussed by Tatevosov (2016a: 218ff.). This class is unique in that it encodes two transition (τ) primitives, as seen in (97) (Translations #1 and #3). The PFV form can also refer to the process that obtains between the two transition points, with a delimitative reading, of course (Translation #2).

(97) Karachay-Balkar: bitelic verb in the PFV (ibid.: 219)

- | | |
|-----------|--|
| <i>üj</i> | <i>zan-van-di</i> |
| house | burn-PFV.PST-3SG |
| 1. | ‘The house caught fire, started to burn.’ (Ru. <i>zagorelsja</i>) |
| 2. | ‘The house burned, was burning (for some time).’ (Ru. <i>gorel</i>) |
| 3. | ‘The house burned down.’ (Ru. <i>sgorel</i>) |

The IPFV form refers to the process, like translation #2 in the previous example, only without the delimitative reading.

(98) Karachay-Balkar: bitelic verb in the IPFV (ibid.: 219)

- | | |
|-----------|-------------------------|
| <i>üj</i> | <i>zan-a-di</i> |
| house | burn-IPFV.PRS-3SG |
| | ‘The house is burning.’ |

Comparison of (97) and (98) indicates that the actional class of the verb *zan* ‘burn’ can be represented as [$\tau\phi\tau$]. In other words, the verb encodes the initial moment of burning (‘caught fire, started to burn,’ seen in translation #1 of the PFV), the ensuing process of burning (‘was burning, burned for some time,’ seen in the IPFV and translation #2 of the PFV) and the culmination of that process (‘burned down,’ seen in translation #3 of the PFV). Such

lexicalizations are rare and are attested only in Turkic languages, such as Karachay-Balkar. For other instances of extremely complex or rare lexicalizations see Tatevosov (2016a: 233–240, 250–253; cf. 2002a: 363–367).

4.4.5. Strong and weak actional classes

The distinction between strong and weak classes was introduced in §4.2.1, where we have seen that complex actional classes can be distinguished based on the set of primitives available to the PFV or related boundedness aspect grams. Thus, the complex class is considered **strong** if the PFV is only associated with transition (τ), and **weak** if it allows a phase primitive – state (φ_S) or process (φ_P) – in addition to transition (τ).

This is in keeping with the observation made in §1.5.4 that the PFV and related boundedness grams can be made compatible with both telic and atelic verbs. In other words, important for the weak-strong distinction is the distinction between natural and arbitrary endpoints.

The strong-weak distinction concerns the complex classes with transition (τ). Therefore, we distinguish between strong and weak inchoative states, strong and weak ingressive activities, strong and weak accomplishments, as well as strong and weak two-phase verbs. For simplicity, the last one will be disregarded here. The relevant examples of the other classes will be discussed in Chapter 7.

The strong-weak distinction was formulated in Tatevosov's model of actional classification (§3.2). Independently, the same distinction has been discussed for accomplishments in the formal semantic literature at least since Dowty (1979: 88–90), where weak accomplishments are treated under the heading of *degree achievements*. In the early 2000s, much interest in weak accomplishments was generated in light of evidence from a typologically diverse set of languages, such as Salish languages and Thai. At the same time, the term non-culminating accomplishments was introduced, which is still the most widely used. I retain the term weak accomplishments for terminological consistency, but the two terms should be considered virtually interchangeable. A discussion of the history of research of weak accomplishments will be incorporated into the presentation of English weak accomplishments in §7.3.3 (see also the next section).

4.4.6. Aspect-sensitive classes and properties of verb arguments

This section addresses the role of referential and quantificational properties of arguments, in particular direct objects, in actional classifications.³⁵⁹ These properties add another dimension to the classification based on aspect-sensitive classes.

More specifically, the discussion in this section revolves around a subset of verbs which Filip (1999) calls “incremental-theme verbs” or “ α -quantized verbs.”³⁶⁰ These verbs are characterized by having an incremental theme as its argument. The notion of the incremental theme was introduced and explained in §2.2.3. According to Filip (1999), incremental-theme verbs are a well delineated actional class of verbs whose telicity (i.e. right-end boundary) is directly influenced by the quantificational properties of its arguments. The relevant properties are quantization and cumulativity, also explained in §2.2.3. Specifically, if a relevant argument is cumulative, the verb phrase is atelic, and if it is quantized, it is telic. Recall that mass NPs (*wine*) and plural NPs (*apples*) are cumulative, while singular count NPs (*an/the/one apple*) and quantified or measure NPs (*five/all (the) apples, a glass of wine*) are quantized (Filip 1999: 46). Typical incremental verbs are *eat* and *drink*. The latter verb is illustrated in (99) and (100).

(99) Mary drank wine.

(100) Mary drank a glass of wine.

In (99), the object is a mass NP (*wine*) and has cumulative reference and the verb is thus atelic. It can be modified by a *for*-PP, but not by an *in*-PP. The opposite is the case in (100), where the verb is telic because the object is a measure NP (*a glass of wine*). This phenomenon is known as aspectual (or actional) composition.³⁶¹ In accordance with §1.2.4.1, the use of verbs like *drink* with cumulative object entails creation of a separate verb sense since it involves changes in argument structure, more specifically changes in referential and quantificational properties of the direct object.

Incremental verbs are well-described semantically (e.g. Filip 1999: 86; Levin & Rappaport Hovav 2005: 93–95). Filip (2011: 1205) cites the paradigm examples: verbs of creation (*build*,

³⁵⁹ The verbs discussed in this section are all transitive and the relevant argument is a direct object.

³⁶⁰ In Role and Reference Grammar (§2.3.2), they are referred to as “active accomplishments.”

³⁶¹ Incrementality and aspectual composition concern linguistic phenomena other than verb arguments, including constructions with a Path non-argument, but this need not concern us here. A summary is given in Filip (1999: 104).

write), consumption (*eat, drink*) and destruction (*destroy, burn*). The theme argument of these verbs intuitively “refers to an object that undergoes a permanent change of state in its physical extent/volume, as it gradually comes into existence or disappears during the course of an event” (ibid.).

So, how does aspectual (actional) composition factor into the classification proposed in this chapter? As it happens, there is little need for a revision of the proposed classification since it appears that most, if not all incremental verbs are in fact accomplishments.³⁶² This point is not normally explicitly made in the literature. Rothstein (2004) is a notable exception. In her account of accomplishments, she observes that incrementality is “normally associated with accomplishments” and that it is “an essential part of an accomplishment meaning” (p. 53).

Incremental verbs are normally contrasted with atelic and telic verbs. Atelic verbs are illustrated in (101)–(103) from Filip (1999: 82). Here despite the quantized object, verb phrases do not become telic, as was the case in (100). Thus, *like* and *watch* are always atelic, as demonstrated by their incompatibility with *in an hour*.³⁶³ This demonstrates that arguments of *like* and *watch* are not an incremental theme. Note that *like* is a typical state verb and *watch* a typical activity verb.

- (101) Mary liked / watched the documentary on Kafka ?in an hour / for an hour.
(102) Mary liked / watched five documentaries ?in an hour / for an hour
(103) Mary liked / watched (these) documentaries ?in an hour / for an hour.

Examples (101)–(103) illustrate one logical possibility – a quantized argument which does not entail telicity. Another logical possibility is a verb or a class of verbs which would be telic irrespective of whether its argument is quantized or cumulative. This appears to be impossible since, to my knowledge, there is no example attested where cumulativity would not entail atelicity (cf. Tatevosov 2002a: 355) and speakers of English categorically reject occurrences of

³⁶² One possible exception is the verb *devour* cited by Van Valin (2005: 33), which does not have an atelic counterpart. It is not entirely clear what is meant by that, since no examples are provided. It can either mean that verbs like *devour* cannot occur with a cumulative object NP and consequently cannot be atelic, or that they remain telic even if occurring with a cumulative object NP, which is highly unlikely, as noted below. Another exception are phrasal verbs like *eat up*, which license only quantized direct objects, e.g. **eat up porridge, *eat up apples* (Walková 2013: 107). Note that undetermined plural direct objects can sometimes be understood as quantized, e.g. in *Lynn made cookies in forty minutes*, where the NP *cookies* denotes some conventional number of cookies (Filip 1999: 66).

³⁶³ For other tests, see Dowty (1979: 62–63).

cumulative objects with *in*-PPs, e.g. *Kathleen ate ice cream *in ten minutes* (Smollett 2005: 45). This probably reflects a universal rule of composition rooted in extralinguistic knowledge.

Incremental verbs are also contrasted with verbs that are always telic. This class is normally illustrated by punctual verbs such as *touch* (*the finish line*) or *recognize* (*a face*), but no example is ever given of a durative verb, that is, of an accomplishment [$\phi\pi\tau$] verb.³⁶⁴ Thus, it appears that in this context “telic” means “achievement” or “punctual.”

Recall also from §4.2.4.1 that a quantized reference of an argument does not necessarily entail telicity. Consider example (40), repeated here as (104), where additional context (*while talking on the phone*) improves the acceptability of modification of *eat* with a quantized object (*an apple*) by a *for*-PP.

(104) Kathleen ate an apple for a couple of minutes while talking on the phone.

It is therefore important to distinguish between two independent kinds of atelic readings available to accomplishments. First, all accomplishments are incremental and therefore subject to atelic readings when occurring with an argument that has cumulative reference (cf. Levin 2000: 419). Second, accomplishments vary with respect to the availability of atelic readings with quantized arguments and can be split into two broad groups. On the one hand, strong accomplishments are always telic with a quantized incremental theme (and are necessarily atelic with a cumulative incremental theme (cf. Tatevosov 2002a: 379). In contrast, weak accomplishments can be both telic and atelic with a quantized incremental theme, but are also necessarily atelic with a cumulative incremental theme.³⁶⁵ This is summarized in Table 21.³⁶⁶

³⁶⁴ Atelicity can be induced with achievements as well, but it is of a different kind. See §7.3.1.

³⁶⁵ Verbs like *eat* appear to be a special kind of the former group, since they allow atelic readings with quantized arguments under appropriate conditions. I return to this in §7.3.3.

³⁶⁶ There are still some parallels between atelic readings brought about by cumulative objects and those brought about by quantized objects (Hay, Kennedy & Levin 1999)).

	Incremental theme has quantized reference	Incremental theme has cumulative reference
Strong accomplishments	always telic under normal pragmatic conditions; atelic readings disallowed	necessarily atelic
Weak accomplishments	both telic and atelic under normal pragmatic conditions	necessarily atelic

Table 21. The strong-weak distinction and referential properties of the incremental theme.

Thus, Table 21 makes clear the important fact that the distinction between weak and strong accomplishments is meaningful only when the incremental theme argument is quantized. For that reason, accomplishments with cumulative arguments will not be covered any further in this work.³⁶⁷

Still, they constitute a viable topic of crosslinguistic research, but that remains outside the scope of this investigation. The generalizations provided in Table 21 have been the subject of some crosslinguistic research (Tatevosov 2002a: 322–323, 352–356; Tatevosov 2016a: 122–140).

4.4.7. Aspect-sensitive classes: a summary

This chapter is rounded off by a summary of classes investigated in the present work. The summary is presented as a guide to Chapter 7. The list of classes was already presented in Table 19 at the beginning of §4.4. It is repeated here as Table 22 with some modifications.

Class	Simple / complex	Symbol [...]
total state	simple	[φ _S]
plain activity	simple	[φ _P]
achievements	simple	[τ]
inchoative states	complex	[τφ _S]
ingressive activities	complex	[τφ _P]
accomplishments	complex	[φ _P τ]
two-phase verbs	complex	[φ ₁ τφ ₂]
multiplicative activities	complex	[M+Q]

Table 22. Actional classes investigated in the present work.

³⁶⁷ This also makes sense if it is assumed, as it was earlier in this section, that cumulative reference of the direct object entails creation of a new verb sense.

These classes are conceived as aspect sensitive classes. In what follows, I briefly summarize the interaction of aspect grams the PFV and IPFV with these classes. For each gram, I give the actional primitive over which that aspect gram can operate (the so-called actional characteristic of the verb from §3.2). These actional primitives are state (φ_S), process (φ_P), transition (τ), multiplicative process (M), and semelfactive quantum (Q). The classes are presented in the order in which they are covered in Chapter 7, which is different from the order used in the course of this chapter. For each actional class, the relevant sections in this chapter and in Chapter 7 are given.

The actional characteristic of **total states** [φ_S] (§4.4.1.1, §7.1.3):

Total states [φ_S]	
PFV	IPFV
n/a or a delimitative (φ_S)	(φ_S)

The actional characteristic of **inchoative states** [$\tau\varphi_S$] (§4.4.2.1, §7.1.4):

Inchoative states [$\tau\varphi_S$]			
Strong subtype		Weak subtype	
PFV	IPFV	PFV	IPFV
(τ)	(φ_S)	(τ) or a delimitative (φ_S)	(φ_S)

The actional characteristic of **plain activities** [φ_P] (§4.4.1.1, §7.2.1):

Plain activities [φ_P]	
PFV	IPFV
a delimitative (φ_P)	(φ_P)

The actional characteristic of **ingressive activities** [$\tau\varphi_P$] (§4.4.2.1, §7.2.2):

Ingressive activities [$\tau\varphi_P$]			
Strong subtype		Weak subtype	
PFV	IPFV	PFV	IPFV
(τ)	(φ_P)	(τ) or	(φ_P)

	a delimitative (ϕ_P)
--	-----------------------------

The actional characteristic of **achievements** [τ] (§4.4.1.2, §7.3):

Achievements [τ]	
PFV	IPFV
(τ)	n/a (only nonepisodic readings possible)

The actional characteristic of **accomplishments** [$\phi_P\tau$] (§4.4.2.2, §7.3):

Accomplishments [$\phi_P\tau$]			
Strong subtype		Weak subtype	
PFV	IPFV	PFV	IPFV
(τ)	(ϕ_P)	(τ) or a delimitative (ϕ_P)	(ϕ_P)

The actional characteristic of two-phase verbs [$\phi_1\tau\phi_2$] (§4.4.2.3, §7.4):

Two-phase verbs [$\phi_1\tau\phi_2$]	
*the strong/weak distinction is possible but is disregarded for the sake of simplicity	
PFV	IPFV
(τ)	ϕ_1 = always (ϕ_P) ϕ_2 = (ϕ_S) or (ϕ_P)

The actional characteristic of multiplicative activities [$M+Q$] (§4.4.3, §7.5):

Multiplicative activities [$M+Q$]	
PFV	IPFV
(Q)	(Q) or a delimitative (M)

Before I lay out the result of the crosslinguistic investigation of these eight classes in Chapter 7, the following two chapters elaborate on the method employed in the comparison of actional systems. Chapter 5 describes a method of comparing aspect systems. It has two broad goals: first, to establish criteria for identification of the PFV-IPFV aspect system, and second, to

establish criteria for the comparison of the PFV-IPFV aspect system with other kinds of aspect systems. This is a crucial step in the crosslinguistic investigation of aspect-sensitive classes. Chapter 6, on the other hand, deals with sources for the study and the sample of languages.

5. Aspect grams and systems in this study

At the beginning of this chapter, let us briefly review the relevant information covered so far. In §1.3, the fundamental notions relevant to aspect were introduced. A preliminary definition of aspect, involving the notion of viewpoint, the discourse functions of aspect, as well as the meanings of aspect that arise in interaction with actionality was presented. The most important aspect grams and the types of aspect systems they form a part of were mentioned, and the distinction between two kinds of aspect grams, namely viewpoint and subsituation, was pointed out.

In §4.2.2, the importance of aspect for typologizing actionality was explained, and it was argued in §1.6.3 that, in order to ensure the crosslinguistic comparability of actional classes that arise in aspect-actionality interactions, both types of values, viz. actionality and aspect, need to be defined as comparative concepts. This includes an independently established list of aspect grams and systems, as well as a list of actional primitives.

While actionality and actional primitives were defined as semantic comparative concepts in Chapter 4, the following chapter deals with aspect grams and systems. In §1.3.7, it was observed that the existing typological investigations of aspect have mainly been concerned with the crosslinguistically most frequent and prominent aspect grams. Such grams are known as **crosslinguistic gram-types**, a notion adopted from the “Bybee and Dahl approach” to the TAM typology (see §2.3). The notion refers to a small set of meanings expressed by language-specific grams which are crosslinguistically similar and recur with reasonable frequency in languages of the world (cf. Bybee & Dahl 1989: 52). These grams, which include the PFV, the IPFV and the PROG, are in fact only a subset of attested aspect systems and grams. Other aspect grams and systems deviate from these crosslinguistic gram-types in various ways, although never significantly. Crosslinguistic gram-types are considered the “default” in the ensuing discussion.

The chapter begins with a discussion of gram-types in §5.1. The approach taken here integrates recent insights regarding the nature of language comparison (see §1.6.1). Specifically, I refer to crosslinguistic gram-types as comparative concepts rather than universal categories. Afterwards, in §5.2, I briefly discuss the relevant facts about the formal expression of aspect, with emphasis on the auxiliary constructions.

In §5.3, I expand on the discussion initiated in §1.3 about the criteria deployed to decide which aspect grams should be included in the study. These include the properties of obligatoriness,

lexical generality and paradigmatic structure. Only the grams that exhibit these properties, known as viewpoint aspect grams, are of interest in this study. The discussion in this chapter draws heavily on the notion of inflectional grammatical meaning as understood in Russian linguistics (Plungjan 1998a; Plungjan 2011a: 17–78).

Finally, a description of aspect grams and systems included in the study based on the criteria outlined is given in §5.4. Two kinds of “default” aspect systems based on crosslinguistic gram-types, viz. the PFV-IPFV system (§5.4.1) and the PROG-NONPROG system (§5.4.2), are discussed at greater length, and individual grams are defined as comparative concepts. Other kinds of aspect systems, which are discussed in §5.4.3, are defined with reference to the default systems.

In comparison to the treatment of aspect grams in most reference sources (descriptive and typological), the definitions discussed here are quite extensive. The criteria for recognizing individual grams are stated as explicitly as possible in order to both facilitate data collection and make it more reliable. The need for such criteria is nicely summarized by Cover & Tonhauser (2015: 342):

Descriptions that use terms such as “past tense” or “imperfective aspect” without providing definitions for the terms are unsatisfying, since such terms can be defined in a variety of ways. If, for instance, a description discusses a “perfective aspect” without defining it, readers will, at best, be unsure about the meaning of the perfective in this language and, at worst, they will assume the meaning of some better-known perfective. The need for clear, language-specific explanation of category labels is especially strong if the meaning of the form for which a label is used differs from the meaning for which the label is typically used (...).

The labels used for each of the given grams are discussed in order to avoid potential terminological confusion (see also §1.4). I follow the established terminology to the greatest possible extent. However, there are some neologisms introduced (the nonprogressive / NONPROG gram in §5.4.2).

Precise and language-independent definitions of grams, as well as unambiguous terminology, should in the end provide us with a more consistent crosslinguistic analysis.

5.1. Aspect gram-types as comparative concepts

In this section, the approach to the crosslinguistic comparison of aspect grams is introduced. It will be argued that aspect grams used for the purposes of comparison (called *crosslinguistic aspect gram-types* above) should be conceived as comparative concepts. Specific procedures

for constructing comparative concepts in the domain of grammatical aspect are briefly outlined, and the details will be filled out in §5.4, where individual gram-types are defined.

In §1.6.1, two approaches to linguistic comparison were defined: categorial universalism and categorial particularism. The former is typical of generative linguistics, whereas the latter is practiced by (most) typologists. It was also mentioned in passing that there are nongenerative linguists that abide by the principles of categorial universalism, including many TAM typologists, such as J. Bybee and Ö. Dahl.

Recall also that, as explained in §2.3.1, the research led by J. Bybee and Ö. Dahl during the 1980s and 1990s brought about major breakthroughs in our understanding of crosslinguistic variation in the domain of TAM. At the center of their approach is the notion of the **gram**, introduced in §1.3.1. Grams are language-specific units which combine an identifiable meaning with a dedicated mode of expression. Their research established “considerable similarity in the meaning of grams in different languages” (Bybee, Perkins & Pagliuca 1994: 46). This means that language-specific grams are similar enough across languages to be classified into a relatively small set of crosslinguistic gram-types. Some of these grams-types are aspect grams used in this study (PFV, IPFV, PROG) and facets of their meanings are included in the definitions of aspect grams in §5.4 below.

The first question explored here is whether this similarity can be accounted for by positing a universal set of TAM meanings; that is, the question of interest is whether crosslinguistic gram-types are *universal*.

In the Bybee-Dahl approach, as well as in TAM typology more generally, grams of individual languages are in fact instantiations of gram-types, i.e. language-specific grams and universal gram-types stand in a taxonomic relationship. This position is explicitly assumed both by Bybee and Dahl, and implicit in Comrie (Lindstedt 2001: 679). Dahl notes, for instance, that “[i]n a universal theory of grammar (...) the relevant unit is the crosslinguistic gram type, the manifestations of which at the language-specific level is the individual gram” (2000b: 7). Likewise, Bybee notes that “gram-types are manifest in language-specific grams” (1998: 262).

Furthermore, gram-types are conceived as prototypes or idealized meanings “whose individual realizations – the language-specific grams – may differ from one another in detail while sharing the same focal properties” (Bybee, Perkins & Pagliuca 1994: 48). A similar position is also

assumed by other authors (Smith 1997: 60ff.; Tatevosov 2002b: 469–470; Arkadiev 2009: 57).³⁶⁸

The taxonomic relationship between gram-types and language-specific grams is reminiscent of the generative approach (see §1.6.1), but there are numerous important differences. First, TAM typology makes no claims about the innateness of crosslinguistic gram-types. This difference is nicely summarized by Dahl (2000b: 7):

[G]ram types should not be thought of as absolute entities – characters chosen from a universal “gram alphabet” – but rather as the statistically most probable clusterings of properties in “grammatical space,” or alternatively, as relatively stable points along the paths of development that grams take in the course of grammaticalization processes.

This means that universal gram-types have no psychological reality, but their universality is linked to the statistical probability of their occurrence in grammatical systems of the world’s languages.

Bybee and her associates also posit a third level, superordinated to gram-types, called “universal conceptual space,” which is “created by the interaction of cognition and communicative needs” (Bybee, Perkins & Pagliuca 1994: 47). Grammatical meanings encoded by grams then correspond to “the semantic substance of the focal points in conceptual space” (ibid.: 46). This means that grams as language specific units are not recruited directly from this conceptual space. Rather, within the conceptual space there are focal points – “areas of the universal semantic space that are frequently grammatic[al]ized across languages” (ibid.: 48). On this approach, the bulk of explanations for the existence of the attested focal points is found in the diachrony of individual grams.³⁶⁹

Bybee assumes a strongly antistructuralist position,³⁷⁰ most explicitly laid out in her 1998 paper (Bybee 1998), which is reflected in denying language particularism (Bybee & Dahl 1989: 52–53), as well as in putting aside the role of the system in the creation of the grams. Instead, the

³⁶⁸ Note that Smith’s views are more aligned with the generative approach to crosslinguistic diversity – see §3.3.2.

³⁶⁹ A similar notion is the “focal zone,” discussed in Lazard (2005).

³⁷⁰ That is, it is an approach which espouses a non-generative variety of categorial universalism, as explained in §1.6.1. (esp. fn. 109).

focus is put on the individual gram, which is “the relevant entity for the study of grammatical meaning” (Bybee & Dahl 1989: 97).

An antistructuralist position is also very prominent in the Russian (and earlier Soviet) TAM typology. Plungjan (2011a) provides an overview of these positions, most of which are similar to the Bybee and Dahl approach. For instance, Plungjan’s approach posits a universal semantic substance shared by all languages. Central to Plungjan’s approach is the notion of the universal inventory of values, “universal grammatical set” (Ru. *univerzal'nyj semantičeskij nabor*). The meanings included in the set are the meanings that are consistently encoded as grammatical across languages (Plungjan 2011a: 93ff.). These values are different from the universal gram types of Bybee and Dahl since, in the Russian tradition, the universal set includes the smallest identifiable meanings (called “atoms”), rather than attested grams. The elements of the universal set rarely appear in their “pure” form, that is, independently. Instead, they cluster into a small number of non-trivial combinations. Non-trivial combinations of aspect meanings are called “aspectual clusters” (Ru. *aspektual'nye klastery*) by Plungjan (2011a: 402–406),³⁷¹ and they are the main object of typological interest. Aspectual clusters are similar in their conception to grams, which are also noted for their polysemy (cf. Dahl 2000b: 7).

In contrast to the antistructuralist position, there are TAM typologists who fully embrace categorial particularism, most notably Johanson (2000: 45–51). To an extent, this is also true for Dahl in his most recent publications (e.g. Dahl 2016). In that approach, crosslinguistic gram-types are conceived as comparative concepts. As explained in §1.6.1, comparative concepts are unlike universal crosslinguistic categories: comparative concepts need to have clear boundaries (Lazard 2005: 8) and they are not assumed to be universal, but are instead a researcher’s tool in investigating typological generalizations.

In practice, the distinction between the approach of using comparative concepts and the antistructuralist approach becomes blurred in the domain of aspect (and more generally TAM) meanings. There are several reasons for that.

First, despite adopting the idea that crosslinguistic gram-types are universal, antistructuralist approaches to TAM do not investigate them using the methodology of generative grammar. The methodological principles are typological, inductive. This can be contrasted with a true

³⁷¹ The notion was already mentioned in §1.5.3.

generative approach to TAM, which is represented in the work of C. Smith, as seen in §3.3.1. According to her approach, viewpoint aspect categories are “similar across languages, but not identical” (Smith 1997: 3). In contrast, the typological approach draws on the existing crosslinguistic diversity and is constantly informed by it.

Second, recall that the main objection to the categorial universalism and its derivatives (such as the Bybee and Dahl approach) concerns the identification of the instantiations of universal categories in individual languages. As pointed out in §1.6.1 and above, the categorial universalism implies that the instantiations of a universal category simply need to be identified in individual languages. This is extremely problematic with respect to the alleged universal categories that have varied instantiations (e.g. adjectives). Such universal categories are typically recruited among the categories of well-known European languages and inherit the properties of categories found in these languages. In contrast, comparative concepts draw explicitly on the attested crosslinguistic diversity, which, in case of categories such as adjectives, results in a mismatch between the posited universal category (based on properties found in well-known, typically European, languages) and the comparative concepts (based on properties found in a diverse set of languages).

One should be aware that this need not be so, and that exactly the opposite happens in the domain of TAM, where the instantiations, i.e. language-specific grams, are very similar to one another.³⁷² Comparative concepts of this kind, i.e. the ones that resemble closely language-specific descriptive categories, are called **portable comparative concepts** (Beck 2016; Haspelmath 2018: 102–104). I will also assume that aspect gram-types are portable comparative concepts.

Thus, an attempt to posit either a corresponding crosslinguistic gram type, or to construct a corresponding comparative concept, will have a largely similar result. The distinction between universalist and particularist approaches to crosslinguistic comparison in such cases is in practical terms nonexistent. This leads to the conclusion that the results and methods of the Bybee-Dahl approach and the Russian aspectological tradition can without much reserve be adopted in this work.

³⁷² This fact was already noted by Dahl (1985: 52; cf. p. 62). It is also true of a number of categories from other grammatical domains (Haspelmath 2018: 102).

One important point particularly emphasized in my approach is that I rely heavily on the notion of contrast within the verbal systems of individual languages; that is, the definition of the comparative concept of the ‘perfective’ relies both on the typical contexts where the PFV must occur and where it must not, and on the contrast of the PFV with another aspect gram, which typically corresponds to the comparative concept of the IPFV. Note that the notion of system, at least in the case of the PFV and IPFV, is adopted by Dahl (1985), but explicitly sidelined in Bybee & Dahl (1989) and Bybee, Perkins & Pagliuca (1994), where individual gram-types are considered independently.³⁷³

As already mentioned, the aspect gram-types considered in this work are conceived as comparative concepts. Let us now examine what this means in practice.

First and foremost, I dispense with the concept of *Gesamtbedeutung*, or the invariant meaning of the gram (see §2.3.1). In this I follow the view that any attempt to define an aspect gram in that way is “futile” (Dahl 1985: 74). Accordingly, instead of by way of invariant meanings, aspect gram-types will be defined by means of smaller semantic components.

These components are also comparative concepts, but of a different kind, called **etic comparative concepts** by Haspelmath (2018: 85–89).³⁷⁴ Etic comparative concepts are not categories but meanings and functions, “often of a type that would not be expected to be the meaning of a single form” (ibid.: 87). They are very similar to etic grids used in lexical typology, which are defined by Moore et al. (2015: 191) as “language-independent [notional] classifications of the phenomena” with “the ‘grid’ metaphor [capturing] a decomposition into mutually independent variables or ‘dimensions’.” Among other etic comparative concepts, one can mention “pronunciations in phonetic typology and meanings or functions in grammatical typology, often of a type that would not be expected to be the meaning or function of a single form” (ibid. 87). This is in keeping with Haspelmath’s (2010: 680) observation that comparative concepts are often based on other comparative concepts.

³⁷³ But cf. Tatevosov (2002b: 470) for some inconsistencies in Bybee’s approach.

³⁷⁴ Actional primitives discussed in Chapter 4 (esp. §4.1.2.1) are an instance of an etic comparative concept. Etic comparative concepts are contrasted by Haspelmath with category-like comparative concepts, which resemble language-specific categories. Aspect gram-types are category-like comparative concepts.

Etic comparative concepts that serve as building blocks of aspect gram-types are of several kinds. The most important are translation contexts, notably those included in Östen Dahl's two questionnaires (Haspelmath 2018: 88; cf. Moore et al. 2015: 191), viz. the TMA Questionnaire or TMAQ (Dahl 1985) and the Questionnaire on the Progressive Aspect or PROGQ (Dahl 2000a: 810–818). Within these contexts one can target selected verb meanings.³⁷⁵ Another important element, as explained in §1.3.4, are taxis configurations (sequence, simultaneity, the Inzidenzschema).³⁷⁶ These contexts are reproducible and can be used for recognizing aspect grams in individual languages in an empirical nonaprioristic way (Tatevosov 2015: 44–52; cf. Bohnemeyer under revision).

In this work, specifically in §5.4, I will use Dahl's translation context to define aspect grams such as the perfective (PFV), imperfective (IPFV), and progressive (PROG). A similar procedure is found in Tatevosov (2015: 52–61), who also applies Dahl's translation contexts to define aspect gram-types in a crosslinguistically comparable manner. Recall that comparative concepts are always defined by means of “explicit and clearly formulated notions” (Lazard 2005: 8). Translation contexts serve exactly that purpose.

Note that the aspect grams conceived as comparative concepts will be written as glosses in small caps: perfective as PFV, imperfective as IPFV, progressive as PROG etc.

On a final note, I should address the question of where comparative concepts, in particular the etic ones (translation contexts etc.), originate from. The original description of the TMAQ (Dahl 1985: 37–50) does not state explicitly how the contexts in the TMAQ were selected. Likely, the choice of contexts reflected the state of knowledge about TAM categories at the time, which was mostly informed on the well-known European languages. This means that, in its origins, the TMAQ exhibited European bias, which is not uncommon for comparative concepts (Dahl 2016: 428–429). However, in many subsequent investigations, these TMAQ contexts proved to be applicable crosslinguistically and a useful tool for recognizing aspect gram-types such as the PFV or the IPFV. This is the main strength of comparative concepts as tools – they can be adapted and reapplied if their definitions prove to be Eurocentric. This means that aspect gram-types

³⁷⁵ Verb meanings are used as comparative concepts, for instance in Valency Patterns Leipzig Online Database (Hartmann, Taylor & Haspelmath 2013).

³⁷⁶ Further contexts for viewpoint aspect grams that may have crosslinguistic applicability are suggested in Smith (1997: 63–65).

and the semantic elements they are built upon are constantly informed as our typological knowledge expands. This is exactly the feedback loop that was invoked in §1.5.3.

5.2. Morphology of aspect

Aspect grams can have “different formal exposures” (Dahl & Wälchli 2016: 328; cf. also Bybee, Perkins & Pagliuca 1994: 40–43) and morphology should be understood very broadly as including “any conventionalized and codified relationships between form and meaning” that have to do with aspect meanings (Timberlake 2007: 284). Morphological means will be dealt with here in terms of “morphological fusion,” i.e. “the degree to which grammatical markers (...) are phonologically connected to a host word or stem” (Bickel & Nichols 2013; cf. Bybee 1985: 4–5). According to this criterion, markers are of three broad kinds: isolative, concatenative, and nonlinear (or nonconcatenative) (Bickel & Nichols 2007: 180–183).³⁷⁷ Isolative markers are understood to include phenomena such as particles, functional words, complex constructions etc. In this work, all types of aspect markers were considered, regardless of their formal expression, provided that they express grammatical meanings (the notion of grammatical meaning is explained in §5.3.1 below).

Concatenative markers are phonologically bound; they are also known as bound markers or affixes.³⁷⁸ Most instances of aspect markers are of this kind. An example from Latin will suffice.

(105) Latin: bound aspect marker

canta-ba-m

sing-IPFV.PST-1SG

‘I sang, I was singing.’

Not infrequently, aspect will be marked by zeros, which can be subsumed under bound markers as well. The past PFV gram in Bagvalal (traditionally dubbed ‘Preterite’) is a case in point (Tatevosov 2002b: 358–359; Tatevosov 2002b: 471–472), e.g. the stem *ašti* ‘hear’ also functions as the Preterite (i.e. PFV.PST) form of that verb. Zeros are found with different kinds of aspect grams, including the PFV and IPFV (Dahl & Velupillai 2013c). In the majority of

³⁷⁷ A variety of alternative classifications can be found (Payne 1997: 242; Aikhenvald 2007: 44–49; Dixon 2010: 138ff.; Dixon 2012: 40; Chelliah & Reuse 2011: 314–316).

³⁷⁸ Affixes are contrasted with clitics, i.e. “categorially unrestricted bound formatives” (Bickel & Nichols 2007: 174). Unlike clitics, affixes are categorially restricted; they can appear only with verbs. Both are considered types of concatenative formatives. No instances of clitics expressing aspect meanings were encountered in the sample.

languages, aspect is encoded cumulatively with other TAM meanings, most frequently tense (Tatevosov 2015: 86).

Nonlinear (noncatenative) markers, in contrast to concatenative markers, cannot be segmented into linear strings. Aspect meanings are particularly prone to noncatenative exponence (Dahl & Velupillai 2013c). For instance, aspect meanings can be encoded by ablaut, as in Muskogean languages such as Choctaw (Ulrich 1986; Broadwell 2006), and by subtraction, i.e. the deletion of part of the stem (Bickel & Nichols 2007: 183; Chelliah & Reuse 2011: 315), which is found in many Uto-Aztecan languages (Langacker 1977: 130–132). Reduplication is sometimes classified as a type of nonlinear marker (Chelliah & Reuse 2011: 315–316; Bickel & Nichols 2007: 183). It is often iconically used to express the aspect meanings of repeated or continued occurrence (Key 1965; Bybee, Perkins & Pagliuca 1994: 166–174 et passim; Rubino 2013).³⁷⁹

Meanings from the domain of aspectuality are often encoded by verbal compounds. The best-known instances of this are constructions with verbs of motion and position, which frequently develop telicizing and perfectivizing meanings (Majsak 2005: chap. 4). In that function they are similar to bounders, telicizing and perfectivizing elements of spatial origin (Bybee, Perkins & Pagliuca 1994: 87–88). Both types of markers are typically less grammaticalized and can be considered instances of subsituation aspect grams (§1.3.6 and in particular §1.5.4).

At last, isolative markers are phonologically fully independent words indicating grammatical meanings. Isolative markers are often called “particles” (Bickel & Nichols 2007: 173), even though the extent to which the two terms overlap is difficult to assess at this point.³⁸⁰ Isolative markers are illustrated here with the Samoan Progressive particle *‘olo* and the Albanian Progressive particle *po*.

³⁷⁹ For that reason, the relationship between aspect meanings and reduplication would be a fruitful topic of a typological survey on its own.

³⁸⁰ Other terms employed to refer to “words” with grammatical functions are “empty roots” and “function words” (Croft 2000: 258).

(106) TAM particle – Samoan (Mosel & Hovdhaugen 1992: 345)

'o moe le teine
PROG sleep ART girl
'The girl [was/is] sleeping.'

(107) TAM particle – Albanian (Leluda 1991: 38)

Zogjtë po sjellin kandrra në çerdhe
bird.NOM.PL.DEF PROG bring.PRS.3PL insects.ACC.PL.INDEF to nest.ACC.SG.DEF
'The birds are bringing insects to the nest.'

Particles are sometimes treated together with auxiliaries under the heading of non-bound markers, that is, markers that are independent words. The difference between the two is explained as follows (Bybee, Perkins & Pagliuca 1994: 42):

Inflected auxiliaries are easy enough to identify, since their inflection is indicative of verb-like behavior. Uninflected non-bound grams were coded as auxiliaries if they exhibited any verb-like behavior at all or if they appeared to bear an etymological relationship to a verb. Other uninflected forms were coded as particles.

I leave aside isolative markers (“particles”), which are a comparatively minor presence in the sample, to briefly address the aspect meanings expressed periphrastically by auxiliaries.

Auxiliary (periphrastic or analytic) constructions are multi-word constructions that express grammatical meanings (Haspelmath 2000: 660). A defining property of such constructions, as said, is the presence of an auxiliary item of verbal origin, which is “at least somewhat semantically bleached, and grammaticalized to express one or more of a range of salient verbal categories” (Anderson 2006: 4). For the purposes of this work, the labels ‘auxiliary verb constructions’ and ‘periphrastic/analytic constructions’ are considered synonymous. Aspect meanings are among the most common verbal meanings expressed by auxiliary verb constructions (Anderson 2006: 32–33), and this particularly concerns one crosslinguistically common aspect gram, the progressive (PROG) (e.g. Bybee & Dahl 1989: 56–59).³⁸¹ Note that other aspect grams can also be encoded by auxiliaries, e.g. the past IPFV in Bagvalal, Tatar and Mari (Tatevosov 2002a: 358–362).

In most typological works on TAM categories, auxiliary constructions are contrasted with bound markers – “affixes” or “inflections” (e.g. Comrie 1976: 8–9; Dahl 1985; Bybee 1985;

³⁸¹ The perfect and the prospective, two grams classified as aspect by some authors, are also noted for being often expressed periphrastically.

Bybee & Dahl 1989: 51; Dahl & Velupillai 2013b; also in Haspelmath 2000). Despite these perceived differences, aspect grams encoded via auxiliary constructions were always included in almost all typological studies on TAM.³⁸² The same tradition is of course followed here.

In contemporary morphology, it is widely acknowledged that auxiliary constructions often fulfill the same functions as bound morphemes, and are thus considered inflectional (Spencer 2013: 30, 44–45) or grammatical (Dahl & Velupillai 2013c). However, it should be kept in mind that auxiliary constructions vary in their status. Some auxiliary constructions are characterized by their limited productivity, specialized meanings, and lack of obligatoriness. In the next section, as I explain the notion of inflectional meaning, I will also separately address the criteria employed to distinguish between inflectional and noninflectional (derivational) aspect auxiliary constructions (see §5.3.2 below).

5.3. Criteria for the inclusion of aspect grams

This section serves to expand on the discussion initiated in §1.3 regarding the criteria a gram needs to meet in order to be included in this study. The need to discuss this matter in detail arose amidst the realization that such criteria are almost never discussed in the literature, descriptive or comparative. Typical reference sources for linguistic fieldwork and for a large variety of languages mention “aspects.” The term is often used quite loosely to refer to any morphologically or periphrastically expressed meaning associated with aspect. These meanings vary in their properties across languages. Not all of these meanings are relevant for this investigation. On the other hand, typological investigations rely on vague notions such as “grammaticalized” and “grammatical,” which are rarely defined in a straightforward manner. This lack of clarity is epitomized by the following quote from Brinton (1988: 18), who says that “while a language may not have fully grammaticalized markers of a category, it may still possess, and express, that grammatical category.”

In keeping with the stated goals of this study, the interest lies primarily with those meanings that possess the properties of inflection, i.e. which are obligatory and form systems of paradigmatically opposed grams. In this section I present some of the specific criteria that underlie that choice.

³⁸² The only exception is Bybee (1985), which investigated only bound formatives.

Many of the conceptions presented originate in the Russian grammatical tradition, which has taken a more systematic approach to grammatical meaning than it is the case in Western linguistics.

5.3.1. The notion of grammatical and inflectional meaning

Any given meaning is considered **inflectional** if it is obligatory in a language (Bybee 1985: 27; Bybee & Dahl 1989: 64–65; Bybee 1998: 257; Plungjan 2016: 89).³⁸³ Meanings are normally obligatory only for a subset of word-forms, which form some kind of a class, for instance verbs, nouns, and so forth (Plungjan 2016: 91–92). For instance, in Cayuga, the minimal obligatory verbal form consists of the root, pronominal agreement prefixes, and aspectual suffixes, as illustrated in the following example:

- (108) Cayuga (Sasse 1997: 5)
ké:kəhs
k+ke+hs
SUBJ.1SG>OBJ.3SG.N+see+HAB
'I see it.'

Inflectional meanings are one of the two kinds of grammatical meanings. The other one is nonobligatory meanings, better-known as derivational meanings (Croft 2000: 260). The possibility of nonobligatory grammatical meanings is pointed out by Bybee, who notes the existence of “nonobligatory but still grammaticized³⁸⁴ items and constructions” (Bybee 1998: 259). Inflectional (i.e. obligatory) meanings are expressed by means of inflectional morphology, and derivational (i.e. nonobligatory) meanings by means of derivational morphology. The commonalities between inflectional and derivational meanings will be discussed in §5.3.3. Here I focus on their differences.

The criterion of obligatoriness is considered to be the most successful one to distinguish between inflectional and derivational grammatical meanings, as it “provides a discrete division”

³⁸³ The definition of inflectional meaning based on obligatoriness is attributed to R. Jakobson (Bybee 1998: 259; Plungjan 2016: 97). Diewald & Smirnova (2010) remark that this view is well-known and has a long-standing tradition but is uncommon in most modern linguistic theories (see below). The original statement by Jakobson refers to “grammatical meaning.” This follows the Russian tradition, where only the inflectional meanings are called “grammatical.”

³⁸⁴ The adjective “grammaticized” (an earlier variant of *grammaticalized*) is here to be understood synchronically, i.e. grammaticalization here refers to “a synchronic property characterizing a notion (semantic category) if and only if it is reflected in or determines the use of grammatical items” (Dahl & Velupillai 2013b). In that sense, ‘grammatic(al)ized’ is a virtual synonym of ‘grammatical’.

between the two (Bybee 1985: 82).³⁸⁵ A strict definition such as this one is often difficult to reconcile with the facts found in the world's languages, and some authors prefer less strong characterizations.³⁸⁶ Nevertheless, I will use obligatoriness as a useful heuristic to establish a clear starting point for the present discussion.

The notion of obligatoriness may not be perfectly applicable to all attested cases, but it is useful because it explains another important property of inflectional meanings – lexical generality. In order to be obligatory, any given category, understood here as a set of mutually exclusive grammatical meanings (see below), has to be “combinable with any stem with the proper syntactic and semantic properties” (Bybee 1985: 11; cf. also p. 12, 16–19, 84–86; and also Bybee, Perkins & Pagliuca 1994: 39), i.e. it has to be lexically general. In that sense, lexical generality can be seen as a direct consequence of obligatoriness. In the case of co-occurrence restrictions between a gram and a lexeme, these restrictions “should be clear and fully predictable” (Tatevosov 2002a: 343). As will be seen in the course of Chapter 7, aspect grams considered in this study exhibit an occasional minor co-occurrence restriction between certain kinds of grams and actional meanings.

A concomitant feature of obligatoriness and lexical generality is semantic regularity, i.e. grams have predictable meaning in most contexts (Bybee 1985: 11, 27; Bybee, Perkins & Pagliuca 1994: 39). This is possible because inflectional meanings have only “minimal semantic content” (Bybee 1985: 17), and that with the addition of inflectional grams to the stem “the meaning change is minimal” (Bybee 1985: 21). Lexical generality is also possible because inflectional meanings are highly general (Bybee & Dahl 1989: 63).

Another criterion often invoked in order to establish the inflectional status of a meaning is Anderson's (1985) criterion of relevance to syntax (cf. e.g. Filip 2011: 1187). However, it has been noted for a long time that not all inflectional meanings – i.e. the meanings that are consistently found to be obligatory across languages – can be considered relevant to syntax in the sense agreement (among verbal categories) or case (among nominal categories) are (noted among

³⁸⁵ Determining whether a grammatical meaning is obligatory in a language is not always straightforward. This in particular concerns auxiliary constructions, discussed in the next section.

³⁸⁶ For instance, Dahl prefers to characterize inflectional meanings as systematic rather than strictly obligatory, in the sense that the use of such meanings is *systematic* rather than *obligatory* (1985: 14).

first by Bybee 1985).³⁸⁷ The inflectional meanings that cannot be said to be “relevant for syntax” are called “inherent inflection” by Booij (1994; 1996; see Croft 2000: 260–261; and Spencer 2013: 77–82, 85–86, 90 for an overview)³⁸⁸ or “non-syntactic/semantic grammatical” meanings by Plungjan (2016: 108–109).³⁸⁹ There is consensus among all of the cited authors that grammatical aspect belongs to inherent inflection.

Furthermore, many of the uses of inflectional meanings are considered to be redundant in context (Bybee 1985: 203). This is a consequence of the obligatory nature of grammatical categories – grammatical meaning has to be expressed in every context – even in those where it is redundant (Dahl & Velupillai 2013b). It is dubious if aspect can ever be considered to be redundant in context. In that respect, aspect is unlike tense, which is often redundant in narrative contexts (Bybee & Dahl 1989: 65) as well as contexts where temporal reference has been established by adverbials (cf. Dahl 1985: 188). I find the idea plausible that redundancy is a property of syntactic (“contextual”) grammatical meanings (such as agreement and possibly tense), and not of inherent grammatical meanings such as aspect (cf. Plungjan 2016: 109).

What has been just said implies a discrete boundary between inflectional and derivational meanings based on obligatoriness. Again, this is not the most commonly held view in linguistics nowadays, and obligatoriness is only one of the many criteria employed to distinguish between inflectional and derivational meanings. Obligatoriness itself can be seen as a gradient phenomenon (Diewald & Smirnova 2010).

This kind of a strict distinction between inflectional and derivational meanings, based on the notion of obligatoriness and lexical generality, is problematic for several reasons, and some of them are relevant for the present discussion about aspect. Most notably, a major challenge is presented by PROG. As we will see in the next section, the classification of PROG is complicated by the fact that it has divergent behavior across languages in terms of obligatoriness and lexical generality, despite exhibiting close to identical semantic properties.

³⁸⁷ For that reason, more recent definitions of inflection based on that idea are formulated more broadly (e.g. Bickel & Nichols 2007:169).

³⁸⁸ The term was in fact coined by Anderson (1985), and then taken and modified by Booij.

³⁸⁹ These are contrasted with “contextual inflection” (Booij), “relational inflectional meanings” (Croft) and “syntactic” grammatical meanings (Plungjan).

An important property of typical inflectional meanings, which was alluded to above, is that they are organized into **grammatical categories**. Concretely, one of the properties of obligatoriness is that it always concerns sets of meanings (a minimum of two), which are mutually exclusive (Plungjan 2016: 90), that is, “they *contrast* with one another, in the sense that the presence of one excludes the presence of another” (Bybee 1985: 191, emphasis in the original).³⁹⁰ Such meanings also typically occur in the same affix position. A set of mutually exclusive meanings forms a grammatical category. This means that grammatical categories form paradigms (Plungjan 2016: 91–92), which in turn means that grammatical meaning is not only obligatory, but also necessarily paradigmatic.³⁹¹

Elements of such paradigmatic sets are here called *inflectional meanings* (or *grammatical meanings* in the Russian linguistic tradition). However, they do not have an established term in the Western linguistic tradition and are most commonly referred to as grammatical meanings, grammatical values and sometimes, to much confusion, as grammatical categories (e.g. in Dahl 1985: 21). In Russian linguistics, they are called grammemes,³⁹² a term borrowed from Pike’s tagmemics and then independently developed in the Russian linguistic tradition (Plungjan 2016: 90–91).³⁹³

Grammatical categories thus, consist of grammemes (inflectional meanings).³⁹⁴ An example of a grammatical category in the nominal domain is case. The grammatical category of nominal cases consists of different meanings (“grammemes”), called nominative, genitive, ergative etc., depending on the language. In the verbal domain, aspect is an instance of a grammatical

³⁹⁰ Grammatical categories are often assumed to group conceptually related notions (Bybee 1985: 191), but that is not necessarily the case, as there are languages where grammatical meanings constituting a category belong to different conceptual domains – for instance in many Bantu languages one of the verbal grammatical categories consists of modal, aspectual and temporal meanings (Plungjan 2016: 98, 101). In other words, in such languages tense, aspect and modal grammatical meanings are mutually exclusive, and their exponents occur in the same affix position.

³⁹¹ Derivational meaning can also show properties of paradigmaticity (see Štekauer 2014; cf. also Plungjan 2016: 106–107).

³⁹² Derivational meanings are called derivatememes (Mel’čuk 2000: 524; Plungjan 2016: 105).

³⁹³ The original spelling was *grameme*. Pike later abandoned the term grameme/grammeme in favor of the nowadays more widely known equivalent *tagmeme* (Pike 1958).

³⁹⁴ A similar distinction was given in Whorf (1945), where the distinction is drawn between specific categories (grammemes, grammatical meanings) and generic categories (grammatical categories).

category. Its meanings (“grammemes”) are perfective, imperfective, progressive etc. Such meanings themselves can be decomposed further. For instance, meanings belonging to the category of case can be complex, e.g., numerous semantic distinctions that can be recognized in the dative or genitive case. Likewise, the perfective and imperfective can be understood as consisting of several semantic components (see §5.4.1 below).

The morphological device encoding inflectional meanings (“grammemes”) is called the **grammatical marker** or, more recently **grammatical formative**. Following the established tradition in TAM typology, the union of a grammeme and a marker will be called a **gram**, the term already introduced in §1.3.1. The PFV, IPFV, PROG and so forth are all aspect *grams*.

Summing up, inflectional meanings (“grammemes”) exhibit the following properties. They are obligatory, lexically general, and paradigmatic. They are encoded by inflectional morphology. Among the languages that were considered for this study (§6.2), most of them fit this characterization almost perfectly. The only exception is Mandarin, where none of the highly lexically general aspect grams are truly obligatory and the verb can be, and often is, unmarked. Such aspect systems seem to be rare.

The status of the progressive (PROG) gram is more complicated. This is discussed in the next section, in conjunction with the discussion of auxiliary constructions.

5.3.2. The position of PROG

In §5.2 above, auxiliary constructions were defined as constructions expressing grammatical meanings. It can be observed that auxiliary constructions are frequently subject to restrictions in their application to the set of all verbs in a given language (Anderson 2006: 7–8).³⁹⁵ That means that, despite often being inflectional in the above sense, they cannot be considered obligatory or lexically general. In fact, some authors even doubt whether the notion of obligatoriness is applicable to auxiliary constructions (Bybee & Dahl 1989: 65). However, here it is demonstrated that auxiliary construction can in fact be obligatory.

This section shows what kinds of auxiliary constructions were considered for the study using PROG as an illustration. PROG is employed here for illustration purposes since it is the only aspect gram in this study which is usually encoded by auxiliary constructions (Bybee & Dahl

³⁹⁵ These and other issues are discussed in Plungjan (2016: 116–119) and Diewald & Smirnova (2010: 5–6).

1989: 56–59). The PROG gram also presents an interesting case because it has different properties in different languages with respect to obligatoriness and lexical generality but keeps the typical PROG semantics.

In English, the Progressive is obligatory and contrasts with the simple form of the verb. It thus forms a PROG-NONPROG aspect system (see §5.4.2 below). Consider the following contrasts from English (Brinton 1988: 6):

(109) He walks to work vs. He is walking to work.

(110) John is a fool vs. John is being a fool.

With respect to obligatoriness, the status of PROG varies considerably in European languages. It is obligatory and, in that sense, inflectional in English, Irish, West Frisian, Icelandic and Maltese (Thieroff 2000: 294).

In many other European languages, for instance in Italian and Ibero-Romance, as well as Albanian,³⁹⁶ PROG is widespread and frequent, but the IPFV can always be used in its place with no difference in meaning (cf. Mair 2012: 810). This strongly suggests that in these languages, PROG is not obligatory. The difference between the languages with obligatory and nonobligatory PROG lies in the existence of the IPFV – the languages with the obligatory PROG lack the IPFV, which allowed PROG to fully grammaticalize and become obligatory. This is captured in the following generalization by Lindstedt (2001: 774):

When the same language has both an imperfective and progressive aspect, I propose the tentative universal that the progressive is also less grammaticalized in that its use is less compulsory in the appropriate contexts: the imperfective may suffice to express the progressive meaning, but not vice versa.

This generalization stems from the fact that it is the IPFV and not PROG that stands in the paradigmatic opposition with the PFV. However, in the languages where it is not obligatory, PROG is frequent and exhibits few restrictions in its use. In that sense, the properties of PROG do not differ between the two groups of languages.

Obligatoriness is thus not the factor that necessarily predicts the properties of the PROG. Consider in that respect the data presented in Bertinetto (2000), according to which the PROG has the widest range of use in English and Portuguese, followed by Spanish. Even though the

³⁹⁶ But Leluda (1991: 39) notes that the PROG particle *po* in the Present tense is “fast immer obligatorisch”.

grammatical status of the Italian PROG does not differ significantly from the Spanish or Portuguese PROG, the range of its uses is evidently narrower than it is the case with the Portuguese and to an extent Spanish PROG.³⁹⁷ Thus, I consider both kinds of PROG grams (obligatory and nonobligatory) to be instances of the inflectional PROG and include them in this study. They will be defined semantically in §5.4.2.2 below.

The inflectional PROG should be distinguished from a variety of auxiliary constructions which are neither obligatory nor widespread or frequent. The best known example of such PROG constructions is the French construction *être en train de* ‘to be in the process of’, whose status is described by Comrie (1976: 9):³⁹⁸

It is usual to consider the French construction *être en train de* ‘to be in the process of’ as a free syntactic construction that expresses progressive meaning, rather than as a grammatical category of French, although it is not clear exactly where the boundary-line would be drawn between this and the English or Spanish Progressives, which are usually considered as grammatical categories.

Such constructions are found in many European languages other than French. PROG paraphrases that cannot be considered fully grammaticalized are also found in many Germanic languages (Ebert 2000a),³⁹⁹ and in Balto-Finnic languages (Tommola 2000). Johanson (2000) calls such constructions “preaspectuals”.

Such PROG constructions underwent only superficial grammaticalization and are in the early stages of grammaticalization towards the grammatical status. This is reflected in their low frequency in spontaneous linguistic usage and many uses that are atypical of the PROG. Moreover, such constructions are non-unique (Ebert 2000a: 628–629), i.e. there is always a number of competing PROG constructions, e.g. in Swedish (Dahl 1985: 23), unlike in English, where there is only one PROG construction. In languages like Spanish and Italian where the PROG is more grammaticalized but not obligatory, one also finds different PROG constructions, but one construction is normally particularly frequent and thus dominant (e.g. in Spanish *estar*

³⁹⁷ This is in a way parallel to the behavior of the nonobligatory future in languages like German. Even though not obligatory in German, the future tense does not differ in its core uses from its counterparts in the languages where the future tense is obligatory, such as English.

³⁹⁸ Grammatical category is here to be understood as “grammatical meaning”.

³⁹⁹ Interestingly, the PROG in Germanic languages other than English (and Icelandic), despite being weakly grammaticalized, again exhibits most of the relevant features of the prototypical PROG. The same is true of the French Progressive, whose functions largely overlap with its English and Spanish counterparts.

V-ndo and Italian *stare V-ndo*). In addition, such constructions are characterized by very unstable use, which tends to vary from speaker to speaker, as noted for Swedish and Baltic Finnic by Tommola (2000).⁴⁰⁰ Such constructions also exhibit morphosyntactic constraints. For instance, the German PROG construction *am-V sein* [at-V be] is largely confined to the use with intransitive verbs (Mair 2012: 804): *Er ist am Arbeiten* ‘he is working’ is fine, whereas the acceptability of *Er ist einen Brief am Schreiben* ‘he is writing a letter’ varies across speakers. In keeping with the principles stated in §1.3 and the previous section, the PROG constructions exhibiting most, or all of these properties were not included in this study.

5.3.3. A brief note on subsituation aspect grams

In §1.3.6 and §1.5.4, the notion of subsituation (secondary) aspect grams was introduced to encompass aspect grams that do not fit the definition of viewpoint aspect. Subsituation aspect grams were defined in terms of actional shift. That is, their function is to modify the actionality of the verb or predicate. In contrast, viewpoint aspect grams are primarily defined by their function of actional expressions and by their viewpoint and discourse functions. Only a small subset of functions fulfilled by viewpoint aspect grams is about actional shift. Subsituation aspect grams are not a subject of this study, but for the sake of completeness I would like to compare them to viewpoint aspect grams in terms of the parameters of introduced in §5.3.1 above.⁴⁰¹

Let us start by the observation that subsituation aspect grams are neither obligatory nor lexically general, and consequently do not qualify as inflectional. For example, the subsituation gram resultative, discussed at various points in Chapter 1, refers to a resultant state. It is not lexically general as resultatives are typically compatible only with telic verbs (Nedjalkov & Jaxontov 1988). Therefore, they are not obligatory either. Grams such as the resultative lack lexical generality by definition because they are compatible only with the verbs and predicates encoding situations compatible with the subsituation fragment for whose expression they are specialized (also remarked upon by Bybee 1985: 100–102).⁴⁰² Viewpoint grams are different in

⁴⁰⁰ Further criteria, relevant for periphrasis in general, are discussed in Haspelmath (2000: 660–661)

⁴⁰¹ Note that many observations put forward in what follows are preliminary and need to be checked against a larger sample of languages.

⁴⁰² The existence of such aspect grams was anticipated by Lyons (1977: 712–713), where he notes that if some of the commonly cited aspect meanings, such as inceptives, were “grammaticalized in some distinctive way in the aspectual system of a particular language, there would be severe restrictions upon the combination of

this respect as they can be combined with all or most verbal roots and express whatever fragment of the situation is available in the lexical specification of the root (and are occasionally able to shift actional meanings).

It can thus be hypothesized that subsituation aspect grams are fundamentally different from viewpoint aspect grams in terms of lexical generality. However, there are other parameters that demonstrate that subsituation aspect grams in fact express grammatical meanings.⁴⁰³ Criteria other than obligatoriness (and lexical generality) can be invoked in that connection.⁴⁰⁴

The first criterion to mention is semantic regularity, i.e. the criterion of semantic modification (Bybee 1985: 5). We have mentioned above that, in the case of inflection, the semantic change to the stem is minimal. We can see that with subsituation aspect grams; while they arguably do add semantic content to the root, the semantic content comes from a small, closed set of meanings that can be defined as ‘actional’. A membership of small, closed sets is more typical of inflection than derivation (cf. Aikhenvald 2007: 36), but grammatical meanings in general typically belong to a closed class (Bybee & Dahl 1989: 59–61; Bybee, Perkins & Pagliuca 1994: 37–38). In addition, Croft (2000: 260) observes that both inflectional and derivational meanings belong to “a restricted overall inventory of semantic concepts, which have a remarkable degree of uniformity across languages.” In that sense, the semantic change brought about by grams of subsituation aspect is also “minimal,” because, as we have seen, ‘actional meanings’ are quite abstract. Abstractness is a major conceptual difference between what we call grammatical and non-grammatical (lexical) meanings. Grammatical meanings are considered more abstract than non-grammatical (Croft 2000: 260; Plungjan 2016: 88). Abstract meanings are, roughly, those that have general properties and are applied to large sets of objects (Plungjan 2016: 89),⁴⁰⁵ as well as those that are highly general (Bybee & Dahl 1989: 63; Bybee, Perkins & Pagliuca 1994: 46).

certain aspects with verbs having a certain [actional] character.”

⁴⁰³ The term “grammatical Aktionsart” (Boogaart 2004: 1171–1173), which refers to subsituation aspect, should also be understood in the same sense.

⁴⁰⁴ This is important because the lack of lexical generality does not necessarily characterize all aspect grams that bring about actional shift. One exception could be the habitual, whose function is to shift dynamic predicates into a stative reading. The habitual appears to be compatible with all actional classes, with a possible exception of permanent states.

⁴⁰⁵ A more fine-grained definition is provided by Croft (2000: 260), who also distinguishes between semantic

Furthermore, like with some inflectional grams, the resulting meaning is generally **predictable** (Bybee 1985: 27). Regularity (semantic predictability) is independent of obligatoriness (cf. Plungjan 2016: 121), and subsituation aspect grams demonstrate that quite clearly. The **productivity** (Aikhenvald 2007: 49; Chelliah & Reuse 2011: 317) of these two types of grams differs since subsituation grams, by virtue of being semantically predictable and regular, can be expected to be more productive than prototypical derivational markers (Aikhenvald 2007: 50). By virtue of these properties specifically, subsituation aspect grams can be considered an intermediate case between typical inflectional meaning and typical derivational meanings. This fits well within the idea that the division between inflectional and derivational meanings is taken to be a continuum (e.g. Bybee 1985; Lehmann 2015; Plungjan 2016: 89, 115). Under this view, such intermediary meanings could be considered to be found in some kind of an intermediate stage of grammaticalization (cf. Croft 2000: 262–263).⁴⁰⁶ Subsitution grams can thus be characterized as fully formed inflectional meanings but which are not yet organized into categories (Plungjan 2016: 119).

In sum, the hypothesis put forward here is that the fundamental distinction between viewpoint aspect grams and subsituation aspect grams relies upon the notion of lexical generality. Viewpoint aspect is considered lexically general because it can be combined with most or all verbs and predicates. Subsitution grams can be combined only with a subset of verbal roots and are thus not lexically general. This property of viewpoint aspect – lexical generality – serves as a starting point for the distinction between the two types of grams. Furthermore, lexical generality correlates with several other properties, the most important of which is the position along the inflection-derivation continuum. Viewpoint aspect grams are more inflectional, subsituation grams are less inflectional.

The properties just discussed are summarized in Table 23 and connected to the terminology and functions introduced in §1.3.6 and §1.5.4. Recall the labels that were adopted in this work: **viewpoint aspect gram** and **subsitution aspect gram**.

generality and abstractness (cf. p. 259).

⁴⁰⁶ In the Russian tradition, these meanings are labeled “quasi-grammatical” to distinguish them from grammatical (my “inflectional”) meanings, which are obligatory and lexically general. These meanings are quasi-grammatical because they express meanings typically expressed by grammatical categories, but which are not obligatory and organized into paradigms. Typical quasi-grammatical meanings are causatives, which are semantically regular but nonobligatory.

Label used here	Lexical generality	Grammatical status	Functions
viewpoint aspect gram	lexically general	more inflectional	actional and non-actional
subsituation aspect gram	restricted to one actional type	less inflectional	actional only

Table 23. Properties of viewpoint and subsituation aspect grams compared.

The distinction is largely based on the opposition between the ideal cases, i.e. typical viewpoint aspect grams the PFV and IPFV, and typical subsituation grams, such as the resultative. The distinction is however not as clear-cut as one may want it to be, and there are aspect grams that do not match this basic distinction perfectly – the case of PROG is the only one relevant for the present work and was already discussed in §5.3.2 above.

5.4. Aspectual grams and systems: definitions

Here the aspect systems and grams considered in this study are defined. As explained before, only inflectional grams are considered. The grams covered in most detail are the PFV and IPFV (with the PFV-IPFV system in §5.4.1), PROG and NONPROG (within the PROG-NONPROG system in §5.4.2).⁴⁰⁷ These are the “default” aspect systems. Other aspect systems and grams are described with reference to the “default” systems. These include the aspect systems of Maltese, Japanese, Belhare, Cayuga (and other Northern Iroquoian languages), and Nyakyusa (and other Bantu languages) which are introduced in §5.4.3.

The procedure for establishing the definitions of individual gram-types is laid out in §5.1 above. Of course, such a procedure requires that various attempts that aim at capturing the idiosyncrasies of language-specific grams are disregarded, such as the discussions on the meaning of the English Progressive (Brinton 1988: 7–15).

Apart from the definition, alternative terms used to refer to the same gram will be listed. For most of these aspectual categories there is much terminological confusion, and this section serves a role in this sense to make the terminological choices clear, in addition to illustrating what the contents of each of these labels are.

Information on the aspect systems of the 16 languages of the sample is given in Appendix II.

⁴⁰⁷ But also the nonobligatory PROG (see §5.3.2).

5.4.1. The perfective-imperfective system

In §1.3.7, the PFV-IPFV system was defined exclusively in terms of contrast with the PROG-NONPROG system. The differences consist in the expression of habitual-generic and ‘state exists’ meanings, which are in the PFV-IPFV system expressed by the IPFV. The distribution of these meanings is reproduced in Table 24.

PFV-IPFV SYSTEM		
IPFV		PFV
ongoing-episodic	habitual-generic and ‘state exists’	perfective (bounded) meanings

Table 24. Functions of the PFV and IPFV grams.

So far, no effort has been devoted to the definition of these specific meanings. In this section, the most attention will be given to the definition of perfective (or bounded) meanings, since, so far, they have been treated as simple and indivisible. However, I maintain the position that the PFV-IPFV opposition is best understood as a presence or absence of a bound, where bound is understood broadly as a “limit that ends or completes the situation in some way or another” (Lindstedt: 2001: 768). Before proceeding to individual grams, let us say something about the properties and distribution of this aspect system.

It was noted in §1.3 that the PFV-IPFV opposition is typically equated with the notion of aspect in general, a position not adopted here. This view originates from the widespread distribution of the PFV-IPFV system, which is doubtless the most common aspect system crosslinguistically. Dahl (1985: 69) reports that the PFV-IPFV opposition occurs “in various guises”⁴⁰⁸ in about 45 languages in his sample of 64 languages.⁴⁰⁹ In the WALS chapter 65 (Dahl & Velupillai 2013c) the authors report that the opposition is found in 101 of the 222 languages in the sample. In other words, it can be taken that slightly less than 50 per cent of the languages of the sample exhibit the PFV-IPFV opposition in their aspect system. The discrepancy is explained by the fact that the former sample is genetically and areally biased, and the figures in the latter sample

⁴⁰⁸ That is, the PFV typically enters in the opposition with the IPFV. There are some exceptions. For instance, in Maltese, the PFV is paradigmatically opposed to a PROG and an old IPFV, which comprises the habitual-generic and ‘state exists’ meanings (see §5.4.3.1). A more complex system is found in Northern Iroquoian languages (e.g. Cayuga), where the PFV is in the paradigmatic opposition with *two* IPFV-like grams (see §5.4.3.4).

⁴⁰⁹ Bybee (1985: 30) reports that 52% of her sample of 50 languages have inflectional aspect, and only considers bound formatives.

should be considered more representative of the world's languages. The world-wide distribution is given in Figure 9.

This is also by and large true of the languages examined in this work. I will not list them separately here, as the information on the type of aspect system in each of the languages is given in §6.2 and in Appendix II.

The PFV-IPFV opposition is often restricted to the past time reference (Dahl 1985: 79–84; cf. Bybee & Dahl 1989: 83–84; Lindstedt 2001: 779), but there are exceptions, e.g. Laz or Modern Greek in the present sample, where aspect and tense/mood are independent of one another. In languages where there is no obligatory present-past tense opposition, the PFV forms have a default past time reference, and the IPFV have a default present time (Lindstedt 2001: 778), even though both default interpretations can be overridden. In this work, the semantics of the PFV-IPFV opposition in future time reference will be disregarded.

I will not specifically address the diachrony of the PFV and IPFV, which is extensively documented elsewhere (Bybee & Dahl 1989; Bybee, Perkins & Pagliuca 1994).

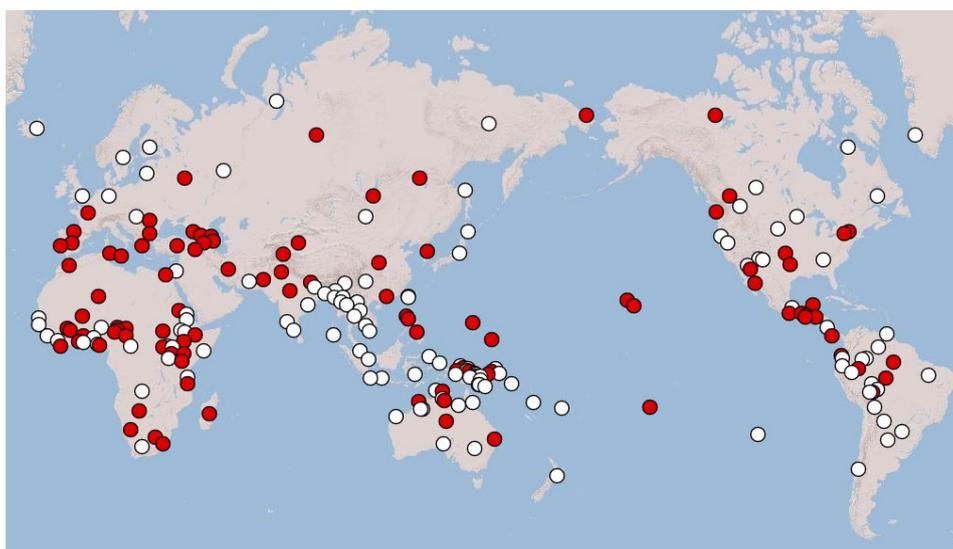


Figure 9. The worldwide distribution of the languages with the PFV-IPFV opposition (red, 101 languages) and without it (white, 121 languages), from Dahl & Velupillai (2013c).

5.4.1.1. Perfective (PFV)

In this section the PFV will be defined and discussed.⁴¹⁰ For the purposes of the definition, the context from TMAQ will be crucial. Actional meanings and taxis function will be used as well.

⁴¹⁰ Other terms for the same gram include *momentaneous*, *punctual* (e.g. in the Iroquoianist tradition), *punctiliar*, *semelfactive* etc. See Dahl (1985: 70), Bybee (1985: 142), and Brinton (1988: 5). In many languages,

Many scholars assume that there is a unifying semantic feature, the so-called *Gesamtbedeutung*, of the PFV, which has been variously referred to as a “blob” (Comrie 1976: 16ff.), “unifying, summarizing” effect (Bache 1982: 70) or “punctivity” (Plungjan 2011a: 39ff.), even though others deem such attempts at unifying definitions as futile (see §5.1 above). These metaphorical characterizations are in my opinion best understood under the heading of temporal boundedness (Bybee & Dahl 1989: 55; Bybee, Perkins & Pagliuca 1994: 54; Lindstedt 2001: 775; Boogaart 2004: 1174 among many others),⁴¹¹ explained in detail in §1.5.2. Unlike the IPFV, the PFV is more amenable to such unifying characterization. Still, as we will see, the PFV can also be decomposed in various ways.

As mentioned repeatedly, the PFV is well established as a crosslinguistic gram (Dahl 1985: 73–79) and it comes in opposition with the IPFV (Dahl 1985: 189). Its prototypical contexts from the TMAQ are given in Table 25 (Dahl 1985: 78).

TMAQ S175 (cf. TMAQ S165)	Do you know what happened to my brother yesterday? I saw it ... (narrative) ... It DIE
TMAQ S91	Q: What your brother's reaction BE to the medicine (yesterday)? He COUGH once
TMAQ S162	Do you know what happened to me yesterday? . . . (narrative) . . . Suddenly I STEP on a snake
TMAQ S99	Q: How long did it take for your brother to finish the letter? He WRITE the letter in an hour
TMAQ S101 (cf. TMAQ S100)	Last year, the boy's father sent him a sum of money When the boy GET the money, he BUY a present for the girl

including some of the languages of the sample used here, the PFV is simply called *Past*. Another related term is *completive* (“conclusive” in Dahl 1985, “strong perfective” in (Dahl & Velupillai 2013c)). This term refers to a gram with the meaning ‘to do something completely’ or ‘finish’, often with the nuance of the object being totally affected. This gram has a more restricted use than the PFV proper and is one of the diachronic sources for the development of the PFV (Dahl 1985: 95; Bybee, Perkins & Pagliuca 1994: 57–61 et passim; Dahl & Velupillai 2013c).

⁴¹¹ This is also similar to Smith’s characterization of the perfective viewpoint as “closed” (1997: 69–70).

<i>Note: only the verb #2 is relevant</i>	
TMAQ S92 <i>Note: only the verb #1 is relevant</i>	Q: What your brother's reaction BE to the medicine (yesterday)? He COUGH twice

Table 25. Typical contexts for the PFV in the TMAQ

These contexts in fact combine several dimensions of PFV properties, including natural endpoints, expression of sequence taxis, as well as its interactional properties with actionality.

Among other relevant contexts, one can mention the contexts targeting the arbitrary endpoint (temporally delimited situation), which occurs with atelic dynamic predicates (activities) and states, as explained in §1.5.2. There it was noted that such predicates, when used with the PFV, do not indicate a completed situation, but rather a temporally delimited situation (such use was called delimitative). This is one of the most important properties of the PFV crosslinguistically. The relevant contexts in TMAQ are reproduced in Table 26.⁴¹²

TMAQ S13	Context: A: What did your brother do after dinner yesterday? Sentence: He WRITE letters
TMAQ S95	Q: What your brother's reaction BE to the medicine (yesterday)? He COUGH for an hour

Table 26. TMAQ contexts targeting temporally delimited situations.

Recall from §1.5.2 that for the PFV, the opposition between verbs with natural and arbitrary boundaries is crucial. These are the two main meaning components of the PFV. They were called **completive** and **delimitative** functions of the PFV. Note that the former kind of boundaries can be targeted with the TMAQ S175, S162, S99 and S101 from Table 25. The two components of the PFV gram are once again illustrated here for the sake of completeness with the examples from Adyghe. In example (111), the PFV indicates that the natural endpoint has been reached,

⁴¹² This property of the PFV is typically most clearly at display in contexts with adverbials of the *for*-PP type. For some issues with this claim see Sasse (2002: 247–248).

whereas in example (112), no natural endpoint has been reached and the PFV only indicates that the situation lasted for a certain amount of time and then ceased.

(111) Adyghe: PFV indicates a natural endpoint (Arkadiev 2009: 62)

pšaše-r txələ-m je-ž'a-ɸ
 girl-ABS book-OBL 3SG.IO-read-PFV.PST
 'The girl read the book (to the end).'

(112) Adyghe: PFV indicates an arbitrary temporal boundary (Arkadiev 2009: 62)

ç'ale-r televizorə-m je-plə-ɸ
 boy-ABS television-OBL 3SG.IO-watch-PFV.PST
 'The boy watched television (for some time).'

Note that the same properties are to an extent reflected in the TMAQ sentences for the PFV, although the TMAQ does not specifically target actional readings. For instance, TMAQ sentences in Table 25 refer to telic uses, whereas the sentences in Table 26 are delimitative.

However, as noted in §1.5.2, contexts from Table 26 are not reserved for the PFV – the IPFV can be used there as well. According to Dahl (1985: 71–72), in his sample almost all languages with the PFV allow for both aspects in the former context (TMAQ S13), and a large majority in the second context (TMAQ S95) (cf. also Bybee & Dahl 1989: 88; Johanson 2000: 84–85; Timberlake 2007: 295–298).

There are two further contexts where languages often have a choice between the PFV and IPFV. Sentences with the adverbial *slowly* (TMAQ S23) are one such context (Dahl 1985: 71–72).⁴¹³ In addition, in some languages the habitual interpretation, which is typical of the IPFV gram (see below), is also possible with the PFV. This is found, for instance, in Bagvalal, Mari and Tatar. In these languages, the habitual meaning of the PFV and IPFV grams is practically indistinguishable in the past context (Tatevosov 2002b: 477–478). However, the habitual interpretation of PFV.PST typically needs to be induced by adverbials (Tatevosov 2002a: 372), which suggests that IPFV.PST is less marked in these contexts. This is an important fact since I assume that the distinction between the PFV and IPFV grams as comparative concepts is not disturbed as long as the PFV is not the default choice of habitual contexts. In other words, the

⁴¹³ The PFV aspect in Slavic is somewhat different from the PFV in most other languages by being disallowed in contexts such as TMAQ S13 and S23, where most languages with the PFV-IPFV opposition allow for both aspects. This is one of the unique properties of the Slavic aspect. See fn. 61.

comparative concept PFV can be used in habitual contexts, whereas the comparative concept IPFV must be available in habitual contexts.

An important element of the definition of the PFV is its taxis function of sequence, explained in §1.3.4, whereby the PFV is “used for narrating sequences of discrete events in which the situation is reported for its own sake, independent of its relevance to other situations” (Bybee, Perkins & Pagliuca 1994: 54; cf. Timberlake 2007: 293). Recall that, crucially, the PFV can be identified in such contexts if the string of verbs refers to successive actions – see example (11). In contrast, IPFV signals a simultaneity of situation. While no context in TMAQ targets this specific context, such context could easily be constructed within TMAQ. In §1.5.2, this taxis property of aspect was linked to the property of temporal boundedness.

The crosslinguistic applicability of taxis configurations is well attested. The following two examples demonstrate the use of the PFV in the taxis configuration of sequence in Laz and Bagvalal:⁴¹⁴

(113) Taxis configuration of sequence in Laz (Mattissen 2001: 23)

<i>mčari</i>		<i>golobioni,</i>		<i>cari</i>	<i>pškomi</i>
write.(1>3)SG.PFV.PST		read.(1>3)SG.PFV.PST	bread	eat.(1>3)SG.PFV.PST	
‘I wrote, read and ate bread.’					

(114) Taxis configuration of sequence in Bagvalal (Tatevosov 2002a: 373)

<i>iši</i>	<i>angi</i>	<i>č’era</i>	<i>sašat-i-r</i>	<i>b-Ri-r,</i>	<i>hē</i>	<i>b-ašā</i>	<i>b-eši-r</i>
we	here	two	hour-OBL-ERG	HPL-stop-HPL	then	HPL-away	HPL-go-HPL
‘We stood here for two hours, and went away.’							

A final property of the PFV that deserves mention is its incompatibility with a present-time reference. The reason for this is succinctly summarized by Lindstedt (2001: 778):

Since the present is also a point-in-time, it is logically impossible to have aspectually bounded forms referring to a single present situation. In various languages perfective presents may be interpreted, for instance, as futures, or present habituais (since a habitual series of bounded situations is in itself a state-like unbounded situation; cf. Every summer she builds a sauna). Perhaps the only types of true present perfectives are performatives (I promise to come) and commentaries describing sports or other public events in approximate real time.

⁴¹⁴ Further examples can be cited from Lezgian (e.g. Timberlake 2007: 294, adapted from (Haspelmath 1993: 448)), Chipewyan (Wilhelm 2007: 54), Portuguese (Oliveira 2003)

This is another criterion according to which an instance of the PFV can be recognized. These restrictions are well documented (Dahl 1985: 79–81; Timberlake 2007: 298; Malchukov 2009; Wit 2016).⁴¹⁵

Let us conclude the discussion of the PFV with a brief observation on its decomposition. It is commonly observed that, while the IPFV is typically decomposed into several components (see below), the PFV is seen as non-decomposable, and as “simple and indivisible” (Tatevosov 2002b: 469–470). The PFV gram is typically not decomposed mainly because its components normally do not occur as independent grams, unlike with the IPFV, where ongoing meaning is frequently expressed by the PROG gram and habitual-generic meaning by the habitual gram.⁴¹⁶ However, we have seen that the PFV can in fact be decomposed into at least two components, completive and delimitative.⁴¹⁷

5.4.1.2. Imperfective (IPFV)

The meaning of the IPFV gram can be defined as nonbounded duration,⁴¹⁸ in opposition to the PFV gram, which can be defined as temporal boundedness (see previous section). In the literature, the semantic core of imperfectivity is normally less coherently defined. This is reflected in Comrie’s classic analysis of the IPFV gram into three components, which was referred to already in §1.3.7 and above.⁴¹⁹ Let us examine that analysis in more details and see how it can be linked to TMAQ contexts.

⁴¹⁵ The performative ‘promise’ can be targeted by TMAQ S125 and S126.

⁴¹⁶ This analysis of the PFV is criticized by Tatevosov (2002b: 475fn5) on the very same grounds.

⁴¹⁷ A more elaborate decomposition of the PFV is proposed by Plungjan (1998b; 2011a: 395ff.), who in his cluster analysis (§1.5.3, §5.1) decomposes it into four smaller “atoms”: the punctive, completive, inceptive and delimitative. These meanings effectively correspond to the interpretations the PFV gram has with different actional classes. Thus, the punctive is the PFV of a punctual verb (an achievement), the completive is the PFV of a durative telic verb (an accomplishment), the inceptive is the PFV of inchoative states and ingressive activities, whereas the delimitative is the atelic PFV (cf. the uses of the PFV in Modern Greek in §1.5.3). The former three meanings correspond to my completive function.

⁴¹⁸ Cf. Smith’s concept of “open viewpoint.”

⁴¹⁹ As observed in §1.3, the semantic opposite of perfectivity (boundedness) is in fact progressivity (nonboundedness). The crosslinguistic well attested fact that the progressive (i.e., ongoing episodic) meaning clusters with nonepisodic meanings (habitual, generic, ‘state exists’) in one gram-type (IPFV) “do[es] necessarily point to a natural affinity between episodic and nonepisodic meanings” (Brinton 1988: 256n54).

First, it should be noted that the IPFV is lexically general, and that it can be used with stative predicates and dynamic predicates. With stative predicates it bears the meaning ‘the state exists’. When used with dynamic predicates, it has two meanings: the meaning of an ongoing, episodic situation, also called ‘progressive’ and the meaning of a nonepisodic situation. The nonepisodic meaning (often called simply habitual) does not describe a particular situation, rather it provides a characterization of situation participants (Tatevosov 2015: 61, 78). It is therefore characterizing and nonparticular (Krifka et al. 1995). Nonepisodic meanings are of two kinds:⁴²⁰ habitual, which refer to a habit or situation that occurs more or less regularly – e.g. *My cat eats mice frequently*, and generic, which refers to timeless truths and “typical or characteristic properties of a species, a kind, or an individual” (Dahl 1985: 99) – e.g. *Tigers eat meat*.⁴²¹

Unsurprisingly, it is these components that are targeted via TMAQ contexts. Unlike for the PFV, Dahl does not define contexts for the IPFV explicitly. The IPFV gram can therefore be defined negatively as the gram that is banned from the contexts in which the PFV appears – see previous section. There were, of course, some contexts where both the PFV and IPFV are possible, for which also see above.

However, the IPFV gram can be defined positively by using two sets of contexts from TMAQ. The first set is used to define the distribution of the gram called “past imperfective” (traditional ‘Imperfect’) by Dahl (1985: 117–119). Since the PFV-IPFV opposition is in many languages confined to the past time reference (see above), these contexts paint a sufficiently clear picture of contexts where the IPFV is used in past time reference (IPFV.PST). The contexts are given in Table 27.

⁴²⁰ In fact, lexical statives, i.e. the meaning of ‘state exists’, are also nonepisodic. According to Krifka et al. (1995: 17), nonepisodic sentences can be distinguished based on whether they have a corresponding episodic predicate (habituals and generics) or not (lexical statives). The differences between statives and habituals are explored in Brinton (1987). Cf. also §1.5.4 here.

⁴²¹ Both examples are from Smith (1997: 33–34).

TMAQ S12 (cf. TMAQ S9, S10, S11) <i>Note: only the verb #I is relevant</i>	A: I talked to my brother on the phone yesterday. B: What he DO? (=What activity was he engaged in?) He WRITE a letter
TMAQ S20 <i>Note: only the verb #I is relevant</i>	Q: What your brother usually DO after breakfast last summer? A: He WRITE letters
TMAQ S14 <i>Note: only the verb #I is relevant</i>	Do you know what happened to my brother yesterday? I saw it myself We WALK in the forest

Table 27. TMAQ contexts for IPFV in past time reference (IPFV.PST).

Note, however, that the IPFV also occurs with the present time reference, in which case it is simply called a “present” since a present situation cannot be perfective (Bybee, Perkins & Pagliuca 1994: 126) – see also the previous section. The IPFV with present time reference (IPFV.PRS) is targeted with a set of contexts in Table 28.⁴²² All these contexts refer to ongoing, episodic actions with present time reference.

TMAQ S05 (cf. TMAQ S06)	Father to child: (Please do not disturb me), I WRITE a letter
TMAQ S83 <i>Note: only the verb #I is relevant</i>	Q: What your brother DO right now? (=What activity is he engaged in?) A by someone who can see him: He WRITE letters

Table 28. TMAQ contexts for the IPFV in present time reference (IPFV.PRS) which refers to ongoing, episodic actions.

The present time IPFV’s have readings other than the ongoing episodic. The contexts in Table 29 are used to target nonepisodic meanings, including present time habitual and generic as well

⁴²² These contexts are in fact used in Dahl (1985) to define the distribution of the PROG gram. Note that in §5.4.2, the prog gram will be defined by means of PROGQ, not TMAQ.

as present time reference of ‘state exists’. The final context in the same table (TMAQ S118) targets the past time reference of ‘state exists’. The past habitual was already presented in Table 27 (TMAQ S20).⁴²³

TMAQ S71 (cf. TMAQ 72)	[Talking about the speaker's habits: I like to be up early.] I RISE at six in the morning (alternative: at dawn)
TMAQ S73 (cf. TMAQ 74, 75)	[Q: What kind of sound do cats make?] They MEOW
TMAQ S01 (cf. TMAQ S02-04)	[Standing in front of a house] The house BE BIG
TMAQ S118 (cf. TMAQ S115-117, 119-121)	My brother KNOW (yesterday) that the water BE COLD (today)

Table 29. TMAQ contexts for nonepisodic meanings of the IPFV.

One of the defining contexts for the IPFV (and PROG) is the Inzidenzschema (see §1.3.4). However, there is no context in TMAQ which targets it. The appropriate sentence is instead found in PROGQ (Sentence 03): [Last night at 8 o' clock,] when John came, Ann still WORK.

The Inzidenzschema is probably the single most important context for identifying individual grams as an IPFV. Consider the following sentence from Tatar, which illustrates the Inzidenzschema:⁴²⁴

(115) Tatar (Tatevosov 2015: 68)

daut kil-gän-dä, alsu jxkl-xj i-de
 Daut come-PERF-SIM Alsu sleep-PST AUX-PST
 ‘When Daut came, Alsu was sleeping.’

The relevant sentence contains an auxiliary construction *jxkl-xj i-de*, which can be identified as IPFV.PST based on numerous contexts, including the Inzidenzschema in example (115). The same example can be used to contrast the IPFV.PST with another Tatar past form, *jxkxla-dx*

⁴²³ Contexts for habitual and generic reference are described in Dahl (1985: 95–102). See also Dahl (1995) for more details on these grams.

⁴²⁴ For examples of the Inzidenzschema in French, Spanish, and Laz, see §1.3.4. Further examples can be cited from Chipewyan (Wilhelm 2007: 41–42).

[sleep-PFV.PST] ‘slept’, which is, unlike the past form *jrkl-xj i-de* ‘was sleeping’, banned from being used in the Inzidenzschema (Tatevosov 2002a: 373). This fact unambiguously rules out an interpretation of *-dx* in *jrkr-la-dx* as an instance of the IPFV.PST. Some further tests are of course needed to demonstrate that the Tatar *-dx* is in fact an instance of the PFV.PST. Among others, for instance, the *jrkr-la-dx* [sleep-PFV.PST] is used in temporally bounded (delimitative contexts), where it is then translated as ‘Daut slept (for two hours and then got back to work ...)’.

Apart from the Inzidenzschema, the IPFV can also be defined in terms of the taxis relation of simultaneity. Recall from §1.3.4 that two verbs in the IPFV aspect are interpreted as referring to simultaneous situations, whereas two verbs in the PFV aspect are interpreted as referring to successive situations. For an illustration of this see also §1.3.4.

Summing up, the gram-type IPFV should have the following characteristics crosslinguistically. First, it should be compatible with all verbs (predicates), including those that are defined as statives by their other characteristics (see §4.3.1). It should be the default form to refer to the ‘state exist’ meaning with statives and for on-going episodic and nonepisodic habitual⁴²⁵ and generic contexts with dynamic predicates. All contexts (except for generic) should be available for both the present and past time reference. Crucially, the IPFV is also found in the Inzidenzschema, normally with past time reference. These properties and related contexts given above are summarized in Table 30.

⁴²⁵ As noted in the previous section, habitual meanings can in some languages be indicated by the PFV form as well, but the IPFV form is always the default choice.

Context	Component of IPFV	Time reference
TMAQ S05, S83	on-going episodic	present
TMAQ S12, S14	on-going episodic	past
PROGQ S03	on-going episodic (Inzidenzschema)	past
TMAQ S71	nonepisodic (habitual)	present
TMAQ S20	nonepisodic (habitual)	past
TMAQ S73	nonepisodic (generic)	n/a (most generics are timeless) ⁴²⁶
TMAQ S01	‘state exists’	present
TMAQ S118	‘state exists’	past

Table 30. Meaning components of the gram-type IPFV, stated in terms of contexts from TMAQ (and PROGQ).

This section is closed out with a brief illustration of these meanings as attested in the IPFV.PRS and IPFV.PST of Adyghe. In this language, the IPFV is used with statives in (116)a to refer to the fact that a state exists in the present moment. With dynamic predicates, the IPFV can express an ongoing process in the episodic (or actual) reading – see (116)b, and in nonepisodic readings, viz. habitual, see – (116)c, and generic – see (116)d.

⁴²⁶ But see Dahl (1985: 100).

(116) Adyghe (Arkadiev 2009: 61–62)

a. IPFV with a ‘state exists’ reading

č'ale-r š'ə-t.

boy-ABS LOC-stand

‘The boy is standing.’ (= is now in an upright position)

b. IPFV of a dynamic predicate with an ongoing episodic reading

pšaše-r ž'adede txələ-m j-e-ž'e.

girl-ABS now book-OBL 3SG.IO-PRS-read

‘The girl is now reading the book.’

c. IPFV of a dynamic predicate with a habitual reading

pšaše-r mafe qes txələ-m j-e-ž'e.

girl-ABS every day book-OBL 3SG.IO-PRS-read

‘The girl every day reads the book.’

d. IPFV of a dynamic predicate with a generic reading

čagʷə-r təkə-r χʷəraj-ew q-e-kʷəhe.

earth-ABS sun-ABS go.around-ADV DIR-PRS-travel

‘The Earth goes around the Sun.’

In Adyghe, IPFV is of course available in the Inzidenzschema, as in the following example:

(117) Adyghe (Arkadiev 2009: 62)

wəne-m sə-z-je-he-m č'ale-r pšaše-m de-gʷəš'əʔe-š'tək.

room-OBL 1sg.s-SBD-LOC-go-OBL boy-ABS girl-OBL SOC-talk-IPFV

‘When I entered the room, the boy was talking with the girl.’

Note that, unlike in (116), where all examples are in the IPFV.PRS, the example (117) is in the IPFV.PST.

5.4.2. The progressive-nonprogressive system

5.4.2.1. Contrast with the PFV-IPFV system

In §1.3, the progressive-nonprogressive (PROG-NONPROG) system was defined in terms of the same notions as the perfective-imperfective (PFV-IPFV) system. In §5.4.1.2 above, following Comrie (1976), the IPFV gram was assumed to consist of three components: on-going episodic (or “progressive”), habitual-generic, and ‘state exists’.

The crucial difference between the two systems lies in the expression of the habitual-generic and ‘state exists’ meanings. In the PFV-IPFV system, all three are by default conveyed by the IPFV gram. In contrast, in the PROG-NONPROG system, these two are combined with the perfective (bounded) meanings.⁴²⁷ This expanded PFV gram is simply called NONPROG. The

⁴²⁷ This does not imply that states are necessarily presented as bounded as well. The semantics of boundedness is not forced onto states in the English Past Simple, as argued by Smith (1997: 170–171), because such states

PROG gram encodes only the ongoing episodic meaning, which is its core function. Consider the following contrasts (cf. de Swart 1998: 365–367; Huddleston & Pullum 2002: 124–125):

Reading	PROG-NONPROG system (e.g. English ⁴²⁸)	PFV-IPFV system (e.g. French)
ongoing episodic	PROG	IPFV
habitual-generic	NONPROG	IPFV
‘state exists’	NONPROG	IPFV
perfective meanings	NONPROG	PFV

Table 31. The PROG-NONPROG and PFV-IPFV system compared in terms of Comrie’s (1976) decomposition of the IPFV.

Note also that, unlike the PFV-IPFV distinction, the PROG-NONPROG distinction and the PROG gram are rarely confined to past time reference and in general exhibit fewer restrictions with respect to time reference.

The PROG-NONPROG system is rarely recognized as a separate aspect system on par with the better-known PFV-IPFV system, even though it is often recognized that PROG is obligatory in some languages, like English. Partial exceptions are some works within the Russian typological tradition (Tatevosov 2002b: 469–470; Plungjan 2011a: 402–406), where it is also noted that such systems have not been subject to a crosslinguistic investigation. The NONPROG gram is also rarely referred to as such or at all (but see Dahl & Velupillai 2013c). The label reflects the lack of semantic core of the gram. Thus, NONPROG is an instance of the “doughnut gram,” namely a gram “whose domain has no focus [and] no prototypical uses” (Dahl 2000b: 10).

There is limited evidence about the existence of such a system outside English. Most of it concerns languages of Europe, where the PROG-NONPROG aspect system is found in Irish, West Frisian, and Icelandic (Thieroff 2000: 293–297). In the sample used here, English is the only such system.

can be “feliculously conjoined with an assertion that the state continues” into the present. This is parallel to the behavior of states with the IPFV in PFV-IPFV languages like French.

⁴²⁸ The NONPROG form is called *Simple* in English.

Recall also §5.3.2, where we noted that a highly grammaticalized but nonobligatory PROG can exist within a PFV-IPFV system. Such cases are attested in Italian, Spanish, Albanian, Nyakyusa, and Tepehua.⁴²⁹

I will not address here the diachrony of the PROG, which is extensively documented elsewhere (Bybee & Dahl 1989; Bybee, Perkins & Pagliuca 1994).

A clear understanding of the PROG-NONPROG system and its relationship with the PFV-IPFV system is of crucial importance for this work. The reasons have become obvious by now. The main body of theoretical literature is focused on English, a PROG-NONPROG language, as the object of investigation. The bulk of crosslinguistic research, as well as most of the languages sampled for this investigation, exhibit the PFV-IPFV system. For that reason, correspondences and mismatches between aspect-sensitive classes in these two kinds of aspect systems need to be fully appreciated in order to avoid misrepresentation of data. As we will see, mismatches between aspect-sensitive classes are most evident regarding stative predicates (see Tatevosov 2002a: 344 for a similar remark).

With that in mind, most of the discussion that follows will focus on the properties of the English PROG. The properties of the NONPROG will be touched upon only incidentally since they can be understood as encompassing all contexts where PROG is not allowed. The discussion is also meant to encompass the properties of the highly grammaticalized and nonobligatory PROG (see §5.3.2 above). Of course, such a PROG does not have a corresponding NONPROG form.

Now we turn to the properties of the PROG as a comparative concept. Afterwards, more information is provided on the specifics of the PROG-NONPROG system as evidenced in English.

5.4.2.2. The progressive gram (PROG)

In this section, the PROG will be defined as a comparative concept.⁴³⁰ As noted before, the PROG partakes in both PFV-IPFV and PROG-NONPROG aspect systems. While PROG is the only ongoing

⁴²⁹ A PROG is also attested in Navajo, a language with the PFV-IPFV system, but its incidence is governed by a different set of rules (Smith 1997: 303–304).

⁴³⁰ Among related terms one should mention the *continuous*, which is a PROG that can be used with stative verbs to express the meaning of ‘state exists’, that is, without coercing statives into dynamic uses (Comrie 1976; cf. Mair 2012: 806). The continuous should be distinguished from *continuative*, which refers to the aspectual meaning expressed by the English *keep -ing* (Brinton 1988: chap. 2; Plungian 1999). The continuous is often referred to by the term *durative* (Comrie 1976: 26; Plungian 2016: 356). The term *durative* is also often used in descriptive grammars to refer to the PROG. The same term (*durative*) is also used to describe the actional feature that distinguishes activities and accomplishments from achievements.

episodic aspect in the latter kind of system, in the former it exists alongside the IPFV, but unlike the IPFV it is not obligatory. In §5.3.2 above it was explained what criteria need to be met by a nonobligatory PROG in the PFV-IPFV system in order to be included in this study.

The PROG was found to be one of the typical aspectual grams crosslinguistically (Dahl 1985: 189), attested in at least 28 languages in the sample of 64 languages (p. 90). The prototypical contexts for the PROG, cited here from the PROGQ, are found in Sentences 01-03 (p. 810). They are reproduced in Table 32.⁴³¹ Note that PROGQ S03 targets the Inzidenzschema, which is discussed extensively in the context of the PFV-IPFV contrast in §1.3.4 and §5.4.1.2. More will be said of the role of the Inzidenzschema in the next section.

PROGQ S01	/Somebody on the phone wants to know about Ann; the answer is: – Ann is near me.../
	...She WORK [right now]
PROGQ S02	A: What does Ann do every Saturday morning?
	B: She CLEAN THE HOUSE / READ
PROGQ S03	[Last night at 8 o' clock,] when John came, Ann still WORK

Table 32. Typical contexts in which PROG is used (from PROGQ).

All three contexts target the defining property of the PROG, which is defined as the aspect referring to an episodic “on-going activity” with “an explicit (or presupposed) indication of a single focalization point” (Bertinetto, Ebert & Groot 2000: 540; cf. Dahl 1985: 91; Bybee & Dahl 1989: 55; Timberlake 2007: 287, 304; Mair 2012: 803; Tatevosov 2015: 65).⁴³² An instance of an explicit focalization point is the comment “Last night at 8 o’clock” in S03. In S01 and S02 the focalization points are more present in the immediate contexts and provided in the comment in S01 and in the question in S02.

Three other important properties of the PROG are identified by Dahl (1985: 92–93):

1. the PROG is usually independent or almost independent of time reference
2. the PROG is infrequently extended to habitual meaning
3. the PROG is normally used only for dynamic situations

⁴³¹ The prototypical uses of the PROG from the TMAQ are listed in Dahl (1985: 92).

⁴³² Other terms for ‘focalization point’ include “topic time” (Klein 1994), and “reference time” (Reichenbach 1947) and “contextual occasion” (Timberlake 2007).

The first property of the PROG was addressed in the previous section and here I will focus instead on the two other properties.

One of the defining characteristics of the PROG is its restriction to ongoing episodic contexts.⁴³³ By definition, it is excluded from expressing the habitual-generic and ‘state exists’ meaning. However, the PROG can occur in particular kinds of habitual contexts. One such context where the PROG is found are habitual focalized contexts, such as *Whenever I arrive, he is writing*. In such contexts, focalization is superordinate to habituality (Bertinetto 2000: 585–586), that is, there is “plurifocalization” (Ebert 2000a: 628). The importance of focalization for the PROG becomes evident in such contexts. For that reason, for instance, all Romance languages with a PROG device can use it (Bertinetto 2000: 570). Another such context is where the PROG refers to a temporary habit; examples of this use are provided for English and several other languages later in the chapter.

The notion of “dynamic” is not to be understood here as a defining property of a class, rather, it is a shorthand for the grouping of verbs that seem to be resistant to the use with the PROG. For now, I define such a group of verbs only negatively, by the absence of a PROG marking, and ascribe to them no semantic property. In order to identify the semantic property shared by the verbs resistant to the PROG as stativity (as done by most authors), one needs to previously establish a set of independent criteria for stativity (cf. Bar-el 2015: 81). Otherwise, there is a risk of circularity. This property of the PROG is of particular importance in this investigation. The matter is investigated for English and other languages in more detail in §7.1.1.

There are several further properties of the PROG. For instance, it is generally incompatible with adverbials of temporal duration (*for*-PPs and the like)⁴³⁴ and does not appear in contexts such as S48 from PROGQ:⁴³⁵

PROGQ S48 | [Yesterday, during my sleep] Ann PLAY for 2 hours all by herself.

⁴³³ In that sense, the PROG is a dedicated morphosyntactic device for the expression of the ongoing episodic meaning.

⁴³⁴ These adverbials were discussed in §1.5.2 and §4.2.4.2.

⁴³⁵ In English, the acceptability of such sentences apparently varies with speakers, but as a rule it can be said that the Simple (NONPROG) form is preferred in such contexts. See Bertinetto & Delfitto (2000: 200) for an overview.

This is illustrated with examples from English, Italian and Spanish (Bertinetto & Delfitto 2000: 196–197, 207):

- (118) ??Mary was dancing for two hours / until midnight.
 (119) *Maria stava ballando per due ore / fino a mezzanotte. (Italian)
 (120) *María estaba bailando durante dos horas / hasta la media noche. (Spanish)

The situation in English is more complex, for which see the next section.

The aspectual system of Ibero-Romance, where the PROG is not obligatory, is unusual in that the PFV.PST and PROG can cooccur.⁴³⁶ The combination of the PFV.PST and PROG has the effect of presenting the situation as temporally bounded, i.e. it is specialized for the expression of the delimitative function of the PFV (see §1.5.2):⁴³⁷

- (121) PFV(.PST) and PROG combined in Spanish (Bertinetto, Ebert & Groot 2000: 526)
- | | | | |
|----------------|------------------------|------------|---------------|
| <i>estuve</i> | <i>deambulando por</i> | <i>las</i> | <i>calles</i> |
| be.PFV.PST.1SG | stroll.GER | about the | streets |
- ‘I was strolling about the street (i.e. for some time).’

The delimitative function of this construction is at display in contexts with adverbials of temporal duration (*for*-PPs), which are otherwise incompatible with the PROG, as shown above in example (120):

- (122) Spanish (Bertinetto & Delfitto 2000: 207)
- | | | |
|----------------------|-----------------|---------------------------|
| <i>María estuvo</i> | <i>bailando</i> | <i>durante dos horas.</i> |
| Maria be.PFV.PST.3SG | dance.GER | for two hours |
- ‘Maria danced for two hours.’

Occasionally, agentivity is brought up as a relevant semantic property of the PROG. However, it appears not to be a factor in the use of PROG, at least not in Romance (Bertinetto 2000: 584–585).

This definition of the PROG describes the “focalized” subtype of the PROG (Bertinetto, Ebert & Groot 2000: 527), which presents a situation as on-going at a single point in time (see also Johanson 2000: 38–39). The focalized type of the PROG is contrasted with the “durative” PROG,

⁴³⁶ In languages with the PFV-IPFV opposition, the PROG is consistently derived from or based on the verbal form with the underlying IPFV (or broadly “durative”) semantics.

⁴³⁷ A detailed description of this construction is found in Squartini (1998: chap. 2). See also Bertinetto & Delfitto (2000).

which is used to refer to a larger interval of time (Bertinetto, Ebert & Groot 2000: 527). It is found in so called durative contexts; such as S51 from PROGQ:

PROGQ S51 | [Moment by moment] The policeman TAKE NOTES of what speaker said

The durative PROG is also compatible with the durative adverbials in contexts such as S48 above. A summary of compatibility with contexts from PROGQ for each of the two subtypes is found in Bertinetto, Ebert & Groot (2000: 533). It is assumed by the same authors that the durative uses of the PROG are diachronically younger, and the focalized PROG develops from the PROG grams of the durative subtype (2000: 539–541; cf. Ebert 2000a: 628). They also note that in some cases the focalized PROG grams of individual languages can incorporate some or most of the meanings of the durative subtype; this is for instance the case with the PROG in English and Ibero-Romance.⁴³⁸

The auxiliary (periphrastic, analytical) expression by means of an auxiliary verb is another important property of the PROG and is extensively documented. This tendency of the PROG was independently observed by Bybee (1985: 142) and Dahl (1985: 91) – see Bybee & Dahl (1989: 56–59) for an overview. A wealth of data on various types of auxiliaries employed in PROG periphrases is found in Anderson (2006);⁴³⁹ see also Blansitt (1975), Bybee et al. (1994: 128–129), Bertinetto, Ebert & Groot (2000: 520–525). The correlation is explained by the fact that auxiliary constructions express “younger, less grammaticalized meanings” (Haspelmath 2000: 661).⁴⁴⁰ Further properties of the PROG, in particular its grammatical status, were discussed in §5.3.2 above.

PROG constructions are well attested crosslinguistically (see above), but it is unclear how many of these are obligatory (or near-obligatory) in nature. More specific information on the

⁴³⁸ The distinction between the subtypes of the PROG based on the notion of focality (Germ. *Prägnanz*) was introduced by Johanson (1971: 118–143). The notion of focality is rarely invoked in discussions of aspect typology, even though it appears to be relevant for the grammaticalization of the PROG and IPFV, as suggested by numerous papers in Dahl (2000) as well as by Ebert (1999). This matter will not be pursued any further in this work.

⁴³⁹ Anderson (2006: 332–373) is a useful overview of lexical items serving as sources of grammaticalization of auxiliaries.

⁴⁴⁰ In some languages PROG grams developed from a discourse emphatic particle, e.g. in Albanian (Leluda 1991: 38; Bertinetto, Ebert & Groot 2000: 524, 551), German (the particle *gerade*, Mair 2012: 805) and Syrian Arabic (Haspelmath 1998: 54–55).

grammatical status of the PROG is available from the questionnaire in Dahl (2000a), which was constructed so as to provide some indication about the degree of grammaticalization of individual PROG constructions, and some of this information was used in the discussion in §5.3.2 above. Based on our current knowledge, the strictly obligatory PROG appears to be rare (Mair 2012: 823). Hence the focus on English as the only example of the PROG-NONPROG system. I turn to English in the next section.

5.4.2.3. The PROG-NONPROG system of English

One of the main reasons for the lack of discussion of the PROG-NONPROG system in the literature lies in the fact that most researchers do not recognize such a system in English.⁴⁴¹ Instead, most of the scholars adhere to one of the two following positions. The first position identifies the English aspect system as an instance of the PFV-IPFV system. This was discussed (and refuted) in §3.3.1. This view is widespread (e.g. Brinton 1988: 52–53; Smith 1997; Klein 2009a: 53). Only rarely is it recognized explicitly, for instance, that the English PROG “covers only a subdomain” of the IPFV (Boogaart 2004: 1176; cf. Huddleston & Pullum 2002: 124), as was explained in §5.4.2.1 above.

The other position identifies a system with an aspectually neutral or underspecified default form (the Simple form, my NONPROG) and a specialized additional form (the Progressive), which is seen as an accessory to the English verbal system. On that analysis, the English lacks the PFV-IPFV opposition: “the perfectivity/imperfectivity distinction (...) is nowhere clearly manifested in English” (Sasse 2002: 213; cf. Bybee & Dahl 1989: 95; de Swart 1998: 365; Binnick 2001: 557; Timberlake 2007: 293; Saeed 2016: 128). These claims mostly concern the past (and future) time references. The absence of the PFV-IPFV opposition in English is thus equated with the absence of any kind of aspect system.

The default status of the Simple forms is understood in the sense that its “application depends on the non-application of some other category” (Dahl 1985: 63). This is reflected in the definition of the Simple form as “nonprogressive” (Quirk et al. 1985: 198; Huddleston & Pullum 2002: 124; Radden & Dirven 2007: 176–177). The English Progressive is thus more marked and more contextually restricted. Corpus evidence is often cited in that connection – PROG forms are rather infrequent in comparison to simple (NONPROG) ones (Quirk et al. 1985:

⁴⁴¹ One notable exception is Bickel (1996: 32–46), whose analysis of the English aspect system in significant respects overlaps with mine.

198; Biber et al. 1999: 461). However, the view of the English Progressive as contextually restricted is only (in part) valid for past (and future) contexts. The reverse is indeed true for present-time reference – “[t]he simple present is more restricted than the past” (Saeed 2016: 128).

These positions disregard the fact that, in most contexts where the PROG is used, it is used obligatorily, even though many authors recognize this fact (Brinton 1988: 6; Smith 1997: 170–171; Boogaart 2004: 1178; Mair 2012: 810). As explained in §5.3 above, obligatoriness is crucial for recognizing an aspectual system. The system is much better understood if a system of two paradigmatically opposed forms, the PROG and NONPROG, is posited. Instead, even authors that recognize the obligatoriness of PROG (e.g. Boogaart 2004) prefer to characterize the system in terms of the PFV-IPFV system, whereby the English system is (explicitly or implicitly) regarded as a subtype of that system. Let us now review some of the evidence in favor of considering the English system distinct from the PFV-IPFV system.

In present-time reference, only the Progressive can be used for ongoing episodic situations. The Simple present is banned from such contexts, except in special cases of the so-called “instantaneous present,” which includes usages such as performatives, sport commentaries, recipe instructions, stage directions, demonstrations etc. (Quirk et al. 1985: 180; Bertinetto 1994a: 416n7). This was not always the case in English – the Progressive became more widespread only during the 17th and 18th centuries (Jespersen 1954: 177; Pollak 1988: 112). In earlier periods, the Simple present form was used instead, while the Progressive was rare (Jespersen 1954: 166–168; Quirk et al. 1985: 181; Mair 2012: 810–811), as evidenced by the following examples from Shakespeare:

(123) Soft, he wakes. (Richard III, I.4.144)
[Modern English: Sh! He’s waking up.] (cited in Barber 1997: 188)

(124) What do you read my Lord? (Hamlet, II.2.194) (cited in Jespersen 1954: 177–178)

As for past-time reference, the opposition is at display in the Inzidenzschema, explained in §1.3.4 and §5.4.1.2. Consider the following two sentences (Quirk et al. 1985: 209):

(125) When we arrived, Jan made some fresh coffee.
(126) When we arrived, Jan was making some fresh coffee.

The behavior of the NONPROG and PROG in these contexts parallels the behavior of the PFV and IPFV, respectively. In (125), the coffee-making followed the arrival (the taxis configuration of sequence), whereas in (126) the arrival took place during the coffee-making (Inzidenzschema).⁴⁴² This clearly shows that the Simple form has an inherent aspectual value (cf. Tatevosov 2015: 88). A further argument is provided by comparison with German, where the Preterite form *setzte auf* in (127) can be used to convey either the taxis configuration of sequence, as in translation 1, or the Inzidenzschema, as in translation 2 (Tatevosov 2015: 89; originally from Schaden 2010):

(127) Als das Feuer ausbrach, setzte Otto seinen Helm auf.

1. ‘When the fire started, Otto put on his helmet.’

2. ‘When the fire started, Otto was putting on his helmet.’

Note that the sequence reading is preferred, although, despite this preference, the ongoing-episodic (“progressive”) reading is still possible and it can be enforced unambiguously by the progressive particle *gerade* (Schaden 2010).

The English PROG can be used to refer to habitual situations, in which case the habit is presented as temporary, e.g. *was drinking coffee every day* (Johanson 2000: 152).

Also note that, as in the PFV-IPFV system, there are some contexts where the two grams, the PROG and NONPROG, can be used. One such context involves adverbials of temporal duration (*for*-PPs and the like). As noted in the previous section, the PROG is generally disallowed in such contexts. In English, there is a preference for the Simple (NONPROG) form to be used, but the Progressive is also possible. Consider the following pairs of examples (Huddleston & Pullum 2002: 165–166):

(128) Between 10 and 11 **I worked** / **I was working** in the library.

(129) From after dinner until nearly midnight **I filled** / **I was filling** in my tax returns.

Huddleston & Pullum note that “highlighting of duration is effectively the only difference between progressive and non-progressive” (2002: 166; cf. Bertinetto & Delfitto 2000: 198).

⁴⁴² The phenomenon is well documented for English (Smith 1997: 74–75; Huddleston & Pullum 2002: 163; Boogaart 2004: 1174; Tatevosov 2015: 88). Exceptions to the general rule are provided in Quirk et al. (1985: 1018–1019).

There is one context where the PROG and NONPROG appear to be interchangeable, viz. with *while, as* and similar subordinators expressing simultaneous situations (Huddleston & Pullum 2002: 166; Jespersen 1954: 188–190), as in the following example:

(130) She was reading / read while he was watching / watched TV.

Note that both aspects are possible in both the main and subordinate clauses, as pointed out by Huddleston & Pullum (*ibid.*).

5.4.3. Other systems

5.4.3.1. Maltese (Afrasiatic, Semitic)

The aspect system of Maltese (Ebert 2000b; Spagnol 2009: 28–32) deserves special mention. It is somewhat unusual insofar as it combines the PROG-NONPROG system with the PFV-IPFV system in the following way. In Maltese, a new PROG developed in what had essentially been a PFV-IPFV system, not unlike what is happening in Romance languages. However, unlike in Romance languages, the new Maltese PROG became obligatory and took over the meaning of the ongoing episodic (“progressive”) from the old IPFV. The old IPFV kept the nonepisodic meanings, (habitual-generic and ‘state exists’). This results in a tripartite system where there is a PFV aspect, a PROG aspect and the old IPFV aspect, now with a reduced functional range. The PROG and old IPFV are distinguished in both past and present. The PFV is of course reduced to past time reference. A summary is given in Table 33.

PROG	old IPFV	PFV
ongoing-episodic	habitual-generic and ‘state exists’	perfective (bounded) meanings

Table 33. The Maltese aspect system (following Ebert 2000b: 753–759).

Note that the Maltese PFV corresponds to the gram-type PFV in all basic functions listed in §5.4.1.1 above: it is used in the taxis configuration of sequence and can refer to both natural and arbitrary endpoints.

In Maltese, one finds two basic synthetic forms, viz. the PFV (*kiteb* ‘he wrote’) and the old IPFV.PRS (*j-ikteb* ‘he writes’). The PROG is a combination of the old IPFV.PRS and the particle *qed* (*qed j-ikteb* ‘he is writing’).⁴⁴³ The particle *qed* originates from a contracted the old IPFV.PRS

⁴⁴³ The exception are verbs of motion – e.g. *ħareġ* ‘go out’, *mexa* ‘walk’, which use the so-called “active participle” form to express PROG – e.g. *ħiereġ, miexi* (Spagnol 2009: 30).

form of the verb *qedhed* ‘stay, sit, be located’.⁴⁴⁴ The past time reference is signaled by the auxiliary *kien* (the PFV of the verb ‘be’): *kien j-ikteb* ‘he used to write’ (old IPFV.PST = *kien* + old IPFV.PST) and *kien qed j-ikteb* ‘he was writing’ (PROG.PST = *kien* + *qed* + old IPFV.PRS).

5.4.3.2. Japanese (Japonic)

The Japanese aspect system is an idiosyncratic but well described one. It is difficult to characterize in terms of the PFV-IPFV system, but in some respects, as we will see, it resembles the PROG-NONPROG system of English.

The system revolves around the obligatory aspect gram *-te i-*,⁴⁴⁵ which has progressive, resultative, and perfect semantics.⁴⁴⁶ Other aspectual functions are encoded by the so-called Simple forms. The two grams distinguish two tenses, nonpast and past. The tense-aspect grams of Japanese are given in Table 34.

	Simple	<i>-te i-</i>
nonpast time reference	<i>-ru</i>	<i>-te i-ru</i>
past time reference	<i>-ta</i>	<i>-te i-ta</i>

Table 34. Obligatory aspect grams in Japanese (adapted from Mori, Löbner & Micha 1992: 222)

The interpretation of *-te i-* is in many ways determined by the actional semantics of the verb. Depending on the available interpretations, Japanese verbs can be grouped into a number of classes. For that reason, the *-te i-* gram is also at the center of a well-known actional classification of Japanese verbs, introduced by H. Kindaichi. The classification and its problems will be discussed briefly at the end of this section. Before that, I provide a characterization of the Japanese aspect system as well as a brief description of the meanings of the two obligatory aspect grams.

On its face, the system of oppositions is not unlike the PROG-NONPROG system. Most importantly, one of the main meanings of *-te i-* is ongoing, episodic, and it contrasts with the

⁴⁴⁴ The active participle *qieghed* is also found in this function (Spagnol 2009: 29).

⁴⁴⁵ The obligatoriness of the *-te i-* gram is explicitly observed by Shirai (2000: 338). The gram evidences a high degree of grammaticalization in other respects as well (Shirai 2000: 329). The *-te i-* gram consists of the nonfinite verb form in *-te* (glossed as -TE) and the auxiliary verb *i-* ‘be there’ (glossed as AUX) (Mori, Löbner & Micha 1992: 220–222; Kaiser et al. 2013: 216).

⁴⁴⁶ On the difference between resultative and perfect semantics see fn. 471 in the previous section. Japanese examples will be given below.

other ('Simple') form in a manner similar to the English system.⁴⁴⁷ More specifically, the two forms (Simple Nonpast and *-te iru*) contrast in the following way. The Simple Nonpast *-ru* is used for the 'state exists' meaning, as in (131), the habitual meaning, as in (132), and the generic meaning, as in (133),⁴⁴⁸ as well as for some other functions such as future actions, intentions, and narration (Alpatov, Arkad'ev & Podlesskaja 2008: 101ff.; Kaiser et al. 2013: 211–212). These are all nonepisodic meanings.

(131) Simple Nonpast in Japanese: 'state exists'

<i>Tanaka-san</i>	<i>wa</i>	<i>doitsugo</i>	<i>ga</i>	<i>dekiru</i>
Tanaka-HON	TOP	German	NOM	know

'Mister Tanaka knows German.'

(132) Simple Nonpast in Japanese: habitual reading

<i>Takashi</i>	<i>wa</i>	<i>Miki</i>	<i>ni</i>	<i>mainichi</i>	<i>tegami o</i>	<i>kaku</i>
Takashi	TOP	Miki	DAT	every.day	letter	ACC write

'Takashi writes Miki a letter every day.'

(133) Simple Nonpast in Japanese: generic reading

<i>Chikyuu</i>	<i>wa</i>	<i>taiyoo no</i>	<i>mawari</i>	<i>o</i>	<i>mawaru</i>
Earth	TOP	Sun	GEN rotation	ACC	turn

'The Earth rotates around the Sun.'

The nonepisodic functions of the Simple Present are contrasted with *-te i-*, which conveys the episodic ongoing meaning, as in (134).⁴⁴⁹ The Simple Nonpast in Japanese, like its English counterpart, does not allow for an episodic ongoing reading (Mori, Löbner & Micha 1992: 241).

(134) Nonpast *-te i-*: present ongoing episodic (Shirai 1998: 661)

<i>Ken-ga</i>	<i>hashi-tte</i>	<i>i-ru</i>
Ken-NOM	run-TE	AUX-NPST

'Ken is running.'

A detailed account of the various nuances of the progressive *-te i-* can be found in Mori, Löbner & Micha (1992: 225–232).

The nonpast *-te i-* can also convey the habitual meaning, as in (135). However, it conveys the idea that the habit is temporary and/or exceptional (as suggested by 'these days') (Mori, Löbner

⁴⁴⁷ Another point of similarity has to do with the fact that the opposition between the two grams is not restricted to a past time reference.

⁴⁴⁸ All three examples are from Seidel & Weyerts (1991: 70).

⁴⁴⁹ Japanese also possesses the dedicated, nonobligatory PROG gram *-tsutsu ar-* (Mori, Löbner & Micha 1992: 245; Kaiser et al. 2013: 218).

& Micha 1992: 230–231; Shirai 1998: 667; 2000: 345).⁴⁵⁰ If this is truly the case,⁴⁵¹ then the default choice of expressing habituality is the Simple Nonpast, which does not imply the temporariness of habit (Mori, Löbner & Micha 1992: 231). As expected, the *-te i-* gram cannot express the generic meaning (Shirai 1998: 667; 2000: 345).

(135) Nonpast *-te i-*: the habitual meaning (Shirai 1998: 664)

Ken-wa saikin kuruma-de gakkoo-e it-te i-ru
 Ken-TOP lately car-INS school-DIR go-TE AUX-NPST
 ‘Ken is going to school by car these days.’

Interestingly, there is a marginal group of defective verbs where the *-te i-* gram has replaced the Simple forms in some of its functions. Accordingly, these verbs employ *-te iru* to encode the ‘state exists’ meaning, whereas the *-ru* form is only used for future time reference. This group includes verbs such as *sunde iru* ‘live’, *motte iru* ‘have’ and *shitte iru* ‘know’ (Seidel & Weyerts 1991: 81–82; Mori, Löbner & Micha 1992: 236; Kaiser et al. 2013: 216).

The functions of the Simple Past *-ta* are less exhaustively described. It is used to refer to the ‘state exists’ meaning with past time reference, as in (136),⁴⁵² as well as to the perfective (bounded) meanings, e.g. in (137), with a delimitative reading and in (138), with a natural endpoint. The Simple Past is not a prototypical past gram as it allows for an interpretation of current relevance (Mori, Löbner & Micha 1992: 235).⁴⁵³ No information was available to me on the expression of habitual meanings with the Simple Past.

⁴⁵⁰ The English Progressive has similar properties.

⁴⁵¹ Cf. authors who do not mention this restriction on the habitual interpretation (Seidel & Weyerts 1991: 70, 83; Nishiyama 2006: 186; Kiyota 2008: 205–207).

⁴⁵² Cf. also Mori, Löbner & Micha (1992: 250).

⁴⁵³ The *-ta* gram is originally a resultative marker, which then developed into a perfect and finally into a past tense (Seidel & Weyerts 1991: 70; Shirai 2000: 335fn5). This path of development resembles the German to French *have-perfects*.

(136) Simple Past: ‘state exists’ meaning (Alpatov, Arkad’ev & Podlesskaja 2008: 101)

tenki-yoohoo desh-ita
weather.forecast COP.HON-PST
‘This was a weather forecast.’

(137) Simple Past: delimitative reading (Mori, Löbner & Micha 1992: 257)

iti-zikan manga o yon-da
for an hour comic ACC read-PST
‘(She) read comics (the/a comic) for an hour.’

(138) Simple Past: natural endpoint reading (Mori, Löbner & Micha 1992: 256)

zip-punkan de sono si o oboe-ta
in 10 minutes this poem ACC learn-PST
‘(She) learned the poem by heart in ten minutes.’

The *-te i-* gram can be combined with the Simple Past in the form of *-te ita*. Its functions are rarely explicitly discussed in the sources I consult.

The *-te i-* gram is unique in that it combines the meaning of the PROG gram (that is, the ongoing episodic meaning) with the resultative, as in (139), as well as the full range of perfect meanings, viz. the perfect of result, as in (140),⁴⁵⁴ the experiential perfect, as in (141)⁴⁵⁵ and the perfect of persistent situation, as in (142).⁴⁵⁶

⁴⁵⁴ It is difficult to distinguish between the resultative and the perfect of result in practice. See Shirai (2000: 335, 342–345) for some of the criteria that are applicable to Japanese. For instance, an example from Shirai (2000: 355), which is almost identical to example (140), namely *Asoko-de ki-ga taore-te i-ru* (*asoko-de* = there-LOC), is translated as ‘A tree is in the state of having fallen there’. The translation suggests a resultative reading, as the resultant state of lying on the ground is in focus rather than the fact that it has fallen.

⁴⁵⁵ Note that example (134) can also have the meaning of experiential/existential perfect, i.e. it can mean ‘Ken has (already) run’.

⁴⁵⁶ Numerous sources discuss in detail the perfect readings of *-te i-* (Mori, Löbner & Micha 1992: 233–235; Shirai 2000: 335–226, 342–345; Nishiyama 2006: 185–186).

(139) The *-te i-* gram: resultative (Shirai 1998: 661)

Mado-ga ai-te i-ru
window-NOM open-TE AUX-NPST
'The window is open.'

(140) The *-te i-* gram: perfect of result (Nishiyama 2006: 186)

Ki-ga taore-te i-ru.
tree-NOM fall-TE AUX-NPST
'A tree has fallen down (and it is lying on the ground).'

(141) The *-te i-* gram: experiential perfect (Shirai 1998: 664)

Ken-wa hon-o san-satu kai-te i-ru
Ken-TOP book-ACC three-CLF write-TE AUX-NPST
'Ken has written three books.'

(142) The *-te i-* gram: perfect of persistent situation (Nishiyama 2006: 186)

Ken-ga ichi-jikan-mae-kara hashi-tte i-ru.
Ken-NOM one-hour-ago-since run-TE AUX-NPST
'Ken has been running since one hour before.'

The readings of *-te i-* are subject to different restrictions. On the one hand, the experiential perfect and perfect of persistent situation are almost universally available. More specifically, the experiential perfect is available with all predicates (Nishiyama 2006: 188; cf. Mori, Löbner & Micha 1992: 239), except with statives, whereas the perfect of persistent situation has no restrictions (Shirai 2000: 344–345). On the other hand, if a verb allows for a resultative interpretation of *-te i-*, then it does not allow for the progressive (ongoing episodic) interpretation and vice versa.⁴⁵⁷ In other words, the resultative and progressive interpretations of *-te i-* are mutually exclusive (Shirai 2000: 342).⁴⁵⁸

As noted above, the distribution of the interpretations of *-te i-* is the basis for the actional classification of Japanese verbs, as proposed by Haruhiko Kindaichi (1950) (cf. also §2.3.2).⁴⁵⁹ Kindaichi divides Japanese verbs into four classes, with the first class consisting of verbs that cannot occur with *-te i-*. These are commonly associated with Vendlerian states. The second class consists of verbs which have a progressive interpretation with *-te i-*. Conversely, the third class consists of verbs which have a resultative interpretation with *-te i-*. The second class is

⁴⁵⁷ The status of the perfect of result is unclear at this point to the extent that it can be distinguished from the resultative reading.

⁴⁵⁸ Due to this asymmetry, it is claimed by some authors that there are two *-te i-* grams, one expressing the progressive and resultative and the other encoding perfect meanings.

⁴⁵⁹ This brief overview is based on Seidel & Weyerts (1991: 72–73), Mori, Löbner & Micha (1992: 235–236), Nishiyama (2006: 187–188).

traditionally identified with Vendlerian activities and accomplishments, and the third with Vendlerian achievements. Finally, the fourth group is comprised of the defective verbs which occur almost exclusively with *-te i-* and which were already mentioned above.

The distinction between the second (“progressive”) and third (“resultative”) groups is central to the approach, as it involves a vast majority of Japanese verbs (Mori, Löbner & Micha 1992: 236). The two groups are distinguished on the basis of durativity. Durative verbs are those with the progressive interpretation, and nondurative verbs are those with the resultative interpretation of *-te i-*. It is however widely acknowledged that the classification has a number of weak points.

The most widely discussed point is that, in Japanese, there is a strong association between transitivity and the interpretation of *-te i-* (Seidel & Weyerts 1991: 74; Shirai 1998: 680; Kiryu 1999: 49). More specifically, it was noted early on that with many verbs, especially with those that come in transitive-intransitive pairs, the transitive verb requires a progressive interpretation, while the intransitive verb require a resultative interpretation. This is illustrated in (143).

(143) Transitivity and the interpretation of *-te i-* (Shirai 2000: 328)

a. Transitive verb and a progressive interpretation

Kodomotati-wa oni-o kime-te i-ru.
 children-TOP it-ACC decide-TE AUX-NPST
 ‘The children are deciding who’s to be it.’

b. Intransitive verb and a resultative interpretation

Oni-ga kimat-te i-ru.
 it-NOM be_decided-TE AUX-NPST
 ‘It has been decided who’s it.’

This approach to *-te i-* is called “syntactic” by Shirai (1998, 2000), while Kindaichi’s approach is called “temporal.” As pointed out by Shirai (2000), the correlation between the interpretation of *-te i-* and transitivity is imperfect, and both syntactic and temporal approaches are in fact needed to account for the attested data. In other words, the choice of meaning is in many cases determined both by the actional class and the transitivity of the verb.

Furthermore, there are verbs where the ongoing episodic (“progressive”) and resultative interpretations are both possible (cf. Kaiser et al. 2013: 217; Alpatov, Arkad’ev & Podlesskaja 2008: 288). With some verbs, such as *ki-* ‘wear, put on’ in (144), both interpretations appear to be readily available (cf. Kiryu 1999: 51).

(144) Verb with an ambiguous *-te i-* (Shirai 1998: 672)

Ken-wa seetaa-o ki-te i-ru.
Ken-TOP sweater-ACC wear/put_on-TE AUX-NPST
1. Ken is wearing a sweater. (resultative)
2. Ken is putting on a sweater. (ongoing episodic)

Yet in other cases, the interpretation depends on various pragmatic conditions as well as the semantic properties of the subject. In particular, it appears that a greater level of the subject's involvement and control enhances the likelihood of a progressive interpretation (Seidel & Weyerts 1991: 74–75; Kiryu 1999: 49–52).⁴⁶⁰

There is an impression that ambiguity arises mainly with otherwise durative verbs, which can have the resultative reading in addition to the expected progressive reading. The opposite does not appear to be true, as nondurative verbs have more difficulties spreading into the progressive territory (Mori, Löbner & Micha 1992: 244–245). This appears to happen mainly in situations where there is a context-induced actional shift (cf. Shirai 2000: 347–348).

There are two further weak points of Kindaichi's approach to address, both of which are briefly mentioned by Shirai (2000), among others. First, as observed above, Kindaichi's durative verbs (i.e., those disallowing the resultative interpretation with *-te i-*) encompass Vendlerian activities and accomplishments, but the two classes are rarely distinguished, and classifications of Japanese verbs rarely take into consideration the telicity. Still, as shown extensively by Mori, Löbner & Micha (1992), the two subgroups of Kindaichi's durative verbs can be distinguished by means of adverbials parallel to the English *for*-PPs and *in*-PPs. Telicity is important in another way for the classifications of Japanese verbs, as only telic verbs allow for the progressive-resultative ambiguity. Atelic verbs are exclusive in this respect, and they allow only for the progressive interpretation. Second, Kindaichi's approach does not distinguish between the resultative and perfect readings of *-te i-*. This fact is significant, as there are some verbs that allow for neither resultative nor progressive interpretations, and normally use *-te i-* only for perfect meanings (Mori, Löbner & Micha 1992: 271).

In conclusion, the interpretations of the two aspect grams of Japanese are contingent upon the semantic (actional and other lexicogrammatical) properties as well as syntactic properties of verbs. The aspect gram Simple is similar in its properties to the English Simple and to the

⁴⁶⁰ The interested reader may here refer to Shirai (2000: 346–355), Mori, Löbner & Micha (1992: esp. 261ff.), Nishiyama (2006), which all offer a wealth of examples.

crosslinguistic gram NONPROG. The *-te i-* gram is more complex and does not lend itself easily to crosslinguistic comparison. It will therefore be difficult, but not impossible, to compare the aspect-sensitive classes of Japanese to other languages. Despite these difficulties, Japanese will provide relevant data at various places in Chapter 7.

5.4.3.3. Belhare (Sino-Tibetan, Kiranti)

The Belhare aspect system in its basic structure stands somewhere between the English PROG-NONPROG system and the PFV-IPFV systems, although it remains distinct. As we will see, the system differs slightly in terms of its properties between past and nonpast contexts (Belhare has no future tense). In nonpast contexts, the Belhare Simple Nonpast form is contrasted with a gram not unlike the English PROG called “Temporary,” which has certain language-specific properties. In past time reference, the opposition stands between the Simple Past and Past Imperfective. The summary presented here is based on Bickel (1996) and, unless otherwise noted, all references are from that work.⁴⁶¹ The aspect grams of Belhare are summarized in Table 35. The Nonpast Imperfective gram is shaded for reasons explained below.

	Simple	non-Simple	
Nonpast	<i>-t ~ -yuk</i> [Simple Nonpast]	<i>-hett</i> [Temporary]	<i>(-yaut)</i> [Nonpast Imperfective]
Past	<i>-he</i> [Simple Past]	<i>-yakt-he</i> [Past Imperfective]	

Table 35. Aspect grams of Belhare summarized.

I start with past contexts. In past indicative contexts, Belhare distinguishes between two aspects, the Simple Past *-he* (PT)⁴⁶² and the Past Imperfective *yakt-he* (IPFV-PT). The Simple Past *-he* is used for contexts where the PFV would be used in a PFV-IPFV language, for instance in the taxis configuration of sequence (p. 141) and in temporally delimited contexts (pp. 146–147). Both properties are illustrated in (145), where temporal delimitation is made explicit by *dui ghanta* ‘two hours’ (Simple Past is glossed as PT). The Past Imperfective (*ŋ-khoŋ-yakt-he*) is banned from such contexts.

⁴⁶¹ Overviews of verb morphology can be found in Bickel (1996: 51–53; 2003: 550–556).

⁴⁶² Bickel uses the term “Past Indicative.”

(145) Belhare Simple Past in bounded contexts (p. 146)

dui ghantaŋ-khoŋs-e *ki* *mun* *n-dhupt-he*
two hours 3NSG.S-play-PT SEQ talk 3NSG.S-talk-PT
'They played cards for two hours and then they talked.'

Simple Past is also used to refer to natural endpoints (transitions), as illustrated in (146) (translation no. 1). However, the same example demonstrates that Simple Past is the default form for 'state exists' (translation no. 2). Another example of 'state exists' is provided in (147).

(146) Belhare Simple Past: natural endpoint, past 'state exists' (p. 154, 215)

cuŋ lus-e
cold perceptible-PT
1. 'It got cold.'
2. 'It was cold.'

(147) Belhare Simple Past: past 'state exists' (p. 155)

i-na *bela* *u-yam* *tug-he*
DIST-DEM time 3POSS-sickness hurt-PT
'That time, he was sick.'

Curiously, stative verbs can have present time reference with Simple Past, as shown in (148). Consider also (149), translated by means of Present Perfect, which suggests an interpretation of the current relevance of a past event. However, as noted by Bickel (p. 214), it is in fact an assertion about a present situation, "such as when somebody exclaims that it is really cold."

(148) Belhare Simple Past: present 'state exists' (p. 222)

cia tato *lis-e*
tea hot be-PT
'The tea is hot.'

(149) Belhare Simple Past: present 'state exists' (p. 215)

hetterikaha, *saro* *cuŋ* *lu-yu*
[exclamation] very cold perceptible-PT
'Damn! It has become very cold!'

However, the 'state exists' meaning is also available to Past Imperfective, as seen in (150), where a bimorphemic gloss is adopted (*yakt-he* IPFV-PT). Bickel does not discuss in detail the differences in meaning between Past Imperfective and Simple Past with respect to the 'state exists' meaning, apart from noting that state in (150) is "temporally limited" (p. 111). This could be taken to mean that Simple Past is a default for 'state exists' and that the effect of Past Imperfective is closer to what we see with Temporary in present time reference (see below).

(150) Belhare Past Imperfective: past ‘state exists’ (p. 111)

iti *u-yakt-he-ŋa*
 this time three.dim-IPFV-PT-E
 ‘I was this big [at that time].’

Past Imperfective and Simple Past are both employed to convey the habitual meaning (pp. 110–112, 157–162). Only Past Imperfective is illustrated in (151) as I found no appropriate example with Simple Past.

(151) Belhare Past Imperfective: past habitual (p. 112)

wancabany-e *tas* *khon-yakt-he*
 youth-LOC card play-IPFV-PT
 ‘He used to play cards in his youth.’

Naturally, Past Imperfective also participates in the Inzidenzschema (pp. 107–108, 148-149).

The functions just described are summarized in Table 36.

PAST IMPERFECTIVE	BOTH		SIMPLE PAST
ongoing-episodic	habitual* *difference in meaning unclear	‘state exists’* *Simple Past is the default?	perfective (bounded) meanings

Table 36. Functions of Belhare aspect grams with past time reference.

In present time reference, the Simple Nonpast *-t* (NPT)⁴⁶³ contrasts with the Nonpast Imperfective *yau(t)-* (IPFV.NPT) and the so-called Temporary *-hett* (TEMP).⁴⁶⁴ The distribution of Simple Nonpast versus the other two forms resembles the opposition between the Present Simple (NONPROG) and PROG in English. Note, however, that most of the functions that are typical of the PROG as a comparative concept have been taken over by Temporary from Nonpast Imperfective, with the exception of Inzidenzschema (see below). Due to the spread of Temporary, the functional range of Nonpast Imperfective is severely limited, and is now mainly used to “implicate unlimited continuation of an event that has started before the time of reference” (p. 112), that is, it has a continuative (*keep -ing*) meaning (see pp. 112–113, 122–

⁴⁶³ The marker has three allomorphs: *-Ø*, *-ʔ* and *-yuk* (Bickel 2003: 551). For more details about their distribution see Bickel (1996: 75–78).

⁴⁶⁴ There are other aspect grams with present time reference and specialized functions, which need not concern us here. See Bickel (1996: chap. 6).

129). This use of Nonpast Imperfective is illustrated in (152). It can also be used to refer to the future.

(152) Nonpast Imperfective: continuative meaning (p. 113)

ani *yeb-yau-ka*
and stand-IPFV.NPT-2
'And you keep standing [around, instead of helping me!].'

Given this, the discussion in what follows will be limited to the contrast between Simple Nonpast and Temporary.

Even though Temporary appears to have language-specific basic meaning (*Gesamtbedeutung* – see p. 118), its uses correspond in all basic functions of the PROG as defined in §5.4.2.2 above. Thus, Temporary must be used to answer the question “what is he doing right now,” as in (153), that is, it is used to encode the ongoing episodic function.⁴⁶⁵

(153) Belhare Temporary: ongoing episodic (p. 142)

A: *ani* *Bimalapa?*
and B. father
'And [where is] Bimala's father?'

B: *nabhak* *chi-het*
face wash-TEMP
'He is washing his face.'

On the other hand, Simple Present is the default for ‘state exists’ meanings (p. 154 et passim), as seen in (154), where it is glossed as NPT. It is also used for present habitual and generic statements (pp. 157–162), illustrated in (155) and (156), respectively.

⁴⁶⁵ There is a number of verbs which do not require Temporary to express the typical meanings of Temporary (pp. 150-151).

(154) Belhare Simple Nonpast: present ‘state exists’ (p. 154)
ku-yu, en-yuk-cha
 feel_warm-NPT light-NPT-ADD
 ‘[A sleeping bag] feels warm and is also light [to carry].’

(155) Belhare Simple Nonpast: present habitual (p. 161)
ekdam hiiʔ-t-u hapt-a piche!
 incessantly look-NPT-3U week-LOC every(temp.)
 ‘She always watches [the movies], every week!’

(156) Belhare Simple Nonpast: generic statement (p. 161)
hi n-ca-yu
 shit 3NSG.S-eat-NPT
 ‘[Dogs] eat shit.’

Unlike Temporary, which is restricted to present time reference, Simple Nonpast expresses future time reference (pp. 84-85, 142) and various modal meanings (pp. 88, 143–144).

The distribution between Simple Nonpast and Temporary discussed so far resembles closely the opposition between Present Simple and PROG in English. However, there are some important differences between Belhare and English. Often Temporary is available for ‘state exists’, but “the simple form suggests a less definitive, more generic statement than the corresponding temporary form would implicate” (p. 156). Bickel illustrates this with the verb *suma* ‘to be sour’. The Temporary can felicitously refer to beer, but not a lime, for which Simple Nonpast must be used. This is explained by the fact that limes are intrinsically sour, and beer is not. Temporary thus “signals that the state has only temporary validity, i.e., that it is asserted for a limited period of time and does not extend beyond that” (p. 114). The nuance brought by Temporary is further illustrated in (157).

(157) Temporary: present ‘state exists’ (p. 215)
cuj lu-het
 cold perceptible-TEMP
 ‘It is cold (these days).’

Often the difference between Temporary and Nonpast Simple is quite subtle (pp. 144–145).

Temporary can also refer to temporarily valid habits (p. 116). In (158), this temporal qualification is implicit and is suggested in the translation with “these days.” It can also be made explicit by way of the adverb *hambasen* ‘these days, nowadays.’

(158) Temporary: habitual meaning (p. 123)
chukg-het-kha
 marketable-TEMP-NM
 ‘It’s that it is selling well [these days].’

An important language-specific property of Belhare Temporary in which it contrasts with the English PROG is that the temporariness implied by Temporary is extended to dynamic predicates as well (pp. 117–119). Bickel interprets this in terms of Johanson’s “high-focality” (§3.3.2). Another property specific to Belhare is that Temporary is suitable for use in a sequence of events, unlike its English counterpart (pp. 119–120). In the Inzidenzschema, Temporary is not allowed and Nonpast Imperfective is used instead (pp. 120–121).

The functions described are summarized in Table 37.

TEMPORARY	SIMPLE NONPAST		
ongoing-episodic* *except for the Inzidenzschema	habitual* *Temporary possible, Simple is the default	generic	‘state exists’* *Temporary possible, Simple is the default

Table 37. Functions of Belhare aspect grams with nonpast time reference.

5.4.3.4. Cayuga and other Northern Iroquoian languages

The aspect system of Northern Iroquoian languages is unique in that it features the PFV gram⁴⁶⁶ and two grams that divide the functions of the IPFV: The Stative gram and the Habitual gram. In addition, one of these “imperfective” grams also has the perfect and resultative meanings. In that respect, the Northern Iroquoian aspect system combines elements of the classic PFV-IPFV system with the system found in Japanese (see the next section). The uniqueness of the system is also noted by Timberlake (2007: 300–302).

Northern Iroquoian languages are one of the two branches of the Iroquoian language family.⁴⁶⁷ Historically, they were spoken in the Northeastern USA and in the adjacent regions of Canada.

The sketch of the Northern Iroquoian aspect system is based on the description of Cayuga in Sasse (1997).⁴⁶⁸ The properties of the system are similar in other Northern Iroquoian languages.

⁴⁶⁶ In the Iroquoianist tradition, the PFV aspect gram is called “Punctual,” a term also used by Sasse (1997). I use the gloss PFV for it because it fits into the comparative concept of “perfective” as described in §5.4.1.1 above. For the other two grams I use the traditional Iroquoianist labels. Note the use of capitals.

⁴⁶⁷ The Southern branch of the Iroquoian family consists of only one language, Cherokee.

⁴⁶⁸ Cayuga is a moribund language spoken in Upstate New York in the USA and in Ontario, Canada

We will start with the description of the PFV gram, which exhibits all of the main functions of the PFV listed in §5.4.1.1.⁴⁶⁹ For instance, it is used to refer to arbitrary endpoints, i.e. in the delimitative function, as in (159), and to refer to natural endpoints, as in (160).⁴⁷⁰

- (159) The Cayuga PFV: the delimitative function (Sasse 1997: 11)
akatrihó'ta:t 'I worked (for some time) (and then...)'
athá:t 'I danced (for some time) (and then...)'

- (160) The Cayuga PFV: natural endpoint (Sasse 1997: 12)
ahanqhsq:ni'
 'he built a house' (= finished building a house, arrived at the endpoint of building a house; the house must be ready by the time of utterance)

The Cayuga PFV is the expected choice with expressions corresponding to adverbials of temporal duration (*for*-PPs) in European languages (p. 11) and it is used to indicate the taxis function of sequence (p. 10). It can be used for habitual situations as well (pp. 14–16).

The meanings of the two other grams are more complex than their names suggest. The core of their meaning is “imperfective” and both can be described by resorting to the three components of the IPFV gram-type, viz. ongoing episodic, habitual-generic and ‘state exists’. The outline of the system is as follows. The habitual-generic meaning is expressed by the Habitual, where applicable (i.e. only with dynamic verbs). The meaning of ‘state exists’ can be expressed depending on the verb either by the Stative or by the Habitual. The same is true for the ongoing episodic meanings and, depending on the verb, both grams can be found in Inzidenzschema (p. 26, ex. 28–29). The Stative has the additional meaning of the resultative and perfect.⁴⁷¹ The

(Hammarström, Forkel & Haspelmath 2019).

⁴⁶⁹ The cognate gram in the closely related Seneca language is among the grams listed in Dahl (1985: 70) as an instance of the crosslinguistic grammatical gram PFV.

⁴⁷⁰ Apart from the PFV marker, all cited forms contain the modal marker “Factual” (the prefix *a-*), which can roughly be described as a realis or indicative marker. The Factual is contrasted with the Future, the Optative and the Imperative.

⁴⁷¹ The **resultative** refers to a state implying a previous event (Nedjalkov & Jaxontov 1988: 6), whereas the **perfect** refers to a situation in the past which “has continuing relevance to the present” (ibid.: 15). The distinction between the two is manifested in their differing compatibility with the adverb ‘still’. The resultative is compatible with ‘still’ (*He is still gone*), whereas the perfect is not (**He has still gone*). Note that it is often difficult to draw a distinction between the resultative proper (‘he is dead’) and the perfect of result (‘he has died’), in particular with intransitive verbs. Of the four meanings of the perfect (Comrie 1976), the Cayuga Stative has the following (pp. 22–23): the perfect of result (see also fn. 474), the experiential perfect, and the perfect of recent past. It lacks only the perfect of persistent situation. More on resultative and perfect meanings will be said in connection with the Japanese aspect system in the next section.

availability of different IPFV meanings gives rise to seven aspect-sensitive classes in Sasse’s analysis, four telic ones (T1-T4) and three atelic ones (NT1-NT3). These findings will be incorporated into the discussions in Chapter 7. Here I only sketch the most basic distinctions.

The choice between the Stative and the Habitual for the ongoing episodic meaning is governed by the telicity of the dynamic predicate (pp. 28–36), a fact first recognized by Chafe (1980).⁴⁷²

A somewhat simplified summary is given in Table 38.⁴⁷³

	Telic verbs	Atelic verbs
the Habitual	habitual-generic (1.), ongoing episodic (2.)	habitual-generic
	Ex. <i>kyethwáhs</i> (p. 29) 1. ‘I always plant it, am a planter’ 2. ‘I’m planting it’	Ex. <i>tekatska’hóha</i> ’ (p. 30, 43) 1. ‘I always chew, like to chew’ 2. ‘*I’m chewing’
the Stative	resultative-perfect	ongoing episodic
	Ex. <i>ak-yę:thwęh</i> ⁴⁷⁴ (p. 21; cf. p. 29) 1. ‘I have planted it’ 2. ‘I have something that is planted.’ ⁴⁷⁵	Ex. <i>tewakatská’hq</i> ’ (p. 30, 43) 1. ‘I’m chewing’ 2. ‘*I have chewed’

Table 38. Functions of the Habitual and Stative with telic and atelic verbs in Cayuga.

Table 38 shows that with **telic** predicates, the Habitual behaves like a typical IPFV of dynamic predicates, i.e. it encompasses habitual-generic and ongoing episodic meanings in one gram (the meaning ‘state exists’ is irrelevant here). It also shows that the Stative has the resultative-perfect meaning with telic predicates.

⁴⁷² Telicity should be understood here as a label of convenience rather than a statement about the identity of this feature with the “universal” feature of telicity.

⁴⁷³ This table is based on Chafe (2015: 24–26) for Seneca. The examples are from Cayuga.

⁴⁷⁴ Translation #1 (‘I have planted it’) is a perfect of result (see fn. 471). Translation #2. (‘I have something that is planted.’) is a true resultative (so-called “possessive resultative,” (Nedjalkov & Jaxontov 1988: 9–10). The agreement prefix *ak-* in *ak-yę:thwęh* indexes both the subject and the object in one fused form. Transitive verbs in the Stative can also have an objective resultative (ibid.: 9), e.g. *ka-yę:thwęh* ‘it is (something) planted’ (Sasse 1997: 21), expressed by the subject prefix *ka-*. Intransitive verbs have only one resultative meaning (the so-called subjective resultative), as well as the resultative perfect. For instance, *hawęhé:yq:* (the Stative of ‘die’) can mean ‘he has died’ (a resultative perfect) or ‘he’s dead’ (a true resultative) (ibid.: 22).

⁴⁷⁵ Sasse’s original translation ‘es ist mir ein Gepflanztes’.

With **atelic** verbs, the two IPFV functions of dynamic predicates are split between the Habitual (habitual-generic) and the Stative (the ongoing episodic). There is a functional gap as the perfect meanings of the Stative are not available with these verbs.⁴⁷⁶

The situation is more complex regarding the choice between the Habitual and Stative to express the ‘state exists’ meaning. This meaning is with most verbs expressed by the Stative. The Habitual is used in that function only with one class of defective verbs, those lacking the Stative forms (Sasse’s class NT4). The position of statives in Cayuga is relatively complex and will be covered in more detail in §7.1.

Lastly, it should be noted that the aspect system is independent of temporal reference and modality. This is largely true for the Habitual and Stative, whereas the PFV, as expected, is by default interpreted as having past time reference. All three aspect grams are also found in combination with the Future, the Optative and the Imperative (see pp. 12–13 for examples with PFV). There is nonobligatory past marking as well.⁴⁷⁷

5.4.3.5. Nyakyusa and other Bantu languages

Nyakyusa is a Narrow Bantu language spoken in Malawi and Tanzania. It features an aspect system typical of Bantu languages (B. Persohn, p.c.). Even though numerous available descriptions of TAM and actional systems of Bantu languages exist, only the system of Nyakuya will be taken into consideration here. The reasons for this have to do with the fact that the aspect systems of Bantu languages are different in significant respects from the default PFV-IPFV system, as well as with the fact most that of the actional classifications for Bantu languages were done in the Botne-Kershner model, which does not lend itself easily to translation into the system used here.⁴⁷⁸ The description of Nyakyusa provided in Persohn (2017) facilitates a comparison because both the aspect system and the actional classification are presented in a more theory-independent way, which makes the comparison easier, albeit not straightforward.

The description of the Nyakyusa aspect system is based on Persohn (2017: Ch. 6) and all references are to that work unless otherwise noted. The system is based on the opposition of

⁴⁷⁶ The resultative meaning of the Stative with atelic predicates is excluded by definition – only telic verbs can have the resultative meaning (Nedjalkov & Jaxontov 1988: 5).

⁴⁷⁷ The TAM system is summarized in Sasse (1997: 7).

⁴⁷⁸ An overview of the properties of Bantu actional systems is given in Crane & Persohn (2019).

two aspect grams, called the Imperfective and Perfective by Persohn. They are different from the PFV and IPFV in that the default gram for expressing the present time reference of the ‘state exists’ is the Perfective.⁴⁷⁹ The system is visualized in Table 39, where I use the glosses ~PFV and ~IPFV for the Nyakyusa grams (cf. p. 334).⁴⁸⁰ The time reference is disregarded for now. The Nyakyusa system can be contrasted with the canonical PFV-IPFV system, which is represented in Table 40.

~IPFV		~PFV	
ongoing-episodic	habitual-generic	‘state exists’	perfective (bounded) meanings

Table 39. The aspectual system of Nyakyusa.

IPFV		PFV
ongoing-episodic	habitual-generic and ‘state exists’	perfective (bounded) meanings

Table 40. The classical PFV-IPFV system.

The system is tensed and distinguishes between the present and past ~IPFV and the present and past ~PFV. The present ~IPFV gram is formed by the prefix *ku-* and the final vowel *-a* (p. 152). It can have ongoing-episodic and habitual-generic meanings (pp. 152–155), as seen in (161).⁴⁸¹ The present ‘state exists’ meaning is expressed by the present ~PFV, on which see below.

(161) The present ~IPFV in Nyakyusa (pp. 118)

i-ku-mog-a

1-PRS-dance-FV

1. ‘S/he is dancing.’ (ongoing-episodic meaning)

2. ‘S/he dances.’ (regularly = habitual meaning)

The past ~IPFV is formed with the past prefix *a-* and the imperfective suffix *-aga*. It can have a past ongoing episodic meaning or past habitual or generic readings (pp. 180–181), illustrated in (162) and (163).

⁴⁷⁹ In that respect, the system bears resemblance to one type of the factative system (§1.3.7).

⁴⁸⁰ The symbol ‘~’ is to be understood as in algebra, i.e. to indicate weak or poor approximation. In the literature, the Bantu system is often not distinguished from the PFV-IPFV system (cf. Nurse, Rose & Hewson 2016: 25–27).

⁴⁸¹ Other functions include performatives, and reference to future situations (e.g. example (161) can also be translated as ‘S/he will dance.’).

(162) The past ~IPFV: ongoing episodic meaning (p. 181)

fyobeene gw-a-job-aga, nalooli lo-kafu
therefore 2SG-PST-speak-IPFV really 11-difficult
'That is why you **were speaking**, it [the lock] truly is tough.'

(163) The past ~IPFV: habitual meaning (p. 181)

a-a-fyol-aga mu-n-deko na muu-sefulila
1-PST-remove-IPFV 18-10-earthen_pot COM 18-cooking_pot(9)
'She **used to take it out** of earthen pots and cooking pots.'

The present ~PFV gram is expressed by the suffix *-ile* and its variants.⁴⁸² When expressing perfective (bounded) meanings, it has the past time reference, as in (164) and (165).⁴⁸³ In contrast, when encoding the 'state exists' meaning it has the present time reference, as in (166) (pp. 157–165). Because of its idiosyncratic semantics, it is glossed as ILE in the examples. The availability of different readings is contingent upon the actional class of the verb.⁴⁸⁴

(164) The ~PFV gram: perfective (bounded) meaning (p. 119)

a-mog-ile
1-dance-ILE
'S/he has danced.'

(165) The ~PFV gram: perfective (bounded) meaning (p. 114)

a-fik-ile
1-arrive-ILE
'S/he has arrived.'

(166) The ~PFV gram: present 'state exists' (p. 113)

a-kaleele
1-be(come)_angry.ILE
'S/he is angry.'

This gram can also be used to indicate a sequence (pp. 162–163), although this is not common in the narrative discourse which is instead built around two specialized narrative grams; the two are discussed extensively by Persohn in Ch. 7 of his book and need not concern us here.

⁴⁸² The morphonology of the suffix is very complex. In many cases, the suffix is fused with the stem. For details see Persohn (2017: 144–152).

⁴⁸³ The translation of the Nyakyusa ~PFV by means of the English Present Perfect (*has danced, has arrived*) does not mean that there is equivalence between the two. As explained by Persohn (pp. 161–164), the Nyakyusa *-ile* shares most of the properties typical of the crosslinguistic gram type perfect, but also exhibits some properties that are incompatible with the perfect: the present relevance property is easily canceled, the use in sequential taxis is possible, it can be combined with 'still' etc.

⁴⁸⁴ For instance, ex. (166) can also mean 'S/he got angry.', i.e. it can have a perfective (bounded) meaning with past time reference (cf. ex. 59–60, p. 158).

The ~PFV gram *-ile* can be combined with the past prefix *a-* to form what Persohn calls “Past Perfective” (pp. 167–169). It is used to express the ‘state exists’ with past time reference, as in (167). Furthermore, it expresses canonical perfective (bounded) meanings, which makes it close to the canonical past PFV, e.g. temporally bounded state in (168), temporally bounded dynamic verb in (169), and natural endpoint in (170). The difference in use between the present and past ~PFV in the case of perfective (bounded) meanings is not clearly explicated in the text and remains unclear to me.

(167) The past ~PFV gram: past ‘state exists’ (p. 167)

a-a-kaleele
 1-PST-be(come)_angry.ILE
 ‘S/he was angry.’

(168) The past ~PFV gram: temporally delimited past ‘state exists’ (p. 168)

<i>j-aa-lambaleele</i>	<i>a-ma-sikv</i>	<i>ma-tatv</i>	<i>n-nyumba</i>
9-PST-lie_down.ILE	AUG-6-day	6-three	18-house(9)

‘He (the lion) slept for three days in his house.’

(169) The past ~PFV gram: temporally delimited past with dynamic verbs (p. 166)

tw-a-bomb-ile
 1PL-PST-work-ILE
 ‘we worked’

(170) The past ~PFV gram: natural endpoint (p. 166)

tw-aly-ag-ile
 1PL-PST-come-ILE
 ‘we found’

The use of “Past Perfective” in the narrative discourse is rather complex, for which see pp. 169–179. It is always accompanied by the two dedicated narrative markers mentioned above.

Nyakyusa also has a nonobligatory PROG (pp. 185–186). It is formed with the copula *li* as an auxiliary and an infinitive marked for the locative noun class 16. The past PROG is formed by adding the past prefix *a-* on the copula. As expected, the habitual-generic meaning is not available. The PROG can always be replaced with the present and past ~IPFV. An example of the progressive with present time reference is given in (171).

(171) Present PROG in Nyakyusa (p. 118)

a-li *pa-kv-mog-a*
 1-COP 16-15-dance-FV
 ‘S/he is dancing.’

6. Sources and Sample

This chapter serves as an introduction to the crosslinguistic study in Chapter 7. Thus, §6.1 deals with sources. It explains their limited **availability** and emphasizes the importance of their **reliability**. These two factors crucially shaped the sample used in this study, which is presented in §6.2.

6.1. Data sources

This section devotes more space to the discussion of sources than it is customary in typological studies. This is primarily driven by the fact that sample building and data collection are more complex in this field (semantic typology) and topic (actionality and aspect) than in an average typological study dealing with a morphosyntactic phenomenon. The reasons are discussed at length in what follows.

6.1.1. Data availability

In most typological studies, descriptive grammars are the main source of data.⁴⁸⁵ Most descriptive grammars, including the most exhaustive ones, typically do not discuss the semantics of verbal morphology in detail, or semantic information in general, as noted as early as in Dahl (1985: 2, 37). The usual coverage of TAM categories is limited to the identification of individual TAM grams with established crosslinguistic categories, often with mixed results due to a lack of terminological clarity and precision in their descriptions (Cover & Tonhauser 2015: 307).⁴⁸⁶ Moreover, grammars provide little information about the interactions of aspect and actionality or actionality in general (Bar-el 2015: 81), and, generally speaking, reference grammars “cannot necessarily be relied on to investigate aspectual classes in a target language” (Bar-el 2015: 82).⁴⁸⁷

The grammar of Samoan (Austronesian – Polynesian, Samoa and American Samoa; smo) by Mosel and Hovdhaugen (Mosel & Hovdhaugen 1992) is a good illustration of the problem on

⁴⁸⁵ On descriptive grammars see Noonan (2006) and Rice (2006).

⁴⁸⁶ On sources in investigations of TAM categories see also Bybee, Perkins & Pagliuca (1994: 32–37).

⁴⁸⁷ This reflects my own experience with reference grammars. Earlier in the course of this project I created a preliminary sample of 18 languages from different families and macroareas, all of which were described in high-quality descriptive grammars. None of these grammars met the two criteria adopted here (reliability and exhaustivity). Most of them, in fact, did not provide the most basic facts about aspect in an intelligible and straightforward manner.

the example of TAM categories. In the first place, it should be made clear that this very detailed grammar is in fact an enjoyable read and has deservedly been considered one of the best reference grammars of a non-European language available. Even though the description of TAM categories runs through quite a few pages (Mosel & Hovdhaugen 1992: 337–374), it simply does not provide enough data nor a description clear enough so as to allow for firm conclusions about their semantics and functions.⁴⁸⁸ For instance, the Progressive particle is described rather vaguely as indicating that “the reported event is actually taking place at the moment of the utterance or that it occurs simultaneously with some other point of reference given by the context” (Mosel & Hovdhaugen 1992: 345). In addition to the fact that the description of the particle is vague, there are at least two other problems with the treatment of this particle in the grammar. First, it is unclear if we are really dealing with PROG (as defined in §5.4.2.2) since the grammar fails to explain (or even notice for that matter) that their “Progressive” is employed in the example translated ‘there is, exists’ (p. 345, ex. 7.74), which is reproduced here:

(172) Samoan

'Olo'o iai nei le vai i Fa'asālele'aga
 PROG exist now ART water LD F.
 ‘There is now a water in F. (...)’

This is exactly the context from which PROG should be banned – i.e. the ‘state exists’ meaning.

Further doubts about the validity of the test with the “Progressive” are cast by the following examples, where *'olo'o* has the meaning of the resultant state (Mosel 2000: 190):

(173) Samoan

'Olo'o tusi le 'upu Fuamatala i tua o lu'a ato
 PROG write the word F. LD back of my bag
 ‘The word F. was written on the back of my bag.’

Even if we are dealing with an instance of PROG, the examples and data interpretations do not allow us to verify any of its relevant properties, for instance its compatibility with stative verbs and predicates (except for (172), of course).⁴⁸⁹

⁴⁸⁸ The interpretation of data from Samoan was additionally made difficult by the complex interplay of actionality and causation in the classification of predicates.

⁴⁸⁹ This is seemingly remedied in a later paper by Mosel (2000), who mentions that the class of verbs which she calls “terminative” cannot be used with the Progressive, and cites verbs such as *malemo* ‘to drown (intr.)’ and *pa'ā* ‘fall’ (2000: 187–188). Still, she fails to address the fact that the alleged Progressive in Samoan has

The same lack of clarity is at display with respect to the particle *sā* (Mosel & Hovdhaugen 1992: 339–344), for which one gets the impression that it is similar to the past IPFV,⁴⁹⁰ since it is said to “signify habitual event in the past.” The authors, however, make no comment as to whether this particle can be used to refer to past ongoing situations – the integral element of IPFV semantics. In addition, there are several examples where *sā* is used to refer to punctual events, e.g. with the verbs meaning ‘fall down’ (p. 343, ex. 7.70: *sā pa ’ū* ‘(she) fell down’) and ‘to aim’ (p. 344, ex. 7.72: *sā tai* ‘(he) aimed (his gun)’). It is impossible to reconcile such uses with IPFV semantics.

Poor descriptions of TAM semantics in descriptive reference grammars can be attributed to two factors. First, the semantics of aspect is a difficult topic which is avoided by most fieldworkers – see also §6.1.3 below. Second, a (Western) linguist/fieldworker typically learns about actionality and aspect from works such as Comrie (1976), Payne (1997), Chung & Timberlake (1985) and Timberlake (2007). These sources are hardly an adequate basis for a detailed analysis of the semantics of aspect and, in that sense, most fieldworkers and typologists are not very well equipped to deal with the semantic intricacies of aspect and actionality in the field. What is more, the traditional typology of aspect (the Bybee-Dahl approach – see §2.3.1 and §5.1) was more concerned with morphology and typological generalizations than the semantic intricacies of individual grams.

This situation is compounded by the fact that the typology of TAM has been a neglected field of research for almost 30 years. In that sense, it is instructive to note that there has been no well-rounded introduction to aspect since Comrie’s 1976 book,⁴⁹¹ and that the last major crosslinguistic study of TAM is over 20 years old (Bybee, Perkins & Pagliuca 1994).⁴⁹² It should also be noted that the situation has been significantly different in Soviet and Russian linguistics,

the meaning of the resultant state with some intransitive verbs (2000: 190).

⁴⁹⁰ Mosel (2000) attempts to identify Samoan TAM particles with crosslinguistic grams (*sā* is identified with the IPFV, 2000: 181–182). However, this is rather unconvincing as she only repeats the characterizations and descriptions from her and Hovdhaugen’s grammar.

⁴⁹¹ The treatment of aspect in Kroeger’s recent semantics textbook is also indicative of that (2019: 390–391).

⁴⁹² I have not taken into account studies such as Dahl and Velupillai’s chapters in WALS (Dahl & Velupillai 2013b; Dahl & Velupillai 2013c etc.) and Boland (2006), as they both recycle older datasets from Dahl’s and Bybee’s investigations, with little recent data. See Boland (2006: 188–189, 196–197) for more details on the method employed in that study.

where we find a continuous interest in aspect and its semantics with numerous typological, descriptive and theoretical contributions (see §2.3.1).

As for the actional classification, it is almost never discussed in descriptive grammars. In all fairness, there are some recent grammars that include references to the actional semantics of verbs and predicates and even discuss the interaction of aspect with actionality. Some of these are included in the sample used here (see §6.1.2). Still, more often than not, such descriptions adopt the actional classifications of Vendler and Dowty at face value and without taking into consideration that their classifications are English-specific (cf. §2.2.4).⁴⁹³ In addition, the information available in the relevant sections of such grammars is typically very limited, with few examples provided. Thus, they do not meet the criteria of reliability and exhaustivity, laid out in §6.1.3 below. All things considered, data from descriptive grammars in general do not provide, with some noteworthy exceptions, an adequate basis for a study dealing with typology of aspect-actionality interactions.

Therefore, it is safe to say that in this typological investigation one deals with a phenomenon for which data sources are limited. In order to make a crosslinguistic study of this kind possible, other types of sources had to be relied on. In particular, this concerns specialized studies, produced for a limited number of languages, which specifically deal with the phenomenon of aspect-actionality interactions. I will say more on this in §6.1.2 below.

Before that however, it should be pointed out that the practical and methodological problems outlined here are not unique for the study of aspect and actionality. Since the investigation presented in this typological study deals with the specific type of lexicosemantic and lexicogrammatical phenomenon (see the definitions in §1.2), it can be understood as an exercise in **semantic typology** (on semantic typology see §1.6.2), more specifically, in lexicogrammatical typology. The present study therefore faces methodological hurdles shared by all types of crosslinguistic studies of meaning.

In semantic typology, methodological procedures are different than the procedures customary in morphosyntactic typology. While the research of grammatical (morphosyntactic) phenomena is almost always based on the data available in descriptive grammars, in semantic typology such

⁴⁹³ Cf. for instance, the grammar of Kukama-Kukamiria (Vallejos 2016), mentioned in §4.1.2, which provides an actional classification of verbs and predicates, but fails to show how this classification was arrived at.

data does not suffice (Behrens & Sasse 1997: 13–14; cf. Matthewson 2004: 371–372; Moore et al. 2015: 191), as already noted above for aspect and actionality. This is well summarized by Wood (2007: 26):⁴⁹⁴

Making semantic generalisations based on information in grammars is highly problematic. The comparison of meanings is dependent on descriptions, glosses and example sentences in context. Different grammar-writers use different terminology and have different assumptions, and provide varying amounts of data for the items in any given semantic domain. Moreover, based on the small number of examples of particular phenomenon available in a typical reference grammar, it is difficult to make claims about meanings with any degree of certainty.

For these reasons, any crosslinguistic investigation of semantic phenomena, including aspect and actionality, relies on semantic studies done through detailed fieldwork investigation (Wood 2007: 26; cf. also Behrens 2000; Behrens & Sasse 1997: 15; Koptjevskaja-Tamm, Rakhilina & Vanhove 2016: 435) or on a collection of primary data derived directly from speakers of different languages (Moore et al. 2015: 191–192). Due to its reliance on the data collected in fieldwork, semantic typology has greatly profited from recent work specifically devoted to improving methods of semantic fieldwork, including the fieldwork on aspect and actionality. This is discussed in §6.1.3 below.

The difficulties in obtaining data normally result in a limited language sample, typically covering from 10 to 50 languages (Koptjevskaja-Tamm, Rakhilina & Vanhove 2016: 436; cf. Behrens & Sasse 1997: 16; Moore et al. 2015: 192). The sample used here is at the lower end of that range (see §6.2 below). Koptjevskaja-Tamm, Rakhilina & Vanhove (2016: 450) observe the following important features of such samples:

Systematic research in lexical typology has so far been carried out on rather limited language samples. These samples are often quite sufficient for falsifying some assumptions on the universality of a particular phenomenon and for unveiling major patterns in its cross-linguistic variation, but are hardly adequate for drawing safe conclusions on the interplay among the various factors behind it or for clearly distinguishing between universal determinants and those due to historical relations among the languages.

⁴⁹⁴ Cf. for a similar point Behrens & Sasse (1997: 6–7). Grammars can nevertheless be useful in the sense that they “can be used to identify questions for fieldwork, including potentially relevant semantic parameters and likely approaches to investigating them” (Wood 2007: 27).

This means that, in semantic typology, one has to contend with smaller convenience samples of languages. Languages included in such samples are examined for the purposes of a typological investigation in a more thorough way than it is the case in morphosyntactic typology.

6.1.2. Types of sources used in this study

In the previous section, it was mentioned that a crosslinguistic investigation of semantics requires types of sources different than the ones used in morphosyntactic typology. In this section, the sources consulted for the purposes of this study are briefly reviewed.

One type of sources is central to the present investigation. These are **specialized language-specific studies** which describe the semantics of aspect or complete verbal (TAM) systems, including aspect-actionality interactions. They are typically book-length (e.g. König 1993, Bickel 1996), but one also finds journal articles (e.g. Smith 1996; Spagnol 2009) or chapters in edited volumes (e.g. Mattissen 2001; Arkadiev 2009).

The main feature of these sources is that they are exhaustive in a way that they provide a clear presentation of the aspect system, the main features of individual aspect grams and at least the most common among interactional meanings available to individual aspect grams. Language-specific studies are normally presented in a particular research framework, and most authors use a specific variant of a bidimensional approach (for instance Johanson 1971; König 1993; Bickel 1996; or Smith 1997). Some sources are primarily concerned with problems internal to specific frameworks, typically of the formal kind (e.g. Wilhelm 2007). Still, such studies often provide a rich descriptive background to the theoretical discussion, which can be then used in an investigation such as this one. Other sources aim at a crosslinguistic comparison of languages (e.g. papers by S. Tatevosov – see §3.2), and as such also provide detailed information for the languages involved in comparison.

Descriptive grammars should be mentioned again, which have proven to be insufficient for the present investigation, as already noted above. Still, there are several exceptions, as some descriptive grammars include an account of actional classes reliable enough to warrant their inclusion in a sample. Languages with such grammars are (unsurprisingly) English (Quirk et al. 1985; Huddleston & Pullum 2002), but also Portuguese (Oliveira 2003), Tepehua (Watters

1988), Ingush (Nichols 2011), Lao (Enfield 2007) and Marind (Olsson 2018).⁴⁹⁵ There are probably more such languages.⁴⁹⁶ As said before, actionality is typically dealt with in more detail in grammars written in Russian, which often include separate chapters on actionality and actional classes, for instance grammars of Adyghe (Testelec 2009), Bagvalal (Kibrik et al. 2001) and Mishar Tatar (Tatevosov, Pazel'skaja & Sulejmanov 2017).

As can be seen, the sources are representative of different theoretical and descriptive traditions, including numerous sources that come from the Russian linguistic tradition. Sources can also be judged by their reliability, which is discussed in the following subsection.

6.1.3. Reliability of data

Reliable sources are of prime importance in a successful crosslinguistic investigation of semantic phenomena. The reader is already aware that reliable sources are more difficult to come by in semantic typology than in morphosyntactic typology. That is why an additional effort is required to ensure that the sources consulted are reliable. This subsection explains what constitutes a reliable source of data in the crosslinguistic research of aspect and actionality.

The reliability of sources is estimated here primarily by examining the methods employed in collecting semantic evidence and by the exhaustivity of presentation. These two methods are now discussed in turn. For each of these methods, relevant and illustrative examples from the sample will be presented. The criteria apply to the investigations of actional classes, as well as to the investigations of semantics of aspect grams.

Reliable sources depend on reliable collections of semantic evidence, which in turn requires a distinct semantic fieldwork methodology (semantic fieldwork, of course, subsumes the fieldwork on aspect, actionality, and their interactions). This is so because high-quality research into actionality, aspect and TAM semantics in general, i.e. research that results in a thorough description of their semantics, is difficult and daunting (e.g. Cover 2015: 233), and it presents “some special challenges” (Matthewson 2004: 370). This is mostly due to the semantic complexity of these phenomena, as well as various methodological issues.

⁴⁹⁵ Not all these languages were included in the sample here.

⁴⁹⁶ For instance, Hellwig's (2011) grammar of Goemai, pointed out by Crane & Persohn (2019: 311).

The criteria given here are more of an ideal, as not all sources follow all the prescriptions. Since the sources consulted here meet only some of the criteria, in some cases I had to accept the data provided by the source at face value. This is “an unavoidable problem with a survey of this type” (Wood 2007: 32). However, I find it opportune to list all the desiderata in a hope that future research will incorporate them to the largest possible extent.

The methodology of semantic fieldwork has mostly been a point of interest among crosslinguistically minded formal semanticists (cf. §2.2.4). That is why the discussions of the methodology of semantic fieldwork are all fairly recent and are in fact more recent than many of the sources consulted here – one of the first contributions to this methodology was published in 2004 (Matthewson 2004). This is also one of the reasons why the sources used here will not always perfectly conform to these criteria. Still, this does not mean that the older sources cannot be judged by them. Most notably, a clear and consistent methodology should be present in these works. Furthermore, in these works there are often comments by the authors which are dispersed through the text and which suggest that the authors observe methodological principles not unlike those advocated here.

In what follows, the methods and issues typically associated with semantic fieldwork are presented.⁴⁹⁷ The methods discussed in the literature include translations, semantic elicitation and text collection and analysis.⁴⁹⁸ The former two are more relevant for semantic fieldwork.

Translations are considered inadequate and unreliable in semantic fieldwork.⁴⁹⁹ As noted by Cover (2015: 240) specifically for TAM semantics, translations are inadequate because TAM categories are language-specific and the semantics of categories in two languages are rarely identical (cf. Matthewson 2004: 389–391). Translations are at the same time unreliable because the fieldworker and/or consultant are often not equally fluent in the metalanguage. Translations

⁴⁹⁷ For more details on the methods of semantic fieldwork, the interested reader is referred to Matthewson (2004) and Bochnak & Matthewson (2015).

⁴⁹⁸ I do not discuss the method of participant observation. Participant observation is a novel approach advocated by Cover (2015). It consists of “observing and documenting constructions of interest that are produced by native speakers during naturally occurring speech” (2015: 263). The fieldworker is not supposed to influence or steer the conversation, nor to record it or even take notes. In such settings “the traditional barrier between linguist-as-observer and speaker-as-observee is less transparent” (2015: 263).

⁴⁹⁹ Translations provided in bilingual dictionaries are another kind of translation used in the research of actionality. Dictionaries are used by J. Nichols in her research (see fn. 257) and occasionally by other authors (e.g. Ebert 1999 on Kalmyk).

are thus considered by some to be a relatively minor part of semantic fieldwork (Matthewson 2004: 380).⁵⁰⁰ In the sample used here, the inadequacy of English translations is, for instance, noted by Sasse for Cayuga (1997: 32 et passim).

These shortcomings notwithstanding, translations are considered by others to be a valuable tool for semantic fieldwork, including the description of TAM categories. They are used for the purposes of establishing basic facts about the category. However, translations cannot be used to “pinpoint” the semantics of a TAM category (Cover 2015: 240). Matthewson (2004: 380–399) provides a number of instructions on how to use translations in fieldwork. I give a rundown of crucial points. First, translations should be regarded as a clue rather than a result (ibid.: 380).⁵⁰¹ Furthermore, only translations of complete sentences should be asked for (ibid.: 383)⁵⁰² and additionally, discourse contexts should be provided together with the sentence to be translated (ibid.: 393–399). Interestingly, Matthewson observes that, in most cases when translating, consultants spontaneously produce only grammatical sentences (ibid.: 386–388).⁵⁰³ She advises against presenting consultants with ungrammatical sentences in the metalanguage (ibid.: 386) and cautions against using ambiguous or vague sentences (ibid.: 391–393).

The inadequacies of translation also need to be addressed with respect to translation contexts from questionnaires employed to define aspect gram-types in §5.4. Somewhat ironically, what has been said so far implies that one cannot rely on translations when employing translation contexts to identify aspect grams in individual languages. This problem can be remedied by using semantic elicitation, which is discussed next.⁵⁰⁴

Since translations are judged inadequate, semantic fieldwork relies considerably more on semantic elicitation. In morphosyntactic typology, **elicitation** is traditionally associated with

⁵⁰⁰ Matthewson (2004) considers translations as one of the main types of elicitation requests, the other being judgements (or semantic elicitation), which are discussed below.

⁵⁰¹ Cover & Tonhauser are even more blunt in this respect: “Translations do not constitute data (though they may provide clues about the meanings of sentences of the object language [...])” (Cover & Tonhauser 2015: 343).

⁵⁰² This subsumes the rule that the consultant should never be asked about the meanings of individual grammatical formatives.

⁵⁰³ In addition to this, as Matthewson points out, consultants are unlikely to produce ungrammatical sentences under the influence of the metalanguage (2004: 397–398).

⁵⁰⁴ Bar-el (2005), when using some of these questionnaires, always elicits sentences from consultants rather than letting them translate directly from a questionnaire.

asking for translations and **grammaticality** judgements.⁵⁰⁵ This is different from semantic elicitation. **Semantic elicitation** is considered to be more complex than other types of elicitation because it encompasses not only the gathering of expressions in the target language (as is the case in grammaticality elicitation), but also the dialogue about these expressions, which requires special strategies and skills (Cover 2015: 245–246). Semantic elicitation is similar to what Matthewson calls “judgements” (Matthewson 2004: 399). Providing discourse context is considered even more important than it was the case with translations (Matthewson 2004: 400).

The benefits of semantic elicitation are numerous (Cover 2015: 246–249), including one relevant for the study here. Namely, through semantic elicitation one can control for the role of lexical semantics, i.e. actionality, allowing the fieldworker to establish how the actional meaning of aspect grams varies with different verbs. Particular strategies for semantic elicitation, together with examples and case studies, can be found in Cover (2015: 248–256) and (Matthewson 2004: 399–410).⁵⁰⁶ As of recently, elicitation has been involving non-verbal stimuli, in particular Storyboards (Bar-el 2005; Bar-el 2007; 2015: 86ff.; Matthewson 2011: 272–273; Burton & Matthewson 2015).

Ideally, fieldworkers should use semantic elicitation rather than simple translation when collecting evidence by means of translation contexts. However, no source consulted for the purposes of the present work discusses this issue.

As for metalanguage, it is noted that a good working knowledge of the language investigated is critical for semantic fieldwork, because semantic fieldwork “requires the researcher to recognize and construct grammatical sentences in the object language” (Matthewson 2004: 370). The **metalanguage** of elicitation can either be the object language, or some other language, and each has certain advantages and drawbacks (Matthewson 2004: 378–379). For instance, Cover in her fieldwork research on Badiaranke used Pulaar, a Fula variety, and later only Badiaranke (2015: 236). Similarly, Bickel in his study of Belhare almost exclusively relied on the object language in elicitation, rather than on the metalanguage Nepali (1996: 22–23).

⁵⁰⁵ As pointed out by Matthewson (2004), semantic fieldwork is about establishing truth conditions and felicity conditions of forms and/or constructions (for these two notions see pp. 372–374 of her article), not their grammaticality.

⁵⁰⁶ Other contributions in Bochnak & Matthewson (2015), such as Bohnemeyer (2015) and Louie (2015), offer more discussions regarding elicitation.

Sometimes, investigators are also native speakers of the object languages (e.g. Spagnol 2009; as well as the main author of Mori, Löbner & Micha 1992), which of course improves reliability of the collected evidence.⁵⁰⁷

When it comes to translation and elicitation, it is important to keep in mind that fieldworkers work almost exclusively with ordinary (or “naïve”) speakers, and that the fieldworker is required to find a way to talk about the meanings of sentences with the consultant (Cover 2015: 240–241). In order to achieve good results, consultants should have a certain level of experience in answering fieldworker’s questions (Cover 2015: 244).

A final method discussed here involves text collection and analysis. This is the method of language description with a long tradition (Matthewson 2004: 374–376; Epps, Webster & Woodbury 2016). Despite being of lesser importance for semantic fieldwork than, say, elicitation (as argued extensively by Matthewson 2004), texts can still contribute considerably to semantic investigations. For instance, it is pointed out that text data are more spontaneous and natural, and that, in addition, texts can introduce data that the linguist has failed to notice and/or do not come up in elicitation (Cover 2015: 258). In addition, some evidence for the translation contexts employed to define aspect gram-types can often be found in texts.

Cover & Tonhauser (2015: 343–344) list additional requirements relevant for semantic fieldwork. They point out, for instance, that the description should be based on both positive and negative evidence. The authors also emphasize the importance of replicability, which ultimately leads to the improvement of methodology, and generalizability, by which they mean that for each semantic investigation in the field, the range of data considered and the number of participants need to be explicitly stated.

As mentioned earlier, the sources used in the present work (see §6.2) meet these methodological desiderata to various degrees. I will not analyze each source separately. Instead, I will point out that two sources stand out in that respect (Mori, Löbner & Micha 1992: 275–278; Bickel 1996), while other sources are less explicit about their methodology of evidence collection.⁵⁰⁸

⁵⁰⁷ This does not mean that no other consultants are included in such cases. See §4.2.4.1 for importance of non-linguist consultants.

⁵⁰⁸ I can also mention two sources which ended up not being included in the sample. Bar-el (2005) is beyond any doubt methodologically the most innovative, elaborate and explicit source that I have come across so far. Smith’s work on Navajo (1996; 1997) is the exact opposite. There is so little information on methodology

Exhaustivity is rarely discussed in the literature. Ideally, the examples of aspect grams and actional classes need to be numerous and well explained. In addition to glosses and translation, examples need to be interpreted and inadequacies of translation made explicit (cf. above for translations).

One case where exhaustivity is of particular importance is the situation where it is noted in a consulted source that the aspect gram *A* when used with the verb *V* yields the interpretation *I*. An exhaustive source will also provide the information about the interpretations available to that same verb with other aspect forms, and, conversely, what other verbs have the same interpretations with the same aspect gram. Therefore, exhaustivity concerns the desideratum that “studies of aspectual classes should ideally examine all classes in the target language” rather than focus on a specific contrast (Bar-el 2015: 106). Finally, it is desirable that the meanings of labels used for actional and aspectual meanings are explained and compared to other prominent systems.⁵⁰⁹ Exhaustivity thus entails as well that the linguistic evidence has been collected via semantic elicitation and accompanying dialogue (see above).

Again, many of the consulted sources are not exhaustive, which will result in disparities between parts of the analysis in Chapter 7 since different (but to a large extent overlapping) sets of verbs will be discussed in connection with actional features and classes investigated there.

If sources are not sufficiently exhaustive, this can make it impossible to translate and compare the system of classification used in a source with the system used here. For instance, this is what happened with the sources for Samoan (see §6.1.1 above) and Georgian (Holisky 1984).

As for aspect grams, exhaustivity can be measured by the contexts used to define aspect gram-types in §5.4. Consider the general outline of the aspect system of Adyghe provided by Arkadiev (2009: 61):

[T]he morphological tense-aspect categories in Adyghe are rather straightforward and simple. There is a tripartite system similar to those attested in many European languages and generally all over the world (...). It consists of a general Present tense and two tenses with past time reference: the Preterite and the Imperfect.

that it even remains unclear if the author did any elicitation with non-linguist native speakers.

⁵⁰⁹ In addition, a good source also provides the sample of tested verbs and predicates. This is done, for instance, in sources for Belhare (Bickel 1996: 209–215), Laz (Mattissen 2001), Cayuga (Sasse 1997) and in Tatevosov (2016a; cf. 2002a: 358).

This in itself is insufficient. However, on pp. 61–62 the functions of the Preterite and Imperfect are shown to correspond to the aspect gram-types PFV and IPFV, respectively, as shown in the Adyghe examples in §5.4.1.1 and §5.4.1.2. Arkadiev’s examples are not however exhaustive, as they do not illustrate taxis configurations, as is the case in the sources for some other languages.

The reliability of sources is also, whenever possible, enhanced by triangulating evidence from several sources (cf. Hendery 2012: 12). This was not possible for most sources examined for this study, as these otherwise very detailed sources are normally the only such studies for each of the languages. Notable exceptions are certain large languages such as Japanese, Spanish and English. In some instances, the evidence from closely related languages was used as an imperfect substitute of triangulation (see §6.2).

Since the sources consulted vary in their reliability, an effort was made to quote and use only examples from languages that are deemed reliable in accordance with the just outlined criteria. In this way it was possible to exclude most of the unreliable and potentially inaccurate data. If an example is nonetheless taken from a source deemed less reliable, this is specially noted. Flagging sources as less reliable and/or less exhaustive is particularly important because this may help minimize the “dissemination of inaccuracies from earlier works” (Hendery 2012: 12), as well as help avoid creating such inaccuracies in the first place. The field of aspectuality is already plagued by such unsubstantiated and less than reliable anecdotal examples, and an effort is made here to avoid repeating these mistakes.

6.2. Sample

Typology is all about samples and the number of languages being compared matters. The samples used in typological studies can range from a few dozen to over one thousand. The sample used in the present work is of the former kind and includes 16 languages. The size of the sample was dictated by the scarcity of sources and the complexity of language evidence that needed to be culled from the sources (see §6.1.1 above).

The languages of the sample are listed in Table 41, which provides names of the languages, their ISO 639-3 codes, genetic affiliations,⁵¹⁰ and (main) sources for information about aspect-actionality interactions.

Language	ISO 639-3	Family (branch, if relevant)	Source(s) for actional classification
Adyghe	ady	Northwest Caucasian (Circassian)	Arkadiev (2009), Arkad'ev (2009)
Bagvalal	kva	Nakh-Dagestanian (Dagestanian)	Tatevosov (2001; 2002a; 2002b; 2016a)
Belhare	byw	Sino-Tibetan (Kiranti)	Bickel (1996; 2000)
Cayuga	cay	Iroquoian (Northern)	Sasse (1997)
Chipewyan	chp	Athabaskan-Eyak-Tlingit (Athabaskan)	Wilhelm (2007), Bortolin (1998)
English	eng	Indo-European (Germanic)	Dowty (1979), Quirk et al. (1985: 197–210), Brinton (1988: 52–57), Smith (1997: chap. 8), Huddleston & Pullum (2002: 118–125, 162–172), and many others
French	fra	Indo-European (Romance)	Garey (1957), Smith (1997: chap. 9), de Swart (1998), and many others
Japanese	jpn	Japonic	Seidel & Weyerts (1991), Mori, Löbner & Micha (1992), Shirai (2000), and many others
Karachay-Balkar	krc	Turkic	Tatevosov (2016a)
Laz (Aredəşen variety)	lzz	Kartvelian	Mattissen (2001)
Maltese	mlt	Afro-Asiatic (Semitic)	Ebert (2000b), Spagnol (2009)
Mari	chm	Uralic (Mari)	Tatevosov (2002a)
Nyakyusa	nyy	Atlantic-Congo (Bantoid)	Persohn (2017)

⁵¹⁰ All genetic affiliations of languages given here follow Glottolog 4.0 (Hammarström, Forkel & Haspelmath 2019).

Language	ISO 639-3	Family (branch, if relevant)	Source(s) for actional classification
Spanish	spa	Indo-European (Romance)	Chapado Chorro & García García (1991), Cipria & Roberts (2000), Gorbova (2010), among many others
Tatar (Mishar dialect)	tat	Turkic	Tatevosov (2002a; 2002b)
Tepehua (Tlachichilco)	tpt	Totonacan (Tepehua)	Watters (1988)

Table 41. Languages of the sample.

Apart from the languages of the main sample, information from a number of other languages was either cited or consulted. They constitute the extended sample. Some of these languages are closely related to the languages of the sample and were consulted for purposes of data triangulation;⁵¹¹ others were cited to supplement the data from the main sample.⁵¹²

Something should be said about the general characteristics of the sample. Considering what has been said so far about sources in semantic typology, the starting point for building of that sample was to identify the languages for which there are sufficiently exhaustive sources available. It does not come as a surprise that the number of such sources was limited. Still, they have shown to be numerous enough and sufficiently detailed to provide the bulk of the data considered in this study.⁵¹³

The sample is genetically and areally biased.⁵¹⁴ An effort has been made to include data available from as many different linguistic macroareas as possible, as long as there was at least

⁵¹¹ In case of Spanish and French, I consulted a source on Portuguese (Sarić 2014); in case of Belhare, sources on Athpare and other Kiranti languages (Ebert 1997; 2001); in case of Cayuga, sources on Seneca (Chafe 2012; 2015) and other Northern Iroquoian languages; in case of Chipewyan, sources on Navajo (Smith 1996; 1997: chap. 12); and in case of Nyakyusa, a source on other Bantu languages (Crane & Persohn 2019). A similar method is applied in Anderson (2006: 2–3) and Stassen (1997).

⁵¹² These include three Indo-European languages (Albanian, Italian and Modern Greek) and one Mongolic language of Europe (Kalmyk).

⁵¹³ In fact, not all languages for which there were extensive sources on aspect-actionality interactions were taken into consideration. For various reasons, I did not include Mandarin (Sino-Tibetan, Sinitic), Turkish (Turkic), Yucatec Maya (Mayan), Squamish (Salish), Marind (Anim; New Guinea) and Mapudungun (Araucanian; South America).

⁵¹⁴ The sample is also typologically biased (Bakker 2010: 108) towards the mildly morphologically complex languages of the Eurasian type, e.g. Turkic, Uralic and Indo-European languages.

some information on the actional semantics of aspect grams (e.g. the Mesoamerican language Tepehua). This required the inclusion of sources that are occasionally less exhaustive, but still valuable as they can be used to evaluate the general picture offered by more comprehensive sources. In this way, it was ensured that at least some of the crosslinguistic diversity in the domain under investigation is acknowledged, which is important as it makes the generalizations about the aspect-actionality interactions presented in the study more plausible. This effort to display as much variety as possible at the current moment introduces some elements of variety sample to the present sample (Miestamo, Bakker & Arppe 2016: 234), even though it remains largely areally biased towards the languages of Eurasia.

Unsurprisingly, most of the available sources deal with large European languages: English and Romance languages. Even though it is assumed here that data from European languages do not suffice to establish universal properties of actional classes, extensive use is made of the data available from these languages in the survey. Data from well-known languages should be used in any study on actionality, but with caution and a sense of perspective (cf. §2.2.4).

Since the availability of data plays an outsized role in sampling, the sample can be considered an instance of a convenience sample (Widmann & Bakker 2006: 84). A topic with limited sources such as the one presented here is hardly ever investigated by using a truly balanced sample. What is crucial instead is to include relevant data as much as possible, regardless of possible areal and genetic biases. In that respect, the survey presented here is a qualitative typological study in the sense of Aikhenvald (2000: 4–5; 2004: xii), where the primary consideration is to “make the typology as comprehensive as it could be at our present level of knowledge about the languages of the world, without imposing artificial limitations dictated by this or that ‘sampling strategy’.” (2000: 4; cf. Dixon 2010: 260–261). Furthermore, it can also be characterized as an exploratory study, in which a poorly defined and/or understood domain of inquiry is surveyed (cf. Koptjevskaja-Tamm 1993: 82).

7. A typological survey of aspect-sensitive classes

This chapter presents the crosslinguistic investigation of actional classes based on a sample of 16 languages. It follows the principles and methods introduced and discussed in Chapters 4, 5, and 6. Chapter 4 laid out the method of comparing actional classes based on the aspect-sensitive classes in PFV-IPFV aspect systems. It also provided a list of crosslinguistically prominent aspect-sensitive classes. The list is repeated in Table 42 below. Chapter 5 introduced a method of identifying PFV-IPFV systems in individual languages, as well as a method of comparing PFV-IPFV systems with other kinds of aspect systems. Chapter 6 outlined the criteria that sources for individual languages must meet in order to be included in the study; the same chapter introduced the sample used in this crosslinguistic investigation.

The presentation in this chapter follows individual actional classes in the order given in Table 42. Section §7.1 addresses two additional topics relevant for stative predicates, viz. interaction with the PROG gram (§7.1.1), and the morphological defectiveness of statives (§7.1.2). The coverage is similar to Section 7 of Tatevosov (2002a) and Chapter 4 of Tatevosov (2016a).

Class	Symbol [...]	Relevant section
total state	[φ_S]	§7.1 (§7.1.3)
inchoative states	[$\tau\varphi_S$]	§7.1 (§7.1.4)
plain activity	[φ_P]	§7.2
ingressive activities	[$\tau\varphi_P$]	§7.2
achievements	[τ]	§7.3
accomplishments	[$\varphi_P\tau$]	§7.3
two-phase verbs	[$\varphi_1\tau\varphi_2$]	§7.4
multiplicative activities	[M+Q]	§7.5

Table 42. Aspect-sensitive actional classes investigated in this chapter.

Most of the 16 languages in the sample exhibit a PFV-IPFV aspect system, while six languages exhibit a different kind of aspect system, viz. English, Maltese, Japanese, Belhare, Cayuga and Nyakyusa.

The presentation of evidence in each of the sections devoted to aspect-sensitive classes normally begins with the data collected from PFV-IPFV languages, followed by the data from languages with other kinds of systems.

As the facts regarding aspect systems in the course of the chapter are extensively discussed in §5.4 and summarized in Appendix II, they will not be repeated here.. Language-specific grams

corresponding to the comparative concepts of PFV, IPFV, and PROG, are always referred to and glossed as PFV, IPFV, and PROG, respectively, rather than by their language-specific and/or traditional labels. For instance, the Bagvalal Preterite is always referred to and glossed as PFV.PST. The language-specific and/or traditional labels are provided in Appendix II, where available. As for the other aspect grams, I follow the conventions established for each language in §5.4.3.

Sources for the 16 languages of the sample provided much more information than could be processed for the purposes of this chapter.⁵¹⁵ For that reason, in this chapter the focus was placed on the phenomena that are common across the sample, whereas the phenomena specific to individual languages were discussed only to a limited extent. The latter kind of evidence was found to be time-consuming, while contributing very little to the goals of the study.

One should also be aware that a collection of information on actional classes does not result in an orderly matrix table with parameters of variation and respective variables. This is most notably true of languages with an aspect system other than the PFV-IPFV one. Despite that, I attempted to bring together the data for each class whenever the facts are sufficiently consistent across languages.

7.1. Stative (non-eventive) classes

The dichotomy between stative and dynamic (eventive) situation descriptions is one of the fundamental ones in natural languages. As shown in §4.3.1, the distinction is rooted in human experience of real-world situations which differ with respect to their stability over time. The lexicalization of these experiences in natural languages varies greatly, and often the distinction is not as clear-cut and unproblematic as it would be expected of a very basic semantic distinction. In the same section, it was shown that the criteria for identifying stativity are often inconsistent. Despite these problems, the distinction is consistently manifested across languages.

⁵¹⁵ Recall that in §1.2.4.1 it was established that the object of classification is the verb sense. In practice, it was often difficult to control for this criterion while collecting evidence from the languages of the sample. Accordingly, I assumed that in most cases the authors of the consulted sources (at least implicitly) take the verb sense rather than the verbal lexeme as an object of classification, even though it was impossible to verify this independently.

This section, in addition to two crosslinguistically relevant aspect-sensitive classes that encode the state (ϕ s) actional primitive, total states [ϕ s] and inchoative states [$\tau\phi$ s], discussed in §7.1.3 and §7.1.4 respectively, addresses two instances where stativity creates gaps in paradigms. Thus, §7.1.1 is concerned with the interactions between stative verbs and the PROG gram, whereas §7.1.2 covers other instances of the morphological defectiveness of statives. Finally, §7.1.5 discusses the relevance of the distinction between permanent and temporary states for aspect-sensitive actional classes.

7.1.1. Statives and PROG

One of the defining properties of the PROG is its incompatibility with a class of verbs which can tentatively be taken to correspond to stative verbs (the other is the incompatibility with habitual contexts; see §5.4.2.2). The explanation for this incompatibility is succinctly summarized for English by Lyons (1977: 485):⁵¹⁶

The progressive aspect in English has as one of its semantic functions that of representing situations, not simply as existing, but as happening, or developing, through time; and when it has this function, it cannot be associated with a verb denoting a static situation.

This is also true of many other languages (Comrie 1976: 32–40; Dahl 1985: 90–92). However, the degree of compatibility between statives and the PROG varies across languages (Mair 2012: 812) and this section documents some of that variation. Even though this kind of information is rarely discussed explicitly in traditional descriptive grammars (Bybee, Perkins & Pagliuca 1994: 139–140), I have managed to collect enough evidence from a variety of languages to suggest preliminary generalizations. Further research is, of course, necessary.

Let us begin by the observation regarding the existence of two groups of languages. In the first group, the PROG is completely banned from contexts with stative verbs, while, in the other group, it can be used with *some* stative verbs. However, the PROG then modifies the actional content of the verb in a way that an originally stative verb is construed as a dynamic one (Bertinetto 1994a: 403), which also entail the creation of a new verb sense. In both groups, we are dealing with an instance of semantic incompatibility, as there is a clash between the temporal properties of the PROG and the temporal properties of stative verbs. The only difference is that, in the former group, the incompatibility results in an outright

⁵¹⁶ Frazier & Koo (2019: 144–149) provide an excellent overview of more recent scholarship on this topic.

ungrammaticality, whereas, in the latter group, the semantics of a stative verb is modified so as to match the semantics of the PROG. As it will be shown in this section, the distinction between the two types of languages is not clear-cut, and there are different, mostly pragmatic, factors which can decide whether a combination of the PROG and a stative verb is acceptable or not. In addition, it will be shown that stativity is an imperfect explanation for these incompatibilities, and that the dividing line is rather the distinction between permanent states, on the one hand, and all other verbs, on the other.

To begin with, it should be noted that there are very few languages where there is evidence for a hard-and-fast incompatibility of statives and the PROG. This appears to be the case in Albanian, a language with a nonobligatory PROG, for which Leluda (1991: 38–39) provides a sample of verbs that resist cooccurring with the PROG particle *po*:⁵¹⁷

admiron ‘admire’, *dashuron* ‘love’, *di* ‘know’, *do* ‘want’, *është* ‘be’, *gjendet* ‘be found, be located’, *ka* ‘have’, *ndodhet* ‘be situated, be located’, *ngërthen* ‘join’, *nxë* ‘to have a capacity’, *përmban* ‘keep in check, hold in; constrain’, *urren* ‘hate’ etc.

Other languages cited in the literature where statives are incompatible with the PROG is Tepehua (Watters 1988: 43) and Basque (Rijk 2008: 388). The PROG is nonobligatory in both languages.

The best-known example of a language where the PROG is compatible with at least some stative verbs is English, where PROG is obligatory (§5.4.2.3). In English, there are “several ways in which the progressive can combine with a basically stative expression to yield a dynamic interpretation” (Huddleston & Pullum 2002: 167). Dynamic reinterpretations of statives result in different nuances.

For instance, the PROG construes stative predicates as being “time-delimited and/or manifested in some specific behavior” (Cover & Tonhauser 2015: 332; cf. Comrie 1976: 37–38; Biber et al. 1999: 471), e.g. in the following examples (Cover & Tonhauser 2015: 332):

(174) You’re being ridiculous.

(175) I’m loving this veggie burger.

In similar contexts, the PROG suggests willful action, i.e. agentivity (Huddleston & Pullum 2002: 167):

⁵¹⁷ In the source, the Albanian verbs are translated into German. The English translations cited here are from Newmark (1999).

(176) He is being tactful.

Accordingly, example (176) can be paraphrased as ‘He is behaving tactfully’, with a possible interpretation of feigning.⁵¹⁸ The paraphrase with ‘behave’ shows that that in such cases we are dealing with a separate verb sense.

The use of the PROG in English is also felt to imply temporariness (Quirk et al. 1985: 199):

(177) We are living in the country. [temporary residence]

(178) We live in the country. [permanent residence]

Interestingly, not all verbs require the PROG to express temporariness. The class of “strongly stative verbs,” such as *belong*, *contain*, *matter*, *own*, are used in the Simple form even when the state is temporary (Huddleston & Pullum 2002: 168):

(179) It doesn’t matter at this stage.

(180) At the moment she owns both blocks, but she’s selling one next week.

In fact, the class of verbs such as *live* in (177), which require the PROG to express the idea of temporariness, is a well-defined class of English verbs. This is the class of “stance verbs,” which also includes some postural and locational verbs, e.g. *sit*, *lie*, *stand*. The class is unique for its property of expressing temporariness without coercing the verb into a dynamic reading (Smith 1997: 33; Bertinetto 2000: 535, 584):

(181) The statue is standing in the garden [i.e. for a limited period time].

(182) Steve is sitting in the chair.

This property of verbs like *live*, *stand* and *sit* puts them “at the boundary between states and activities” (Huddleston & Pullum 2002: 170; cf. Quirk et al. 1985: 205; Mair 2012: 806). Biber et al. (1999: 472) remark that verbs such as *sit* and *stand* frequently occur with the PROG.⁵¹⁹ Further details of the class are given in Huddleston & Pullum (2002: 170–171).

The use of the PROG with stance verbs illustrated here is claimed in the literature to be truly English-specific (Dahl 1985: 93–94; Bertinetto 2000: 537, 584), and it is observed that uses of

⁵¹⁸ The uses of the PROG seen in (174) and (178) rely on the fact that English allows combinations of the PROG with the verb *be*. Such combinations are not allowed in all languages, e.g. in Icelandic (Jóhannsdóttir 2011: 117ff.).

⁵¹⁹ Gorbova (2010: 155fn4) however provides examples of the Spanish PROG with statives without destativizing effects (e.g. *Creo que estoy necesitando un medico* ‘I believe I need a doctor’ from Marquez). She notes that such uses are quite rare.

the PROG as in examples (174)–(177), (181)–(182) are rare in the world’s languages (cf. Sasse 2002: 241). Apart from English, such uses of the PROG are available only to an extent in Ibero-Romance languages (Bertinetto 2000: 537 cf. PROGQ 42-43). In contrast, they are reported to be impossible in other Romance languages and some Turkic languages (Johanson 2000: 152) as well as in Icelandic (Jóhannsdóttir 2011: 113–117).

Authors differ in their estimates on what share of stative verbs can be used with the PROG. The opinions range from the one that the PROG “is not generally available for statives” (Smith 1997: 34) to “most state predicates can be used with special interpretations within the scope of the progressive operator (...) [t]he only exceptions seem to be certain syntagmas with the verb *be*” (Filip 1999: 69, citing Bach 1981: 77). The predicates most resistant to the use with the PROG in English are typically instances of qualities, “relatively permanent and inalienable properties of the subject referent” (Quirk et al. 1985: 200). Apart from predicates with *be*, some qualities are also introduced by *have*:

(183) Mary is Canadian. / *Mary is being Canadian.

(184) Mary has blue eyes. / *Mary is having blue eyes.

In that sense, the qualities resemble what was called permanent states in English and in §4.3.1. Accordingly, resistance to the PROG can be seen as a diagnostic of permanent states.

A detailed corpus analysis of the lexical associations of the English PROG with dynamic and stative verbs is available in Biber et al. (1999: 470–475), where it is noted that some stative verbs such as *feel*, *listen*, *wait*, *live*, *stay* occur frequently with the PROG, whereas others are rare, such as *know*, *like*, or *desire*.⁵²⁰ Mair observes that for many verbs and predicates it is easy to find examples of them being used in PROG, but cautions that such uses are “usually negligible statistically” (2012: 814). The situation is in fact so complex that it is difficult, if not impossible, to draw firm conclusions (Quirk et al. 1985: 202):

The constraints on the progressive cannot, it seems, be explained entirely in terms of meaning. Since the use of the progressive aspect has been undergoing grammatical extension over the past few hundred years, it is likely that its use is still changing at the present day, and this its description at any one time cannot be totally systematic.

⁵²⁰ See also Quirk et al. (1985: 200–206), Mair (2012: 816–822), and Frazier & Koo (2019: 155–156).

Sometimes, the use of the PROG with stative predicates is taken as an indication of ongoing grammaticalization, whereby the PROG is spreading into the IPFV territory. However, the existing evidence shows that this is not the case in English. Rather, the use of the PROG with statives is “an instance of semantically or pragmatically licensed rule-bending” (Mair 2012: 812). This “rule-bending” typically results in stative verbs exhibiting various nuances of dynamic meaning, as documented above, but keeps the frequency of such uses very low.

Interestingly, according to Biber et al., the split in frequencies is also found with dynamic verbs, some of which rarely occur with the PROG. Some of these verbs are Vendlerian achievements (e.g. *find*) – see §7.3.1, but for many of them no explanation in terms of actional characterization can be provided (e.g. *frighten, invent, suck, accuse, reply* etc.).⁵²¹ This clearly illustrates that (in)compatibility with the PROG should be used as a diagnostic test with caution.

Evidence from languages other than English is similar in that this combination is rarely unmarked in most languages for which there is evidence for the combinability of the PROG with statives. Accordingly, in such languages the PROG can occasionally be found with statives, but such combinations are pragmatically odd and require special contexts. Italian is a case in point, where the use of the PROG with stative verbs (such as *vedere* ‘see’ in the sense of inert perception) can be licensed in very particular contexts (Gardenghi 2000: 116).

In Maltese, stative verbs are a tightly delimited group of verbs based on their uniform behavior with respect to a number of syntactic tests (Spagnol 2009: 20–21). The verbs of this class do not normally occur in the PROG (Spagnol 2009: 22). Rather unremarkably, certain statives can be found with the PROG, as in (185), where the use of the PROG implies temporariness (cf. also Johanson 2000: 153).

(185) Statives with PROG in Maltese (Spagnol 2009: 22)

<i>Hu=k</i>	<i>qed</i>	<i>j-oqgħod</i>	<i>ma-z=zija</i>
brother=your	PROG	IPFV.3.SG.M-live	with-DEF=aunt
‘Your brother is living with (his) aunt.’			

Another example comes from Assiniboine (Siouan, Canada/USA; asb), where stative verbs modified with the marker *-hq* “describe a temporary or alterable condition” (Cumberland 2005: 314). The effect of *-hq* is at display in (186), where only the verb ‘be mean’ occurs with *-hq*,

⁵²¹ Biber et al. (1999: 473) discuss some factors unrelated to actionality.

whereas the verb ‘be big’ does not, suggesting that “meanness can be altered but inherent size cannot” (ibid.).

(186) Assiniboine: stative verb in the progressive (Cumberland 2005: 314)

<i>šúka</i>	<i>žé</i>	<i>Ø-tʰáka</i>	<i>Ø-hinika-hq</i>	<i>Ø-žécʰa</i>
dog	that	3SG.A-be_big	3SG.A-be_mean-PROG	3SG.A-be_that_kind

‘it’s a big, mean dog’

A similar situation is found in Japanese, where the *-te i-* gram, which has progressive semantics (see §5.4.3.2), is incompatible with a number of permanent states, like *are* ‘exist (of inanimates)’, *iru* ‘exist (of animates)’, *iru* ‘need’ and *dekiru* ‘know’ as well as with predicative adjectives (Seidel & Weyerts 1991: 72, 75–76). This is illustrated in (187) with *iru* ‘need’.

(187) Incompatibility with *-te i-* (Seidel & Weyerts 1991: 76)

<i>*Boku</i>	<i>wa</i>	<i>o-kane</i>	<i>it-te</i>	<i>i-ru.</i>
1SG	TOP	HON-money	need-TE	AUX-PRS

‘I need money.’

Since the *-te i-* gram also conveys the meanings of the perfect, many stative verbs are compatible with *-te i-* when referring to perfect meanings (Mori, Löbner & Micha 1992: 239). The class of verbs illustrated in (187) appears to be incompatible with *-te i-* in any of its meanings, but there are some statives which are compatible with *-te i-* when they convey the meaning of the perfect of persistent situation.

Similar to some of the English examples cited above, e.g. (174) or (175), Japanese allows the use of *-te i-* with statives to convey “vividness or temporariness of the situation” (Shirai 2000: 332, cf. also 339), as in (188). To my knowledge, this use has not been extensively documented.

(188) Vividness, temporariness with *-te i-* (Shirai 2000: 332)

<i>Huzisan-ga</i>	<i>mie-te</i>	<i>i-ru</i>
Mt_Fuji-NOM	be_visible-TE	AUX-PRS

‘We can see Mt. Fuji (at this moment).’

The situation in Japanese is further complicated by the class of defective stative verbs, discussed in §5.4.3.2, which occur only in the *-te i-* form, as well as by the number of verbs which occur in both the Simple and *-te i-* forms with barely perceptible differences in meaning (Mori, Löbner & Micha 1992: 241; Seidel & Weyerts 1991: 76–77, Shirai 2000: 339fn11). One of the verbs from the latter group, *chigau* ‘differ, be incorrect’, is illustrated in (189) (*chigau* is the Simple Nonpast form).

(189) Stative verb *chigau* (Seidel & Weyerts 1991: 76)

<i>Kono</i>	<i>kotae-wa</i>	<i>chigau /</i>	<i>chiga-tte</i>	<i>i-ru</i>
this	answer-TOP	differ	differ-TE	AUX-NPST

‘This answer is incorrect.’

This demonstrates that *-te i-* is an imperfect test for stativity in Japanese (cf. Shirai 2000: 339 for a similar remark) and cannot be relied upon. Instead, the test with *-te i-* needs to be supplemented with other tests. I will not go any further into this matter, which is discussed in much detail elsewhere (e.g. Alpatov, Arkad’ev & Podlesskaja 2008: 74–78, 288–290).

In addition to these languages, Icelandic is another language where temporariness is a crucial factor that licenses the use of the PROG with statives (Jóhannsdóttir 2011: 109–113).

This brief overview shows that the construal of states as dynamic and temporary is indeed the main actional function of the PROG across languages (cf. Breu 1994: 33). This is unsurprising since these effects are a natural extension of the intrinsic meaning of the PROG which is manifested with dynamic (“non-stative”) verbs. Moreover, only some stative predicates are susceptible to that kind of construal, typically those that designate temporary states. For that reason, it would be more precise to say that the PROG is incompatible with permanent states, whereas, with temporary states, it displays varying degrees of combinability, which is also dependent on pragmatic factors. In that respect, it is interesting to observe that the PROG is rarely invoked as one of the criteria to distinguish permanent and temporary states in the formal literature (e.g. in Kratzer 1995; Chierchia 1995).

7.1.2. Morphological defectiveness of statives

This subsection addresses the claim that aspect (and other TAM) categories “tend to be less developed or wholly neutralized in stative contexts” (Dahl 1985: 28), and, it can be said that in many languages, “statives are in effect outside the viewpoint system” (Smith 1997: 66).

First, let us discuss the case of Northern Iroquoian languages. I use the examples from Cayuga (Sasse 1997: 7–9) and the closely related Seneca (Chafe 2012: 11–14). Presumably, there are parallel phenomena in other Northern Iroquoian languages as well (see Barrie 2015: 74 for Onondaga). In these languages, there are two broad classes of verbs that are distinguished by means of aspect morphology. The first class of verbs may be used in all three available grammatical aspects (Habitual, Stative, and the PFV, see §5.4.3.4), whereas the verbs of the

other class are restricted to the Stative aspect, hence the name “stative-only verbs” or *stativa tantum*.⁵²²

In Cayuga, stative-only roots lexicalize meanings that are in European languages expressed by adjectives, nouns and sometimes (stative) verbs (Sasse 1997: 7–8).

(190) Stative-only verbs in Cayuga

- a. *akáhse:* ‘I’m fat’
- b. *akéhshę:* ‘I’m slow’
- c. *kihę:te* ‘it’s a river’
- d. *ohá:te* ‘it’s a road’
- e. *kyęti:* ‘I know it’

A parallel situation is found in the closely related Seneca. It is therefore tempting to tie morphological defectiveness to semantic stativity. However, the relationship is not as straightforward. For instance, in Seneca one finds examples of *stativa tantum* which are not stative in other languages (Chafe 2012: 14):

(191) Stative-only verbs in Seneca with non-stative semantics

- a. *hóio’de* ‘he’s working’
- b. *ha:awi* ‘he’s carrying it’

Furthermore, the semantics of *stativa tantum* subsumes only a subset of stative meanings, namely the so-called permanent states, whereas non-permanent states belong to the class of verbs that occur in all three aspects (Sasse 1997: 8).⁵²³ Thus, the underlying semantic basis is in fact narrower than stativity.

As for statives in PFV-IPFV languages, their defectiveness is also well attested. Let us begin with Athabaskan languages.⁵²⁴ For instance, Bortolin (1998: 128–130) describes an IPFV-only class of verbs with stative semantics in Chipewyan. Unlike all other Chipewyan verbs, these statives

⁵²² The Northern Iroquoian *stativa tantum* are set apart from other verbs in other ways as well. For instance, at least in Seneca and Cayuga, they can appear with either patient or agent prefixes. Chafe notes that “[t]here is a tendency for agent prefixes to occur with more permanent states and for patient prefixes to occur with states that result from an event, but the choice is now largely arbitrary and unpredictable” (2012: 13). Of the two verbs cited in (191) below, the first one has a patient prefix (*ho-*), and the other one has an agent prefix (*ha-*) (cf. Chafe 2015: 26).

⁵²³ Sasse does not discuss separate tests for stativity.

⁵²⁴ Stative verbs are called “neuter verbs” in the Athabaskan literature. Apart from defectiveness, Athabaskan statives exhibit various morphological idiosyncrasies which set them apart from dynamic (eventive) verbs (see, e.g., Rice 2000: 276).

lack a PFV counterpart. Chipewyan defective statives normally correspond to European nominal predicates. Some of the typical meanings are illustrated in (192).

- (192) Defective statives in Chipewyan (Bortolin 1998: 129)
- a. *nez̥o* ‘it is good’
 - b. *degoth* ‘it is new’
 - c. *nedáth* ‘it is heavy’
 - d. *delgai* ‘it is white’
 - e. *náts̥ēr* ‘it is strong’
 - f. *delz̥en* ‘it is black’

These verbs are semantically characterized in the Athabaskan literature as either “dimensional” or “descriptive” (Bortolin 1998: 130; citing Kari 1979; cf. also Wilhelm 2007: 71–72). Again, as is the case with Cayuga, not all semantically stative verbs are defective. Bortolin (1998: 130–132) cites the other subclass of stative verbs, which exhibits no defectiveness and uses both the IPFV and PFV forms.

Importantly, both subclasses of statives can be independently shown to be stative by means of the test with *xáslá* ‘made’ (Bortolin 1998: 132 cf. 104–105).⁵²⁵ Their semantics is illustrated in (193), where only the IPFV forms are given. Many of these verbs are positionals, which are typical instances of temporary states.

- (193) Statives in Chipewyan with no defectiveness (Bortolin 1998: 130)
- a. *thit̥j* ‘I am in sleeping position’
 - b. *thiy̥j* ‘I am standing’
 - c. *thida* ‘I am in sitting position’
 - d. *k’athida* ‘I am sitting and waiting’
 - e. *thek’á* ‘it is cold’

The case of Chipewyan again shows that defectiveness is not in one-to-one correspondence with stativity. As in Cayuga and Seneca above, the semantic property responsible for defectiveness is stability over time. In other words, it is permanent states that are more prone to morphological defectiveness rather than statives in general.

The properties of statives in other Athabaskan languages are not necessarily the same. The most interesting case is found in Navajo, where the PFV-IPFV distinction is effectively neutralized with states. More specifically, while some statives occur only in the IPFV, and others only in the PFV, no statives possess both forms, and there is no difference in meaning between the two

⁵²⁵ This is a Chipewyan version of Dowty’s *force/persuade* test (see Table 17 in §4.3.1).

aspects – the meaning is always the imperfective ‘state exists’ (Smith 1996: 244–246; 1997: 317–319; Young 2000: 65). In other Athabaskan languages both the PFV and IPFV are generally available with statives, as can be seen for example in Slave and other Northern Athabaskan languages (Rice 2000: 22, 276–281). In general, statives in Athabaskan languages are still an underresearched topic which deserves further study as it may provide valuable typological insights.

The kind of defectiveness we have seen in Chipweyan above is attested in other PFV-IPFV languages, for instance, with total states in Laz (Mattissen 2001: 23), where the verb *miṣk̄un* (IPFV.PRS.1SG) ‘I know’ lacks the PFV aspect form – that is, there is no form **miṣk̄i* (PFV.PST.1SG). This verb uses only the IPFV aspect forms (IPFV.PRS, IPFV.PST). Mattissen cites a number of such verbs (p. 20), e.g. *bore* ‘I am’, *miyun* ‘I have (sth.) [inan.]’ etc. In Maltese, most otherwise stative verbs lack PFV forms, although there are some exceptions such as *ħabb* ‘love’, *xtaq* ‘love’, *ried* ‘want’, *eżista* ‘exist’, *ħamel* ‘adore’ (Spagnol 2009: 13–23).⁵²⁶ In Modern Greek, the verbs *kséro* ‘to know’ (discussed in §1.5.3 and §4.1.1), as well as *aniko* ‘belong to’, *periého* ‘contain’ and *periméno* ‘wait’ are not available in the PFV.PST (“Aorist”) forms (Johanson 2000: 66, 157). Other languages cited in the literature which exhibit such restrictions include Mandarin (Smith 1997: 70) and Tepehua (Watters 1988: 34–50, 66–76).⁵²⁷

Another interesting case is Bagvalal, where the verb *b-uk’a* ‘be’ is only attested in the PFV but has the ‘state exist’ meaning, which is normally only expressed by the IPFV (Tatevosov 2002a: 363; 2002b: 473–474).⁵²⁸

7.1.3. Total states [φ_s]

Total states are verbs encoding only the state (φ_s) primitive; they are an instance of a simple actional class. Total states as conceived here are consistent with Vendler’s original conception of states.

Let us first discuss the total states in PFV-IPFV languages. Two subtypes of total states can be distinguished. The first type concerns cases where a total state verb cannot occur in the PFV

⁵²⁶ Spagnol points out that some otherwise dynamic verbs are also defective in this respect, but their defectiveness can be explained by morphological constraints.

⁵²⁷ Here we can add the anecdotal claim from Johanson, who cites Romanian verbs such as *cântari* ‘weigh’ which cannot normally be used in the PFV.PST (2000: 65).

⁵²⁸ Bagvalal otherwise has no total state predicates – see §7.1.3.

aspect. This constitutes an instance of defectiveness and was already explored in §7.1.2. Crosslinguistic relevance of such cases is controversial. For instance, Johanson (2000: 157) observes that such constraints on PFV forms are rare, whereas Tatevosov assumes that the class of total states with no PFV form has no universal relevance (2002a: 371). In the sample used here, the evidence of such incompatibilities is also limited.

In contrast, the opposite case, where total states do occur in the PFV, is much more common. When used in the PFV, they keep the stative interpretation and encode the state primitive (ϕ_S). The use of the PFV typically entails a delimitative (‘for some time’) reading.⁵²⁹ Adyghe is a case in point, as shown in (194).

- (194) Adyghe (Arkadiev 2009: 63–64)
- a. a totally stative verb in (the present) IPFV
ras^wəl ə-šhe me-wəzə.
 Rasul 3SG.POSS-head PRS-ache
 ‘Rasul has a headache.’
- b. a totally stative verb in (the past) PFV
ras^wəl ə-šhe wəzə-ke.
 Rasul 3SG.POSS-head ache-PFV.PST
 ‘Rasul had a headache (for some time).’

In Adyghe, the absence of the transition (τ) is reflected in their incompatibility with *in*-PPs in the past PFV (Arkadiev 2009: 68, ex. 23). They are instead compatible with *for*-PPs in the past PFV (Arkadiev 2009: 69, ex. 26). Again, it should be noted that the absence of the transition (τ) with total states is linguistic; more on this is said at the end of §7.1.4.

Other languages with totally stative predicates allowing for the PFV or analogous aspect include Tatar (Tatevosov 2002a: 376–377), Mari (Tatevosov 2002a: 376–377; 2016a: 223–224), Mandarin (Smith 1997: 265 ex. 6, 293 ex. 76), and Belhare (Bickel 1996: 214–216). Some Athabaskan languages like Slave and Chipewyan, where at least some states are compatible with the PFV (see §7.1.2 for references), can also be included here. It is not completely clear what specific function the PFV aspect fulfils in these Athabaskan languages, apart from introducing past time reference for the ‘state exist’ meaning.

Crosslinguistic relevance of total states occurring with both the IPFV and PFV is assumed by Tatevosov (2002a: 376–377), who includes this class among its crosslinguistic actional types

⁵²⁹ This was discussed in detail in §1.5.2.

(CLATs – see §3.2). The two subclasses of total states (with and without the PFV) are not distinguished in other bidimensional models such as Breu’s and Johanson’s.

Claims of the complete absence of total states are also found. For instance, this is reported for Kiranti languages such as Athpare and others (Ebert 1997: 68–70; 2001: 144). There is also no evidence for total states in Nyakyusa (cf. Persohn 2017: 136). Bagvalal (Tatevosov 2016a: 224) is another such case, where the only exception is the defective verb *b-uk’a* ‘be’ (see §7.1.2).⁵³⁰ In such languages, all verbs encoding the state (ϕ_S) primitive belong to the inchoative state [$\tau\phi_S$] or two-phase [$\phi_P\tau\phi_S$] classes. Further remarks on the membership are given in the next section, which is devoted to inchoative states.

7.1.4. Inchoative states [$\tau\phi_S$]

Inchoative states refer to a complex actional class encoding a **transition** (τ) and an ensuing resultant **state** (ϕ_S). Within the PFV-IPFV aspect system, the transition is associated with the PFV, whereas the resultant state is associated with the IPFV. Examples are provided in §4.4.2.1.

Inchoative states are well attested crosslinguistically in languages with PFV-IPFV systems, e.g. in Laz (Mattissen 2001: 20–33), Kalmyk (Ebert 1999: 333–334), Tepehua (Watters 1988: 34–50, 66–76), Ancient Greek (Bary 2009: 37–38), French (Smith 1997; de Swart 2002), Spanish (Chapado Chorro & García García 1991: 50–51; Butt & Benjamin 1994: 213; Kattán-Ibarra & Pountain 2003: 75), Tatar (Tatevosov 2002a: 382–384), Mari and Bagvalal (Tatevosov 2002a: 382–384; 2016a: 224–229), and in Karachay-Balkar (Tatevosov 2016a: 224–229).⁵³¹ They are also attested in Cayuga (Sasse 1997) and Mandarin (Smith 1997: 70, 265). Johanson (2000: 63) remarks that inchoative states “are not equally well represented in all European languages,” without providing any specifics (cf. also Timberlake 2007: 293).

In contrast, inchoative states are difficult to recognize within the PROG-NONPROG system – as alluded to in §2.2.4.1 – and they will be discussed at the end of this section. Inchoative states are a neatly delineated class in Bantu languages, where they are known as “resultative achievements” (Botne 2003; Persohn 2017: 131–136). Their properties as observed in Nyakyusa will be discussed in §7.4.

⁵³⁰ Albanian is also cited in this connection, but no examples are provided in the source I consulted (Leluda 1991).

⁵³¹ For examples from more languages see Johanson (2000: 148, 155).

As for the membership of the total state and inchoative state classes, the ratio between verbs that belong to these respective classes varies according to the language. In the previous section, we already cited a number of languages where no verbs belong to the class of total states (Belhare and other Kiranti, Bagvalal etc.). In some languages, there is an impression that total states are less represented than inchoative states (cf. Tatevosov 2016a: 223). Thus, in Tatar, out of 100 investigated verbs, there are only five total state verbs, in comparison to 20 inchoative state verbs (Tatevosov 2002a: 364). Similarly, in Mari there are four total state and 15 inchoative state verbs (ibid.: 366).

These differences can be explained by the fact that the membership of individual verbs cannot be predicted based on their meanings. Consider the verbs with the meaning ‘see’, which can belong either to the inchoative state class, e.g. in Bagvalal in example (195), or to the total state class, e.g. the Laz verb *maziren* ‘to see’ (Mattissen 2001: 22). Therefore, in many cases there is nothing in the meaning of total state verbs that rules out the transition (entry-into-state) interpretation. In other words, the restriction is linguistic, rather than ontological (§4.1.1, cf. §4.1.2.2). Total state verbs compensate the transition meaning in two ways. First, in some cases there is a separate verb, which can encode the transition. For instance, in Laz, there are two ‘sleep’ verbs (Mattissen 2001: 23). One is a total state, *mcar* ‘sleep’ and the other is *binciram* ‘sleep’, which can additionally refer to the transition (‘fell asleep’). In Modern Greek, the verb *kséro* ‘to know’ is a total state and the meaning of ‘come to know, realize, find out’ is encoded by a variety of verbs, such as *katalavéno* ‘understand, realize’ or *mathéno* ‘learn’. Another example comes from Tepehua, whose two existential verbs, *'alin* ‘X exists, is’ and *t'ahun* ‘X is’, are largely synonymous, but differ in their actional classes (Watters 1988: 67–68).⁵³² The verb *'alin* ‘X exists, is’ is an inchoative state and occurs in the PFV, whereas *t'ahun* ‘X is’ is a total state and cannot occur in the PFV.

On the other hand, the transition meaning can be created by means of derivation. For instance, this is attested for morphologically defective statives in Northern Iroquoian languages (§7.1.2). The transition meaning is available to stative-only verbs in Seneca via a special derivation called the Inchoative (Chafe 2012: 14–17). Different means of deriving a transition meaning

⁵³² The verb *t'ahun* ‘X is’ is normally restricted to animate arguments.

for stative-only predicates is reported for the closely related Cayuga as well (Sasse 1997: 8–9).⁵³³

As it is the case with all complex transition classes,⁵³⁴ inchoative states can further be subdivided into strong and weak subtypes (see §4.4.5, §4.4.7), at least in PFV-IPFV languages. They are distinguished according to the interpretations available to the PFV aspect. The interpretations of IPFV forms are, of course, the same between weak and strong subtypes.

With strong inchoative states, illustrated in (195), the PFV form has only the transition (τ) interpretation, i.e. it refers to a change of state (‘caught sight’), and cannot have a delimitative interpretation (‘saw (for some time)’):

- (195) Strong inchoative state: Bagvalal (Tatevosov 2002a: 382–383)
- | | | |
|----------------------|-------------|-----------|
| <i>maHammad-i-ba</i> | <i>ʕali</i> | <i>hã</i> |
| Mohammed-OBL-AFF | Ali | see |
- ‘Mohammed caught sight of Ali.’

In contrast, the PFV form of a weak inchoative state can have both interpretations, as illustrated in (196).⁵³⁵

- (196) Weak inchoative state: Bagvalal (Tatevosov 2002a: 383)
- | | | | |
|----------------------|------------|---------------|--------------|
| <i>maHammad-i-la</i> | <i>o-b</i> | <i>zadača</i> | <i>b-uhã</i> |
| Mohammed-OBL-DAT | this-N | task | N-understand |
1. ‘Mohammed came to understand this task.’ (= transition)
 2. ‘Mohammed understood this task (for some time).’ (= delimitative)

Other languages where the distinction is attested are the three other languages investigated by Tatevosov (Tatar, Mari and Karachay-Balkar), as well as Adyghe (Arkadiev 2009). The ratio between strong and weak subtypes of inchoative states varies across languages (Tatevosov 2016a: 229–231). In some languages, thus, strong inchoative verbs are largely absent: Mari appears to lack strong inchoative states,⁵³⁶ and Karachay-Balkar has only one such verb (*añila* ‘understand, realize’). In other languages, strong inchoative states are better represented, e.g. in

⁵³³ Cf. also English, which in order to derive the transition meaning for the total state verb *know*, can resort to a semi-productive paraphrase (*come to know*) or to a separate lexeme (*realize*).

⁵³⁴ That is, with all classes that consist of transition (τ) and at least one phase (φ).

⁵³⁵ Tatevosov observes (p. 384), however, that speakers prefer the transition (τ) interpretation.

⁵³⁶ In his 2002 paper, Tatevosov does cite (p. 383) one strong inchoative state predicate for Mari.

Tatar. The opposite is the case in Bagvalal, where strong inchoative states are more frequent than weak inchoative states.

In general, it appears that languages favor weak over strong inchoative states in their lexicalization patterns, with Bagvalal being a notable exception (Tatevosov 2016a: 225–226). The distribution of verbs between strong and weak subclasses appears at this point to be largely language-specific.⁵³⁷

Weak inchoative states appear to be predominant in Romance, as well, for instance in Spanish (Chapado Chorro & García García 1991: 51). The same appears to be true in French since all inchoative state verbs I came across are of the weak subtype (cf. Schøsler 1994: 169; Smith 1997: 195–196).

As for other languages, the distinction is not discussed. However, I was able to indirectly confirm the existence of at least some weak inchoative states in Laz. The case in point is the inchoative state verb *maṣḱurinen* ‘I am afraid’, which has a delimitative reading in (197).

(197) Laz (Mattissen 2001: 24)
cu žana laçi-ša maṣḱurinu
two year dog-MOT afraid.>1SG.PFV.PST
‘I was afraid of the dog for two years (but things have changed).’

Mattissen does not explicitly discuss the distinction between weak and strong classes and this verb is explicitly classified only as an inchoative state. However, since it can be used with a delimitative reading, it can be concluded it is an inchoative state of the weak subtype.

Let us now return to the question of inchoative states in English. Recall from §2.2.4.1 that inchoative states are absent from the classical Vendlerian classification and are generally not invoked in English verb classifications. The reasons for this remain unclear, but, in the literature, one often finds claims that inchoative states are rare in English (e.g. Ebert 1995: 189). In the same section, it was shown that many English Vendlerian states in fact do allow entry-into-state (transition) interpretations, but it remains unclear whether such readings are lexically specified or instead arise in specific contexts.

It appears that states with an inchoative interpretation are well represented in English. Apart from verbs like *know*, *see*, and *understand* mentioned in §2.2.4.1, inchoative interpretations are

⁵³⁷ But see also Tatevosov (2016a: 231–232) for an attempted explanation.

found with a variety of state verbs, including *kneel* (Talmy 2007: 108), e.g. *She knelt when the bell rang* (inchoative) and *She knelt there for a minute* (state), *believe* (Smith 1983: 487), e.g. *Macbeth believed in ghosts when he saw Banquo* (inchoative) and *Macbeth believed in ghosts for years* (state). Levin & Rappaport Hovav (2005: 90) cite the verbs *hear*, *recognize*, *bloom*, *flower*.⁵³⁸ Furthermore, it is very difficult to decide whether inchoative (transition) readings are lexically specified or given in specific contexts. However, two observations point to the conclusion that they are a matter of contextual reinterpretation and thus represent an instance of actional shift with at least some of the cited verbs (e.g. *know*). The first one concerns translation equivalents of inchoative states in English. For instance, Gorbova (2010: 19fn7) remarks that the Spanish verb *saber* ‘know’ when encoding transition (τ) corresponds to English lexemes other than *know*, for instance *learn* in the translation of the sentence from Isabel Allende’s *La casa de los espíritus: Los demás lo supieron más tarde, cuando Clara murió y la casa perdió las flores* ... ‘Everybody else **learned** it later, when Clara died and the house lost its flowers’. This is anecdotal, but it appears that *knew* would be inappropriate here precisely because the contextual support is not sufficiently strong to induce a transition reading for *knew*.

The other observation is more substantive and it concerns inchoative states in Belhare, whose aspect system resembles the English one, especially with respect to the properties of the Simple form in both languages, which largely overlap (§5.4.3.3). As observed by Bickel, the Simple form of all stative verbs in Belhare exhibits the ambiguity between inchoative and state readings as seen in (146), repeated here as (198). This is unlike in English, where the inchoative reading is only available in special contexts with verbs such as *know*.⁵³⁹

⁵³⁸ I also recorded an example with *sleep*: “At last she **slept** again, but woke early to find Jandria already up and saddling the horses” (M. Bradley Zimmer, *The Ages of Chaos*, pp. 641–642); *slept* is to be understood here as ‘fell asleep’.

⁵³⁹ Cf. also examples such as the German *erkannte*, which are systematically ambiguous between the state (‘was aware of’) and transition (‘became aware of’) readings (Johanson 2000: 149). German is an aspectless language.

(198) Belhare: inchoative states are ambiguous in Simple Past

cun lus-e

cold perceptible-PT

1. 'It got cold.' (transition)

2. 'It was cold.' (state)

This kind of ambiguity in out-of-the-blue contexts is not possible in English with verbs such as *know*. Therefore, for now, it stands to reason to assume that inchoative readings of state verbs such as *know* in English are derived in specific contexts. Still, it is unclear if all verbs exhibiting inchoative readings behave like *know*.⁵⁴⁰

Lastly, it should be noted that this kind of analysis based on the facts of English is occasionally extended to PFV-IPFV languages. For instance, Boogaart (2004: 1179) comments with respect to the contrast between the PFV and IPFV in French that an inchoative reading (i.e., 'he fell ill, he got sick') of *Il fut malade* is "a non-standard interpretation" in relation to the state reading 'he was ill for some time', even though a couple pages before he observes that the inchoative reading is the preferred one (p. 1174). Arguments against this kind of analysis are twofold. More importantly, there is nothing odd or pragmatically marked about the inchoative interpretation of *Il fut malade* or similar examples in French and other PFV-IPFV languages and, unlike in English, such interpretations naturally arise without much additional context. Second, as pointed out by Tatevosov (2016a: 228–229), the fact that in languages like Mari or Tatar we find total state verbs, which are demonstrably never able to encode transition, points to the conclusion that inchoativity is lexically determined.⁵⁴¹ The same is true for Belhare, where total and inchoative states are distinguished on the lexical level as shown by diagnostics sensitive to the presence of an initial boundary (Bickel 1996: 214–216).

7.1.5. Distinction between permanent and temporary states

After presenting one possible subdivisions of states, i.e. the distinction between the total (non-inchoative) and inchoative states, in this subsection I introduce into the discussion the distinction between permanent and temporary states, which was first introduced and explained in §4.3.1. Specifically, this section addressed the question of whether the distinction between permanent and temporary states is relevant for aspect-sensitive classes.

⁵⁴⁰ One counterexample might be the verb *go*, which can apparently have an inchoative meaning without much contextual support, e.g. in the sentence *And I went*, where *go* means 'leave, depart' (that is, 'start going').

⁵⁴¹ I was not able to independently verify if all state verbs can have an inchoative interpretation in French.

The discussion of this matter is warranted because in the literature one often encounters the suggestion that the distinction between total and inchoative states can be correlated with the distinction between permanent and temporary states. On that proposal, permanent states are never inchoative, as they are assumed to disallow inchoative readings, whereas the inchoative reading is possible only for temporary states. The match is considered to be total: all temporary states are inchoative, and all permanent states are non-inchoative.⁵⁴² In terms of aspect sensitive classes, as seen in the previous two sections, this means that temporary states can be found in the PFV aspect, whereas permanent states cannot.

Most explicitly this is stated in the Breu-Sasse model (e.g. Breu 1998: 56), where inchoative states are assumed to consist of the transition component and the ensuing temporary state. Conversely, permanent states are equated with the class of total (non-inchoative) states. The same assumption is made by Bar-el (2015: 102). In what follows, however, I show that the distinction between permanent and temporary states, and total and inchoative states is correlated only to an extent.

An interesting piece of evidence comes from Spanish (Chapado Chorro & García García 1991: 48–50). In Spanish, two subtypes of total (non-inchoative) states can be distinguished. The two subtypes ontologically correspond to what we call permanent and temporary states. Verbs and predicates describing more permanent-like properties and states are distinguished from the other total states in two properties. First, permanent total states such as *ser ciego* ‘be blind’, *ser inteligente* ‘be intelligent’, or *ser rubio* ‘be blond’ are not compatible with syntactic devices indicating temporal relations:

- (199) *antes de ser ciega ... ‘before she was blind ...’
- (200) *después de ser ciega ... ‘after she was blind ...’
- (201) *mientras era ciega ... ‘while she was blind ...’

In contrast, temporary states are available in of the following contexts:

⁵⁴² A curious exception is Watters (1988: 34–50), whose analysis of Tepehua statives claims exactly the opposite. However, his analysis rests upon a somewhat idiosyncratic interpretation of Carlson’s and Dowty’s distinctions between permanent and temporary states, and I do not find it particularly convincing.

(202) Antes de pertenecer a la mafia era agente de seguros.

‘Before he was a member of the mafia (lit. before he belonged to the mafia) he was an insurance sales agent.’

Second, the uses of the past PFV of permanent states is rather restricted. The past PFV with such verbs and predicates can either refer to the fact that the past state does not obtain in the present, as in (203), or it focuses the attention to the fact that the state was relevant at some past moment, as in (204).

(203) Napoleón fue un estratega. ‘Napoleon was a strategist (and is dead now).’

(204) Juan fue muy inteligente (al responder eso). ‘Juan was very intelligent by replying so.’

In (203) the PFV past *fue* is used to unambiguously refer to the fact that Napoleon is not alive anymore. In (204), the PFV past *fue* is used to emphasize Juan’s intelligent behavior on a particular occasion in the past. In contrast, the past PFV of temporary states can be found in a variety of other uses, including the delimitative function and the taxis function of sequence (see §1.5.2).

This clearly shows that there are temporary states which are total (non-inchoative). Verbs and predicates of the temporary type, such as *pertenecer* ‘belong’ and *ser rico* ‘be rich’ are ontologically possible as inchoative states, but, due to language-specific lexicalization patterns, lack the inchoative (transition) component. The opposite also appears to be true, as we find (ontologically) permanent state verbs, e.g. *saber* ‘to know’, which belong to the inchoative state class.⁵⁴³

This means that out of the four possible combinations between the inchoative/total and permanent/temporary distinctions, all four are attested, as shown in Table 43.

⁵⁴³ This claim is problematic because there is no linguistic test to show that *saber* is a permanent state since all inchoative states appear to be compatible with the expressions *antes de* and *después de* (Chapado Chorro & García García 1991: 50–51). Therefore, *saber* is taken to be a permanent state only on ontological grounds; hence the question mark in Table 43.

Total/inchoative?	Permanent/temporary?	Example
total	permanent	<i>ser ciego, ser inteligente</i>
total	temporary	<i>pertenecer, ser rico</i>
inchoative	permanent	<i>saber (?)</i>
inchoative	temporary	<i>ser médico</i>

Table 43. Total vs. inchoative state and permanent vs. temporary state distinctions are independent in Spanish.

In conclusion, it can be said that the cited evidence from Spanish does not favor positing the distinction between permanent and temporary states within systems of aspect-sensitive classes. This is based on the observation that absence of inchoativity is not exclusive to permanent states. We have seen that Spanish has a number of verbs and predicates which linguistically encode temporary states but do not encode a transition point. This does not mean, of course, that the distinction is irrelevant for actional classification in general, only that its influence on how languages build aspect-sensitive classes is limited, as already suggested by some authors (e.g. Mattissen 2001: 20).

7.2. Eventive atelic verbs

This section addresses two aspect-sensitive classes which are atelic in the sense of §4.4.2.2 (i.e., they lack a natural endpoint). These two classes are plain activities [ϕ_P] and inceptive activities [$\tau\phi_P$]. The distinction between the two parallels in many ways the distinction between total states [ϕ_S] and inchoative states [$\tau\phi_S$], discussed in §7.1.3 and §7.1.4, respectively.

7.2.1. Plain activities [ϕ_P]

Plain activities are the least controversial of all Vendlerian classes. They are built of the basic meaning of process (ϕ_P), which remains unchanged in different contexts. In the following subsection I examine the most common interactional readings which allows me to identify a plain activity verb.

In PFV-IPFV languages, prototypical activities have atelic readings in both the PFV and IPFV. In the IPFV aspect, activities refer to an ongoing, episodic situation. Some of the examples are the following:

(205) Laz (Mattissen 2001: 26)

biçalışam
work.1SG.PRS
'I'm working.'

(206) Adyghe (Arkadiev 2009: 64)

ç'ale-xe-r *me-ž'egʷə-x*
boy-PL-ABS PRS-play-PL
'The children are playing.'

In the PFV aspect, on the other hand, activities have a delimitative reading, i.e. the interpretation 'for some time':

(207) Adyghe (Arkadiev 2009: 64)

ç'ale-xe-r *ž'egʷə-ke-x*
boy-PL-ABS play-PFV.PST-PL
'The children played (for some time).'

As discussed elsewhere, in such cases the PFV aspect conveys termination or arbitrary final endpoints (§1.5.2). In languages with aspect systems other than the PFV-IPFV one, the meaning of the PFV is conveyed by Simple/NONPROG forms.

The delimited time-span can also be explicitly specified by a *for*-PP adverbial:⁵⁴⁴

(208) Adyghe (Arkadiev 2009: 70)

çəfə-r *səhat-nəqʷe* *gʷəš'əʔa-ke*
man-ABS hour-half talk-PFV.PST
'The man talked for half an hour'

(209) Laz (Mattissen 2001: 24)⁵⁴⁵

cu saat'i *bgori*
two hour look.for.(1>3)SG.PFV.PST
'I searched it for two hours.'

As an aspect-sensitive class, activities are distinguished from other classes by the strict atelic interpretation of the PFV form. In languages that distinguish the *for*-PP and *in*-PP adverbials, activities cannot be used with the latter:

⁵⁴⁴ For more examples see Johanson (2000: 158).

⁵⁴⁵ The grapheme *t* represents the ejective alveolar plosive. In Mattissen's work it is written with a carron ^ above the letter, a combination that is for some reason always rendered as *t* in the Unicode based system used here.

- (210) Laz (Mattissen 2001: 25)
**a saat-i-şa biçalişi*
 one hour-MOT work.1SG.PFV.PST
 ‘I worked in one hour.’

If the PFV form of the verb were compatible with both the *in*-PP and *for*-PP adverbials, then we are dealing with a weak telic verb (§7.3.3).

Activities are well attested across a wide range of different languages, including PFV-IPFV languages like Bagvalal (Tatevosov 2002a: 377–378), Mari (*ibid.*), Tatar (*ibid.*), Karachay-Balkar (Tatevosov 2016a: 208–210), as well as in languages with other kinds of aspect systems, e.g. Nyakyusa (Persohn 2017: 118–121), Japanese (Seidel & Weyerts 1991: 78–79; Mori, Löbner & Micha 1992: 253–254).

In Cayuga (Sasse 1997: 43–45), activities are characterized by the specific distribution of imperfective meanings over the Stative and Habitual aspect forms. As shown in (211), the habitual-generic component is expressed by the Habitual, and the ongoing episodic by the Stative.⁵⁴⁶

- (211) Cayuga activity verb *-atska’hq-* ‘chew’ (Sasse 1997: 43)
tekatska’hqha ‘I always chew, like to chew’ [Habitual]
tewakatská’hq ‘I’m chewing’ [Stative]
atkátska’hq: ‘I chewed (for some time and...)’ [PFV]

The same example shows that the Cayuga PFV has the expected delimitative meaning.

7.2.2. Ingressive activity [τφP]

This class was introduced in §4.4.2.1. as one of the two classes of inchoativatives (the other being inchoative states). As noted there, the class is not recognized in the Breu-Sasse model, and the sources adopting that model do not report examples of this class. The class is however well attested in the sample. Consider (212) from Adyghe, where the presence of transition (τ) is rendered in English by using the verb *start*.

- (212) Adyghe (Arkadijev 2009: 64)
č’ale-r wəne-m ča-βe
 boy-ABS house-OBL run-PFV.PST
 ‘The boy started running to the house.’

The IPFV forms of the same verb encode process (φP).

⁵⁴⁶ See §5.4.3.4 for more details about the aspect system of Cayuga.

This class is attested in other PFV-IPFV languages: in Tatar (Tatevosov 2002a: 384–386), Bagvalal and Mari (Tatevosov 2002a: 384–386; 2016a: 210–214), and Karachay-Balkar (Tatevosov 2016b: 210–214). For Spanish, Gorbova (2010) identifies several ingressive activities, e.g. *trabajar* ‘work’ and *buscar* ‘search, look for’. She does not discuss whether an ingressive interpretation is universally available with activity predicates, or whether it is instead only characteristic of a subset of activities.

An ingressive interpretation is also reported for languages with other aspect systems, as can be seen in Japanese, e.g. *warau* ‘laugh’ (Mori, Löbner & Micha 1992: 255, ex. 48) and in Belhare, e.g. *lakma* ‘(come to) boil’ (Bickel 1996: 209, 217–219).

In connection with this class, it is important to emphasize that the predicates belonging to this class are normally capable of referring to the transition (τ) without any contextual support, as in example (212) above. For Adyghe, Arkadiev notes that non-ingressive (plain) activities cannot refer to the transition (τ) and that the examples of non-ingressive activities in the context of *in*-PPs are judged “strange”:

- (213) Adyghe (Arkadiev 2009: 68)
- | | | |
|-----------------------|---------------------|-----------------------|
| ^{??} č’ale-r | taqjəq-jə-tfə-č’e | qe-š ^w a-κ |
| boy-ABS | minute-INF-five-INS | DIR-dance-PFV.PST |
- Intended meaning: ‘The boy started dancing in five minutes.’

On the other hand, Arkadiev notes that such predicates can receive an ingressive interpretation if a temporal subordinate clause is added:

- (214) Adyghe (Arkadiev 2009: 68)
- | | |
|------------------------------|--------------------------------------|
| se sə-qə-z-je-ha-m | pšaše-r səhat-nəq ^w e-č’e |
| I SG.S-DIR-SBD-LOC-enter-OBL | girl-ABS hour-half-INS |
| telewizorə-m | je-plə-κ |
| television-OBL | 3SG.IO-watch-PFV.PST |
- ‘After I came in, the girl in half an hour started to watching television.’

According to Arkadiev, in both examples non-ingressive (plain) activities undergo actional shift (p. 69). This requires a strong “contextual temporal anchor,” as in example (214), where the subordinate clause makes the sentence felicitous, in contrast to example (213), where the contextual support is not sufficiently strong.

These examples have ramifications for the analysis of activities in English. It is often noted that English activity predicates can have ingressive interpretations “when modified by punctually locating expressions/clauses” (Bar-el 2015: 88; cf. Rothstein 2004: 25):

- (215) John ran at 9 p.m. (→ begun to run) (ibid.)
 (216) Mary swam when the bell rang. (→ begun to swim) (ibid.)
 (217) Suddenly Mary ran. (→ begun to run) (Smith 1997: 25)

The matter is investigated in detail by Bar-el (2005: 310–314), who studied the interpretations of activities in the presence of punctual temporal clauses, as in (216), via elicitation with naïve native English speakers. Her study shows that the ingressive interpretation is almost always enforced in the presence of *when*-clauses. Consider the sentence in (218), where the speaker’s comments indicate that an ingressive interpretation is the preferred one (Bar-el 2005: 311).

- (218) Mary sang when John arrived.
 Speaker’s comments: “Started singing is most natural – you don’t even have to say started, it is assumed”

Crucially, such interpretations appear not to be available in the out-of-the-blue contexts, as was the case with the Adyghe example in (212) above. Given this, it is unclear whether the ingressive interpretation of activity predicates in English should be taken as an instance of actional shift. Furthermore, it is unclear if this kind of reinterpretation is available with all activities or only with some. If the former is the case, then we are most probably dealing with a contextually determined actional shift. The opposite is found in Japanese, where most activity verbs do not occur with the punctually locating expression *at X time*, with some exceptions like the verb *hashiru* ‘run, travel’ (Mori, Löbner & Micha 1992: 250). Evidence from Belhare is also relevant, as was in the case with inchoative states (§7.1.4), in the sense that, unlike in English, Belhare ingressive activities encode a transition point without contextual support, cf. example (219). In addition, a number of diagnostics sensitive to the presence of an initial boundary clearly distinguish between plain and ingressive activities in Belhare.

- (219) Belhare ingressive activity in the Simple Past (Bickel 1996: 219)
nua pes-e
 bird fly-PT
 ‘The bird flew off.’

Considering the distinction between the lexically determined and pragmatically conditioned actional properties established in §1.2.4.3, the inceptive interpretation of activities in English has properties of both shifted and lexically determined actional meanings since it is quite natural and pragmatically unmarked, but still requires additional contextual support.⁵⁴⁷ In conclusion,

⁵⁴⁷ Note also that contextually conditioned actional shift is available only to activities. Other dynamic (eventive) classes – accomplishments and achievements – do not allow this kind of reinterpretation (Bar-el 2015: 88).

it is impossible to unequivocally determine if English is lacking the class of ingressive activity predicates or not.⁵⁴⁸

In terms of class membership, the distribution of predicates between non-ingressive (plain) activities and ingressive activities appears to be arbitrary and is subject to much crosslinguistic variation. The size of each of the classes in Tatevosov (2002a) is indicative of that. The number of verbs belonging to each of the two classes out of 100 investigated verbs is given in Table 44.

Language	Plain activities [ϕP]	Ingressive activities [τϕP]
Bagvalal	8	4
Tatar	15	2
Mari	8	4

Table 44. Membership of the plain activity [ϕP] and ingressive activity [τϕP] classes.

The only observable trend is that the membership of the plain activity class is larger than the membership of the ingressive activity class, even though there is nothing that bars plain activities from having an ingressive interpretation. Interestingly, Tatevosov (2016a: 211–213) observes that, in the three languages he investigates (Mari, Bagvalal, Karachay-Balkar), many ingressive activities belong to two lexical groups: verbs of sound emission (e.g. Karachay-Balkar *maqir* ‘meow’) and verbs of undirected motion (e.g. Mari *kuržaš* ‘run’). Despite that observation, the membership of plain and ingressive activities remains too semantically heterogeneous to allow any predictions about class membership (Tatevosov 2016a: 217–218).

Since this class lexically encodes transition (τ), the distinction between weak and strong ingressive activities is also found. The strong subtype appears to be less frequent than the weak one. Tatevosov (2002a: 385) reports that, of the three languages investigated, the strong type is only attested in Tatar, whereas in Mari and Bagvalal only the weak subtype is found. The strong subtype is also absent in Karachay-Balkar (Tatevosov 2016a: 216). In Adyghe only the strong subtype is found (Arkadiev 2009: 63) as seen in (212). For the sake of completeness, the weak subtype is illustrated in (220).

⁵⁴⁸ A parallel situation is found in Squamish (Bar-el 2005: 137–201). See also Matthewson (2017: 156) for other Salish languages.

(220) Karachay-Balkar (Tatevosov 2016a: 210)

kistiq *maqir-kan-di*

cat meow-PFV.PST-3SG

1. ‘A cat started to meow.’ (Russian: *zamjaukala*)

2. ‘A cat meowed for some time.’ (Russian: *pomjaukala*)

Translation #1 indicates that the PFV form can encode transition (τ) and Translation #2 that it can encode process (ϕ_P), with a delimitative (‘for some time’) nuance.

In Spanish, only the weak subtype is found among the predicates investigated by Gorbova (2010). A small group of weak ingressive activities is identified in Cayuga by Sasse (1997: 45).

7.3. Accomplishments [ϕ_{PT}] and achievements [τ]

In this section, an in-depth discussion of distinctions between accomplishments and achievements is provided from the perspective of aspect languages. In §4.4 we have already seen that the distinction between the two classes is not straightforward. This section provides additional evidence that might help in elucidating the differences between these two classes.

7.3.1. Achievements and PROG

Accomplishments are a robustly attested complex actional class that consists of a transition (τ) and a preparatory process (ϕ_P). The prototypical accomplishments [ϕ_{PT}] are perfectly acceptable with the PROG: *John is building a house* (Rothstein 2004: 22).

A variety of tests that can be used to distinguish between accomplishments and achievements were discussed in §4.4.1.2 and §4.4.2.2. As noted there, these were mainly sensitive to the presence of the preparatory process phase, whose absence signals an achievement [τ] and presence signals an accomplishment [ϕ_{PT}]. In traditional accounts, which in most cases deal with English, the two are ontologically distinguished as punctual and durative, respectively. The idea is that achievements are viewed as verbs with no temporal structure and no duration (Botne 2003: 234), they are “all culmination” (Binnick 1991: 195). Comrie (1976: 42) points out that punctual verbs do not lack duration, but in fact refer to situations that last for a very short time. There is however no consensus about how short the situation must be in order to be considered punctual; V. Lehmann suggests that a situation is considered punctual if it does not exceed the time span of 3 seconds (2009: 10).

One test relevant for this distinction which was not discussed is the combinability with the progressive (PROG). This is the topic of this section. The next section discusses the interactions of achievements with the imperfective aspect (IPFV).

When trying to distinguish between accomplishments and achievements, there are two major problems. The first is that many achievements often have preliminary stages associated with them. The second is the ambiguity between the punctual and durative interpretations exhibited by many telic verbs. The latter problem will be disregarded here as it is not as relevant for the status of achievements as an aspect-sensitive class. Instead, the focus will be placed on the former issue.

A punctual nature of achievements is assumed based on its incompatibility with the Progressive in English (Vendler 1957). Consider the examples with the English verbs *recognize* and *lose* (Rothstein 2004: 11), and *reach* (Comrie 1976: 47) in (221) and (222).

(221) *Mary is recognizing John / losing her pen.

(222) *John was reaching the summit when he died.

A similar effect is found with the construction *in the midst of*, e.g. **I'm in the midst of reaching the summit* (Botne 2003: 235).

However, it is widely recognized that some achievements do combine with the Progressive in English (Dowty 1979: 136–137; Huddleston & Pullum 2002: 121; Rothstein 2004: 24; Boogaart 2004: 1169).⁵⁴⁹ Filip (1999: 18) explains the misconception that the progressives of achievements are generally ungrammatical by observing that Vendler (1957) considered only achievements such as *recognize*, *spot*, *notice*, which are generally incompatible with the progressive.⁵⁵⁰ Some examples of progressive achievements are given in (223).

⁵⁴⁹ I disregard, of course, achievements with plural subjects which yield a distributive reading (see §4.4.1.2).

⁵⁵⁰ According to Rothstein (2004: 52), such verbs are incompatible with the progressive because they are “non-agentive events which ‘happen’ to the subject participant unexpectedly, they do not have preparatory events which can be recognized as stages of an event culminating in a recognition.”

- (223) English progressive achievements (Rothstein 2004: 36)
- a. Susan **was arriving** at the station when she heard that trains to Jerusalem had been cancelled because of the state of the line.
 - b. Dafna **is finding** her shoes.
 - c. Fred and Susan **are** finally **leaving**.
 - d. The old man **is dying**.
 - e. The plane **is landing**.
 - f. Jane **is** just **reaching** the summit.

According to Spagnol (2009: 27), a similar distinction is found in Maltese:⁵⁵¹

- (224) Maltese achievements ungrammatical with PROG
- **ħija qed jasal id-dar* ‘my brother is arriving home’
 - **il-bużżieqa qed tinfaqa* ‘the balloon is popping’
 - **oħti qed tifle l-arlogġ* ‘my sister is losing her watch’

- (225) Maltese achievements acceptable with PROG
- oħti nieżla t-taraġ* ‘my sister is going down the stairs’⁵⁵²
 - bħalissa aħna qed nirbħu* ‘at the moment we are winning’
 - il-bhima kienet qed tmut fl-istalla* ‘the animal was dying in the stable’.

Following Huddleston & Pullum (2002: 121), the achievements which are incompatible with the PROG will be called **strict achievements**⁵⁵³ and those that occur in the PROG will be called **extendable achievements**.⁵⁵⁴ This contrast can broadly be understood as referring to the distinction between achievements which allow some kind of a durative preparatory process (extendable achievements) and those that do not (strict achievements). Strict achievements in languages with PFV-IPFV systems are discussed in §7.3.2.

Among extendable achievements, there appear to exist two broad groups (cf. Rothstein 2004: 42–43). There are verbs such as *die* which occur rather naturally in the PROG, on the one hand,

⁵⁵¹ The source does not provide glosses for these examples.

⁵⁵² The verb cited in this example (*niżel* ‘go down’) uses the old active participle form to express the PROG instead of the construction with *qed* introduced in §5.4.3.1. The same is true for other verbs of motion (Spagnol 2007: 29–30).

⁵⁵³ Strict achievements can be made acceptable with the PROG if they exhibit “slow-motion” or “film-strip” readings, where “a normally instantaneous event is perceived as being ‘stretched’ over time” (Rothstein 2004: 37; cf. Comrie 1976: 43). Extendable achievements can also have this reading, whereas accomplishments cannot (Rothstein 2004: 43, 56–58).

⁵⁵⁴ Cf. Filip (1999: 111), who calls strict achievements “happenings” and extendable achievements “culminations.”

and verbs such as *reach* which are more resistant to the PROG, on the other. The sentences with verbs of the latter group can still be repaired by additional contextual support, such as the adverb *just* in (223)(223)f.

As noted by Rothstein (2004: 37), the examples in (223) “don’t seem any different from accomplishment progressives,” e.g. *Dafna is painting a picture* or *Mary is building a house*. For one, achievement progressives are subject to the Imperfective Paradox (§4.4.2.2), that is, they can be interrupted before culminating, as seen in examples (226)–(228) from Rothstein (2004: 39).

(226) He was dying of disease X when they discovered the new wonder drug
(so he didn’t die of disease X).⁵⁵⁵

(227) The plane was landing when it exploded in midair (so it didn’t land).

(228) Jane was just reaching the summit when there was an avalanche (so she didn’t reach it).

However, there are several important differences between the properties of progressive achievements and progressive accomplishments.⁵⁵⁶ The matter is investigated in much detail in Rothstein (2004: chap. 2) and the ensuing discussion relies heavily on her account. Progressive achievements can be distinguished from progressive accomplishments in the following four cases cited by Rothstein.⁵⁵⁷ First, progressive achievements cannot be modified “halfway through” (Rothstein 2004: 44):

(229) She is halfway through walking to the station. (accomplishment)

(230) #She is halfway through arriving at the station. (achievement)

This is similar to Botne’s (2003: 340) observation that accomplishments (231), but not achievements (232) can be meaningfully modified by *somewhat*.

⁵⁵⁵ Interestingly enough, Comrie (1976: 47) considers a similar example to be odd (?*John was dying, but the discovery of a new medicine led to his recovery*). Languages vary in this respect. As reported by Breu (1994: 33), “an imperfective expression of the type *umiral* ‘was dying’ from the perfective *umer* ‘died’ in Russian does not exclude the possibility of recovery,” whereas in Italian “the acceptance of the (...) sentence *Moriva, ma non mori* varies according to the speaker.”

⁵⁵⁶ For a different view see Mittwoch (1991).

⁵⁵⁷ Further differences, which are less relevant here, are cited by Rothstein (2004: 43–44).

(231) The old man is recovering (from an illness). **entails**
The old man has recovered somewhat.

(232) The old man is dying. **does not entail**
*The old man has died somewhat.

These two facts are the single most important diagnostics which convincingly show that achievements, unlike accomplishments, are never incremental, that is, they do not progress gradually towards the endpoint (§2.2.3).

Second, progressive accomplishments can be paraphrased with “about to” (ibid.), as seen in (233) and (234). This is not possible with progressive achievements.

(233) The vase is falling → The vase is about to fall.

(234) The train is arriving at the station → The train is about to arrive at the station.

The “about to” reading of progressive achievements is referred to in literature as the “prospective” (Comrie 1976: 64–65), “imminential” and “propinquitive” (Johanson 2000: 153). Imminence generally makes progressive achievements more felicitous. Compare (235), which is “awkward,” with (236), which is “more natural” due the imminence of the transition point (Timberlake 2007: 288).

(235) ?The sun was shining and we were happily reaching the summit.

(236) We were just reaching the summit when it began to rain.

The prospective/imminential reading of achievements with the PROG is also attested in Icelandic (Jóhannsdóttir 2011: 18–19; cf. Johanson 2000: 153–154).⁵⁵⁸ It is also common with achievements in the IPFV, for which see §7.3.2. Progressive achievements are not necessarily prospective/imminential in meaning, e.g. in *X is dying* or *X is leaving* (cf. Johanson 2000: 154; Rothstein 2004: 53).

Third, progressive achievements are very odd in the perfective progressive (ibid.):

(237) She has been cooking dinner (for half an hour). (accomplishment)

(238) #Fred and Susan have been leaving. (achievement)

Lastly, progressive achievements cannot have temporary interruptions, unlike progressive accomplishments (Rothstein 2004: 55):

⁵⁵⁸ For Germanic languages with less grammaticalized (“preaspectual”) progressives see Ebert (2000a: 614–615) and Botne (2003: 268).

- (239) Context: Mary is sitting in a field picking buttercups.
- a. Mary is walking to the station. She is just taking a rest. (accomplishment)
 - b. #Mary is arriving at the station. She is just taking a rest. (achievement)

The properties of extendable achievements vary with different verbs as some verbs are easier to extend in time than others. Consider the contrast between *die* in (240) and *arrive* in (241) (from Huddleston & Pullum 2002: 166). Recall that extendable achievements are normally odd with the progressive perfect.

(240) He has been dying for several weeks now.

(241) *The train has been arriving for two minutes now.

This is not to say that *die* is not an achievement. Its status as an achievement was confirmed in (232) by the fact that it cannot be modified with *somewhat*. Another test is its incompatibility with *finish*, as in (242) (Huddleston & Pullum 2002: 121).

(242) #He finished dying last week.

To conclude, Rothstein (2004) convincingly demonstrates that progressive (extendable) achievements differ from progressive accomplishments in a number of ways.⁵⁵⁹ Her evidence speaks in favor of the view that achievements are a separate class rather than just “disguised” or “concealed” accomplishments,⁵⁶⁰ as assumed by Verkuyl (1989).

Therefore, even though there are achievements whose PROG forms indicate “development portions prior to the time of culmination” (Parsons 1990: 24, cited in Botne 2003: 235), Rothstein’s examples provide ample evidence that the relationship of the process component of achievements manifested in the PROG and the natural endpoint of achievements is different than the relationship observed with accomplishments. The difference is also reflected in different entailment patterns exhibited by achievements and accomplishments and is discussed in §4.4.1.2.

The difference between the “preliminary stage”⁵⁶¹ of achievements and the preparatory process of accomplishments is handled by Smith (1997) in terms of the property of “non-detachability,”

⁵⁵⁹ A formalization of differences is provided by Rothstein on pp. 45–52. On that analysis, progressive achievements are an instance of actional shift (§1.2.4.3).

⁵⁶⁰ The phrase is used by Rothstein.

⁵⁶¹ The term is introduced by Smith (1997).

which describes the relation between the preparatory process and endpoint of accomplishments. Since “the process component of an Accomplishment is essential to the very notion of the event,” the two are considered non-detachable (Smith 1997: 26, cf. 43–44). In contrast, the preliminary stages of achievements are “conceptually detached from the event” (Smith 1997: 31; cf. Quirk et al. 1985: 209; Durst-Andersen 1994: 105; Radden & Dirven 2007: 188–189).⁵⁶² This is in turn a consequence of the fact that (Walková 2013: 8; cf. Smith 1997: 30):

although achievements are preceded by a process, the achievements themselves do not refer to this process. For instance, *to reach the summit* is necessarily preceded by a process of climbing, yet this is out of the reference of *to reach the summit*.

To that effect, Rothstein (2004: 41) observes that “[i]n ‘real life,’ it may be hard to imagine an achievement event or telic point without a preparatory activity, but crucially with accomplishments the preparatory activity is given lexically, whereas with achievements it is a defeasible, contextual inference.” In other words, “the characteristics of the process stage of [an achievement] are not lexically specified but must be contextually determined” (Rothstein 2004: 49).

To sum up, we have seen that the PROG is an imperfect means of distinguishing achievements and accomplishments. Achievements are inconsistent in their compatibility with the PROG and at least two groups can be distinguished: strict achievements, which outright reject the PROG (e.g. *notice*) and extendable achievements, which readily accept the PROG (e.g. *die*). In English, we also find a third group, achievements which accept the PROG only with extra contextual support (e.g. *reach*). On the other hand, a variety of diagnostics, some discussed earlier in §4.4.1.2 and §4.4.2.2, and some discussed above, clearly distinguish accomplishments and achievements. Thus, even though achievements do not exhibit unified behavior when combined with the PROG, this does not deny the fact that achievements are a semantically well-defined class and can clearly be differentiated from accomplishments by a variety of tests.

In that connection, it is interesting to review the status of achievements in Japanese. Recall from §5.4.3.2 that the language-specific classification of Japanese is based on the behavior of verbs with the progressive-resultative gram *-te i-*. In that system, achievements (or non-durative verbs) are recognized as those verbs that do not allow a progressive (more precisely, ongoing

⁵⁶² Other terms include “anticipatory” (Quirk et al.) and “buildup phase” (Radden & Dirven).

episodic) reading with *-te i-*. However, as the detailed examination of actional classes by Mori, Löbner & Micha (1992) shows, the verbs lacking a progressive reading of *-te i-* are not a homogenous group. This is most clearly shown by the two tests for achievements discussed in §4.4.1.2., namely the test with *at X time* and the test with the reinterpretation of *in*-PPs. Unlike accomplishments, it is characteristic of achievements to occur with *at X time*, and to exhibit the meaning ‘after’ with *in*-PPs. In Japanese, both tests can be employed and show the following. First, some verbs lacking a progressive interpretation with *-te i-* behave as typical (English) achievements, and others do not. For instance, the verb *tsuku* ‘arrive at, reach’ is compatible with *at X time* in its Simple Past forms, whereas *ochiru* ‘fall’ is not (Mori, Löbner & Micha 1992: 250). What is more, *in*-PPs exhibit the meaning of ‘after X time’ with *tsuku* ‘arrive at, reach’, whereas with *ochiru* ‘fall’ they need not (ibid.: 256).⁵⁶³ With respect to these two tests, *ochiru* ‘fall’ patterns with accomplishments such as *tateru* ‘build, construct’. The only difference between the two is that with verbs like *ochiru* ‘fall’ *-te i-* cannot have a progressive reading, whereas with verbs like *tateru* ‘build, construct’ it can. Other verbs such as *ochiru* are, for instance, *iku* ‘go, move’, *kuru* ‘come, arrive’, *kareru* ‘dry up’ and *kusaru* ‘rot’ (ibid.: 244). All of these meanings are normally accomplishments in other languages. Accordingly, they are characterized as “nicht progressive-fähigen accomplishment[s]” (accomplishments lacking a progressive reading) (ibid.: 250) or durative achievements. The latter label is used in Table 45, which summarizes the differences between the three classes.

Verb class	Progressive reading with <i>-te i-</i>	Occurs with <i>at X time</i>	<i>in</i> -PP means ‘after X time’
Achievements (<i>tsuku</i> ‘arrive’)	No	Yes	Yes
Durative achievements (<i>ochiru</i> ‘fall’)	No	No	No
Accomplishments (<i>tateru</i> ‘build’)	Yes	No	No

Table 45. Achievements and accomplishments in Japanese.

The results of these tests appear to suggest that verbs like *ochiru* have a durative pre-transition component like other accomplishments, and that they should be represented in the same

⁵⁶³ Shirai (2000: 340) contrasts the verbs *wakasu* ‘boil, heat’ (*in*-PP ambiguous) and *dekakeru* ‘leave’ (only the meaning ‘after’).

manner, namely as [φπτ]. The existence of the durative component is confirmed by the fact that *ochiru* can occur with the dedicated PROG paraphrase *-tsutsu aru*, as shown in (243).

(243) Verb *ochiru* occurs with *-tsutsu aru* (Mori, Löbner & Micha 1992: 245)

<i>ringo</i>	<i>wa</i>	<i>ochi-tsutsu</i>	<i>a-ru</i>
apple	TOP	fall-PROG	AUX-PRS

‘The apple is falling.’

The Japanese case discussed here is interesting because it clearly shows the pitfalls of assuming that language-specific tests and resulting classes can be straightforwardly equated with the established crosslinguistic classes. In this case, we have seen that the progressive reading of *-te i-* does not in fact single out achievements. To recognize the class of achievements, one needs to use more specific tests, namely adverbials and a nonobligatory PROG paraphrase.

One should always be aware that even achievements most resistant to PROG (and durative) adverbials are acceptable in such contexts if their arguments (normally subjects) are plural. In such cases, they are reinterpreted and receive the distributive (‘one by one’) interpretation (Tatevosov 2002a: 333).⁵⁶⁴

(244) The soldiers are reaching the summit of the mountain. (Comrie 1976: 43)⁵⁶⁵

(245) At the airport, several freight aircraft were taking off noisily. (Smith 1997: 209)

(246) The firecrackers are popping. (Van Valin 2005: 36)⁵⁶⁶

The same effect is present in some of the languages discussed above, where achievements are incompatible with the PROG. For instance, consider that the Japanese verb *deru* ‘leave’. It is a typical Japanese (non-durative) achievement and thus cannot have an ongoing episodic interpretation with *-te i-*, as shown in (247). However, that interpretation is available if the verb occurs with a plural subject, as in (248).

⁵⁶⁴ Often referred to as “iterative” or “repetitive.” See §4.3.3 for these terms.

⁵⁶⁵ According to Comrie, the same example with a singular subject (*The soldier is reaching the summit of the mountain*) is odd.

⁵⁶⁶ According to Van Valin, this sentence with a singular subject is ungrammatical (**The firecracker is popping*).

(247) Japanese achievement with a singular subject (Mori, Löbner & Micha 1992: 229)

Mariko wa eki o de-te i-ru
Mariko TOP train_station ACC leave-TE AUX-NPST
1. *Mariko is leaving the train station.
2. Mariko has left the train station.

(248) Japanese achievement with a plural subject (ibid.)

hitobito ga eki o de-te i-ru
people NOM train_station ACC leave-TE AUX-NPST
'People are leaving the train station.'

The same is true of Maltese achievements like *tilef* 'lose' (Spagnol 2009: 27), which are otherwise ungrammatical with the PROG – see ex. (224).

7.3.2. Strict and extendable achievements in PFV-IPFV languages

This section explores realizations of the distinction between strict and extendable achievements, introduced in the previous section, in languages with PFV-IPFV aspect systems. In that context, it would be beneficial to revisit the status of achievements in bidimensional models, which predominantly deal with PFV-IPFV languages (see §1.5.1, §3.1). In the bidimensional models of Breu (§3.1) and Tatevosov (§3.2), the classes normally equated with Vendlerian achievements, namely totally terminative verbs and punctual verbs, are defined in the following manner. Achievements [τ] naturally occur only with the PFV aspect, where they encode transition (τ), as seen in (249) from Karachay-Balkar.

(249) Karachay-Balkar (Tatevosov 2016a: 180)

alim kitap-ni tap-xan-di
Alim book-ACC find-PFV.PST-3SG
'Alim found the book.'

In contrast, the use of achievements with the IPFV in these models is seen as heavily restricted since, when used in the IPFV, achievements do not allow an ongoing episodic reading. This is illustrated with an example from Karachay-Balkar in (250), which cannot refer to the fact that Alim is in the process of finding the book.

(250) Karachay-Balkar (Tatevosov 2016a: 180)

alim kitap-ni tap-a-di
Alim book-ACC find-IPFV-3SG
1. *'Alim is finding the book.'
2. 'Alim finds the book.' (on a regular basis)

However, as seen in Translation #2, such forms can be used, but exhibit a variety of nonepisodic readings, e.g. habitual. Such readings are taken as characteristic of achievements (e.g. Breu 1994: 29). More on that below.

In this conception, achievements defined by the absence of the episodic ongoing interpretation of the IPFV form can be taken to roughly correspond to strict achievements in the previous section. Strict achievements were defined as those that are incompatible with the PROG, which is taken as a sign that they cannot refer to the preliminary stage. An analogous conclusion can be reached based on the absence of an ongoing episodic reading with the IPFV.

A class of verbs characterized by the absence of an episodic ongoing reading is well attested in a number of PFV-IPFV languages. In addition to Karachay-Balkar, it is found in Tatar (Tatevosov 2002a: 381–382), Bagvalal, and Mari (Tatevosov 2002a: 381–382; 2016a: 179–182), Laz (Mattissen 2001: 24), Adyghe (Arkadiev 2009), Albanian (Leluda 1991: 39), and Cayuga (Sasse 1997: 38–40).

Strict achievements appear to be rare in PFV-IPFV languages (Tatevosov 2016a: 179). In Tatevosov’s sample, one rarely finds verbs that rule out an ongoing episodic reading of the IPFV; the most common example is the verb meaning ‘find’. In fact, in Tatar and Bagvalal, this is the only such verb, while in Mari, there are five strict achievements (Tatevosov 2002a: 366).

In both Breu’s and Tatevosov’s models, if a verb can have an ongoing episodic interpretation, it is classified as an accomplishment (Breu’s gradually terminative and Tatevosov’s telic verbs). Neither of these models discusses the possibility that verbs allowing an ongoing episodic interpretation are not a homogenous group and should be classified accordingly (cf. Breu 1998: 59).

Johanson’s bidimensional model (§3.3.2) is more nuanced. While his conception of achievements does not depart much from the Vendlerian one,⁵⁶⁷ Johanson (2000: 62) observes a subclass of situation descriptions such as ‘arrive’ or ‘die’ for which it is unclear whether such situations are “momentaneous or not in extralinguistic reality.” However, verbs denoting such situations “allow pretransformational phases of some duration *in their actual linguistic behavior*” (emphasis mine).

In fact, many verbs allowing an ongoing episodic reading of the IPFV can be shown to be different from accomplishments. Consider the French verb *entrer* ‘enter’, which in the

⁵⁶⁷ E.g. Johanson (2000: 61) states that “(...) momentaneous finitransformatives [+tf, +mom] imply abrupt transformation without preliminaries, without any salience of the cursus leading to it. The action is conceived of as absolutely indivisible. Though even events of very short duration have an extension in time, initium and cursus seem irrelevant and appear to merge with the transforming finis.”

bidimensional approach of Breu and Tatevosov would be classified as an accomplishment simply by the virtue of having an episodic ongoing interpretation, as seen in (251).

- (251) French (Smith 1997: 197)
Il entrait dans un magasin.
'He was entering a store.' (*entrait* = 3SG, IPFV.PST)

However, that is an oversimplification, because in French, as in English, the preparatory process of accomplishments can be distinguished from the preliminary stage of an achievement by means of a variety of tests (Smith 1997: 221). These kinds of achievements resemble extendable achievements like *die* or *leave* cited in the previous section, i.e. achievements which can refer to a preliminary stage in PROG.

Apart from French, the distinction between the two kinds of achievements has been discussed for Chipewyan. In that language, achievements can be identified by a variety of tests (Wilhelm 2007: 36–39, 94–97, 98–99). However, two subgroups of achievements can be distinguished based on their compatibility with the IPFV (*ibid.*: 97–98, cf. 246–252, 253–258). The verbs of the first group, when occurring in the IPFV, are either outright rejected, as in (252), or accepted in a prospective ('about to') reading, as in (252).⁵⁶⁸ The latter example can be repaired by adding the future particle *xa*.

- (252) Chipewyan (Wilhelm 2007: 38)
**náneskár*
slap_once.IPFV.1SG

- (253) Chipewyan (*ibid.*: 37)
hessił
scream_once.IPFV.1SG
'I'm going to scream once.'

The verbs of the second group can be used in the IPFV, as shown in (254).

- (254) Chipewyan (*ibid.*: 98)
nesdá
sit.IPFV.1SG
'I am (in the process of) sitting down.'

The two groups also differ with respect to their acceptability with adverbs of manner such as *łıghá* 'quickly'. The verbs of the second group occur with these adverbs, whereas the verbs of

⁵⁶⁸ The meanings of these verbs are reminiscent of semelfactives (§4.3.3) but in Chipewyan, it is difficult to distinguish punctual situations with and without a result state. See fn. 569.

the first group are incompatible with them. Taking all of this into consideration, it stands to reason to identify the former group with strict achievements whereas the latter can only be conditionally identified with extendable achievements due to a lack of data.⁵⁶⁹

Since relevant evidence for this kind of distinction is unavailable for most languages, I cannot provide a crosslinguistic examination of extendable achievements. Instead, in the remainder of the section, I focus on strict achievements, that is, the instances of verbs where the ongoing episodic reading IPFV is ruled out.

The main difference between the behavior of strict achievements with the PROG and IPFV lies in the differing properties of two aspect grams. Since the meaning of the PROG is restricted to ongoing episodic meaning, the PROG is blocked from uses with strict achievements. A different situation obtains with the IPFV, which has a broader range of meanings. Accordingly, strict achievements can be used in IPFV meanings other than the ongoing episodic one. The most prominent of such readings are the nonepisodic (habitual) reading, the prospective ('about to', imminential, propinquitive) reading, and the conative ('try to') reading.⁵⁷⁰ Each will now be examined in turn.

The main nonepisodic interpretation of the IPFV form is the nonepisodic (habitual), already illustrated in (250). Another example comes from Laz in (255), which illustrates both the present and past IPFV.

⁵⁶⁹ Wilhelm identifies the IPFV-incompatible group with semelfactives and the IPFV-compatible group with achievements (2007: 97–98). This appears to rely on the fact that the verbs of the former group are often lexicalized as semelfactives, i.e., as punctual situations with no result state in other languages, rather than on language internal tests, which are lacking in this case. Moreover, the match between the allegedly semelfactive verb meanings and incompatibility with the IPFV is imperfect as some of the IPFV-incompatible verbs are semantically more similar to achievements, e.g. the verbs meaning 'come back' and 'kill' (ibid.: 257–258).

⁵⁷⁰ There is also some confusion over the different terms introduced here. In Schösler (1994: 167), the meaning of the French past IPFV found in the examples *il mourait*, *il oubliait*, *il se noyait* 'he was (nearly) dying, forgetting, drowning' is called *imparfait de conatu*, even though *prospective* would be a more precise characterization. The term is probably incorrectly adopted from grammatical descriptions of Ancient Greek, where the term *imperfectum de conatu* is used in the intended 'try to' meaning (Smyth 1954: 424).

(255) Laz achievements in the IPFV: nonepisodic meaning

a. present IPFV (Mattissen 2001: 26)

bziram

find.(1>3)SG.IPFV.PRS

‘I (usually) find (what I lose).’

b. past IPFV (Mattissen 2001: 28)

vena gomandinert'u

voice get.lost.>1SG.IPFV.PST

‘I kept losing my voice.’

Crucially, these forms cannot mean **I am finding (it) now* and **I am losing my voice right now*, respectively. The nonepisodic meaning of IPFV achievements is also attested in Adyghe (Arkadiev 2009: 65), in Russian and Italian (Breu 1994: 29). In all three cases the relevant example is the verb meaning ‘find’, as in (250) and (255)a.

The nonepisodic meaning is also attested in Belhare (1996: 229), as shown in (256). The Belhare aspect system in past time reference resembles the PFV-IPFV system (§5.4.3.3).

(256) Achievements in Belhare: nonepisodic meaning

a-yakt-he

fall-IPFV-PT

‘[The curtain] kept falling down.’ (because nobody fixed it properly)

The habitual interpretation is typical of the IPFV gram (§5.4.1.2), and the habitual interpretation is available to all actional classes of verbs, but only with (strict) achievements is it the default interpretation, because the episodic reading is blocked by the lexical nature of the verb – it lacks a durative component, i.e. with achievements [τ] there is no (φ) that the IPFV aspect can operate over.

Another widely attested meaning of IPFV achievements is the prospective reading, which was also found with progressive achievements, cf. examples (233) and (234) in §7.3.1. It was already illustrated by example (252) from Chipewyan. Another illustration comes from Spanish in (257), where the relevant form *empezaba* ‘was going to start’ is bolded.⁵⁷¹

⁵⁷¹ Cipria & Roberts call this interpretation “intentional.”

(257) Spanish (Cipria & Roberts 2000: 331–332)

<i>María</i>	<i>empezaba</i>	<i>el régimen</i>	<i>el lunes.</i>	<i>Pero hoy</i>
Maria	begin.IPFV.PST	the diet	the Monday	but today
<i>se enteró</i>	<i>que sus amigas</i>	<i>le</i>	<i>van</i>	<i>a hacer</i>
learn.PFV.PST	that her friends	she.DAT	go.PRS	to make
<i>una fiesta</i>	<i>el lunes</i>	<i>a la noche,</i>	<i>así que</i>	<i>decidió</i>
a party	the Monday	the evening	so	decide.PFV.PST
<i>no</i>	<i>empezar</i>	<i>hasta el otro lunes.</i>		
not	begin	until the other Monday		

‘María was going to start her diet on Monday. But today she learned that her friends are going to throw a party for her Monday evening, so she decided not to start until the following Monday.’

The nonepisodic and prospective readings do not exclude each other. Both are attested, for instance, in Laz with the verb *p’vazum* ‘burst’, illustrated in (258) and (259).

(258) Laz: prospective reading (Mattissen 2001: 27)

p’vazum
burst.1SG.PRS
‘I am going to burst.’ (e.g. after eating a lot)

(259) Laz: nonepisodic reading (Mattissen 2001: 29)

cu xafta boyne lastriyi t’vazur’u
two week always tire burst.3SG.IPFV.PST.
‘For two weeks my tires kept bursting.’

It appears that prospective readings are also available to classes other than strict achievements. For instance, Cipria & Roberts (2000: 332) note that in Spanish one finds verbs that allow both prospective and ongoing episodic interpretations, but that achievements are characterized by allowing only prospective readings (cf. also Chapado Chorro & García García 1991: 52, 53). Similarly, both the ongoing and prospective readings are possible in the Turkish example *Ali boğuluyordu*, cited by Johanson (2000: 150), which can mean either ‘Ali was drowning’ or ‘Ali was on the verge of drowning.’

The conative (‘try to’) ⁵⁷² interpretation is illustrated with the Laz verbs *gomžum* ‘I open’ and *boyurinam* ‘I kill’ in (260) and (261).

⁵⁷² An illuminating discussion of the term *conative* is found in Vincent (2013).

(260) Laz: conative reading (Mattissen 2001: 28)
gomžumt'i
open.(1>3)SG.IPFV.PST
'I tried to open it (but it would not open).'

(261) Laz: conative reading (Mattissen 2001: 29)
a saat'i boyurinamt'i
one hour kill.(1>3)SG.IPFV.PST
'I tried to kill him for one hour.'

There is some disagreement over how to classify verbs with conative readings. For instance, Mattissen (2001) classifies such verbs as accomplishments (Breu's "gradually terminative verbs"), for instance the verbs *gomžum* 'I open' and *boyurinam* 'I kill' in (260) and (261), respectively. It appears that, then, according to Mattissen's conception, only the verbs that allow the habitual and prospective interpretations are classified as achievements. This leaves out the verbs allowing a conative interpretation, which are instead classified as accomplishments. This is in keeping with Breu's conception of accomplishments, where verb meanings with conative readings (e.g. 'catch' or 'convince') are seen as a subtype of accomplishments ("konative Teilklassse") (Breu 1998: 59). A similar position appears to be held by Johanson (2000: 150).⁵⁷³

What appears to differentiate between achievements and accomplishments is then the conative interpretation (Mattissen 2001: 32 provides a summary), which is implicitly understood as a variety of the ongoing episodic meaning. Achievements are understood as the class that does not allow for ongoing readings of IPFV forms in the broadest sense (Mattissen 2001: 24).

While it cannot be denied that the conative reading is episodic, its presence does not necessarily signal that a verb is an accomplishment. This is because the conative interpretation is non-incremental, and hence not characteristic of prototypical accomplishments. The interpretation of 'open' in (260) is non-incremental because it does not say that the act of 'opening it' gradually progresses toward the natural endpoint of 'being opened'. Instead, it refers to a series of attempts at opening. In that sense, conative IPFV achievements are closer to what I call extendable achievements above – see examples (251) and (254) – rather than accomplishments.

The class of extendable achievements in PFV-IPFV languages would thus consist of verbs with a conative interpretation in the IPFV, as well as of the group of non-incremental verbs like the ones cited in (251) and (254), which allow an ongoing episodic in the IPFV but do not exhibit

⁵⁷³ Johanson adds that the conative reading normally emerges only with controlling subjects.

the conative reading. However, this is still all speculative since crosslinguistic evidence for the existence of extendable achievements in PFV-IPFV languages is scarce, as repeatedly observed. This topic thus awaits further research.

7.3.3. Strong and weak (non-culminating) accomplishments

The accomplishments [ϕPT] are distinguished from achievements [τ] in that they encode a preparatory process (ϕP). In terms of aspect-actionality interactions, this means that accomplishments are compatible with the PROG and encode an ongoing episodic meaning in the PROG and IPFV. In this section, the question of incrementality and the distinction between accomplishments and extendable achievements, which was raised in the previous section, is largely disregarded, and many of the accomplishment verbs discussed here may as well be extendable achievements rather than accomplishments.

As observed in §4.2.1 and §4.4.5, accomplishments [ϕPT], like other complex classes with the transition (τ) component, distinguish between a weak and a strong subtype in the PFV, NONPROG and other PFV-like (boundedness) forms. The difference is that the distinction between strong and weak accomplishments is much better known in the literature and has been investigated in greater detail. Moreover, as explained in §4.4.6, the distinction is only relevant when arguments are quantized because cumulative arguments produce an atelic interpretation even with strong telic verbs.

The distinction was first recognized for English in Dowty (1979: 88–90), where the term *degree achievements* was coined for weak accomplishments (more on this term see below). In parallel, from early 1980s, reports started to emerge about non-European languages where sentences such as ‘I removed the stain, but I ran out of soap, so I couldn’t remove it’ were not contradictory (Kroeger 2019: 395). Some of these early works concerned Tagalog (Dell 1983), Thai (Koenig & Muansuwan 2000) and a variety of Salish languages (Bar-el, Davis & Matthewson 2005).⁵⁷⁴ In the latter paper, the term *non-culminating accomplishments* was first introduced. The phenomenon has been of considerable interest to the formal semantic community. The distinction was also independently identified in Tatevosov (2002a).⁵⁷⁵

⁵⁷⁴ Cf. also Bertinetto (1994b: 120–121).

⁵⁷⁵ The discussion on p. 393 attests that Tatevosov was not aware of the connection between weak accomplishments and degree achievements, but he cites the just mentioned early work on non-culminating accomplishments. The connection between weak accomplishments and degree achievements is ultimately

Strong accomplishment verbs are characterized by not allowing a delimitative reading with the PFV aspect, as in (262) from Adyghe. The PFV form refers exclusively to the transition (τ).

- (262) Adyghe (Arkadiev 2009: 65)
məɫə-r tʃʷə-ɬe
ice-ABS melt-PFV.PST
'The ice melted (completely || ??partly).'

In this example, the PFV aspect cannot refer to the fact that the ice melted to an extent but not completely. This indicates that this verb is a strong accomplishment in Adyghe. This property is most clearly evidenced by the incompatibility of such verbs with *for*-PPs, as shown in (263) from Laz.

- (263) Laz (Mattissen 2001: 24)
**a saat'i (Mutafi-ʃa) bidi*
one hour M.-MOT go.1SG.PFV.PST
'I went (to Mutafi) for one hour.'

In contrast, weak (or non-culminating) accomplishments allow for a transition reading, as well as a delimitative reading. The former is manifested in the contexts with *in*-PPs, and the latter in the contexts with *for*-PPs. All objects are quantized (see above).

made in Tatevosov & Ivanov (2009).

(264) Karachay-Balkar (Tatevosov & Ivanov 2009: 85)

a. transition reading

alim eki saǵat-xa baxca-ni süür-dü
Alim two hour-DAT field-ACC plow-PFV.PST.3SG
'Alim plowed a field in two hours.'

b. delimitative reading

alim eki saǵat baxca-ni süür-dü
Alim two hour field-ACC plow-PFV.PST.3SG
'Alim was involved in plowing the field for two hours.'

(265) Laz (Mattissen 2001: 24)

a. transition reading⁵⁷⁶

a saat'i-şa o-şķomu
one hour-MOT FOC-eat.(3>3)SG.PFV.PST
'He ate it (up) in one hour.'

b. delimitative reading

a saat'i o-şķomu
one hour FOC-eat.(3>3)SG.PFV.PST
'He ate it for one hour.'

Apart from Laz and Karachay-Balkar (and also Adyghe), the distinction between strong and weak accomplishments is well attested in the three other languages investigated by Tatevosov, namely Tatar, Mari and Bagvalal (Tatevosov 2002a: 378–381; 2016a: 175ff.). By definition, no reading can be considered basic, since both are equally available with any overt contextual trigger (see Tatevosov 2002b: 476 for Bagvalal and Tatar), e.g. in contexts with the taxis configuration of sequence (§1.5.2).

Whether an accomplishment allows for a delimitative reading can be identified without resorting to *for*-PPs by introducing continuations that negate the final stage of the situation, e.g. #*He built a house but did not finish it*. For strong accomplishments, such sentences are contradictory (as with the English *build*), whereas for weak accomplishments they are not. This test can then be used in languages that do not distinguish between *for*-PPs and *in*-PPs, e.g. in Chipewyan.

The distinction between strong and weak accomplishments is not particularly uncommon in European languages. It is well attested in English (see below), Spanish (Gorbova 2010), as well

⁵⁷⁶ The reading is emphasized by Mattissen with the phrasal particle *up*.

as in French, where verbs such as *interroger* in (266), *lire* ‘read’, *écrire* ‘write’ and *dessiner* ‘draw’ (Smith 1997: 218, 219) are all weak accomplishments.

(266) French (Vikner 1994: 159)

Elle l’interrogea pendant/en dix minutes.
 She him=interrogate.PFV.PST.3SG for/in ten minutes
 ‘She interrogated him for/in ten minutes.’

The distinction is also attested in Japanese. In (267) and (268), the weak accomplishment verb *yomu* ‘read’ is illustrated. Note that (267) repeats (137) from §5.4.3.2.⁵⁷⁷

(267) Japanese: weak accomplishment with a *for*-PP (Mori, Löbner & Micha 1992: 257)

iti-zikan manga o yon-da
 for an hour comic ACC read-PST
 ‘(She) read comics (the/a comic) for an hour.’

(268) Japanese: weak accomplishment with an *in*-PP (ibid.)

iti-zikan de manga o yon-da
 in an hour comic ACC read-PST
 ‘(She) read the/a comic in an hour.’

Apart from the languages of the sample, the phenomenon of weak (non-culminating) accomplishments is attested in a number of other languages (Bar-el 2015: 96; Kroeger 2019: 395). Particularly rich evidence has been collected from Salish languages (Bar-el 2005; 2015: 94–95; Bar-el, Davis & Matthewson 2005; Kiyota 2008; Matthewson 2017: 155–156). The distinction is also attested in aspectless languages, e.g. in Danish (Vikner 1994: 159).

Weak (non-culminating) accomplishments are semantically heterogeneous. They can be divided into three further subtypes (Tatevosov & Ivanov 2009).⁵⁷⁸

Non-culminating accomplishments of the first type are exemplified above and are referred to as *partial success accomplishments*. They describe situations that have progressed for some time, e.g. plowing in (264)b and eating in (265)b, but have not reached the transition point. This is the type normally recognized in the literature on non-culminating accomplishments (Rothstein 2004). Partial success accomplishments overlap with prototypical accomplishments of the incremental type, where “parts of the change of state [are] mapped onto parts of the activity” (Tatevosov & Ivanov 2009: 97).

⁵⁷⁷ In the same section, example (138) illustrates a strong accomplishment, which is not repeated here.

⁵⁷⁸ A more elaborate classification can be found in Tatevosov (2016a: 182–202).

The second type of non-culminating accomplishments is referred to as *failed attempt accomplishments* and was introduced by Tatevosov & Ivanov (2009). This is illustrated with an example from Karachay-Balkar in (269) (Tatevosov & Ivanov 2009: 83–84). Example (270) is given here to show that the same verb in the PFV can be used to indicate transition.

(269) Failed attempt accomplishment in Karachay-Balkar

fatima eki minut xali-ni zirt-ti
 F. two minute thread-ACC tear-PFV.PST.3SG
 ‘Fatima tried to tear a thread for two minutes.’

(270) Transition reading in Karachay-Balkar

fatima eki sekunt-xa xali-ni zirt-ti
 F. two second-DAT thread-ACC tear-PFV.PST.3SG
 ‘Fatima tore a thread in two seconds.’

The interpretation of (269) differs from the interpretations seen in (264)b and (265)b, where at least part of the situation has occurred despite not having reached the transition. In contrast, in (269) all efforts at tearing produce no change at all. Hence the name *failed attempt accomplishments*. The thread is never partially torn, and “the whole change of state of the thread would have occurred at the very final part of tearing activity” (Tatevosov & Ivanov 2009: 96). In other words, failed attempt accomplishments are non-incremental (Tatevosov 2016a: 198–202). Accordingly, the preparatory process involved with failed attempt accomplishments is not specified and must be supplied contextually (Tatevosov & Ivanov 2009: 115–116).

In addition to Karachay-Balkar, verbs of both types are attested in Mari (Uralic), Bagvalal (Nakh-Dagestanian) and Russian. The difference between the two types is assumed to be rooted in the lexicon and is associated with different semantic verb representations (Tatevosov & Ivanov 2009: 92). For a formalization of the distinction see Tatevosov & Ivanov (2009: 106–110).

It is important to distinguish failed attempt accomplishments from achievements. There are similarities between the failed attempt reading of weak accomplishments and the conative reading of achievements, as discussed in the previous section. The crucial difference, as pointed out by Rothstein (2004: 40), and Tatevosov & Ivanov (2009: 106), is that achievements by definition do not allow for non-culminating readings (‘delimitative’) in the PFV, NONPROG and other boundedness grams. Accordingly, achievements cannot have a failed attempt (conative) reading in the PFV and similar aspects and cannot be modified by *for*-PPs, as shown for Laz and Maltese in (271) and (272), respectively.

(271) Laz achievement (Mattissen 2001: 24)

**a saat'i bziri*
one hour find.(1>3).SG.PFV.PST
*'I found (sth.) for one hour.'

(272) Maltese achievement (Spagnol 2009: 26)

**Sab cavetta għal siegħa shiħ-a*
find.PFV.3SG.M key for hour whole-F
*'He found a key for one (whole) hour.'

Instead, the failed attempt reading is found only in the IPFV aspect, as shown in examples (260) and (261) from Laz in the previous section. In this respect, achievements pattern with strong accomplishments.⁵⁷⁹ A strong accomplishment is illustrated in (273), which, like achievements in (271) and (272), also disallows a failed attempt reading in the PFV form.

(273) Adyghe (Arkadiev 2009: 65)

thamate-m zeʔʷəç'e-r r-jə-ke-ž'a-ɛ
director-OBL meeting-ABS 3SG.IO-3SG.A-CAUS-begin-PFV.PST
'The director opened the meeting || *tried to open the meeting but failed.'

In contrast, weak (non-culminating) accomplishments can be modified by *for*-PP when in the PFV aspect.

The final type includes verbs that allow for both the partial success and failed attempt interpretations. They are referred to as *non-restricted accomplishments* by Tatevosov & Ivanov (2009). The example comes again from Karachay-Balkar (Tatevosov & Ivanov 2009: 86). The first interpretation describes a failed attempt and the second one a partial success.

(274) Non-restricted non-culminating accomplishment in Karachay-Balkar

išcieki kün/savat üj-nü oj-dü
worker two day/hour house-ACC destroy-PFV.PST.3SG
1. 'The worker tried to take down the house for two days.' {But soon it became clear that it is not possible for a single person; so he gave up, not being able to remove a single brick.}
2. 'The worker was involved in taking down the house for two hours. {He had already removed two walls, but was asked to stop.}

The two readings seem to be determined by the semantic properties of the objects, which entails that the membership of the verb in one of the three subtypes of accomplishments is determined by actional (aspectual) composition (Tatevosov & Ivanov 2009: 107–108). The partial success

⁵⁷⁹ The two are distinguished by differences with respect to interpretations of IPFV forms (at least strict achievements) as well as by further tests discussed in §4.4.2.2 and §7.3.1.

interpretation is also available to the Karachay-Balkar verb *zirt-* ‘tear’ from (269) above, if the object is changed to *širiq-* ‘shirt’, as seen in (275) (Tatevosov & Ivanov 2009: 108fn11).

(275) Non-restricted accomplishment in Karachay-Balkar

fatima beš minut širiq-ni zirt-ti
 F. five minute shirt-ACC tear-PFV.PST.3SG

1. ‘Fatima spent five minutes tearing a shirt.’ <partial success>
2. ‘Fatima tried to tear a shirt for five minutes (but the shirt was so firm that she soon gave up.’ <failed attempt>

The distinction between strong and weak subtypes of accomplishments is also manifested in the Past Simple (NONPROG) forms of English, and it has been discussed extensively in the formal semantic literature (e.g. Hay, Kennedy & Levin 1999; Rothstein 2004; Tatevosov & Ivanov 2009; cf. also Filip 2011: 1208 and references therein). In what follows, an overview of the basic descriptive facts from English is given.

It is often implied in the literature that non-culminating accomplishments are absent in English (e.g. Arkadiev 2009: 66; Kroeger 2019: 395–396), without considering that many English accomplishments do not entail culmination; an example is the verb *cool* in (276).

(276) English: weak accomplishment (Hay, Kennedy & Levin 1999: 127)

- a. The soup cooled for an hour.
- b. The soup cooled in an hour.

The existence of this class, which also includes verbs such as *sink*, *age*, *lengthen* etc., has been known at least since Dowty (1979: 88–90), where the term *degree achievements* was introduced for them (see above). The term is doubly misleading. First, the class of verbs it describes are of course accomplishments rather than achievements (Hay, Kennedy & Levin 1999: 142n1). The term *achievement* is used in a different sense in Dowty (1979), hence the apparent misnomer. Second, the class of non-culminating accomplishments is broader than the semantic core of degree predicates recognized by Dowty. Degree or vague predicates refer to a group of predicates involving (ibid.: 88):⁵⁸⁰

properties such as *big*, *wide*, *good*, *tall*, etc. of which we cannot definitely say once and for all how to determine what their extension is, but can only say so relative to some agreed-upon standard of comparison or some particular context of use. The most typical vague predicates seem to be adjectives, specifically, those that form the comparative without semantic anomaly.

⁵⁸⁰ Cf. also Smith (1997: 24),

This entails that weak accomplishments are mainly to be found among deadjectival English verbs such as *widen*, *cool*, *lengthen* etc. However, subsequent research has shown that the list of weak verbs is much broader (cf. Smollett 2005: 48fn6). Consider the examples (277)–(282), which include the verbs *read*, *comb*, *shave*, *bathe* and *wash*.

- (277) He read a book **for/in** an hour. (Dowty 1979: 61)
(278) She combed her hair **for/in** five minutes. (ibid.)
(279) John shaved **for/in** an hour. (Tenny 1994: 42)
(280) Kazuko bathed **for/in** an hour. (ibid.)
(281) Mary washed **for/in** an hour. (ibid.)
(282) The corn dried **for/in** the fields for two days. (Declerck 1979: 785)

The list of weak accomplishments is in fact quite long. Here is the list by Kratzer (2004: 396):

milk, clean, read, examine, analyze, barbecue, roast, iron, bathe, massage, wash, comb, brush, fry, polish, explain, confuse, pollute, control, cover, insulate, test, decorate, describe, drain, mop, survey, check, ...

Further verbs reported in the literature include: *sew* (Tatevosov & Ivanov 2009: 121), *melt* (intr.) (Van Valin 2005: 37), *create*, *empty*, *drown* (Spagnol 2007: 11), *water* (*the garden*) *grease* (*the chain*) (Levin 2000: 422), *paint* (Smollett 2005: 44), *mix*, *polish*, *play* (*the tune*) (ibid.: 48–49), *dine* (Johanson 2000: 66), *mow* (ibid.: 74), *learn* (Walková 2013: 24), and *wipe* (Rothstein 2004: 112).

The verbs cited here appear to readily allow both atelic and telic readings.⁵⁸¹ They should be distinguished from the group of verbs that imply telicity in zero contexts, but where atelic readings can be forced depending on context and speakers. In §4.2.4.1, this was illustrated in examples (40) and (41) with the verb *eat*. Thus, verbs like *eat* are best analyzed as strong accomplishments with non-culminating (weak) readings created via actional shift. In contrast, verbs like *cool* are true weak accomplishments.⁵⁸²

⁵⁸¹ This concerns contexts without adverbials and other contextual cues. Various factors influence which interpretation, telic or atelic, is deemed more plausible. A detailed account is provided in Hay, Kennedy & Levin (1999).

⁵⁸² It is of course difficult to draw a neat boundary between different cases. There are disagreements in the literature (Smollett 2005: 45 provides a telling examples) and among judgements of non-linguist native speakers (Bar-el 2005: 337ff.). In Portuguese, a similar distinction is made between verbs like *ler* ‘read’, which are marginally accepted when modified by *for*-PPs (e.g. *durante duas horas*) and verbs like *estudar* ‘study’, which are equally acceptable with both *for*- and *in*-PPs (e.g. *durante duas horas*, *em duas horas*) (Daliborka Sarić, p.c.).

Not all strong accomplishments behave like *eat* since some of them cannot be shifted into a non-culminating reading (cf. Rothstein 2004: 114; Filip 2011: 1209–1210).⁵⁸³ Some of these verbs are illustrated in (283)–(286).

(283) Mary built a house #for years. (Rothstein 2004: 24)

(284) Mary saddled the horse in 5 minute / #for 5 minutes. (Levin 2000: 422)

(285) The blacksmith shoed the horse in an hour / #for an hour. (ibid.)

(286) John proved the theorem in an hour / #for an hour. (Zucchi 1998: 351)

Weak (non-culminating) accomplishments do not fit into the Vendlerian classification, and various attempts were made to explain their status in the Vendlerian classification. One way to deal with this is to claim that one reading is basic and the other is derived, as in Rothstein (2004: 25), who claims that atelic readings are “forced,” thus implying that the telic reading is basic (cf. also *ibid.*: 113). In other words, this extends the analysis of verbs like *eat* (see above) to all weak accomplishments.

However, we have seen that weak accomplishments appear to readily allow both atelic and telic readings in zero contexts, which is not the case with verbs like *eat*. Filip (1999: 65) thus concludes:

It is unclear how we could empirically justify whether the process (atelic) or event (telic) interpretation is more basic in the case of such predicates like *crawl through the tube*, *read a book*, *comb one’s hair*. Therefore, such predicates are best treated as underspecified with respect to the eventuality type.

Another way of dealing with weak accomplishments is to claim that verbs like *cool*, *comb* and *read* are ambiguous between two classes, activities and accomplishments.⁵⁸⁴

At last, let us make some observations on the distribution of accomplishment verbs between strong and weak subclasses. There is little specific evidence in that respect, and again the observations offered here rely on Tatevosov’s two crosslinguistic studies. In Tatevosov (2002a: 363–367; cf. 2002b: 479), he observes that the languages which he investigated differ significantly with respect to the proportion of verbs belonging to the weak and strong accomplishment classes. Bagvalal is notable for having twice as many strong accomplishments as weak accomplishments, while in Mari weak accomplishments are predominant. In Tatar, the

⁵⁸³ See Tatevosov & Ivanov (2009: 121–122) for an explanation of the divergent behavior of *build*.

⁵⁸⁴ In this conception, accomplishments are equated with strong accomplishments.

distribution is more even, with weak accomplishments being only slightly better represented than strong accomplishments.

Explanations for this kind of variation are impossible to provide at this stage. The only generalization that can be posited is that incremental verbs consistently lexicalize as weak accomplishments, whereas non-incremental verbs (like ‘open’) are subject to crosslinguistic variation and lexicalize either as weak or as strong accomplishments (Tatevosov 2016a: 202–208).⁵⁸⁵ Recall that non-incremental weak accomplishments were referred to earlier as failed-attempt accomplishments. For instance, the non-incremental verb ‘open’ is a strong accomplishment in Bagvalal but a weak accomplishment in Mari and Karachay-Balkar, whereas typical incremental verbs like ‘rot’ and ‘grow’ are weak accomplishments in all three languages.

Still, there are languages that do not fit into this generalization. Slavic languages are notable for an absence of weak accomplishments (Tatevosov 2002a: 381). Similarly, in Chipewyan the completion reading of accomplishments in the PFV aspect is an entailment which cannot be cancelled, and cancelations were judged nonsensical by native speakers (Wilhelm 2007: 44–53). In other words, all Chipewyan accomplishments are strong (recall that Chipewyan does not distinguish between *for*-PPs and *in*-PPs).⁵⁸⁶ This runs counter to Tatevosov’s generalization, which predicts the existence of languages with no strong accomplishments, but does not predict the opposite case, which is attested in Slavic and Chipewyan.

7.4. Two-phase verbs [$\varphi_1\tau\varphi_2$]

Two-phase verbs are characterized by the presence of two phases in their lexical representation, the preparatory phase (φ_1) and the resultant phase (φ_2). The general representation for the class is [$\varphi_1\tau\varphi_2$]. The preparatory phase always has the properties of a process (φ_P), whereas the resultant phase can either have the properties of a state (φ_S) or, less frequently, of a process (φ_P). Accordingly, the two subtypes are distinguished, represented by [$\varphi_P\tau\varphi_S$] and [$\varphi_P\tau\varphi_P$], respectively. See §4.4.2.3 for other general observations. Recall from §4.4.2.2 that

⁵⁸⁵ Cf. also Tatevosov & Ivanov (2009: 121 ff.) and Arkadiev (2009: 71–72).

⁵⁸⁶ The opposite cases are claimed to exist, e.g. Mandarin (Smith 1997).

accomplishments [φPT] *imply* but do not *encode* the resultant state and are therefore distinct from two-phase verbs.

7.4.1. Two-phase verbs in PFV-IPFV languages and English

The class of two-phase verbs is the easiest to identify in PFV-IPFV aspect systems. The list of PFV-IPFV languages in which two-phase verbs were identified is given in Table 46.⁵⁸⁷ Two-phase verbs are well-attested in many Eurasian languages with the PFV-IPFV aspect system, including Uralic, Turkic and Caucasian languages (Tatevosov 2016a: 243–244).

Language	Family	Sources
Bagvalal	Nakh-Dagestanian	Tatevosov (2002a: 363–367, 384, 386; 2016a: 215–216, 240–244)
Karachay-Balkar	Turkic	Tatevosov (2016a: 215–216, 240–244)
Laz	Kartvelian	Mattissen (2001: 20–31)
Mari	Uralic	Tatevosov (2002a: 363–367, 384, 386; 2016a: 215–216, 240–244)
Russian	Indo-European	Breu (1998); Tatevosov (2016a: 243, 323, 327, 331–333)
Tatar	Turkic	Tatevosov (2002a: 363–367, 384, 386)

Table 46. PFV-IPFV languages where two-phase verbs are attested.

The class was already illustrated with the Bagvalal verb *helli* in §4.4.2.3. Here I provide an additional illustration with the Laz verb *bimpulam* ‘I hide’ (Mattissen 2001: 20, 27). The present IPFV form *bimpulam* can mean either ‘I am going into a hiding-place’ (preparatory process) or ‘I am hidden’ (resultant state). The PFV form *bimpuli* ‘I hid’ refers to a transition. Recall that the resultant phase can also have the properties of a dynamic process.

Four of the languages listed in Table 46 were investigated exclusively by Tatevosov, who also lists the membership of each of his classes. Likewise, Mattissen (2001: 20) lists some typical members of this class in Laz. Membership across these five languages is summarized in Table 47. It is limited but consistent.

⁵⁸⁷ There is also one such verb mentioned for Italian, *indossare* ‘put on, wear’. See fn. 355.

Bagvalal	Mari	Karachay-Balkar	Tatar	Laz
boil	boil	hide	lie (positional)	hide
fly	fly	freeze		sit
burn	freeze	sit		sleep
stop	catch/hold	stand_1		stop
catch/hold		stand_2		
lie (positional)		hold/catch		
		lie (positional)		
		sleep		

Table 47. Meanings of two-phase verbs in five PFV-IPFV languages.

Available data suggest that two-phase verbs have a marginal presence in PFV-IPFV languages. Their low frequency is clearly indicated by the numbers provided by Tatevosov (2002a; 2016a) for the four languages he investigated; they are summarized in Table 48. Recall that Tatevosov investigated a stable sample of 100 verb meanings across these four languages.

Language	Number of two-phase verbs (dynamic resultant phase)	Number of two-phase verbs (stative resultant phase)
Tatar	none	2
Karachay-Balkar	none	8
Mari	4	4
Bagvalal	3	5

Table 48. Frequency of two-phase verbs in four Eurasian languages.

I discuss separately a peculiar case from Tepehua (Watters 1988: 43–45), also a PFV-IPFV language. In that language, some inchoative states ($\tau\phi_S$) are compatible with the PROG, in which case they refer to the preparatory process. The resultant state is referred to by the IPFV, and the PFV indicates transition (τ). All three meanings are illustrated in (287).

(287) Two-phase verbs in Tepehua

a. preparatory phase: PROG

t'ahun *k'aca:-na:*

PROG know-INF

1. 'X is finding Y out.'

2. *'X is knowing Y.'

b. resultant phase (state): IPFV

k'aca:-y

know-IPFV

'X knows it.'

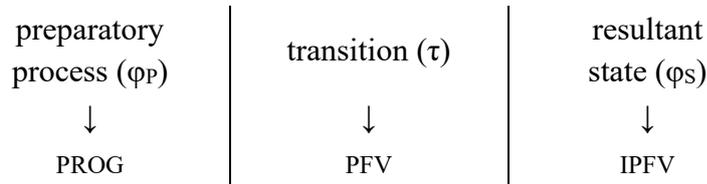
c. transition: PFV

k'aca:-t

know-PFV

'X learned/came to know it.'

In Tepehua, the operator-operandum relationship can be summarized as follows:



As for English, as the only representative of the PROG-NONPROG system, recall that the two phases are expressed by the PROG (see example (94) in §4.4.2.3), whereas the transition (τ) is expressed by the Simple tense. The Simple tense can also refer to the resultant state, e.g. *He hid there for some time* (*hide* is the only two-phase verb in English).

In Belhare (§5.4.3.3), the behavior of two-phase verbs resembles English. The two phases are encoded by the Temporary (\sim PROG), as shown in (288)a. The Simple Past, shown in (288)b, encodes the resultant state and transition (τ).

- (288) Belhare: two-phase verbs (Bickel 1996: 223–224)
- a. Temporary: preparatory phase (ϕ_P), resultant phase (ϕ_S)
makkhorok-ma li-het
 black-COL.ART be-TEMP
 1. ‘It is black.’ (resultant phase)
 2. ‘It is getting black.’ (preparatory phase)
- b. Simple Past: resultant phase (ϕ_S), transition (τ)
makkhorok lis-e
 black-COL.ART be-PT
 1. ‘It was black.’
 2. ‘It turned black.’

The ambiguity of the Temporary exhibited by two-phase verbs is contrasted with inchoative states, where the Temporary only encodes a resultant state, as in (289).

- (289) Belhare: inchoative states [$\tau\phi_S$] in Temporary (Bickel 1996: 223)
- misen ni-hett-u*
 know know-TEMP-3U
 1. ‘S/he knows him/her.’ (resultant phase (ϕ_S))
 2. *‘S/he is getting to know him/her more and more.’ (no ϕ_P)

The differences between the two-phase verb *makkhorok* ‘be(come) black’ from (288) and the inchoative state *misen nima* ‘(get to) know’ from (289) are summarized in Table 49.

Aspect gram	<i>makkhorok</i> ‘be(come) black’ [$\phi_P\tau\phi_S$]	<i>misen nima</i> ‘(get to) know’ [$\tau\phi_S$]
Temporary (TEMP)	is becoming black (ϕ_P)	*is getting to know (ϕ_P)
	is black (ϕ_S)	knows (ϕ_S)
Simple Past (PT)	turned black (τ) was black (ϕ_S)	got to know (τ), knew (ϕ_S)

Table 49. A summary: two-phase verbs and inchoative states in Belhare.

Two-phase verbs are robustly attested in Belhare and appear to be better represented in the lexicon than total and inchoative states (Bickel 1996: 226).

7.4.2. Two-phase verbs in other aspect systems

In this subsection, two-phase verbs are identified in aspect systems different than the default ones. For reasons of space, I focus on two-phase verbs in the Bantu language Nyakyusa, but two-phase verbs can also be identified in the idiosyncratic aspect systems of Cayuga (Sasse 1997: 40–41) and Mapudungun (Zúñiga 2001: 83–85).

Actional configurations with two lexicalized phases figure prominently in the actional systems of many Bantu languages where this actional class is called “transitional achievements”

(§4.4.2.3).⁵⁸⁸ In what follows, the class of transitional achievements in Nyakyusa is illustrated, and it is shown how the three actional building blocks – preparatory phase, transition, and resultant phase – interact with the aspect grams of that language (§5.4.3.5). In addition, I show how two-phase verbs contrast with two classes which encode a single phase, viz. accomplishments and inchoative states.⁵⁸⁹ To illustrate the contrast, three Nyakyusa verbs will be cited: the two-phase verb *kalal* ‘be(come) angry’, the accomplishment verb *lembok* ‘wake up’ and the inchoative state verb *hoboka* ‘be(come) happy’.⁵⁹⁰

The two-phase verb *kalal* ‘be(come) angry’ is illustrated in (290), where it is shown that aspect grams of Nyakyusa, ~IPFV and ~PFV, can encode both the preparatory and resultant phase. In keeping with the description of the Nyakyusa aspect system in §5.4.3.5, the preparatory phase (ϕ_P) is encoded by ~IPFV (glossed PRS) in (290)a, whereas the resultant phase (ϕ_S) is encoded by the ~PFV gram in (290)b.⁵⁹¹ The ~PFV gram is also used to encode transition (τ).

(290) Nyakyusa: two-phase verb [$\phi_1\tau\phi_2$] *kalal* ‘be(come) angry’ (Persohn 2017: 113)

a. preparatory phase (ϕ_P)

i-ko-kalal-a

1-PRS-be(come)_angry-FV

‘S/he is becoming angry.’

b. resultant phase (ϕ_S)

a-kaleele

1-be(come)_angry.ILE

‘S/he is angry.’ (also: ‘S/he got angry.’, cf. ex. 59–60, p. 158)

In contrast to the two-phase verb *kalal* ‘be(come) angry’, the accomplishment verb *lembok* ‘wake up’ illustrated in (291) cannot encode the resultant phase (ϕ_S) with the ~PFV gram. This is shown in (291)b, which cannot mean ‘is awake’. Instead, only the transition (τ) meaning ‘has woken up’ is available. The preparatory process meaning is available, as seen in (291)a; in this respect accomplishments parallel two-phase verbs.

⁵⁸⁸ In fact, what I call two-phase verbs can be split into two classes in Bantu; transitional achievements and the only minimally different transitional accomplishments. The distinction is subtle and has only recently been acknowledged. Here I only discuss transitional achievements. For more on this topic, the interested reader is referred to Persohn (2018; cf. also 2017: 125–131).

⁵⁸⁹ Inchoative states are called “resultative achievements” in Bantu classifications.

⁵⁹⁰ A detailed account of the properties of each of the three classes is provided in Persohn (2017: chap. 5).

⁵⁹¹ The ~PFV marker *-ile* is fused with the root. It is glossed as ILE.

(291) Nyakyusa: accomplishment [$\varphi_P\tau$] *lembok* ‘wake up’ (ibid., 122–123)

a. preparatory phase (φ_P)

i-ko-lembok-a

1-PRS-awake-FV

‘S/he is waking up.’

b. resultant phase (φ_S) reading **not available**

a-lembwike

1-awake.ILE

‘S/he has woken up / *is awake.’

The inchoative state [$\tau\varphi_S$] *hoboka* ‘be(come) happy’ is a mirror image of the accomplishment verb *lembok* ‘wake up’. More specifically, the preparatory process meaning is not available, as shown in (292)a, where the \sim IPFV gram can only have futurate and habitual meanings. In parallel to two-phase verbs, the \sim PFV gram encodes the resultant phase (φ_S), as shown in (292)b. As expected, the transition (τ) meaning ‘got happy’ is also available with \sim PFV.

(292) Nyakyusa: inchoative state [$\tau\varphi_S$] *hoboka* ‘be(come) happy’ (ibid., 132)

a. preparatory phase (φ_P) reading **not available**

i-ko-hobok-a

1-PRS-be(come)_happy-FV

1. ‘S/he will become happy.’ (futate)

2. ‘S/he becomes happy (e.g. on each particular occasion).’ (habitual)

3. *‘S/he is becoming happy.’

b. resultant phase (φ_S) (B. Persohn, p.c.)

a-hobwike

1-be(come)_happy.ILE

‘S/he is/got happy.’

The lexicalization ranges for the three classes illustrated above are summarized in Table 50.

Two-phase verb [$\varphi_1\tau\varphi_2$]: <i>kalal</i> ‘be(come) angry’		
φ_P	τ	φ_S
\sim IPFV	\sim PFV	\sim PFV

Accomplishment verb [$\varphi_P\tau$]: <i>lembok</i> ‘wake up’		
φ_P	τ	φ_S
\sim IPFV	\sim PFV	φ_S
		* \sim PFV

Inchoative state verb [$\tau\varphi_S$]: <i>hoboka</i> ‘be(come) happy’		
φ_P	τ	φ_S
φ_P	τ	φ_S
* \sim IPFV	\sim PFV	\sim PFV

Table 50. A comparison of three classes in Nyakyusa.

The example of Nyakyusa shows that aspect-sensitive classes can be compared across different aspect systems by identifying actional primitives such as the preparatory process and resultant state, despite the idiosyncracies inherent to individual systems. Still, it should be pointed out that two-phase verbs in the actional systems of Bantu languages have in general a more prominent position (similar is also true of Belhare). In the previous subsection, it was made evident that two-phase verbs, where attested, constitute a marginal class in the PFV-IPFV languages. In contrast, two-phase verbs, or transitional achievements, are robustly attested across Bantu languages and figure prominently there. This is another indicator of the significant differences between the actional systems of Bantu languages and actional systems of other languages, which are often pointed out by scholars of Bantu actionality (Persohn 2018; Crane & Persohn 2019).

7.5. Multiplicative activities [M+Q]

In §4.4.3, the [M+Q] class as an aspect-sensitive class was characterized by the following properties. The IPFV/PROG grams encode the (M) primitive, while the PFV / Simple (NONPROG) grams are ambiguous between the (M) and (Q) primitives.⁵⁹² This was illustrated in example (96) from Tatar, repeated here as (293).

(293) Tatar PFV refers to both (M) and (Q) (Tatevosov 2002a: 387)

<i>daut</i>	<i>mišen-gä</i>	<i>at-tr</i>
Daut	target-DAT	shoot-PFV.PST
1. 'Daut shot in the target (once).'		
2. 'Daut shot in the target (for some time).'		

This property of multiplicative activities is consistently found in PFV-IPFV languages other than Tatar, e.g. in French (Smith 1997: 198, 220), Mari and Bagvalal (Tatevosov 2002a: 386–387; 2016a: 244–246), Karachay-Balkar (Tatevosov 2016a: 244–246), and Adyghe (Arkadijev 2009: 63–65, 79–80). The same configuration is found with the English [M+Q] verbs, as shown in §4.4.3.

The same pattern is also attested in a variety of other languages. For instance, in Maltese, in addition to (Q), the PFV gram encodes the (M) primitive, as shown by (294). The Maltese PROG as expected encodes only (Q): *qed jegħmeż* 'he is winking' (Spagnol 2009: 27).

⁵⁹² This ambiguity is missed in Xrakovskij's discussion of multiplicative and semelfactive verb forms (Xrakovskij 1998: 488–489).

(294) Maltese (Spagnol 2009: 26)

<i>Għemżi=li</i>	<i>għal</i>	<i>siegħa</i>	<i>shih-a</i>
wink.PFV.3SG.M=OBJ.1SG	for	hour	whole-F

‘He winked at me for one (whole) hour.’

A comparable case is attested in Japanese. Multiplicative activities are recognized by the following characteristics. The *-te i-* gram encodes the (Q) primitive (Mori, Löbner & Micha 1992: 226–228, 243, 255; Shirai 2000: 332, 340; cf. also Kiryu 1999: 48). In Simple Past, a multiplicative activity verb can either have a semelfactive (Q) interpretation or a multiplicative (M) interpretation (Mori, Löbner & Micha 1992: 226–227). A typical representative of the class in *tataku* ‘knock, bang’, illustrated in (295) and (296). Other verbs of this class are *keru* ‘kick’, *matataku* ‘blink’, *nokkusuru* ‘knock’.

(295) Multiplicative activity verb in Japanese (Mori, Löbner & Micha 1992: 226)

<i>to</i>	<i>o</i>	<i>tatai-te</i>	<i>i-ru</i>
door	ACC	knock-TE	AUX-PST

‘(She) is knocking on the door.’

(296) Multiplicative activity verb in Japanese (Mori, Löbner & Micha 1992: 227)

<i>to</i>	<i>o</i>	<i>tatai-ta</i>
door	ACC	knock-PST

‘(She) knocked on the door.’ (once or repeatedly)

The class is also attested in Cayuga, but no information is available on the possible readings of the PFV (Sasse 1997: 56–57). A wealth of data on multiplicative activities and related matters from numerous languages is available in Khrakovskij (1997).

The membership of the class is fairly consistent across languages. Some of the typical verb meanings were already cited and include ‘knock’, ‘shoot’, ‘cough’, ‘tap’ etc. Other meanings that are typical of this class include ‘drip’, ‘wave’, ‘rock’, ‘bark’ etc. (Tatevosov 2016a: 245). We have seen in the course of this chapter that languages rarely coincide in their lexicalizations, which in particular concerns situations which encode transition (τ). Multiplicative activities are different in that respect. Typical multiplicative activity verbs describe a limited number of cyclic or repeatable real-world situations, and this property is faithfully and consistently reflected in their linguistic properties.

7.6. Discussion

This chapter concludes with a discussion of the findings that emerge from the previous five sections, where eight actional classes were investigated in a sample of 16 languages.

Six of these classes (total and inchoative states, plain and ingressive activities, accomplishments and multiplicative activities) are well-known from the existing literature, either from formal and typological-descriptive literature or both. Two classes neglected in the formal literature, inchoative states and ingressive activities, were once again shown to be crosslinguistically relevant, thus confirming earlier research. More importantly, the reasons for their absence in the Vendlerian classification can now be convincingly explained by the unresolved status of these classes in English. In other words, we have seen in §7.1.4 and §7.2.2 that English evidence strongly suggests that the entry-into-state and entry-into-activity interpretations available to English state and activity verbs are contextually derived. This conclusion is supported by the comparison of Belhare with English, which shows that the same interpretations are more readily available to Belhare verbs.

As for the remaining classes, achievements and two-phase verbs, it was shown that there are considerable gaps in our understanding of these two classes. The present work outlined some of the more problematic points, which need to be addressed in subsequent research.

With respect to achievements, this in particular concerns their status in PFV-IPFV languages, which is not as well understood as it is in English. The distinction between strict and extendable achievements which manifests itself in English in the behavior with the PROG (strict achievements cannot occur with the PROG, extendable achievements can) has not been extended to PFV-IPFV languages. Despite limited evidence, the discussion in §7.3.3 hypothesizes that the distinction is probably manifested in PFV-IPFV languages, where strict achievements are easily identified by an absence of the ongoing episodic meaning in the IPFV. In contrast, extendable achievements are virtually indistinguishable from accomplishments from the perspective of aspect-actionality interactions. However, various other tests for distinguishing achievements from accomplishments could be employed to show that, despite having an ongoing episodic interpretation in the IPFV, some verbs are distinct from accomplishments by being non-incremental (such verbs would then correspond to extendable achievements). The evidence for this hypothesis is lacking and needs to be provided in future research. The case of achievements exposes the limitations of the method of aspect-sensitive classes.

The case of two-phase verbs is particularly interesting for crosslinguistic research on actionality. We saw that the status of this class varies across languages and aspect-systems. Specifically, the class is marginal in English and PFV-IPFV languages, but it is one of the best

represented classes in the lexicon of Bantu languages (and, to an extent, in the lexicon of Belhare). This raises important questions about variation in the attested actional systems. Undeniably, the actional systems of Bantu languages are considerably different from the actional systems of Eurasian languages.⁵⁹³

Our understanding of crosslinguistic variation in size and composition of actional classes is still limited, but it has been documented in the literature. Here I mention some further instances of variation, in addition to the previously mentioned case of two-phase verbs. First, recall the case of inchoative states and ingressive activities in English discussed above. Furthermore, important differences are found between the actional systems of the languages investigated in Tatevosov's crosslinguistic studies. An interesting point of difference between these languages concerns the relative weight given to weak and strong classes. In §7.3.3, we have seen that the distribution of strong and weak accomplishments is quite different in Bagvalal, Mari, and Tatar. The same is true across all three classes which distinguish the strong and weak subtypes (inchoative states, ingressive activities, and accomplishments). According to Tatevosov (2002a: 389–390), 60% of verbs from these three classes belong to the strong subtype in Bagvalal. In contrast, 80% of these verbs belong to the weak subtype in Mari.

Furthermore, as already summarized in §4.1.3, the languages investigated in Tatevosov (2002a) differ considerably in the size of their respective actional systems (19 classes in Mari, 11 classes in Bagvalal, 15 classes in Tatar). In addition, Arkadiev (2009: 65) observes that, while the actional system of Adyghe is “rather straightforward,” it is still “not very rich.” It has only nine aspect-sensitive classes, seven of which contain more than one verb.

These datapoints make it clear that we are still unable to say what a *maximal* actional system is. However, the evidence collected in this chapter and in the present work as a whole demonstrates quite clearly that we already have a good sense of what a *minimal* and *probable* actional system is. The minimal size and the most probable structure of actional systems is tied with the eight classes discussed in the course of this chapter. In that sense, it is expected that most, if not all of these classes, will be attested in every language. This claim awaits further empirical testing on both languages with and without grammatical aspect.

⁵⁹³ This appears to be independent of aspect because there is little variation in terms of the actional systems between aspectless Bantu languages and other Bantu languages.

Lastly, a comment on the crosslinguistic variation in actional class membership is in order. As noted in my comments in the course of this chapter, the membership of verbs in actional classes can be said to be largely unpredictable. Tatevosov (2002a: 388) comments:

Data like these have no serious theoretical consequences, though; it does not require any explanation that a certain verb belongs to a certain class. For practical reasons, however, it is extremely important, especially when one deals with aspectual/actional systems of non-European languages, to keep in mind that the actional type of a vernacular verb may not correspond to that of its closest European equivalent. This could help to avoid misleading generalizations about the meaning and distribution of TMA grams combined with such verbs.

It should also be noted that membership may not be predictable, but it is not random either. Tatevosov (2016a: 253–272 *et passim*) attempts to uncover some patterns in class membership based on the evidence from Bagvalal, Mari, and Karachay-Balkar. While he manages to show some correlations between certain verb meanings, semantic classes, and actional membership in these three languages, most of his observations are not predictive as there are too many exceptions. Future research will show to what extent these correlations can be shown to be significant for languages other than the three investigated.

8. Conclusions and path forward

A more general goal of this dissertation was to present a broad coverage of a variety of topics relevant for approaching actionality from a crosslinguistic perspective. Although the situation has improved since the early 2000s when it was said that “not much is known about the limits of crosslinguistic variation in this domain” (Tatevosov 2002a: 323–324), a number of open questions still remain, and many were touched upon in the course of this text.

A more specific goal was to contribute to the development of the Greenbergian or inductive approach to the comparison of actionality and actional systems. Investigating the interactions of actionality with the notionally close category of grammatical aspect was considered central in this task. The reasons for this lie in the fact that the presence of grammatical aspect in a language imposes an additional layer in actional classification, and thus considerably complicates the effort to establish a list of actional classes.

To my knowledge, this is the first investigation with a broad coverage of this kind. To be clear, it is not the first study to investigate actionality from a non-formal (descriptive) perspective; such studies are numerous (see §2.3). Neither is it the first investigation to explore the ways of typologizing aspect-actionality interactions, nor is it the first to incorporate findings from a broader empirical basis of languages. It is however the first study to incorporate all three methods, (although Tatevosov [2016a] should be credited with a similar attempt). What is more, this is the first study to explicitly compare and systematize views from different authors and approaches, including formal semantics.

In order to meet the goals of this dissertation, it was required to delve deeper in §1.6 and Chapter 2 into the origins and motivations of the Greenbergian approach to actionality and its more mainstream competitor, formal semantics. The differences between the two approaches in many respects parallel those between Greenbergian linguistics and generative grammar in the domain of morphosyntax.

A deeper look into formal semantics allowed me to critically discuss mainstream assumptions about actionality, which were shown in §1.2 and quite extensively in Chapter 4 to be methodologically underdeveloped and to exhibit a lack of concern for descriptive facts outside a set of well-researched examples and tests. Furthermore, in §1.2.4.1 I argued that the unit of actional classification is the verb sense and not the verb lexeme, a fact largely missed by the mainstream literature. In Chapter 4, in particular in §4.1 and §4.2, I provided a comprehensive

overview of a variety of issues that arise in crosslinguistic investigations of actionality, some of which are more often discussed in the literature than others. A related discussion is found in Chapter 6, which laid out some desiderata for evidence collection and elicitation.

Chapter 4 put forward the method of comparing actional classes in aspect languages, which was adopted from the works of S. Tatevosov and W. Breu. The two approaches were critically discussed and expanded on. The discussion established a list of crosslinguistically relevant actional classes, which were used as a starting point for the typological survey in Chapter 7.

The central place of grammatical aspect made the comparison more complex since comparing actionality in aspect languages presupposes a method of comparing aspect systems. Chapter 5 offered a broad reexamination of the standard method of aspect comparison (the so-called Bybee-Dahl approach) and adapted it for the comparison of actional systems of aspect languages. The method of comparison of aspect systems applied in the present work centered around two well-described types of aspect systems, the PFV-IPFV system and the PROG-NONPROG system. It relied on a decomposition of meanings of the PFV, IPFV and PROG grams into smaller units, identified via translation contexts. These smaller units were then used to analyze the aspect systems of five languages, viz. Maltese, Belhare, Cayuga, Japanese, and Nyakyusa, all of which have somewhat idiosyncratic aspect systems. This allowed not only for the comparison of their respective aspect systems with the PFV-IPFV and PROG-NONPROG systems, but also the comparison of the actional systems of these five languages with the actional systems attested in PFV-IPFV and PROG-NONPROG languages. In that sense, even though this work is above all concerned with actionality, the contents of Chapter 5 contribute significantly to the typology of grammatical aspect as well.

The method of comparing actional classes and aspect systems developed in Chapters 4 and 5 was tested on a sample of 16 languages in Chapter 7. It was shown to be broadly applicable and allowed me to establish the similarities between actional systems, which are predominant, as well as to establish a number of differences, which were only sketched out in §7.6 and require further research. The crosslinguistic investigation in Chapter 7 thus showed that many of the claims found in the previous non-formal investigations of aspect-actionality interactions turned out to be relatively correct, despite being based on evidence from a limited number of mainly European languages. On the other hand, the investigation also uncovered some significant differences between the actional systems of different languages, thus convincingly proving that

the broadening of the empirical basis significantly contributes to this field. A prime example of this is the class of two-phase verbs. This actional class is absent or poorly represented in most Eurasian languages but is prominent in languages like Belhare and Nyakyusa. At the same time, in Chapter 7 I made much effort to contextualize the evidence from English within a larger crosslinguistic context. This allowed me to show that many seemingly “exotic” phenomena, like weak (non-culminating) accomplishments, are in fact well attested in English and other European languages but have been for various reasons neglected in earlier research.

This takes me to the discussion of what lies ahead. First, even though many inconsistencies and problematic assumptions of the formal semantic approach to actionality were highlighted in the course of the dissertation, alternatives for them were rarely put forward. While many uncontroversial findings of formal semantics are included in the study, mostly on the descriptive level, the controversies which contribute little to my crosslinguistic research here were at the same time avoided. An example is the issue of basic ontological distinctions – since most of these are consequences of particular, very complex, models, and do not follow directly from the data. In other words, I decided not to enter, for the most part, into the critical assessment of the formal semantic approach to actionality. This was mainly done in order to maintain the descriptive orientation of this work. Accordingly, it is a task for future work to deepen the discussion of theoretical questions and to continue to demonstrate the challenges that crosslinguistic evidence poses for some aspects of the formal semantic approach to actionality.

Furthermore, the typology of actionality, be it Greenbergian or formal, cannot thrive without expanding the empirical basis. The broad coverage of methodological issues provided in this dissertation should facilitate and hopefully inspire collection of semantic evidence from an even broader range of diverse languages.

Finally, this dissertation outlines an updated framework for the comparative research of aspect systems. As pointed out in the dissertation, the descriptive and typological research on grammatical aspect has been neglected over the last two decades or so and, accordingly, there is still much to contribute to this field in terms of comparative work.

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ABSTRACT

The present work deals with the topic of aspect-actionality interactions from a crosslinguistic and, more specifically, functional-typological perspective. It investigates how the existence of obligatory grammatical aspect shapes the actional classification of languages, and compares such classifications across languages. The interaction is investigated by adopting the concept of aspect-sensitive classes, i.e. actional classes established via interactions of actional meanings and obligatory aspect grams that are available in individual languages. In that sense, the main goals of this crosslinguistic investigation were to establish which actional meanings are expressed by a selection of (inflectional) aspect grams, then to establish what combinations of actional meanings inherent to verb senses are attested through interactions with aspect, and finally to call attention to crosslinguistic variation in membership of thus established actional classes.

This investigation adopted a functional-typological approach to. The approach is primarily based on the works of Sergei Tatevosov, Walter Breu, and other authors working within the bidimensional approach to aspect-actionality interactions. Accordingly, it is assumed that the number, structure and membership of actional classes are subject to crosslinguistic variation. Still, this assumption does not preclude the existence of a universal set of semantic parameters that could be used to characterize actionality. These semantic parameters are called actional meanings (building blocks, primitives) and they are the components of attested actional classes. As this is a novel approach, it required a broad reexamination of the existing mainstream approaches, which, for the most part, belong to the formal semantic tradition. This resulted in, on the one hand, calling attention to the language-specific properties of many elements of the dominant mainstream approaches to actionality, and, on the other, incorporating relevant findings of formal semantics into the approach adopted in the present work.

In this investigation, five actional meanings are posited: state (ϕ_S), process (ϕ_P), transition (τ), multiplicative process (m) and quantum of a multiplicative process (q). These meanings, when interacting with grammatical aspect grams of individual languages, give rise to a large number of aspect-sensitive actional classes. However, only some of these classes can be considered crosslinguistically relevant, based on two criteria. Namely, that they consistently occur across languages, and that they have a large verb membership. Based on these criteria, this investigation included eight actional classes: total states, plain activities, achievements,

inchoative states, ingressive activities, accomplishments, two-phase verbs, and multiplicative activities. The properties of these classes were investigated based on their interactions with the obligatory aspect grams of 16 typologically diverse languages: Adyghe (Northwest Caucasian), Bagvalal (Nakh-Dagestanian), Belhare (Sino-Tibetan) Cayuga (Iroquoian), Chipewyan (Athabaskan-Eyak-Tlingit), English (Indo-European), French (Indo-European), Japanese (Japonic), Karachay-Balkar (Turkic), Aredəşen Laz (Kartvelian), Maltese (Afro-Asiatic), Mari (Uralic), Nyakyusa (Atlantic-Congo), Spanish (Indo-European), Mishar Tatar (Turkic), and Tlachichilco Tepehua (Totonacan).

These languages feature a variety of aspect systems. The most common is the perfective-imperfective aspect system, attested in ten languages (Adyghe, Bagvalal, Chipewyan, French, Karachay-Balkar, Aredəşen Laz, Mari, Spanish, Mishar Tatar and Tlachichilco Tepehua). One language, English, features the progressive-nonprogressive aspect system. Five languages (Maltese, Belhare, Cayuga, Japanese, and Nyakyusa) each feature an idiosyncratic system, which cannot be reduced to either of the former two systems. Given this, a method of comparison of different aspect systems was needed because such a method is a prerequisite for a meaningful comparison of actional systems. The method of comparison of aspect systems applied in the present work was centered around two well-described types of aspect systems, the perfective-imperfective system and the progressive-nonprogressive system. It relied on a decomposition of meanings of the perfective, imperfective and progressive grams into smaller units, identified via translation contexts. These smaller units were then used to analyze the aspect systems of the five languages featuring idiosyncratic aspect systems. This made possible a meaningful comparison of these idiosyncratic respective aspect systems with the perfective-imperfective system and the progressive-nonprogressive system.

The ultimate goal of this dissertation was to develop and advance a typologically informed functionalist perspective on actionality in general, and, more specifically, and on the interaction of aspect and actionality. Subsidiary goals were, on the one hand, to advance the typology of grammatical aspect, and, on the other, to advance a general understanding of actionality and aspect, especially by providing a terminological grid that can be used in other crosslinguistic investigations as well as in the fieldwork.

Keywords: actionality; grammatical aspect; linguistic typology; semantic typology.

EXTENDED ABSTRACT IN CROATIAN

Tipologija međudjelovanja kategorije akcionalnosti i kategorije glagolskog vida

U doktorskoj disertaciji *A Typology of Aspect-Actionality Interactions (Tipologija međudjelovanja akcionalnosti i kategorije glagolskog vida)* iz tipološke se i međujezične perspektive istražuje kako prisutnost gramatičke kategorije glagolskog vida utječe na konstituiranje sustava akcionalnih razreda. U podjelama istraživačkih pristupa akcionalnosti (Sasse 2002) takav se model opisa naziva bidimenzionalnim jer jasno luči dvije dimenzije aspektualnosti (glagolski vid i akcionalnost) te se posebno zanima za njihovo međudjelovanje. Disertacija se sastoji od teorijskog dijela u kojem se detaljno izlaže metoda na kojoj se bi trebalo temeljiti svako međujezično istraživanje akcionalnih razreda, a posebno istraživanja gdje se istražuje međuodnos akcionalnosti i kategorije glagolskog vida, kao i od praktičnog dijela u kojem se tako ustanovljena metoda primjenjuje na usporedbu 16 tipološki različitih jezika. Ti su jezici adigejski (sjeverozapadnokavkaski), bagvalalski (nahsko-dagestanski), belharski (sinotibetski), kajuga (irokijski), čipevaja (atabaskansko-ejački-tlingitski), engleski (indoeuropski), francuski (indoeuropski), japanski (japanski-riukiu), karačajsko-balkarski (turkijski), lazijski (kartvelski), malteški (afrazijski), marijski (uralski), njakjusa (atlantsko-kongoanski), španjolski (indoeuropski), tatarski (turkijski) i tepehuanski (totonački). Disertacija je podijeljena u osam poglavlja.

U prvome se poglavlju definiraju temeljni pojmovi sadržani u naslovu disertacije. Iznose se tako tradicionalno Vendlerovo viđenje akcionalnosti, koje se zatim proširuje raspravom o cijelom nizu obilježja koja definiraju akcionalnost kao jezičnu pojavnost, a koje su u postojećoj literaturi zanemarene. Ističe se tako da je akcionalnost prije svega *jezična* pojavnost, kao i da je primarni objekt akcionalne klasifikacije glagolsko značenje, a ne glagolski leksem. Tumači se i pojam akcionalne rekategorizacije (*actional shift*) te se upućuje na činjenicu da se akcionalnost glagola može modificirati i kontekstualno. Nadalje, u istom se poglavlju raspravljaju tradicionalne definicije glagolskog vida te se ističu njezini brojni problemi, posebice neodređenost i slaba objasnidbena moć, a razmatraju se i moguća rješenja. Nakon toga obrađuje se odnos akcionalnosti i glagolskog vida. Oni se razgraničuju terminološki i pojmovno te se ističe određena značenjska srodnost tih dviju jezičnih pojavnosti. Uvodi se i pojam međudjelovanja između aspekta i akcionalnosti te pojam akcionalnog razreda utemeljenog na aspektu (*aspect-sensitive actional class*). Posljednji pojam sadržan u naslovu disertacije

obrađen u ovom poglavlju jest pojam tipologije. Tipologija se predstavlja kao grana lingvistike usmjerena na usporedbu jezika s ciljem otkrivanja međujezičnih generalizacija (univerzalija). Tipološki se pristup univerzalijama kontrastira s pristupom koji zastupa generativna gramatika. Poglavlje se završava sažetkom glavnih terminoloških rješenja, kratkim pregledom ciljeva disertacije te strukturom disertacije po poglavljima.

U drugome se poglavlju predstavljaju dvije tradicije istraživanja glagolskog vida i akcionalnosti, angloamerička formalna i kontinentalna tipološko-deskriptivna (ne-formalna). Ispituju se nastanak, povijest i teorijsko-metodološke postavke dviju tradicija. Prva je tradicija utemeljena u formalnom pristupu značenju kojem je začetnik američki semantičar Richard Montague. Ta je tradicija u načelu jednodimenzionalna, što znači da u načelu ne luči akcionalnost od glagolskog vida i općenito se slabo zanima za glagolski vid. Druga tradicija proizlazi iz kontinentalnog deskriptivnog i kasnije strukturalističkog pristupa jeziku. Mnoge je elemente te tradicije usvojila i jezična tipologija. Ranija razdoblja te tradicije obilježavali su primarni interes za glagolski vid i aktionsart, derivacijski uvjetovane modifikacije glagolskog značenja tipične za slavenske i neke germanske jezike. Tek se kasnije u sklopu te tradicije počinje ozbiljnije promišljati problematika akcionalnosti. Iz tih je razvojnih crta lako iščitati zašto je ova tradicija bidimenzionalna, odnosno zašto je glavni naglasak stavljen na odnose akcionalnosti i glagolskog vida te interes za akcionalnost ponajprije dolazi iz perspektive odnosa s glagolskim vidom.

U trećemu se poglavlju daje raščlamba četiriju bidimenzionalnih pristupa akcionalnosti. Prvo se predstavljaju dva pristupa čije su pretpostavke u velikoj mjeri prihvaćene i u ovoj disertaciji. To su pristup njemačkog slavista Waltera Breua (Breu 1994; 1998) i pristup ruskog semantičara Sergeja Tatevosova (Tatevosov 2002a; 2016a). Potom se obrađuju još dva utjecajna pristupa koji su u manjoj mjeri utjecali na ovaj rad, pristup američke semantičarke Carlote Smith i pristup švedskog turkologa Larsa Johansona.

U četvrtome se poglavlju detaljnije razrađuju postavke tipološkog-deskriptivnog i ne-formalnog pristupa akcionalnosti. Ovo je prvo od dvaju središnjih teorijskih poglavlja koja uvode u tipološko istraživanje u sedmom poglavlju (drugo središnje teorijsko poglavlje jest peto, posvećeno glagolskom vidu). Na početku poglavlja naglašava se razlika između akcionalnosti kao jezičnog obilježja glagola i akcionalnosti kao ontološkog obilježja situacija u svijetu. Lingvistika se zanima isključivo za akcionalnost kao jezičnu pojavnost. Zatim se

raspravlja o dvama glavnim načelima tipološkog pristupa usporedbi akcionalnih razreda. Prvo, iznosi se pretpostavka da akcionalni razredi nisu univerzalni, već se to može isključivo tvrditi za manje jedinice značenja, tzv. akcionalna značenja ili primitive (*actional meanings/primitives*). Na te se primitive mogu razložiti svi akcionalni razredi. Usporedba akcionalnih razreda u različitim jezicima oslanja se stoga na usporedbu akcionalnih značenja i načela njihova ustrojavanja u akcionalne razrede u pojedinim jezicima, umjesto na izravnu usporedbu akcionalnih razreda. Drugo, pokazuje se na brojnim primjerima da glagoli koji orječuju slična glagolska značenja (npr. značenje 'umrijeti') ne moraju nužno u svim jezicima pripadati istom akcionalnom razredu. Nadalje, na brojnim primjerima pokazuju se razni problemi koji se mogu javiti pri pokušajima da se s pomoću testova identificiraju pojedina akcionalna značenja i razredi. Također se pokazuje da se testove koji su primjenjivi u jednom jeziku ne može nekritički prenositi u druge jezike, već se uporabljivost i ponovljivost testova mora ustanoviti zasebno prije njihove primjene u samom istraživanju. Ostatak četvrtog poglavlja posvećen je opisu akcionalnih značenja odnosno primitiva koji su procijenjeni kao najbolji kandidati za univerzalnost. Ti su primitivi stanje (*state*), proces (*process*), prijelaz (*transition*), multiplikativni proces (*multiplicative process*) i semelfaktivni kvant (*semelfactive quantum*). Oni su temelj za ustrojavanje akcionalnih razreda u pojedinim jezicima. Međutim, u velikom broju akcionalnih razreda koji se mogu ustrojiti tek je manji broj razreda kojima se može pripisati relevantnost na tipološkoj razini na temelju njihove učestalosti u jezicima svijeta i broja glagola koji pripadaju tim razredima u pojedinim jezicima. U ovoj disertaciji izdvojeno je osam takvih razreda: obična stanja (*total states*), obične radnje (*plain activities*), postignuća (*achievements*), inhoativna stanja (*inchoative state*), ingresivne radnje (*ingressive activities*), ostvarenja (*accomplishments*), glagoli s dvije faze (*two-phase verbs*) i multiplikativne radnje (*multiplicative activities*). Njihov status u 16 jezika istražen je u sedmom poglavlju.

U petome se poglavlju, drugom od dvaju središnjih teorijskih u ovoj disertaciji, prikazuje metoda usporedbe vidskih sustava. Pokazatelji glagolskog vida (*aspect grams*) razlažu se na manja značenja koja se mogu u različitim jezicima prepoznati s pomoću prijevodnih kontekstâ. To je tzv. metoda Bybee i Dahla (Bybee i Dahl 1989). U jezicima se javljaju razne vrste vidskih sustava (vidski sustav nekog jezika čini skup međusobno isključivih obvezatnih vidskih pokazatelja). Dva su temeljna vidska sustava, sustav sa svršenim i nesvršenim vidom (*perfective-imperfective system*) te sustav s obvezatnim progresivnim vidom (*progressive-nonprogressive system*). Od 16 istraženih jezika, 10 ih ima prvi tip, a samo jedan (engleski)

drugi tip. Pet jezika (belharski, japanski, kajuga, malteški i njakjusa) ima sustav koji je specifičan pojedinom jeziku (što podrazumijeva i jezično specifične pokazatelje glagolskog vida) te se usporedba tih jezika s dvama ostalim sustavima temeljila na gore spomenutim manjim značenjima na koja se mogu razložiti pokazatelji glagolskog vida.

U šestome se poglavlju predstavlja istražen uzorak jezika od 16 jezika, kako je prikupljen i koji su izvori upotrijebljeni u disertaciji.

U sedmome se poglavlju predstavljaju rezultati tipološkog istraživanja osam akcionalnih razreda na uzorku od 16 jezika s glagolskim vidom. Prvi je fokus istraživanja bio dokumentirati razne načine na koje glagolski vid utječe na ustrojavanje akcionalnih sustava različitih jezika, a drugi testirati predloženu metodu usporedbe akcionalnih sustava. U istraživanju se pokazalo da metoda predložena u disertaciji omogućuje usporedbu sustavâ akcionalnih razreda u jezicima s različitim vidskim sustavima. Pokazalo se i to da su akcionalni sustavi 16 istraženih jezika u glavnim crtama prilično slični, ali i da postoje značajne razlike među akcionalnim sustavima. Može se, primjerice, istaknuti razred glagola s dvije faze (*two-phase verbs*), koji je u većini istraženih jezika marginalno prisutan. Ipak, u belharskom i njakjusi taj je razred prilično dobro zastupljen i velik broj glagola pripada upravo tom razredu.

U osmome se poglavlju iznose zaključci, sažimaju doprinosi disertacije te se raspravlja o mogućim smjerovima budućih istraživanja. Kao poseban doprinos disertacije ističe se prije svega empirijsko tipološko istraživanje provedeno na uzorku od 16 jezika. Nadalje, naglašava se da se u disertaciji tipološki pristup akcionalnosti dodatno razvija i širokom raspravom o raznim metodološkim problemima koji su obrađivani ponajprije u četvrtom poglavlju, a dijelom i u prvom i šestom poglavlju. U tom smislu disertacija može pomoći u budućim istraživanjima pojedinačnih akcionalnih sustava, osobito kroz inzistiranje na nekolicini ključnih pretpostavki. Posebno je važna pretpostavka da su predmet akcionalne klasifikacije individualna glagolska značenja, a ne glagolski leksemi. Također su važna i u disertaciji empirijski poduprta opažanja da se bliska glagolska značenja u različitim jezicima ne moraju poklapati u smislu akcionalnog razreda, kao i to da se testovi koji služe utvrđivanju pripadnosti pojedinog glagolskog značenja akcionalnog razredu ne mogu smatrati *a priori* prenosivima i primjenjivima u svim jezicima. Dodatni doprinos disertacije jest i u razradi postojećeg tipološkog pristupa glagolskom vidu i vidskim sustavima. Tema glagolskog vida u posljednjih je tridesetak godina bila ponešto

zanemarena među tipološki usmjerenim lingvistima te se stoga ova disertacija može promatrati kao pokušaj da se ponovno pobudi interes za ovu i dalje nedovoljno istraženu temu.

Ključne riječi: akcionalnost; glagolski vid; jezična tipologija; semantička tipologija

APPENDIX I: List of abbreviations

Symbols indicating the status of examples

#	semantically or pragmatically anomalous example / only an unattended meaning is possible
*	ungrammatical example
? or ??	example of questionable acceptability / grammaticality

Symbols of actional primitives (...) and classes [...]

(φ_S)	state
(φ_P)	process
(τ)	transition
(M)	multiplicative process
(Q)	quantum of a multiplicative process (semelfactive quantum)
[φ_S]	total state class
[φ_P]	plain activity class
[τ]	achievement class
[$\tau\varphi_S$]	inchoative state class
[$\tau\varphi_P$]	ingressive activity class
[$\varphi_P\tau$]	accomplishment class
[$\varphi_1\tau\varphi_2$]	two-phase class
[M+Q]	multiplicative activity class

Glosses

1...18	noun class 1...18 (Nyakyusa)
1, 2, 3	1 st , 2 nd , 3 rd person (elsewhere)
A	actor index
ABS	absolutive
ACC	accusative
ADD	additive ('also, even')
ADV	adverbializer
AFF	affective
ART	article
AUG	augment
AUX	auxiliary
CAUS	causative
CLF	classifier
COL.ART	color term article (Belhare)
COM	comitative
CONV	converb
COP	copula
COP.HON	polite copula (Japanese)
DAT	dative
DEF	definite
DEM	demonstrative
DET	determiner
DIR	directional preverb/case
DIST	distal
E	exclusive of addressee
ERG	ergative
F	feminine
FOC	focus
FV	final vowel (Nyakyusa)
GEN	genitive

GER	gerund
HPL	human in plural (noun class in Bagvalal)
HON	honorific
ILE	Nyakyusa aspect gram ending in <i>-ile</i>
INF	interfix (Adyghe), infinitive (elsewhere)
INS	instrumental
IO	indirect object
IPFV	imperfective
IPFV.PRS	present imperfective
IPFV.PST	past imperfective
LD	locative-directional
LOC	locational preverb/case
M	masculine
MID	middle
MOT	motative (case in Laz)
N	neuter (gender)
NM	nominality marker
NOM	nominative
NONPROG	nonprogressive (“simple”)
NPST	nonpast
NSG	non-singular
OBJ	object agreement indexes
OBL	oblique
P	patient
PFV	perfective
PL	plural
POSS	possessive
PROG	progressive
PRS	present
PST	past
PT	Simple Past (Belhare)
RL	realis

S	single argument of intransitive verb
SBD/SUB	subordinator
SEQ	sequential
SG	singular
SOC	sociative
SUBJ	subject agreement indexes
TE	nonfinite verb form in <i>-te</i> (Japanese)
TEMP	Temporary aspect gram (Belhare)
TOP	topic
TR	transitivizer
U	undergoer

APPENDIX II: Aspect systems of the languages of the sample

The following table provides relevant information about the 16 languages of the sample and their aspect systems. In most cases, I kept the original labels for the aspect grams of the five idiosyncratic aspect systems; these are written in capital letters. For all other systems, I replace the original labels with glosses (PFV.PST, PROG etc.). However, where relevant, I give in parentheses the traditional and/or established label for the aspect gram as well. The traditional label *Present* is almost universally used to refer to IPFV.PRS and is therefore never cited.

Language	ISO 639-3	Family (branch, if relevant)	Aspect system	References for aspect system	Aspect grams relevant for actional classification
Adyghe	ady	Northwest Caucasian (Circassian)	PFV-IPFV, tensed	Arkadiev (2009), Arkad'ev (2009)	PFV (<i>Preterite</i>), IPFV.PRS, IPFV.PST (<i>Imperfect</i>)
Bagvalal	kva	Nakh-Dagestanian (Dagestanian)	PFV-IPFV, tensed; numerous periphrastic forms	Tatevosov (2002a: 358–359; 2016a: 373–380) and references therein	PFV (<i>Preterite</i>), IPFV.PRS, IPFV.PST
Belhare	byw	Sino-Tibetan (Kiranti)	idiosyncratic (see §5.4.3.3), tensed	see §5.4.3.3	Simple Nonpast, Simple Past, Temporary, Nonpast Imperfective, Past Imperfective
Cayuga	cay	Iroquoian (Northern)	idiosyncratic (see §5.4.3.4), non-tensed	see §5.4.3.4	PFV, Stative, Habitual
Chipewyan	chp	Athabaskan-Eyak-Tlingit (Athabaskan)	PFV-IPFV with complex morphology and morphonology, non-tensed	Bortolin (1998: chap. 3), Cook (2004), Wilhelm (2007: 32–68, 77–90)	PFV, IPFV

Language	ISO 639-3	Family (branch, if relevant)	Aspect system	References for aspect system	Aspect grams relevant for actional classification
English	eng	Indo-European (Germanic)	PROG-NONPROG (see §5.4.2.3)	see §5.4.2.3	PROG, NONPROG
French	fra	Indo-European (Romance)	PFV-IPFV, tensed	Smith (1997: chap. 9)	PFV (<i>Passé Composé</i> , <i>Passé Simple</i>), ⁵⁹⁴ IPFV.PST (<i>Imparfait</i>), IPFV.PRS
Japanese	jpn	Japonic	idiosyncratic (see §5.4.3.2), tensed	see §5.4.3.2	Simple Nonpast, Simple Past, Nonpast <i>-te i-</i> , Past <i>-te i-</i>
Karachay-Balkar	krc	Turkic	PFV-IPFV, tensed; numerous periphrastic forms	Tatevosov (2016a: 363–373) and references therein	PFV (<i>Perfekt</i>), IPFV.PRS
Laz (Aredeşen variety)	lzz	Kartvelian	PFV-IPFV, tensed	Mattissen (1995: 51–57, 73–81; 2001)	PFV, IPFV.PST, IPFV.PRS
Maltese	mlt	Afro-Asiatic (Semitic)	idiosyncratic (see §5.4.3.1), tensed	see §5.4.3.1	PFV, PROG.PRS, PROG.PST, old IPFV.PRS, old IPFV.PST
Mari	chm	Uralic (Mari)	PFV-IPFV, tensed	Tatevosov (2002a: 361–362, 374–375; 2016a: 380–389) and references therein	PFV (<i>Preterite</i>), IPFV.PRS
Nyakyusa	nyy	Atlantic-Congo (Bantoid)	idiosyncratic (see §5.4.3.5), tensed	see §5.4.3.5	Present ~PFV, Present ~IPFV, Past ~IPFV

⁵⁹⁴ French has two past perfective grams, *Passé Composé* and *Passé Simple*. There is no difference in meaning between the two when encoding perfectivity (Smith 1997: 195–196, 204ff, 216–217 and references therein).

Language	ISO 639-3	Family (branch, if relevant)	Aspect system	References for aspect system	Aspect grams relevant for actional classification
Spanish	spa	Indo-European (Romance)	PFV-IPFV, tensed; highly grammaticalized but nonobligatory PROG	Butt & Benjamin (1994), Kattán-Ibarra & Pountain (2003)	PFV (<i>Preterito Indefinido</i>), IPFV.PST (<i>Preterito Imperfecto</i>), IPFV.PRS
Tatar (Mishar dialect)	tat	Turkic	PFV-IPFV, tensed; numerous periphrastic forms	Tatevosov (2002a: 359–361) and references therein, Tatevosov et al. (2017)	PFV (<i>Preterite</i>), IPFV.PRS
Tepehua (Tlachichilco)	tpt	Totonacan (Tepehua)	PFV-IPFV, tensed; highly grammaticalized but nonobligatory PROG	Watters (1988: 254–272)	PFV, IPFV.PST, IPFV.PRS, PROG

CURRICULUM VITAE

Jurica Polančec rođen je 1989. godine u Zagrebu. Diplomski studij Lingvistike (smjer Poredbena lingvistika) i Francuskog jezika i književnosti (Prevoditeljski smjer) na Filozofskom fakultetu Sveučilišta u Zagrebu završio je 2014. godine obranivši diplomski rad o povratnim glagolima u starofrancuskom. Dobitnik je Nagrade Filozofskog fakulteta za izvrsnost u studiju 2011. godine i Rektorove nagrade 2012. godine. Kao stipendist vlade Francuske Republike 2013. godine dva se mjeseca stručno usavršavao na institutu *Dynamique du language* u Lyonu. Suradivao je kao student na projektima u Zavodu na lingvistiku Filozofskog fakulteta. U proljeće 2015. godine upisuje poslijediplomski doktorski studij *Humanističke znanosti* na Sveučilištu u Zadru.

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