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Unbounded repetition, habituality, and aspect from a comparative perspective

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Abstract: This paper addresses the relationship between habituality, including expressions of unbounded repetition, and verbal aspect. It is often assumed that past events that are conceptualized as habitually occurring or repeated in an unbounded way are inherently expressed by imperfective verb forms in languages with verbal aspect. A crosslinguistic analysis is provided of the relationship between habituality and the perfective and imperfective aspect, based on analysis of 36 languages from different language families. It is shown that there is a strong but certainly not absolute association between the imperfective and habitual constructions/expressions of unbounded repetition with past reference. With respect to perfective habituality, some crosslinguistic patterns can be found. It is further argued that any account of the specific aspectual behavior in habituality must take heed of language-specific properties of the aspectual-verbal structure, and that using general, abstract comparative concepts, such as ‘perfective’, ‘imperfective’, or ‘habitual’, is insufficient to explain aspectual usage.

Keywords: crosslinguistic; habituality; plurality of events; unbounded repetition; verbal aspect

1 Introduction

Following Comrie (1976), it is commonly assumed that habituality – that is, constructions or forms expressing a habitual situation (event, state of affairs, etc.) – contain an imperfective (IPFV) verb form (see also Dahl 1985: 79). While Comrie observes (e.g., 1976: 31–32, 70) that in a few languages habituality may also contain a perfective (PFV) verb, the examples (with expressions of unbounded repetition) he gives come from Czech and Georgian, both languages with an aspectual structure linked to telicity ((ad)terminativity), which suggests that these languages behave differently from other aspectual languages. Hence, the universal restriction on perfective habituality

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could be due to general semantic constraints. This opinion is expressed by Bertinetto and Lenci (2012), who claim that habituals are imperfective *by definition*. In contrast, Boneh and Jędrzejowski (2019) argue that habituality need not be universally treated as a subdomain of imperfectivity, an opinion which is also expressed by Johanson (2000: 53–54). Sasse (2002: 264) is skeptical about the possibility of determining whether habituals are perfective or imperfective, given the inherently problematic nature of the concepts ‘perfective’ and ‘imperfective’, although he hopes that more insight will be gained in the future when more data become available. To my knowledge, there are no crosslinguistic analyses that discuss the presumed association between habituals and the imperfective aspect in detail. In this paper, I will answer the following research questions and provide a descriptive account of the data, based on analysis of 36 languages from different language families:

1. What is the relation between habituals (with past reference) and the imperfective or perfective aspect, from a crosslinguistic perspective?
2. Is the hypothesis that habituals are inherently imperfective correct?

As I will show, there is indeed a relation between habituals and the imperfective, but the specific relation differs from one language to another, and perfective habituals are allowed in many languages. With respect to perfective habituals, some crosslinguistic patterns can be found. I further argue that any account of the specific aspectual behavior in habituals must take heed of language-specific properties of the aspectual-verbal structure (cf. Johanson 2000), and that using general, abstract comparative concepts, such as ‘perfective’, ‘imperfective’, or ‘habitual’, is insufficient to explain aspectual usage (cf. Sasse 2002). Although I benefited greatly from important insights provided by various formal semantic analyses, my aim is not to formalize the linguistic analysis. My analysis takes into account theoretical insights from various functional, descriptive and structuralist theories of language, especially the distinction between comparative concepts and form-meaning units in individual languages.

This paper has the following structure: in Section 2, I discuss the basic concepts (habituality and perfective and imperfective aspect) and how I collected the data; Section 3 discusses the instances where the perfective is used in contexts of unbounded repetition; Section 4 presents the conclusion.

2 Theoretical principles

2.1 Definition of habituality and unbounded repetition

The term ‘habitual’ or ‘habituality’ is used by various linguists (see Boneh and Jędrzejowski [2019] for an overview). From a theoretical perspective, the term

‘habituality’ can be used in three different ways: (i) to refer to a language-specific category; (ii) for a comparative concept in the sense of Haspelmath (2010); and (iii) for a universal category (the universal status may then be due to biological factors or universal communicative principles). In this paper, I will treat habituality as a comparative concept. Comrie (1976: 27–28) uses the following crosslinguistically applicable general definition of habituais; that is, forms/constructions that express a habitual meaning:

[T]hey [habituais] describe a situation which is characteristic of an extended period of time, so extended in fact that the situation referred to is viewed not as an accidental property of the moment but, precisely, as a characteristic feature of a whole period.

In Comrie’s analysis, habituais can be dedicated habitual forms or constructions which do not explicitly refer to repetition or constructions that contain an IPFV verb form usually combined with expressions of unbounded repetition, such as *always*, *often*, *every day*. The term ‘unbounded repetition’ is used to indicate that there is no limit to the number of repetitions (within a specific timeframe), in contrast to bounded repetition, as in *twice*, *three times*, *a couple of times*, etc. where an event is repeated a (specific) number of times (for pluractionality of situations, see also Shluinskij [2005]). Consequently, the unbounded repetition readily suggests that the repeated situation is characteristic of an extended period of time, and the world’s structure (cf. Langacker 2000: 252).¹ Comrie also points out that a habitual meaning is sometimes expressed by an IPFV verb without habitual marking. Comrie’s approach to habituality and aspect is similar to Dahl’s (1985: 79, 95–98), although Dahl makes a further subcategorization of habituais into (i) habitual, (ii) habitual-generic, (iii) habitual past.

Comrie’s definition provides a good starting point for the analysis of habituais, with the additional comment that his notion of “extended period of time” is a relative notion, and that this requirement also depends on the type of habitual construction. Compare French (1) with the expression for ‘every night’ and an IPFV past with English (2) with *used to*:

- (1) *La semaine dernière, Pierre allait_[PST.IPFV] au cinéma à chaque soirée; maintenant il ne sort presque jamais.* (Bertinetto and Lenci 2012: 859)
 ‘Last week Pierre went to the movies every night; now he hardly gets out.’
- (2) ? Last week Pierre used to go to the movies, now he hardly gets out.

¹ A situation that is characteristic of an extended period of time can also be a state that lasts for this whole period where no repetition is involved; for example, *I used to be a doctor* (cf. Comrie 1976: 27). Some linguists reject such uses as habitual (Binnick 2005) and focus on constructions where some kind of repetition is involved (e.g., the definition given by Bybee et al. [1994: 127]: “customarily repeated on different occasions”).

One could argue that this shows that (1) is not a habitual sentence in the strict sense. Sentence (1) can be compared to the sentence in the present tense: *Pierre goes to the movies every night*. This clearly indicates something that is characteristic of an extended period of time, without any temporal restriction. Such sentences have a clear habitual character since they indicate something of the current world's structure. When we talk about past events, it is possible to indicate that the unbounded repetition took place during a longer or shorter stretch of time (*when I was young, last week*). The shorter the stretch of time, the less clear is the idea that something that is characteristic of the world's structure or that something that is someone's habit is expressed. Nevertheless, because it is difficult to draw a clear line between an extended period of time and a non-extended period of time, I think it is preferable to include all sentences with unbounded repetition into the category of habitual sentences.

In general, the definitions of habituality given within descriptive linguistic frameworks are similar to those given in formal semantic frameworks even though formal semantic approaches to habituality often seem to suggest that the category of habituality is universal. Krifka et al. (1995: 17–19, 25, 32, 36) argue that habituals are a subcategory of 'characterizing' sentences (which describe some 'essential property'), i.e. sentences that contain an episodic verb – which reports on a specific event or occasion – and are neither stative nor generic. According to Krifka et al. (1995: 17) “[h]abitual sentences express generalizations over situations that are specified by the corresponding episodic verbal predicate.” In their formal semantic description of habituality a so-called generic operator (GEN) plays an important part. Krifka et al. (1995: 25) also remark that “the genericity of characterizing sentences takes sentential scope, and [...] should be treated as similar to adverbs such as *always*, *often*, *seldom*, and the like. Adverbs such as *usually*, *typically*, and *in general* are closest in meaning to the generic operator, which often is not realized phonologically”. As such, in their view the more prototypical instances of habituality express a law-like pattern, which occurs often and regularly, and which do not explicitly indicate repetition. Carlson (2009: 376) argues that habituality can be expressed by dedicated markers, such as English *used to*, *tend to* but it is also a component of the meaning of most frequency adverbs, including *often*.

Bertinetto and Lenci (2012: 860) provide an analysis of habituality within a formal semantic framework that also explicitly takes verbal aspect into account. They argue that iterative sentences are mostly *PFV*,² whereas habitual sentences (in

2 At many points in their article, Bertinetto and Lenci seem to argue that iteratives are inherently perfective (see for example [2012: 869]), and in all the iterative examples they provide the verb form is in fact perfective. In their conclusion, however, the authors (2012: 877) seem to make a less strong statement.

languages with explicit aspectual marking) are IPFV by default (cf. Mari et al. [2013: 47] for a similar claim). Put differently, in my terminology, the property ‘IPFV’ is part of their comparative concept of habituality. According to Bertinetto and Lenci, habitual sentences, unlike iterative ones, are intrinsically characterizing: they attribute a defining property to the intended referent(s). In Bertinetto and Lenci’s analysis, iterative sentences, for example sentences with *twice*, *seven times*, differ from habitual sentences in the following ways: (i) the iteration is specifiable, (ii) iterativity is, unlike habituality, impossible in the present domain, (iii) the timeframe in which the iteration occurs is strictly delimiting, and (iv), which is an extension of (i), the exact number of occurrences is determinable or at least potentially determinable. It should be noted that the distinction between habitual sentences and iterative sentences proposed by Bertinetto and Lenci is not identical to the distinction between unbounded and bounded repetition because some sentences that contain expressions of unbounded repetition are still classified as iterative by Bertinetto and Lenci (2012). Take the French example (3), which contains a *passé composé*, defined by them as a PFV marker, and an expression of unbounded repetition:

- (3) *Pendant l’année passée, Jean a rarement/souvent visité^[PST.PFV] sa mère.*
 ‘Last year, Jean seldom/often visited his mother.’

Bertinetto and Lenci classify this sentence as iterative and not habitual for two reasons: (i) the sentence contains a PFV marker, and (ii) the iteration has characteristics of iterative sentences: for example, the event takes place within a limited timeframe (‘last year’) and hence, they seem to argue, the exact number of occurrences is potentially determinable. Another claim by Bertinetto and Lenci (2019: 868–871) and Lenci and Bertinetto (2000: 254) is that “the PFV and habitual IPFV aspects also differ because the former is typically intensional whereas the latter is typically extensional”. In their view, this is true for all languages with PFV and IPFV aspect, such as Romance and Slavic languages (Lenci and Bertinetto 2000: 215, 216, 224). They also suggest a way to model this within a formal semantic-syntactic framework, i.e. by interpreting “the generic operator as a modal quantifier” (Lenci and Bertinetto 2000: 256). In their approach, the difference between intensional (habitual) and extensional, for example iterative, sentences boils down to the difference between accidental generalizations (in their view expressed by the PFV) and nomic generalizations (in their view expressed by the IPFV) (Lenci and Bertinetto 2000: 254–255). The intuition behind this, as I understand it, is that nomic generalizations do not just refer to specific or concrete individual situations (episodic fact; cf. Lenci and Bertinetto 2000: 265), but to any situation to which the law applies (normative fact; cf. Lenci and Bertinetto 2000: 265). However, it is often not clear how one can objectively determine (apart from the presence of aspect itself) whether a sentence is iterative or not. This can be illustrated with the following Greek example, which seems to have a

characterizing function that is typical of habituais but without any characteristics of iterative sentences even though we find a PFV verb form:

(4) Modern Greek (CMG)

[*To olokáftoma kai ta epakólouthá tou prokálese éna kýma ekatommyrion profýgon, symperilamvanoménon Evraíon pou échasan ta perissótera í óla ta méli ton oikogeneión tous kai tis idioktisíes tous,*]

kai **sychná antimetópisan** antisimitismó epistréfontas stis
and often face.3PL.PST.PFV antisemitism.ACC return.GER to
patrídes tous.

homeland their

‘The Holocaust and its aftermath caused a wave of millions of refugees, including Jews who lost most or all of their family members and property, and *often faced* anti-Semitism returning to their homelands.’

In my view, the main issue with Bertinetto and Lenci’s definition of habituality is that it requires the property IPFV (NON-PFV), even though other properties that are required (intrinsically characterizing, and non-potentially determinable) can be found with PFV verb forms as well. Of course, one can argue that an IPFV verb form is very suitable to indicate nomic generalizations. The meaning of non-totality (envisaging the event within its limits or not envisaging the event in the attainment of its relevant limit), as expressed by the IPFV, accords well with the generic or unbounded character of the nomic generalization. But, as I already showed with respect to the Greek example (4), sentences with a PFV may also have a law-like character. Furthermore, in some languages constructions that refer to concrete ‘episodic’ events can get a habitual interpretation because the event is presented as typical for how things are in general, suggesting a nomic meaning. An example is the so-called exemplary meaning of the PFV present (prototypically used as a PFV future) in Russian, to indicate a past habitual event. This construction occurs with PFV present verb forms with or without the past habitual marker *byvalo*:

(5) Russian (RNC)

Ploxo spitsja po nočam stariku, vyjdet iz izby,
bad sleeps.REFL at nights old.man.DAT come.OUT.PRS.PFV.3SG from hut
prisjadet na zavalinku i slušaet.

sit.DOWN.PRS.PFV.3SG on heap and listen.PRS.IPFV.3SG

‘The old man cannot sleep well during the nights, he comes out of his hut, sits down on the *zavalinka* [small mound of earth along the outer walls of a peasant’s house] and listens.’ (description of the way things usually happen)

This type requires the idea of picking an individual instance, to illustrate something general, to some extent similar to English *would* as a marker of habituality, and

Carlson and Spejewski's (1997: 143) analysis of constructions with *whenever*. They argue that in sentences with *whenever* the main clause is episodic, but the sentence as a whole is generic (habitual).³ As such, even though it is possible to exclude PFV habituais by definition, I think that this would limit the definition of habituality in an undesirable way.

To conclude this section, based on the data given in the literature, it is possible to distinguish the following types of habituais, which all adhere to the semantic definition of habituais as defined by Comrie (1976), which I treat as a comparative concept:

- (i) Sentences with dedicated habitual constructions or habitual aspectual markers (e.g. English *used to*, Russian *byvalo*, Ossetic *-iu*, South Conchucos Quechua past habitual marker *-q*).
- (ii) Sentences with adverbs (or similar parts of speech which can modify a predicate) that explicitly indicate the idea of a habit or something which occurs on a regular basis (e.g. English *usually*, Russian *obyčno*).
- (iii) Sentences with expressions of unbounded repetition (*every day*, *often*, *always*, *sometimes*), which express their own meaning of frequency but at the same time adhere to the definition of habituality.
- (iv) Sentences with IPFV verb forms (e.g. Russian IPFV, Georgian imperfect) without any of these markers, which adhere to the definition of habituality. As Russian (5) shows, perfectives can also indicate a habitual meaning without an expression of unbounded repetition.

I do not think that it is possible from a crosslinguistic perspective to clearly delineate (i) and (ii), but the main difference can be illustrated with English, where *used to* + infinitive is a grammaticalized construction which functions as a predicate, whereas *usually* adheres to the general rules of other adverbs and modifies a whole proposition or meaning as expressed by a predicate. At the same time, English *usually* also shows formal and semantic similarities to the adverbs given under (iii). In my view (i) and (ii) must be seen as habituais in the strictest sense since they are specialized in expressing a habitual meaning, whereas (iii) and (iv) must be seen as forms and constructions which indicate a habitual meaning, similar to (i) and (ii), in addition to having their own semantics. Within category (iii) it could be argued that meanings like 'sometimes' are not habitual since they do not indicate what took place in the majority of occasions, something which according to some scholars is an inherent

³ The more individuated character of sentences with *would* also explains the observation by Boneh and Doron (2013: 189) that in *When I awoke, a kind nurse would be sitting beside me* one can think of different nurses each time, which is not the case with the corresponding *When I awoke, a kind nurse used to sit beside me*.

part of the meaning of habituality (for example Dahl 1985: 97).⁴ However, in my view, it is better to treat the category of unbounded repetition as a single category.

In order to test the relationship between PFV or IPFV aspect and habituality, the habituals mentioned under (i) are not suitable because they often do not combine with an IPFV or PFV verb form, or because they express an aspect of their own. Because of this, I will focus on sentences that contain an expression of unbounded repetition, such as *every day*, *often*, or *always*, as a more objective way to test the relation between habituals and aspect. The choice to test the relationship between aspect and habituality by looking at contexts of unbounded repetition, is also motivated by the fact that in the literature (Comrie 1976; Dahl 1985), many of the examples of PFV habituals contain expressions of unbounded repetition.⁵ As such, the inclusion of expressions of unbounded repetition (irrespective of verbal aspect) may provide interesting crosslinguistic insights. For some languages, I will, however, also consider dedicated habitual expressions that adhere to Comrie's definition, in order to see whether they can be combined with IPFV or PFV markers. I will reserve the term 'iterativity' for expressions of bounded repetition (*twice*, *seven times*, *many times*, etc.). Such expressions typically occur with the PFV aspect (e.g. Dahl 1985: 78) even though there also language-specific differences. To give an example, Barentsen et al. (2015), Barentsen (2018) show that in Russian the IPFV is the most common aspect in contexts of bounded repetition, but in Czech the PFV is the most common, whereas Bulgarian, Polish, and BSC taken an intermediate position.

2.2 Definition of PFV and IPFV

The term (verbal) aspect can be used for constructions or forms that provide an internal temporal perspective on an event (i.e., state of affairs), that is, how an event extends over time: for example, whether it is seen as a whole (something complete or

⁴ But also see sentence 193 from the connected texts of the questionnaire (Dahl 1985: 97, 206).

⁵ For this research I did not systematically look into equivalences of English adverbs like *usually*, *typically*, *generally*. Bertinetto and Lenci (2012: 856) argue that such "habituality adverbials" require the IPFV aspect and that this constraint follows "from the intrinsically indeterminate nature of such adverbials, which is orthogonal to the notion of closed interval implied by the perfective view". Even though they do not provide any crosslinguistic evidence for their statement and only provide one example from French, I do expect that this type of adverbs shows a stronger crosslinguistic correlation with IPFV verb forms than expressions of unbounded repetition such as *often*. The reason is that they are less compatible with the idea of a limited timeframe in which the habit occurs, even though in English we do find sentences like: *Chelsea Gonzales last year usually started the first and third games of every series* (COCA). Furthermore, in some Slavic languages, for example Czech and Slovene, habituality adverbials can occur with PFV verbs (see for example Dickey [2000: 71] for a Czech example). As such, before further conclusions can be drawn, more research is necessary.

total), often called ‘PFV’, or not. Aspect deals with the specific temporal way in which the speaker confines a claim with respect to a situation that extends over time (Klein 1994: 4, 99). Different authors describe terms like PFV and IPFV in different ways, using different theoretical concepts and basing their descriptions on different languages (see Sasse [2002] for a comprehensive overview). The terms PFV and IPFV may refer to meanings within one specific language (e.g., the PFV form, which expresses a PFV meaning) or to comparable meanings across languages (e.g., the PFV in Slavic). In the latter case, it must be seen as a comparative concept in the sense of Haspelmath (2010). Dahl (1985: 78), who provides a comprehensive comparative overview of aspect, gives the following comparative definition for the PFV:

A PFV verb will typically denote a single event, seen as an unanalysed whole, with a well-defined result or end-state, located in the past. More often than not, the event will be punctual, or at least, it will be seen as a single transition from one state to its opposite, the duration of which can be disregarded.

Dahl does not give a definition of IPFV, although one might gather from his discussion that it must be defined in opposition to the PFV. Whether or not a verb form, or rather verbal category, in a specific language is classified by Dahl as an instance of the PFV or the IPFV depends on the type of context used, which Dahl determined by means of a questionnaire. Because different verb forms (categories) from different languages do not behave identically, the PFV and IPFV forms converge on prototypical contexts serving as the basis for their identification. Other authors define the PFV and IPFV differently, using different terminology. For example, Klein (1994: 108) argues that the IPFV indicates that the time for which an assertion is made (topic time) falls entirely within the time of the situation, giving the impression that the situation is seen from within, whereas in the case of the PFV, the time of the situation is interpreted as partly including the time for which the assertion is made, giving rise to the idea of change (Klein 1994: 110). These different definitions lead Klein and Dahl to classify categories from individual languages differently. An example is the simple present in English, which is seen as a PFV form by Klein (1994: 109; cf. Smith’s [1991] analysis); in Dahl’s approach, however, the English simple present does not show enough PFV properties as a category to be classified as a PFV verb form.

Another difficult issue is that languages with a PFV or IPFV marker do not necessarily have a binary PFV~IPFV structure. In my approach to the study of aspect, this is an important issue since the question what form-meaning elements are available to the language user, and how meanings are correlated with forms depends on the division of labor within the linguistic structure (see also Johanson 2000; Fortuin 2019). This means that languages where a PFV form-meaning element occurs side by side with an IPFV form meaning element, are different from languages where there the PFV is not opposed to an IPFV. Dahl (1985: 69, 71–72) states that in his sample the

PFV~IPFV distinction occurs “in various disguises” in 44 languages out of his total sample of 64. Indo-European languages are clearly overrepresented here (19 out of the 44 languages), while the two other largest groups are Afro-Asiatic languages (6) and Niger-Congo languages (6). In his sample, there is still a clear correlation between Indo-European languages and a binary PFV~IPFV aspectual system.⁶ Languages with a simple binary PFV~IPFV system are not common among the languages of the world. The WALS (Dahl and Velupillai 2013) provides data about various languages with a PFV~IPFV structure (including the ones described by Dahl [1985]), but closer inspection reveals that many of these languages do not have a simple binary structure with a PFV opposed to a general (single) IPFV marker. In many languages, also in Dahl’s sample, the PFV verb is in fact opposed to a habitual verb form or a progressive verb form, or to another verb form, such as a the simple past, which has no clear aspectual PFV or IPFV character. For such languages, one could actually question whether it is useful to speak about the category IPFV at all. An example is Korean, which is classified as a PFV~IPFV language in WALS (based on Lee 1991: 261–269). However, Korean does not have a simple binary structure since the general IPFV form *-nŭn* is basically a non-past marker (Lee 1991). In the past, we find *-ŏss-*, which is described either as an anterior or past tense form (Lee 1991) or as a PFV marker (Sohn 1995: 26–30). There is no single IPFV past tense, but only a dedicated habitual (*kon ha-*) and a dedicated progressive marker (*-ko is’*), which are attached to the past tense (PFV).⁷ In my view, this clearly shows that terms like IPFV or even PFV are not really useful in analyzing Korean. Yet even languages with a general IPFV marker often have more complex aspectual structures. This can be illustrated with Evenki, which is given in WALS as a PFV~IPFV aspectual language (based on Nedjalkov 1997). When we look more closely at Evenki, however, we observe that it has various habitual aspectual markers, which means that some of the functions that are part of the IPFV (or PFV) in some languages, are part of the habitual forms in Evenki. Additionally, in Evenki the PFV marker (the non-future *-rA*) only has a PFV function with non-stative verbs and can also be combined with the IPFV marker (and other aspectual markers). Furthermore, the IPFV marker (*-d’A*) has a rather specialized meaning, is often used to indicate the present tense, and exists alongside a separate durative (continuous) marker (*-t*). Evenki is not exceptional in this respect; many of the languages classified as PFV~IPFV in WALS in fact have more complex structures of this kind, or structures without a clear binary character.

⁶ Indo-European (19 IPFV~PFV, 2 not binary), non-Indo-European (25 IPFV~PFV, 18 not binary). Fisher exact Phi 0.33; P two-tailed: 0.0099.

⁷ There is also a non-marked simple past, which is described by Lee as a perfective verb form similar to the English simple past, and “simply denotes that there existed a situation at a time point in the past” (Lee 1991: 330–31). Sohn (1995: 28), on the other hand, argues that at least in some contexts it must be seen as an imperfective marker.

In addition to this, there are also important language-specific differences between categories such as PFV OR IPFV. Even within Indo-European languages, we can already observe a striking difference between aspect as found in Greek, both Ancient and Modern, where we see a PFV past (sometimes called preterite, aorist, or simple past) as opposed to an IPFV past (also called imperfect), and aspect as found in the Slavic languages. Whereas Slavic aspect in the case of the PFV centers around the attainment of an inherent or imposed boundary (*telos*, (*ad*)*terminus*) of the event, Greek-style aspect centers around the concept of a temporally bounded event, irrespective of whether the event is telic or not. This can be illustrated with the difference between the aorist in Ancient Greek and the past tense forms in Russian. Consider the following Greek example of an aorist provided by Comrie (1976:19):

- (6) Ancient Greek (taken from Goodwin 1889)
ebasileuse déka étē
 reign.3SG.AOR ten years
 ‘He reigned for ten years’, ‘He had a reign of ten years’.

As Comrie (1976: 19) points out, in Ancient Greek the aorist (prototypically the PFV, which refers to a past event) of the verb *reign* either refers to a complete reign or has an ingressive interpretation (‘become king’). It differs from the imperfect (IPFV past) in that it does not say anything about events that occurred during this reign. In terms of the theory of Johanson (2000), the aorist signals PAST and –INTRA (i.e. opposed to intraterminality, that is, envisaging the event within its limits, *intra terminos*). This is different from Russian, where sentences similar to (6) could contain an IPFV OR PFV past; this depends on whether the events are presented as having a boundary ((*ad terminus*) that has been reached and actualized or not (in terms of Johanson [2000], +AD), determined by whether the context is narrative, as in (7) where the (delimitative) PFV prefix *po-* is added to the verb, or retrospective, as in (8), a consideration that is irrelevant for the Greek aorist:

- (7) Russian (RNC)
Smolič v Aleksandrinskom teatre pocarstvoval neskol'ko mesjacev,
 Smolič in Alexandrinsky theatre rule.PST.PFV couple.of months
potom uexal v Xarbin.
 then left to Harbin
 ‘Smolič ruled in the Alexandrinsky theatre for a couple of months, and then left for Harbin.’
- (8) Russian (RNC)
On carstvoval 4 goda, 4 mesjaca i 4 dnja.
 he rule.PST.IPFV 4 years 4 months and 4 days
 ‘He ruled for four years, four months and four days.’

Thus, even though both the Russian and Ancient Greek instances of the PFV past are examples of the PFV defined as an unanalysable whole, they nevertheless show different behavior, and should be defined differently. This becomes even clearer if we look at more typologically divergent languages. In many languages that do not have a grammaticalized way to express tense (e.g., Berber languages; Mayan languages, such as Tzotzil), the PFV is the standard way to refer to a past event. This type of 'PFV' is very different from the PFV in Slavic or Greek, for example. Dahl's (1985) solution to this is to treat aspectual categories such as PFV as a prototype-like category, defined in terms of a set of typical properties. In this paper, I will build further on Dahl's insight, although – as explained later – I will also point out the difficulty of this classification.

As such, a comparative approach to verbal aspect may give insight into aspect from a crosslinguistic perspective, but the differences between individual languages should also be taken into account.

2.3 Discussion of the language sample

The association between the PFV OR IPFV aspect and habituality (or unbounded repetition) can be determined in a straightforward manner for languages that have a binary PFV~IPFV structure; however, as I discussed above, this is typologically not very common. As a result, it is not possible to work with a large and genetically diverse sample. This research is therefore confined to a smaller set of languages (36 in total), most of which do indeed have a binary (PFV~IPFV) aspectual structure.

For the sample, I collected data from languages that have the following properties:

- Aspectual languages with a clear binary (PFV~IPFV) system, where prefixation or suffixation associated with telicity (or limitation, (ad)terminativity) is involved in the expression of aspect. These are Slavic languages (Russian, Czech, Slovene, Bulgarian) and two non-Slavic languages (Georgian, Ossetic).
- Aspectual languages with a clear binary system (PFV~IPFV), where aspect is only expressed in the past, with two past tense forms (often called 'aorist' and 'imperfect'). These are the Indo-European languages Italian, French, Spanish (Romance), Albanian, Greek, Armenian, and Persian. Bulgarian and Georgian from the first group also belong to this group.
- Aspectual languages with a clear binary system (PFV~IPFV) without tense. These are two Semitic languages (MS Arabic, Tarifyt Berber), two languages from Middle America (Tzotzil, Mixtec), and one language from Africa (Luwo).
- Non-Indo-European aspectual languages with a clear binary system (PFV and IPFV). In my sample these are two Bantu languages with complex aspectual systems (Xhosa, Zulu) and Totonac from Middle America.

- Languages without a clear binary PFV~IPFV system:
 - Languages with a PFV but without one general IPFV marker (Turkish, Korean, Ewe, Seneca, Mohawk, Hindi);
 - Languages where aspectual markers can be combined with a habitual marker (Mian, Evenki, Quechua, Totela);
 - Languages where there is a simple past as opposed to a habitual past (English, Lithuanian);
 - Languages where aspectual marking is not obligatory (Burmese, Chinese).

I collected the data from the languages in three ways:

- using existing literature and grammars;
- consultation of native speakers or language experts, in some cases using a questionnaire as in Dahl (1985);
- using a corpus of the language or data from the Internet.

See Appendix A for a classification of the languages used in my study, and Appendix B for an overview of how the data were collected per language.

3 Overview and analysis: perfective aspect and unbounded repetition in PFV~IPFV languages

3.1 Languages where perfectivity (and imperfectivity) is related to telicity

Some Slavic languages only allow for the IPFV in the case of unbounded repetition in the past (e.g., Russian), while others allow for both aspects (e.g., Czech, Slovene).⁸ In the latter type of languages, the IPFV by itself can trigger a habitual interpretation, whereas the PFV always needs an expression of unbounded repetition, such as *every day*, for a habitual reading to occur. The use of both aspects in Czech or Slovene is explained in the literature as the result of the inherent nature of unbounded repetition (see, e.g., Benacchio and Pila 2015; Dickey 2000; Dübbers 2015; Mønnesland 1984; Stunová 1986). In the case of an event that is repeated unboundedly, the event is fully completed a non-definite number of times. This full completion of each individual event, called the ‘microlevel’ of the complex of repeated events, makes it

⁸ In Czech (and Slovak) there is also a dedicated habitual (suffix) marker *-va-*, which only occurs as part of imperfective verbs.

possible to use the PFV, which in Slavic signals full completion of a telic event. Using the IPFV, however, brings the focus to the ‘macrolevel’, where the whole of repeated situations forms a series of events without clear boundaries. This can be illustrated with Slovene (9), where the IPFV portrays the action of opening as something ongoing during a specific timeframe, whereas in (10) the subordinate clause with the PFV describes a single, fully completed instance as characteristic of something the person does every day:

(9) Slovene⁹

*Zadnjih 20 dni je Rok vsak dan odpiral poštni
past 20 days be.PRS.3SG Rok every day open.PST.IPFV mail.ADJ
nabiralnik in preverjal ali je dobil kakšno reklamno obvestilo
box and checked if AUX receive.PST any advertising notice*
‘For the past 20 days, Rok opened his mailbox every day and checked for any advertising notice.’

(10) Slovene¹⁰

*V tem pogledu sledim Dostojevskemu, ki je
in this respect follow.PRS.1SG Dostoyevsky who be.3SG.PRS
odprl vsak dan Sveto pismo [in iskal v njem navdih za
open.PST.PFV every day Holy Bible ...
razmišljanja in za vse, kar je počel].*

‘In this respect, I follow Dostoyevsky, who opened the Bible every day [and sought inspiration in it for his thinking and for everything that he was involved in.]’

Among the factors that trigger a PFV are (i) the frequency of the iteration as expressed by the adverb (the higher the frequency, the more likely the use of the IPFV), (ii) the extent to which the context focuses on an internal set of subsituations that are all repeated, and (iii) the avoidance of a progressive or conative meaning, which would be implied by the use of the IPFV. Slovene and Czech differ from Russian, where the IPFV is obligatory in past tense contexts of unbounded repetition:

(11) Russian (RNC)

*Marsel’ praktičeski každyj den’ otkryval (*otkryl) korobku...
Marcel almost every day open.PST.IPFV (open.PST.PFV) box*
‘Marcel opened the box almost every day.’

⁹ https://si.openprof.com/wb/verjetnost_dogodka_vaja_5?ch=160 (last accessed 15 Dec 2022).

¹⁰ <https://www.svetopismo.si/prisluhni-besedi-izid/> (last accessed 15 Dec 2022).

In Russian, the unbounded character of the repetition makes it hard to say where each individual event begins and ends, which results in an IPFV conceptualization (for an analysis, see Dickey [2000], Fortuin and Kamphuis [2015], discussing the East-West theory of Slavic aspect).

In Bulgarian and Macedonian we find a different situation than in the other Slavic languages due to their different aspectual structure, where there are, in addition to IPFV and PFV verb stems, also separate IPFV and PFV past tenses that combine in various degrees with the IPFV and PFV verb stems. The aorist refers to a completed past event and differs from the imperfect (IPFV past) in that it does not say anything about events that occurred during the event (+PAST, –INTR). Put differently, the imperfect signals to the hearer to look for other events that occurred simultaneously, or signals that the event was repeated in an unbounded way. The added meaning of the PFV is that it signals that the boundary ((ad)terminus, telos) of the event is reached or actualized (+AD). In the case of unbounded repetition, the PFV aorist is never used in Bulgarian and Macedonian (Dickey 2000: 74). In Macedonian, the IPFV aorist is lost, but in Bulgarian, the IPFV aorist can be used in contexts of unbounded repetition (with telic and atelic verbs), even though its use is restricted and not accepted by all speakers. Because the aorist indicates a closed event, such sentences imply or require the idea of a timeframe in which the repetition took place. It occurs, primarily in the spoken language of Sofia, with *često* ‘often’ as in (12b), with the non-prefixed (simplex) verbs *igraja* ‘play’; compare:

- (12) Bulgarian¹¹
- a. *Minalata godina, Georgi često igraeše*_[IPFV.IMPERF] *futbol.*
 - b. *Minalata godina, Georgi često igrá*_[IPFV.AOR] *futbol.*
‘Last year, Georgi often played football.’

In (12a) with an IPFV imperfect the focus is on the fact that the event regularly occurred, whereas in (12b) with an IPFV aorist the idea of regularity is absent and there may be an implication that George does not play football anymore. Sentences like these are very infrequent and probably only possible (for some speakers) with non-(ad)terminative simplex verbs such as ‘play football’, and with verbs that express actions that people usually do as a habit. Similar sentences are considered less

¹¹ This example was put forward by a reviewer. In the Bulgarian National Corpus or Russian-Bulgarian Corpus I did not find any univocal examples. A complicating factor is that the form of the IPFV aorist is often identical to the (IPFV) present tense. Native speakers were asked whether in the following sentences an IPFV aorist could be used: (a) ‘He liked it so much, that he often recalled it and laughed’; (b) ‘During our trip, he often got out of the car’. The native speakers indicated that in (a) the IPFV aorist is marginally possible, but an imperfect would be much more acceptable, and that the aorist is fully ungrammatical in (b). To what extent such aorists are accepted also depends on the type of dialect. This topic requires further study.

acceptable with *ponjakoga* ‘sometimes’ and *vinagi* ‘always’ and fully unacceptable with ‘every day’ (*vseki den*), even if an explicit timeframe is added, due to the highly cyclic meaning of ‘every day’:

- (13) Bulgarian
 **Minlatata godina, Georgi igrá*[IPFV.AOR] *futbol vseki den.*
 ‘Last year, Georgi *played* football *every day*.’

As I will show in Section 3.2, this restriction is in fact reminiscent of two other languages with an aorist~imperfect opposition in my sample (Greek or Armenian), but different from Romance languages, where there seem to be less restrictions on sentences like (13). In some contexts, it is also possible to use the PFV imperfect in Bulgarian and Macedonian. This form is only used in the case of so-called conditional-temporal constructions. In such cases the PFV is triggered because the construction singles out an individual, fully completed instance that is linked to another individual, completed instance: ‘each time that x, y occurred’, as in the following Bulgarian example:

- (14) Bulgarian (N. Chajtov, given in Nicolova 2017: 402)
Zatuj pâk dâšterja mu Hatte vikneše[PFV.IMPERF] *li da pee – zahlasvaše*
 [IPFV.IMPERF] *se vsi ko živo da ja sluša.*
 ‘But if his daughter Hatte *opened* her mouth to sing, everybody *would listen* in raptures.’

Both Georgian and Ossetic have an aspectual system to some extent similar to Slavic, where the PFV is inherently linked to telicity. The addition of the prefix to a verb stem means that the verb expresses that the (*ad*)terminus of the event has been reached (cf. Tomelleri [2010]). In Georgian there is a difference between the imperfect (IPFV past) and the aorist (PFV past). As in Bulgarian and Macedonian, we find a non-prefixed (‘IPFV’) imperfect and a prefixed (‘PFV’) imperfect (the aorist occurs almost exclusively with verbal prefixes). In the case of unbounded repetition, Georgian typically uses a non-prefixed (i.e., IPFV) imperfect. It is also possible, however, to use the prefixed (i.e., PFV) imperfect to indicate that the event (or events) was fully completed (cf. Comrie 1976: 32; Hewitt 1995: 174, 195). This use normally occurs with *xolme* (‘as a rule’), with or without an adverb of unbounded repetition, as in the example given by Comrie, where the use of the PFV is triggered by the sequential nature of the repeated events, emphasizing that each single subevent is fully completed, before the next one starts:¹²

¹² Bondarenko (2017: 80) provides an example without *xolme*, with a construction with *roca* (‘when’), and PFV imperfects in both clauses.

- (15) Georgian (Comrie 1976: 32, taken from Vogt 1971)
Ca-mo-iřaxoda xolme xřirad Salome, ga-mo-vidoda,
 PREV-PREV-CRY.3SG.IMPERF usually often Salome PREV-PREV-GO.IMPERF
mi-idebda řublze xels da ga-ixedavda
 PREV-put.IMPERF forehead.to hand.DAT and PREV-look.IMPERF
gzaze.
 road.on
 ‘Salome used often to cry, go outside, put her hands to her eyes, and look towards the road.’

The PFV imperfect is also used as a past of the future, and therefore often called ‘conditional’. As such, the habitual use of the PFV imperfect is reminiscent of English constructions with *would*, or similar uses in Bulgarian, Macedonian and old Croatian (see Fortuin [to appear] for a discussion). The most prototypical PFV form, the (pre-fixed) aorist, is not used in past contexts of unbounded repetition.¹³

In Ossetic a non-prefixed past tense can be seen as an IPFV past, whereas a prefixed past tense can be seen as a PFV past. Abaev (1964: 45) notes that to express recurrence or customariness the particle *-iu* is often used, and provides examples with PFV and IPFV past tense verbs. The particle or clitic *-iu* (literally ‘once’) can be regarded as a habitual marker. In the case of sentences without an adverb of unbounded repetition (for example *aræx* ‘often’, *xatt* ‘sometimes’) and with the clitic *-iu*, we often find the PFV past tense. This is because the idea of a habit easily presupposes the idea that a telic event was fully completed a non-specific number of times. It is also in full accordance with the original meaning of *-iu*, namely ‘once’. Cf. the following examples:

- (16) Ossetic (ONC)
Mæ iu quşj baj-quyst-on sæ sabyr nyxas-m.
 I HAB silently PFV-listen.PST-1SG their quiet speech-COM
 ‘I used to listen silently to their quiet speech.’
- (17) *Æz-iu æm quyst-on æmæ-iu mæ bar-ænæbary jæ*
 I-HAB him listen.PST.IPFV-1SG but-HAB my willy-nilly his
uacar-y ba-kodt-a.
 captivity-LOC PFV-make.PST-3SG
 ‘I used to listen to him, but whether I wanted it or not, he captivated me.’

In (16), the PFV of the verb ‘listen’ focuses on the idea of completion and success (for example that someone has taken to heart what is said), whereas the use of the non-

¹³ Except for some sentences with *zogřer* ‘sometimes’, which are similar in character to bounded repetition ‘on various occasions’; see, for instance, the example given in Hewitt (1995: 135).

prefixed (IPFV) verb in (17) presents the action as an ongoing process, not necessarily with the idea of success. In the case of sentences with an expression of unbounded repetition and the past tense, we find various combinations (PFV or IPFV with or without habitual marker), although the PFV with habitual marker and the IPFV without habitual marker seem to be the most common.

3.2 Languages with a PFV~IPFV system in the past (Spanish, Albanian, Armenian, Greek, Persian)

In this section I discuss Indo-European languages that have a system with a PFV past (often called aorist) and an IPFV past (often called imperfect).¹⁴ Even though in Romance, habituality is strongly associated with the IPFV aspect, we also find instances with a context of unbounded repetition and the PFV aspect. This can be illustrated with the following sentences from Spanish. Both of them have a habitual character since they report on a characteristic situation that was typical of an extended period of time in the past:

- (18) Spanish (Gabriel García Márquez. *Vivir para contarla*. 2002)
*Desde el primer día **acaparó**[PST.PFV] la poltrona más cómoda, **puso**[PST.PFV] varias torres de libros nuevos en una mesita y **leyó**[PST.PFV] sin espabilar desde la mañana hasta que lo **distraían**[PST.IPFV] las parrandas de la noche. **Cada día apareció**[PST.PFV] en el comedor con una camisa de playa diferente y florida, y **desayunó**[PST.PFV], **almorzó**[PST.PFV], **comió**[PST.PFV] y **siguió**[PST.PFV] leyendo solo en la mesa más arrinconada.*
 ‘From the first day he hoarded the most comfortable armchair, put several towers of new books on a small table and read without stirring from morning until he was distracted by the night parties. *Each day he appeared* in the dining room in a different and flowery beach shirt, and *had* breakfast, lunch, [ate] dinner and *went* on reading [only] alone at the most cornered table.’
- (19) ***Iba**[PST.IPFV] a cumplir veintitrés años el mes siguiente, **era**[PST.IPFV] y a infractor del servicio militar y veterano de dos blenorragias, y me **fumaba** [PST.IPFV] **cada día**, sin premoniciones, sesenta cigarrillos de tabaco bárbaro.*

¹⁴ Johanson (2000: 79) also lists examples of non-Indo-European languages of this type (Basque, Kalmyk, eastern Finno-Ugrian, Kartvelian and several other Caucasian languages), and remarks that “[s]uch language-specific oppositions have much in common”. Bulgarian and Macedonian also belong to this group, but this was already discussed in Section 3.1.

'I was going to turn twenty-three the following month, I was already an offender against military service and a veteran of two bouts of gonorrhea, and every day I smoked, with no foreboding, sixty cigarettes of barbaric tobacco.'

In (18) we find a narrative with only PFV's, except for one IPFV past. The use of the PFV with 'each day' singles out a series of completed events that are presented as typical of how things proceeded during a specific time in the past, although there is no linguistic reference to this (e.g., during his stay there, last summer, etc.). Both the specificity of the events and the timeframe, and the fact that the events are part of a chain, make it possible to present them as closed or total. In (19), with only IPFV's, the reoccurring, habitual, event is presented as an ongoing general habit that is characteristic of a person during the given, extended period of time. The first two IPFV's serve as a background for the story and provide general information about a person.

In Armenian the PFV past can also occur in contexts of unbounded repetition, but such uses are more limited than in Spanish. They do not occur with "every day" as in Spanish (18), but are exclusive to the adverb *hačax* 'often' (Donabédian-Demopoulos 2016), for example with the verb 'remember':¹⁵

- (20) Armenian
 '[Having returned from Zangezur, I actually recounted to Hamo Sahyan the event related to the inscription, and]
aynk'an tur.ekav nran, or hačax verhiš-ec` u
 so.much please.AOR.3SG 3SG.DAT that often recall-AOR.3SG and
cicał-ec`.
 laugh-AOR.3SG
 '... he liked it so much, that he often recalled it and laughed.' (Donabédian-Demopoulos 2016: 387)

In this particular example, the use of the PFV is triggered by the specific context, expressing that on various occasions a given event occurred, followed by another event. The Armenian data are partly reminiscent of Greek and Albanian. In Greek the PFV can occur with expressions of unbounded repetition, such as *sychná* 'often', as illustrated with the earlier example (4), and *merikés forés* 'sometimes', as in the following example:

¹⁵ In the Eastern Armenian National Corpus (EANC) I also found examples with *yerbenn* 'sometimes', 'at some occasions' and an aorist, and examples with *mišt* 'always' and an aorist.

(21) Modern Greek (CMG)

*An kai arketá fonímata cháthikan, o diaforetikós tonismós káthe týpou
synévale sti diatírissi tis metaxý tous diákrisis*

kai aftó merikés forés odígise ston schimatismó
and this some times lead.3SG.PAST.PFV to formation

enós anomálou rímatos.

one irregular verb

‘Although several phonemes were lost, the different accentuation of each form helped to keep them apart and this sometimes led to the formation of an irregular verb.’

Both expressions of unbounded repetition presuppose the idea of an occasion or time that occurs either frequently (often; i.e., on various occasions) or with some regularity (sometimes; i.e., on some occasions). The same is in fact true for Albanian, where the PFV (aorist) can be found in contexts with *shpesh* ‘often’ and *ndonjëherë* ‘sometimes’. In the languages in my sample, the meaning which is expressed in English by *often* seems to occur more frequently with the PFV than the meaning expressed in by English *sometimes*. The explanation for this is that in many languages ‘often’ can be used more easily with respect to a bounded and shorter timeframe than ‘sometimes’, which requires the idea of a stretch of time consisting of various intervals. This explains why Dutch (22a) with *vaak* ‘often’ is acceptable, whereas (22b) with *soms* ‘sometimes’ is not; in both sentences the present perfect is used.¹⁶

(22) Dutch

a. *Gisteren heb ik vaak zonnebrandcrème opgedaan.*

‘Yesterday, I often put on sunscreen.’

b. **Gisteren heb ik soms zonnebrandcrème opgedaan.*

‘Yesterday, I sometimes put on sunscreen.’

Nevertheless, expressions with ‘sometimes’ as in Greek (21), given that the iteration of the event is relatively low, may also suggest the idea of a specific occasion when the event occurred. In such sentences, the speaker presents one completed (PFV) occurrence of the repeated events as typical of how things proceeded. Such sentences show properties of bounded repetition, specifically the idea of a concrete occurrence of an

¹⁶ The idea of a short or large timeframe is not absolute and depends on the linguistic context. In the following example with a past tense, the use of *soms* is acceptable: ‘Toen ik de docu terugkeek had ik *soms* het idee dat je wordt weggezet als een soort karakter, of een personage’ (‘While watching the documentary, I *sometimes* had the feeling that I was being portrayed as a kind of character’). This is because one can think of ‘watching the documentary’ as a period which can consist of various intervals.

event, which in the case of bounded repetition is often indicated by expressions referring to times (as in English *three times, a couple of times*, etc.). The same individuating character may also occur with ‘often’. In these sentences there are additional factors that trigger the PFV. To give an example, in (4) the PFV is triggered by the context where the repeated event (“face antisemitism”) occurs against the background of some other action (“returning to their homelands”), which makes it easier to present it as something complete. The use of the PFV is much more restricted or even absent with ‘every day’ (see, e.g., Newton [1979: 141, 165] and Lindvall [1997] for Greek *káthe méra* ‘every day’). This expression has a cyclic meaning and therefore easily suggests the idea of something ongoing. Because of this, it triggers the idea of several points in time, which is typical of the IPFV. There are exceptions, however, as in the following Albanian example, where the PFV occurs with *çdo ditë* ‘every day’:

- (23) Albanian (Albanian National Corpus)
*Për ta ndrequr atë kumborë, çdo ditë pagova*_[PST.PFV] *gjysmë leku, kështu që, brenda 40 ditëve, vdiq sahati*
 ‘To correct that mistake, I paid half a lek every day, so that within 40 days, the issue with the clock (watch) was solved....’

In Greek the PFV would be chosen here as well. The reason is that the repetition refers to a limited period of time in a narration, and on each day one specific event occurs. If the time span is shorter, and if the events that are repeated are more specific, it is generally easier to name or guess the exact number of iterations (cf. Bertinetto and Lenci 2012). As such, examples such as these conform less to the definition of habituals as describing a situation which is characteristic of an extended period of time, than as something characteristic of a whole period. Interestingly, in Greek the PFV is also possible in some contexts with *pánta* ‘always’, even though this adverb refers to a continuous time span:

- (24) “*Pánta, ypostírixa*_[PST.PFV] *théseis pou pistévo óti antéchoun ston chrono*” *eípe*.¹⁷
 “‘I [have] always supported positions that I believe can withstand time,’ he said.’

In this case the PFV can be explained by the retrospective character, where the speaker takes stock at a particular moment in the present of a specific period in the past. By using the PFV, the speaker emphasizes that the actions of this period must be seen as closed, as something belonging to the past.¹⁸ In (25) the IPFV focuses on the

¹⁷ Example taken from the Hellenic National Corpus of Greek Language.

¹⁸ One may hypothesize that this use is related to the more restricted use of the perfect in Greek (see for example Van der Klis et al. 2022).

ongoing (re-occurring) past action of supporting, which in this example also continues into the present:

(25) Modern Greek

Pánta ypostíriza^[PST.IPFV] *kai ypostirízo sthenará tin ápopsi pos éinai enklimatikó láthos i diáthesi tou gia ton skopó aftó.*¹⁹

‘I have *always supported* and strongly support the view that his disposition for this purpose is a criminal mistake.’

It is interesting to compare Greek, Armenian, and Albanian with Persian, because Persian has a similar PFV~IPFV structure but does not allow the use of the PFV with *har ruz* ‘every day’, *hamiše* ‘always’, *aqlab* ‘often’, *ba’zi-vaqth* ‘sometimes’, *barxi auqat* ‘sometimes’. In all these contexts, the IPFV past with *mi-* is used and the PFV past is excluded (see, e.g., Mahootian 1997: 241; Taleghani 2008: 86, 116).²⁰ Only in very specific contexts, the PFV is not fully excluded, as can be illustrated with the following Persian translation from *The Old Man and the Sea* by Ernest Hemingway (note that this example was judged to be perfectly acceptable by native speakers of Persian):

(26) Persian (Farsi) (Rahimian 2010: 149)

se hafteh har ruz māhi-hā-ye dorost gereft-im.
three week every day fish-PL-LINK big catch.PFV.PST-1PL

‘[But remember how you went eighty-seven days without fish and then] we caught big ones every day for three weeks.’

The PFV in (26) is facilitated by the use of *se hafteh* ‘for three weeks’. This expression indicates that the episode of catching fish every day occurred during a limited and relatively short timeframe in a narrative, which is part of a chain of events (‘first without fish, and then caught fish’). Such a limited (bounded) and relatively brief ‘for’-timeframe can facilitate the use of the PFV because it indicates the limits for the realization of the re-occurring event as part of the narration. Nevertheless, the use of the PFV in contexts of unbounded repetition is much more restricted than in languages such as Spanish or Greek and does for example not occur with expressions such as ‘last week/year, etc.’:

¹⁹ <https://efimeridakefalonias.gr/el/2020/06/14/γνώριος-τσιλιμιτός-είναι-εγκληματι/> (last accessed 15 Dec 2022).

²⁰ In order to determine this, I asked native speakers of Persian whether the counterparts of the Armenian and Greek examples with unbounded repetition and a perfective would be possible in Persian. In none of these cases, this was the case. In Persian, expressions of unbounded repetition suggest the idea of an ongoing situation, which is not in accordance with the meaning of the perfective past. The perfective past is, however, chosen in the case of bounded repetition and universal negation (*hargez/hichvaqt* ‘never’). This latter is also reminiscent of Greek *poté* and Armenian *erbevê* (both ‘never’), which can occur with an aorist.

(27) Persian (Farsi)

**Haftē-ye gozašte har ruz māhi-hā-ye bozorg gereft-im.*
 week-LINK last every day fish-PL-LINK big catch.PFV.PAST-1PL
 ‘Last week we caught big fishes every day.’

As I have shown, the presence of a limited (bounded) timeframe is not a prerequisite for using the PFV in my sample of languages. Besides the presence or presupposition of a limited timeframe, there are other factors that may trigger the PFV, such as the presence of a series of repeated events, the type of repetition, and the possibility of conceptualizing the unbounded repetition in terms of a specific instance that was typical of the general repetition in the past.

3.3 Languages with a PFV~IPFV system without tense

In my sample there are five tenseless languages with a PFV~IPFV system (Arabic, Tarifyt Berber, Tzotzil, Luwo and Mixtec). In all these languages, the PFV is closely associated with a past reference. Structures of this kind entail potential competition between the use of the PFV to signal a past reference, and the use of the IPFV to signify that there are no boundaries to the repetition (‘non-totality’).²¹ Table 1 gives an overview of the aspect in contexts of unbounded repetition.

In this group we find different strategies, probably due to the association between past reference and the PFV on the one hand, and unboundedness and the IPFV on the other. In Tarifyt Berber, habituais are always IPFV, which means that the past

Table 1: Aspect and unbounded repetition in tenseless aspectual languages.

Language	Aspect
Tarifyt Berber	IPFV
Luwo	auxiliary verb ‘be’ + PFV (past habitual) or IPFV (unbounded repetition)
Arabic (MS)	(PFV/PST) auxiliary verb <i>kāna</i> (‘be’) + IPFV
Tzotzil	IPFV OR PFV
Mixtec	IPFV OR PFV

²¹ The perfective in MSA is often used to signal past reference, but this is not the only interpretation. The perfective can also be used in performative sentences (see Fortuin 2019). Also in the other languages in this sample, one of the prototypical interpretations of the perfective is to signal past reference, but this is not the only interpretation.

reference has to be inferred from the context.²² In Arabic, we find a construction consisting of a (perfect(ive)) auxiliary verb *kāna* ‘was/were’, which explicitly signals past reference, and an IPFV verb (O’Brien 2003: 76), which signals the habitual character of the event. In Luwo, both a PFV construction and an IPFV verb are possible. In Tzotzil, the IPFV is typically used with expressions of unbounded repetition, such as *jujun k’ak’al* ‘every day’. However, with regard to Tzotzil, Vinogradov (ms) also mentions that the PFV can be used in past tense habituais to indicate that the habit only refers to the past; an example is given in (28) with *li junabie* ‘last year’, although the timeframe can also be a longer period as in (29):

- (28) Tzotzil (Igor Vinogradov, ms)
Li junabi=e l-i-anilaj ta jujun sakub-el osil
 DEF last.year=ENCL PFV-1.ABS-RUN PREP every dawn-NMLZ earth
 ‘Last year, I ran every morning.’

- (29) *Ta epal jabil jutuk mu s-kotol k’ak’al l-i-bat*
 PREP many year one not 3.POSS-all day PFV-1.ABS-go
*li ta mukinale.*²³
 the PREP cemetery
 ‘For many years, I went to the cemetery nearly every day.’

In these sentences, the event is situated in a specific timeframe, which emphasizes the idea that at the moment of speech the series of events has been completed, presenting a fact about the past. This retrospective-like conceptualization differs from instances with an IPFV, where the focus is on the past where the events are repeated unboundedly. The Tzotzil data are partly comparable to the Nuyóo Mixtec data. In this language, habitual situations (Bickford and Marlett 1988: 8) can be indicated by both the PFV and IPFV:

- (30) Nuyóo Mixtec (Bickford and Marlett 1988: 7–8)
 a. *sá ñ nee =ni? yuuⁿ nuyóo*
 while PFV live ls town Nuyóo
xee ñ yaxi =ni? we?i alwétó?
 and PFV eat ls house Alberto
 ‘While I lived in Nuyóo, I ate (used to eat) at Alberto’s house.’

²² The only exceptions to this rule are instances where the perfective expresses an (inchoative) state that results from the completion of the event; for example, ‘The store always used to be open(ed)’, where opened is indicated by a perfective. In this case the imperfective could also be used, for example if a timeframe is added, such as *řmeřta* ‘during winter’. Such a timeframe shifts the focus from a permanent resultative state of being open, to an ongoing state that coincides with the given period.

²³ <https://wol.jw.org/tzo/wol/d/r91/lp-tzo/2015085> (The Watchtower).

- b. *xá?a* =*ráa* *ntewísí?...*
 give.IPFV 3p soft.drink
 ‘They (the bride’s family) used to give soft drinks (to the suitor’s family)...’

Precisely because of the temporal subordinate clause in (30a), the event of living is presented as something that occurred in a limited timeframe in the past and no longer in the present, which makes it possible to use the PFV. In the case of the IPFV as in (30b) some other time span (such as the moment of speech) coincides with part of the habitual macrosituation, thus “imposing an ‘inside out’ perspective on it” (Bickford and Marlett 1988: 8).

In the non-tensed PFV~IPFV languages, the PFV can also be chosen if the repetition shares properties of both unbounded and bounded repetition. This is the case in Arabic sentences with *tāratān* ...*wa-ṭura(nān)* ‘sometimes X, sometimes Y’, in constructions with *kullamaa* ‘whenever’ (both in the main clause and subordinate clause; Bahloul [2008: 59]), which all share properties with bounded repetition. Similarly in Tzotzil, depending on the construction, the PFV or IPFV is used in sentences that express ‘whenever’.²⁴

3.4 Non-Indo-European PFV~IPFV languages (Xhosa, Zulu, Totonac)

In my sample, there are three non-Indo-European languages with a (partly) tensed binary IPFV~PFV structure, namely the related Bantu languages Xhosa and Zulu (see also WALS and Dahl [1985] for Zulu), and Upper Necaxa Totonac from Mexico.

In Upper Necaxa Totonac, past habituais (with or without expressions of unbounded repetition) always occur with the past tense plus the IPFV aspect marker, and not with the PFV aspect marker, which is used to indicate complete events.²⁵ As such, there is a clear relation between past habituality and the IPFV. In Xhosa and Zulu, past habituais are expressed by the remote past plus IPFV aspectual marking (see, e.g., Dahl [1985] for Zulu, and Savić [2017] and [2020] for Xhosa). Savić [2017] suggests that in Xhosa there is a sliding scale between the use of the PFV and IPFV in the case of iteration. In his opinion, the more unspecified the number of iterations, the higher the probability that the verb will take the IPFV aspect. In fact, examples of PFV habituais with either a remote past or a recent past can be found, as illustrated by the following example with *yonke imihla* ‘every day’ and a perfective remote past:

²⁴ See, for example, the use of the imperfective with *ju-jun bwelta* ‘every turn’ (Laughlin 1977: 18) and the use of the perfective with *bu* ‘where(ever)’ (Laughlin 1977: 317). The perfective also occurs with *ep ta velta* ‘many times’, ‘often’.

²⁵ David Beck (pc).

(31) Xhosa

Wayesesibhedlele iinyanga nabahlobo bakhe babe besiza[PFV remote past]
kuye yonke imihla, bezama ukgcwalisa inkumbulo yakhe, bemkhumbuza
*ukuba, ewe uyathanda ukubukela ibaseball.*²⁶

‘He had been in the hospital for months, and his friend *came* to him *every day*, trying to fill in his memory for him, reminding him that, uh, he loved watching baseball.’

The use of the PFV is perfectly acceptable, because the speaker has in mind a specific period of time in which the iteration occurs. Xhosa thus shows similarities to other languages with a PFV~IPFV system.²⁷

3.5 IPFV~PFV languages without a (clear) binary system

3.5.1 Languages without a clear binary structure

In this subsection I will discuss languages with a PFV but without a clear or simple binary structure. These languages can provide insight into whether PFVs are incompatible with habitual contexts *per se*, or whether this hypothesized incompatibility only occurs in languages with a clear or simple binary PFV~IPFV structure. My sample includes six languages without a simple or clear binary PFV~IPFV aspectual structure, namely Turkish, Korean, Ewe (Niger-Congo), the two related languages Seneca and Mohawk (Iroquoian), and Hindi.²⁸ In these languages, the PFV (past) is contrasted with other forms, such as a habitual, progressive, simple past tense. Except for Hindi, in all of these languages the PFV form can be used in past contexts of unbounded repetition without any restriction. The use of the PFV can be illustrated with the following examples from Ewe and Mohawk:

(32) Ewe (pc)

ɲútsu=ɔ xlē agbalē=a édzi-édzi
 man=DEF read.AOR book=DEF often
 ‘The man often read the letter/book.’

²⁶ This sentence is based on an example from <https://en.opentran.net/xhosa-english/yonke+imihla.html>, but slightly adapted by a native speaker.

²⁷ The extent to which such sentences also occur in Zulu requires further investigation.

²⁸ WALs does not give Ewe as a perfective~imperfective language, whereas it does give, for example, the Niger-Congo language Akan. Note that Akan also has a completive aspect, progressive aspect, and habitual aspect marker (indicated by tone), in addition to other markers, such as the perfect. It is therefore not immediately clear to me why these languages are classified differently.

- (33) Mohawk (pc)
Iotkà:te' *shes* *en-ha-wennahnó:ton'*
 often customarily FUT-3M-read-PUNCT
tsi nahò:ten' *ro-hiaton-hser-ot-à:s-e'*.
 at what 3M-write-NOM-standing-BEN-STATIVE
 'The man often read the letter.'

In Ewe we find the aorist, which can be seen as a PFV form of the so-called 'factative' type; that is, it refers to total past events with dynamic verbs, and to present states with non-dynamic verbs. In Mohawk we find the future marker (*en-*) and the punctual aspect (cf. Baker and Travis 1997; Mithun 2016: 227), as in Seneca, where the punctual factative is used (see, e.g., Chafe 2019: 116).²⁹ The punctual factative can be seen as a PFV form (see, e.g., Dahl [1985: 70, 173]). In some cases, there is disagreement in the literature about the extent to which a language has a clear and simple binary structure. This is the case, for example, with Turkish, which WALS gives as a PFV~IPFV language, based on Dahl (1985), who lists the definite or simple past (on *-TI -di*) as the PFV, and the (non-future) continuous marker *-(I)yor* as the IPFV. He probably does this because the definite or simple past never indicates a situation in its progression, whereas *-(I)yor* can indicate both progressive and habitual situations. The quotative past marker *-miş* is not treated as a PFV marker by Dahl (1985), in contrast to Göksel and Kerslake's (2005) analysis. If we turn to contexts of unbounded repetition, it seems that there are no specific restrictions and that all markers (definite past *-TI*, continuous *-(I)yor*, quotative past *-miş*, and aorist *Ir -(I/E)r* [combined with tense marker]) are possible with expressions of unbounded repetition. In the following example, we find the expression 'often' and a PFV past:³⁰

- (34) Turkish
Çok sık olarak, Majeste beni görmeyi reddetti[PST.PFV]
 'Very often His Majesty refused to see me.'

So even though the aorist marked with a tense marker is specialized in indicating typical habits, any expression of unbounded repetition, including *her gün* 'every day', can be combined with all of the mentioned TAM markers (cf. Johanson [2000: 92], who argues that all the markers with a low focality, i.e. the definite past and aorist, are easily interpreted as having habitual or future time reference). This is

²⁹ For the future as a source gram of the habitual form, see also Bybee et al. (1994: 157–158). Note that in this Mohawk example the past habitual marker *shes* is also used; this form is not obligatory, and is often used at the beginning of the narration.

³⁰ The original Italian example has a perfective past tense form here as well (source: <https://www.subtitlecat.com/subs/123/%28hdpopcorns.com%29%20Ludwig%20%281973%29.html>).

actually typical of all the languages in my sample that lack a clear binary (PFV~IPFV) structure, except for Hindi. In Hindi the use of the PFV (without auxiliary ‘be’) is very uncommon in such contexts. Instead, the habitual form (verb root + *t* [*tha*]) or an IPFV is normally used,³¹ although sentences with the PFV are not fully excluded and are possible, for example, with ‘often’:

- (35) Hindi
maian akasar usakē ghar par sōyā
 I often his house at sleep.PST.PFV
 ‘I often slept at his house.’

It is interesting to look in more detail at languages that have a dedicated habitual aspectual marker. In such languages, this form is used in contexts of unbounded repetition and general habitual contexts that lack the idea of repetition:

- (36) Ewe (pc)
ɲútsu=ɔ nyí-ε kútú édzí-édzǐ.
 man=DEF suck-HAB orange often-often
 ‘The man eats/ate oranges often.’

- (37) Mohawk (pc)
Ie-wennahnot-á-hkhwa’ ra-wennahnót-ha-hkwe’ ne r-ón:kwe
 3F-read-LINK-INSTR 3M-read-HAB-FORMER.PST DEF 3M-HUMAN
 ‘The man used to read books.’

This raises the question: in which cases is the habitual marker used in contexts of unbounded repetition, and when are other verb forms used, specifically the PFV? In Ewe, the habitual indicates a habit with a more generic character. In (36) the non-definite object accords well with this meaning, in contrast to the aorist, as in (32), which provides a more definite or specific (episodic) conceptualization. This case is about a definite or given letter that is read many times. This difference in meaning between the PFV and habitual forms also plays a role in the Iroquoian languages. In Mohawk, the habitual morpheme *-ha’* or *-s*, followed by the past morpheme *-kwe’*, can be used in sentences with adverbs of unbounded repetition or ‘seldom’, but is most typical of sentences without an adverb that express a generic statement, unlike (33). More research is necessary to determine the exact division of labor between the habitual and the aorist (PFV) in these languages.

³¹ We find the frequentative (perfective form [in MSG form] of a verb followed by an imperfective form of the verb *kar* [‘to do’]), or the so-called ‘routine imperfective’ (imperfective participle without any auxiliary of present or past).

3.5.2 Languages where there is a simple past as opposed to a habitual past

A difference comparable to the one found in Mohawk can in fact be observed in the two languages in my sample, where there is a habitual form for the past, as opposed to a simple past tense form that is not clearly PFV (or IPFV): the English simple past versus the habitual *used to* or *would* constructions, and the Lithuanian dedicated habitual past with the suffix *-dav-* and the (unmarked) simple past. In both of these languages, expressions of unbounded repetition, such as ‘often’, can occur with both the simple past and the habitual construction, although in Lithuanian there is clear association between expressions of unbounded repetition and the habitual construction, and expressions of bounded repetition and the simple past (Sakurai 2015: 401–402). In English the habitual construction with *used to* presents the situation differently, i.e. as something that was typical of some period in the past (often with the suggestion that this is no longer the case), a feature that is absent with the simple past. In many studies, such habitual uses are treated as IPFV because they adhere to the general description that habituals are IPFV, or because they are similar to habitual uses that are expressed by IPFVS in languages with a PFV~IPFV past. In my view, however, it makes little sense to try to determine whether such habitual uses are IPFV (or PFV) because this opposition is simply not part of the aspectual system of English or Lithuanian (cf. Sasse 2002).

3.5.3 Languages where aspectual markers are combined

For languages with a separate habitual marker, it is difficult to test the hypothesis of whether habituals are inherently IPFV because the habitual aspectual marker indicates a separate aspectual class that is not marked as either PFV or IPFV. There are, however, languages where aspectual forms can or have to be combined with other aspectual markers, including IPFV or PFV markers. In my sample there are five languages where the habitual aspectual marker can be combined with other (PFV or IPFV) aspectual markers: South Conchucos Quechua, Totela (Bantu), Mian (Trans New-Guinea), Evenki (Tungusic) and Supyire (Atlantic Congo).

A clear example of an inherent relation between the IPFV and habitual forms can be found in Mian, where the habitual past *bina* always co-occurs with the IPFV marker *-b* (Fedden 2011: 246, 406). A similar co-occurrence can be found in Totela (Bantu, see Crane 2011: 94, 312, 314), where past habitual events expressed by habitual *-ang-* co-occur with the preodiernal IPFV *-ka*. A strong association between the habitual marker and PFV aspectual markers can be found in South Conchucos Quechua (Hintz 2011). This language has twenty productive derivational and inflectional aspectual markers, which Hintz categorizes into PFV and IPFV aspect. The past habitual marker *-q* (cf. English *used to*) and the durative suffix *rayka:*, which can also have a habitual interpretation, never seem to occur with markers that Hintz classifies as PFV, with the

Table 2: Habitual markers and aspectual markers.

Language	Aspectual profile of dedicated habitual aspectual marker
Mian	IPFV marking obligatory
Totela	IPFV marking obligatory
South Conchucos Quechua	Can co-occur mostly with IPFV aspectual forms
Evenki	Can co-occur with PFV non-future (with present reference)
Supyire	Can co-occur with PFV OR IPFV

exception of punctual *-ri*, which occurs infrequently with the past habitual marker. However, there are also languages where habituals can occur with PFV marking. In Supyire, a Niger-Congo language from Mali and Ivory Coast, the past progressive (marked for progressive *na* and past (*m*)*pyi*) can have a habitual meaning, and occurs with IPFV marking, whereas the past habitual (marked for habitual *màha* and past (*m*)*pyi*) occurs with both the IPFV and the PFV aspect (see Carlson 1994: 354–55). In the latter case, the PFV seems to be triggered by the expression of telic events that occur in a sequence of events. Other languages show a more complex picture. This is the case in Evenki (Nedjalkov 1997). Evenki has a fairly complex TA system (see Nedjalkov 1997), with several markers that can indicate a habitual event: (i) habitual participle (*-vki*), (ii) habitual (*-ngnA*), and (iii) habitual past (*ngki*). All these markers can co-occur with the IPFV marker (*-d'A*). The habitual marker *-ngnA* can also occur with the PFV (definite) non-future ('aorist'). In that case, the non-future tense gets a *present* reference. Table 2 gives an overview of the languages in my sample.

As Table 2 shows, in my sample there is indeed a relation between dedicated habitual aspectual forms and the IPFV aspect but this relation is certainly not absolute. Thus, the claim that dedicated habitual markers *inherently* or a priori have an IPFV profile is too strong; the data rather suggest that habitual markers have their own dedicated aspectual semantics, which in many languages are compatible with the IPFV meaning but in some languages also with a PFV meaning.

3.5.4 Languages without obligatory aspectual marking

Besides languages where all or most verbs are marked for aspect, there are also languages where aspectual marking is not obligatory. In my sample this is the case for Burmese and Mandarin Chinese. Burmese has a number of adverbial so-called finite/status markers, which express various TAM meanings (reality suffix *-tε/dε*, future tense *-mε*, PFV *-pi/bi*, statement *-p^hù/bù* see, e.g., Jenny and Hnin Tun [2016]). In addition, there are also forms that have a habitual aspectual meaning. Although Romeo (2008: 54, 96–7) argues that habitual sentences with past reference (with or

without an expression of unbounded repetition) are marked with the ‘reality’ suffix *-tɛ* and the habitual marker (either *-taʔ* or *-lé*), the data from Burmese show that expressions of unbounded repetition, such as *kʰəná-kʰəná* ‘often’, *ʔəmjé.dàn* ‘always’, and *né-dàin* ‘every day’, can occur on their own, with or without a habitual marker, and with any of the other finite/status markers. For instance, Romeo (2008: 132–133) provides an example with ‘often’ with the PFV postverbal marker *-pi*, which is derived from the meaning ‘finish’:

- (38) Burmese (Romeo 2008: 132)
- | | | | |
|-----------------------|-------------------|------------------------|---------------|
| <i>Mãtʰo=jé</i> | <i>mibá=tó=ká</i> | <i>məʃakʰəná</i> | <i>jwa-ká</i> |
| Maung.Cho=POSS | parent=PL=SUBJ | often | village-FROM |
| <i>jauʔ=la=tʃá=pi</i> | <i>mãutʰo=ko</i> | <i>la-tʃí= tʃá=tɛ.</i> | |
| arrive=come=PL=PFV | Maung.Cho=OBJ | come-see=PL=REAL | |
- ‘Maung Cho’s parents would often arrive from the village and come to see Maung Cho.’

In this case, the PFV marker is triggered by the context of sequentiality (cf. Romeo [2008: 119, 214–215]). In Chinese, in the case of unbounded repetition or habitual contexts in most instances no aspectual marker is used, neither PFV (*le*) nor IPFV (*zai*, *zhe*) (Yang 1995: 138), although sentences with *le*, *zai*, or *zhe* and expressions of unbounded repetition are not fully excluded with expressions of unbounded repetition, for example to emphasize the duration of the event (39a) or to make explicit that the natural endpoint of the event was reached (‘so busy that he often forgot’ in 39b):

- (39) Mandarin Chinese
- a. *jìn liǎng nián wǒ jīng-cháng zài xiǎng yī jiàn shì*
 recent two year I often PROG think one CLF thing
 ‘I have often been thinking about one thing for the last two years.’ (CCL)
- b. *Nà jǐ nián, tā hěn máng, shǒu-jī fēi*
 that several year he very busy mobile-phone bill
jīng-cháng wàng le jiāo
 often forget PFV pay
 ‘During those few years, he was very busy, and often forgot to pay mobile phone bills.’ (pc)

4 Conclusion

In this study I examined the hypothesis put forward in the literature that habituals are inherently IPFV and that PFV habituals do not exist. Since it is not possible to objectively determine whether dedicated habitual expressions or habitual aspectual

markers are PFV or IPFV, I focused primarily on sentences with expressions of unbounded repetition, which constitute a subset of habitual expressions.

I also focused on habituais with past reference because in many languages aspect is only expressed in the past tense. There are relatively few languages that have a simple binary PFV~IPFV system. The category IPFV is a comparative concept that is not suitable for dedicated progressive or habitual constructions, which constitute separate comparative categories. Therefore, the question of whether there is a relation between habituais and the IPFV aspect can only be answered for a fairly limited sample of languages. The question of whether PFVs are used in past habituais can be answered for a larger set of languages because there are relatively many languages that have a PFV, but no single IPFV marker.

With respect to the research question, my conclusion is that in languages with a binary PFV~IPFV structure, there is indeed a strong relation between habituais (interpreted in terms of sentences containing an expression of unbounded repetition) and the IPFV. This suggests that from a comparative perspective the idea of a situation that is not presented in its totality but as a situation in its progression, occupying several points on a timeline, is semantically close to a habitual situation, and therefore put in the same category as a situation that is repeated unboundedly, on different occasions. In many languages without a general IPFV marker but with a PFV form, this relation is less strong. In these languages, such as Ewe, past habituais can be indicated by PFV verbs without any restriction even when other verb forms can occur in habituais as well.

With the exception of Ossetic, in all binary languages in my sample the IPFV is the most common aspect in habituais, and this is a possible reading of the IPFV even without explicit expression of unbounded repetition. Some languages in my sample do in fact only (Russian) or almost exclusively (Persian) allow for the use of the IPFV in past habituais. Of all the languages in my sample, Russian probably has the most restrictions on the use of the PFV in past habituais. This is related to the fact that in comparison with other (Slavic) languages, the division of labor between the PFV and IPFV has changed, such that the IPFV can also be used for fully completed telic (terminative) events, whereas the PFV requires more triggers in order to be used. The reason why Ossetic forms an exception and prefers the PFV in past habituais is connected with the aspectual system of Ossetic, which is inherently related to telicity. The PFV in Ossetic indicates that the *telos* (natural end point, (ad)terminus) of the situation has been reached, something that is typically the case when situations are repeated. A somewhat similar situation can be found in Czech and Slovene, where the use of the PFV is possible if the speaker wants to focus on the microlevel of the repeated events and stress that each individual (telic, (ad)terminative) event was fully completed.

Notwithstanding the strong association between the *IPFV* aspect and past habituals, most of the languages in my sample do not exclude *PFV* habituals, and there are specific triggers for their occurrence. The following contexts may trigger a *PFV* habitual in most of those languages:

- The more the repetition can be considered to occur on a specific occasion, similar to bounded repetition, the more likely the possibility of a *PFV* being used. The use of the *PFV* is therefore possible in most languages with ‘whenever’, and in many languages with ‘often’ and ‘sometimes’, whereas in many languages the use with ‘every day’ is either impossible or very restricted. In contrast to the first three expressions given here, ‘every day’ has a cyclic meaning and therefore more easily suggests something ongoing in time, which is expressed by the *IPFV*. On the basis of my sample, one can postulate the following scale of likelihood that the *PFV* can be used: ‘whenever > often > sometimes > always > every day’.
- If the situation occurs in a bounded (limited) timeframe that is linguistically expressed or implied, the use of a *PFV* is more likely. This timeframe then serves as the background for the completed event. In relation to this, in some languages the *PFV* is also possible in contexts where the speaker takes stock of a past period, which is no longer valid for the present.
- If the repeated situation is part of a chain of events that is repeated, in which case, the construction emphasizes or highlights that one situation is completed before the next one starts (cf. Dahl [1985: 78], for the correlation between the *PFV* and narrative contexts, including sequential contexts).

Because some expressions of unbounded repetition with *PFV*'s occur within a limited and sometimes relatively short timeframe or show similarities to bounded repetition (for example, ‘whenever’), they can be considered less typically habitual in the sense of Comrie (1976), that is, they do not point at a characteristic feature of a whole period (lawlike generalization). Nevertheless, this is certainly not always the case. Because of this, there are no convincing reasons in my view to exclude *PFV*'s in the context of unbounded repetition from the domain of habituality, as is advocated by Bertinetto and Lenci (2012).

I also looked at languages where the habitual aspect can be combined with other aspectual markers, such as *PFV* and *IPFV* aspectual markers. Here we find the same picture: that is to say, in many of these languages there is an inherent or strong relation with the *IPFV* aspect, but there are also languages where the habitual marker can be combined with a *PFV* aspectual marker. If we take such combinations as indicative of the aspectual profile of the habitual aspectual marker, this suggests that habituality as such is not inherently *IPFV*.

My analysis clearly shows that there is no general cognitive or semantic (functional) restriction on PFV's in habituals. Instead, the restriction on PFV's in habituals must be explained with reference to the division of labor within the linguistic structure, and the different meaning of the PFV and IPFV across languages. Nevertheless, there are clear language-specific differences, even between languages with similar aspectual systems.

To give an example, even though the verbal system of Greek and Armenian seems to be similar to that of Persian, the use of the PFV is much more restricted in Persian than in Armenian. In the same vein, even though Russian has an aspectual verbal structure very similar to Slovene and Czech, they behave differently with respect to the use of aspect in contexts of unbounded repetition. Such differences seem to point at a different division of labor within the linguistic structure, which cannot be captured in terms of general labels such as PFV or IPFV (cf. Dickey 2000 for Slavic). My analysis underlines the idea that theoretical concepts such as habitual, PFV, and IPFV are comparative concepts, which are insufficient to fully explain all the distributional properties of aspectual forms in individual languages. Therefore the research presented here is a strong incentive to also study the aspect of individual languages in their own right, taking into account the TAM structure of each language, and bearing in mind the different aspectual markers that exist in the linguistic systems. Such studies should therefore look at language-specific nuances and details, also when one wants to compare these languages with other languages: both those with similar structures and those with differing structures (cf. Dickey [2000] for Slavic, and the various studies on Slavic verbal aspect based on data from a parallel corpus by Barentsen such as [2018]; Janda and Fábregas [2019], who compare Russian and Spanish; Johanson [2000], for a systematic comparison of the aspectual systems of European languages; and Van der Klis et al. [2022] for the perfect in European languages based on data of a parallel corpus). This is the only way that an answer can be given as to why languages with a very similar verbal and aspectual structure may behave differently when it comes to aspectual usage. This is not to say that aspect cannot be studied comparatively. As I have shown, a comparative approach to aspect can provide deeper insights into both crosslinguistic patterns and language-specific differences.

Abbreviations

1/3	1st/3rd person
ADJ	adjective
ALL	allative
AOR	aorist

AUG	augment
CLF	classifier
COM	comitative
DAT	dative
DEF	definite
E	ergative
ENCL	enclitic
FEM	feminine
FUT	future
FV	final vowel
GEN	genitive
HAB	habitual
IMPERF	imperfect
IPFV	imperfective
LINK	linking vowel
LOC	locative
M	masculine
NEG	negative
NMLZ	nominalization
NT	neutral aspectual marker
PFV	perfective
PL	plural
POSS	possessive
PREP	preposition
PREV	preverb
PRS	present
PRTC	participle
PST	past
PUNC	punctual aspect
REAL	real status
REFL	reflexive
S	subject
SG	singular
SM	subject marker
SUBJ	subject

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Appendix A: Linguistic families, genera, and geographical areas of languages in sample

Area	Family	Genus	Language	
Africa	Niger-Congo	Atlantic-Congo (and other non-Bantu)	Ewe, Supyire	
		Bantu	Xhosa, Zulu, Totela	
	Nilo-Saharan? Afro-Asiatic	Nilotic Semitic Berber	Luwo Arabic (Modern standard) Tarifiyt	
Eurasia	Indo-European	Slavic	Bulgarian, Czech, Russian, Slovene	
		Baltic	Lithuanian	
		Greek	Modern Greek	
		Armenian	Armenian	
		Indo-Iranian	Persian, Ossetic, Hindi	
		Romance	Spanish, French, Italian	
		Germanic	English	
		Kartvelian	Karto-Zan	Georgian
		Turkic	(Southwestern Common) Turkic	Turkish
		Tungusic	Tungusic	Evenki
South East Asia and Oceania	Sino-Tibetan	Tibeto-Burman	Burmese	
		Sinitic	Mandarin Chinese	
North America	Korean	Korean	Korean	
	Trans-New Guinea	Ok	Mian	
	Iroquoian	Southern Iroquoian	Mohawk, Seneca	
	Mayan	Cholan–Tzeltalan	Tzotzil	
	Oto-Manguean	Mixtec	Nuyóo Mixtec	
South America	Totonac	Totonac	Upper Necaxa Totonac	
	Quechua	Quechua	South Conchucos Quechua	

Appendix B: List of sources

Sources	
(1) Albanian	Albanian National Corpus, Michiel de Vaan (pc)
(2) Arabic (MS and spoken)	O'Brien (2003), Consultation with native speaker (Hossam Ahmed)
(3) Armenian	Donabédian-Demopoulos (2016), Eastern Armenian National Corpus, Consultation with native speaker (Karen Sughyan, Anaid Donabedian-Demopoulos)
(4) Bulgarian	Dickey (2000), Margarita Gulian (pc) who also consulted various native speakers, Bulgarian National Corpus, Parallel Russian-Bulgarian corpus. For Macedonian, Jaap Kamphuis (pc)
(5) Burmese	Okell and Allott (2001), Romeo (2008), Mathias Jenny and San San Hnin Tun (pc)
(6) Chinese (Mandarin)	Yang (1995), Hongmei Fang (pc), CCL Corpus
(7) Czech	Stunová (1986), Dickey (2000), Dübbers (2015), Barentsen et al. (2015)
(8) English	For example Comrie (1976), Corpus of Contemporary American English, British National Corpus
(9) Evenki	Nedjalkov (1997)
(10) Ewe	Survey with native speaker (Felix Ameka)
(11) French	Bertinetto and Lenci (2012), Karène Sanchez (pc)
(12) Georgian	Hewitt (1995), Georgian National Corpus
(13) Greek	Lindvall (1997), Hellenic National Corpus of Greek Language, Corpus of Modern Greek, Marina Terkourafi (pc)
(14) Hindi	Abhishek Avtans (pc)
(15) Italian	Bertinetto and Lenci (2012), Mari et al. (2013)
(16) Korean	Sohn (1995), Kim Cheon-Hak (pc)
(17) Lithuanian	Sakurai (2015)
(18) Luwo	Storch (2014)
(19) Mian	Fedden (2011)
(20) Mixtec	Bickford and Marlett (1988)
(21) Mohawk	Survey with native speaker (Akwiratékha Martin), Marianne Mithun (pc)
(22) Ossetic	Abaev (1964), Tomelleri (2010), Ossetic National Corpus Consultation with native speakers (Angela Kudzoeva, Ramazan Lagkuti)
(23) Persian	Mahootian (1997), Taleghani (2008) Consultation with native speakers (Ali Jabbari, Siviash Rafiee Rad, Ali Mofatteh)
(24) South Conchucos Quechua	Hintz (2011)
(25) Russian	Dickey (2000), Barentsen et al. (2015), Russian National Corpus
(26) Seneca	Chafe (2019)
(27) Slovene	Dickey (2000), Barentsen et al. (2015), Benacchio and Pila (2015)
(28) Supyire	Carlson (1994)
(29) Spanish	Corpus (RNC; parallel)

(continued)

Sources	
(30) Tarifiyt Berber	Consultation with native speaker (Khalid Mourigh)
(31) Totela	Crane (2011)
(32) Totonac	David Beck (pc)
(33) Turkish	Johanson (1971, 2000), Gerjan van Schaaijk (pc), Internet (Glosbe)
(34) Tzotzil	Igor Vinogradov (ms, pc), Laughlin (1977), Internet (Glosbe)
(35) Xhosa	Stefan Stefanović (pc), Andiswa Bukula (pc), Internet (Glosbe)
(36) Zulu	Dahl (1985), Stefan Stefanović (pc)

References

- Abaev, Vasilij Ivanovič. 1964. *A grammatical sketch of Ossetic*. The Hague: Mouton.
- Bahloul, Maher. 2008. *Structure and function of the Arabic verb*. London: Routledge.
- Baker, Mark & Lisa Travis. 1997. Mood as verbal definiteness in a “tenseless” language. *Natural Language Semantics* 5(3). 213–269.
- Barentsen, Adriaan. 2018. Nabljudenija nad funkcionirivanjem vida v bolgarskix preterial'nyx formax pri obstojatel'stvax ograničenoj kratnosti (v sopostavljenii s drugimi slavjanskimi jazykami). [Observations about the functioning of verbal aspect in Bulgarian past tense forms with expressions of bounded repetition (in comparison with other Slavic languages)]. In Egbert Fortuin, Peter Houtzagers & Janneke Kalsbeek (eds.), *Dutch contributions to the Sixteenth International Congress of Slavists: Linguistics (Belgrade, August 20–27, 2018)*, 1–53. Leiden: Brill.
- Barentsen, Adriaan A., Rene M. Genis, Magda van Duijkeren-Hrabova, Janneke Kalsbeek & Radovan Lu. 2015. V poiskax sxdostv i različij meždu ruskim, pol'skim, češkim i serboxorvatskim jazykami pri vybore vida v slučajax 'ograničenoj kratnosti' [In search of the similarities and differences between Russian, Polish, Czech and Serbian-Croatian with respect to the choice of verbal aspect in the case of bounded repetition]. In Rozanna Benakk'o (ed.), *Glagol'nyj vid: Grammatičeskoe značenie i kontekst* [Verbal aspect: Grammatical meaning and context] (Die Welt der Slaven 56), 55–78. München: Otto Sagner.
- Benacchio, Rosanna & Malinka Pila. 2015. Glagol'nyj vid v kontekstax neograničenoj kratnosti v slovenskom jazyke v sopostavljenii s ruskim [Verbal aspect in the context of unbounded repetition in Slovene as compared to Russian]. In Rozanna Benakk'o (ed.), *Glagol'nyj vid: Grammatičeskoe značenie i kontekst* (Die Welt der Slaven 56), 79–91. München: Otto Sagner.
- Bertinetto, Pier Marco & Alessandro Lenci. 2012. Habituality, pluractionality, and imperfectivity. In Robert Binnick (ed.), *The Oxford handbook of tense and aspect*, 852–880. New York: Oxford University Press.
- Bickford, J. Albert & Stephen A. Marlett. 1988. The semantics and morphology of Mixtec mood and aspect. *Work Papers of the Summer Institute of Linguistics, University of North Dakota Session* 32. 1.
- Binnick, Robert I. 2005. The markers of habitual aspect in English. *Journal of English Linguistics* 33(4). 339–369.
- Bondarenko, Tatiana I. 2017. Two aspectual subsystems of Georgian. *Voprosy Jazykoznanija* 4. 74–100.
- Boneh, Nora & Łukasz Jędrzejowski. 2019. Reflections on habituality across other grammatical categories. *STUF – Language Typology and Universals* 72(1). 1–20.

- Boneh, Nora & Edit Doron. 2013. Hab and Gen in the expression of habituality. In Alda Mari, Claire Beyssade & Fabio del Prete (eds.), *Genericity*, 176–191. Oxford: Oxford University Press.
- Bybee, Joan, Revere Perkins & William Pagliuca. 1994. *The evolution of grammar: Tense, aspect, and modality in the languages of the world*. Chicago: The University of Chicago Press.
- Carlson, Greg. 2009. Generics, habituais and iteratives. In Keith Allan (ed.), *Concise encyclopedia of semantics*, 375–378. Boston: Elsevier.
- Carlson, Greg N. & Beverly Spejewski. 1997. Generic passages. *Natural Language Semantics* 5(2). 101–615.
- Carlson, Robert. 1994. *A grammar of Supyire*. Berlin: De Gruyter Mouton.
- Chafe, Wallace. 2019. *A grammar of the Seneca language*. Oakland: University of California Press.
- Comrie, Bernard. 1976. *Aspect: An introduction to the study of verbal aspect and related problems*. Cambridge: Cambridge University Press.
- Crane, Thera Marie. 2011. *Beyond time: Temporal and extra-temporal functions of tense and aspect marking in Totela, a Bantu language of Zambia*. Berkeley: University of California, Berkeley dissertation. Available at: <https://escholarship.org/uc/item/5v23t7nn>.
- Dahl, Östen. 1985. *Tense and aspect systems*. Oxford: Blackwell.
- Dahl, Östen & Viveka Velupillai. 2013. Perfective/imperfective aspect. In Matthew S. Dryer & Martin Haspelmath (eds.), *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. <http://wals.info/chapter/65> (accessed 24 September 2021).
- Dickey, Stephen M. 2000. *Parameters of Slavic aspect: A cognitive approach*. Stanford: CSLI Publications.
- Donabédian-Demopoulos, Anaïd. 2016. The aorist in Modern Armenian: Core value and contextual meanings. In Zlatka Guentcheva (ed.), *Aspectuality and temporality: Descriptive and theoretical issues* (Studies in Language Companion Series 172), 375–412. Amsterdam: John Benjamins.
- Dübbers, Valentin. 2015. Factors for aspect choice in contexts of open iteration in Czech. In Rozanna Benakk'o (ed.), *Glagoľ'nyj vid: Grammatičeskoe značenie i kontekst* (Die Welt der Slaven 56), 197–210. München: Otto Sagner.
- Fedden, Sebastian. 2011. *A grammar of Mian*. Berlin: Walter de Gruyter.
- Fortuin, Egbert. To appear. Conditionals in Slavic. *Encyclopedia of Slavic languages and linguistics online*. Leiden: Brill.
- Fortuin, Egbert. 2019. Universality and language-dependency of tense and aspect: Performatives from a crosslinguistic perspective. *Linguistic Typology* 23(1). 1–58.
- Fortuin, Egbert & Jaap Kamphuis. 2015. The typology of Slavic aspect: A review of the East-West Theory of Slavic aspect. *Russian Linguistics* 39(2). 163–208.
- Göksel, Aslı & Celia Kerslake. 2005. *Turkish: A comprehensive grammar*. London: Routledge.
- Haspelmath, Martin. 2010. Comparative concepts and descriptive categories in crosslinguistic studies. *Language* 86(3). 663–687.
- Hewitt, George. 1995. *Georgian: A structural reference grammar*. Amsterdam: John Benjamins.
- Hintz, Daniel John. 2011. *Crossing aspectual frontiers: Emergence, evolution, and interwoven semantic domains in South Conchucos Quechua discourse*. (University of California Publications in Linguistics 146). Berkeley: University of California Press.
- Janda, Laura A. & Antonio Fábregas. 2019. Seeing from without, seeing from within: Aspectual differences between Spanish and Russian. *Cognitive Linguistics* 30(4). 687–718.
- Johanson, Lars. 1971. *Aspekt im Türkischen: Vorstudien zu einer Beschreibung des türkeitürkischen Aspektsystems* (Studia Turcica Upsaliensia 1). Uppsala: Almqvist & Wiksell.
- Johanson, Lars. 2000. Viewpoint operators in European languages. In Östen Dahl (ed.), *Tense and aspect in the languages of Europe*, 27–187. Berlin: De Gruyter Mouton.
- Jenny, Mathias & San San Hnin Tun. 2016. *Burmese: A comprehensive grammar*. New York: Routledge.
- Klein, Wolfgang. 1994. *Time in language*. London: Routledge.

- Krifka, Manfred, Francis Jeffrey Pelletier, Gregory Carlson, Alice ter Meulen, Gennaro Chierchia & Godehard Link. 1995. Genericity: An introduction. In Gregory Carlson & Francis Jeffrey Pelletier (eds.), *The generic book*, 1–124. Chicago: University of Chicago Press.
- Langacker, Ronald. 2000. *Grammar and conceptualization*. Berlin: Mouton de Gruyter.
- Laughlin, Robert M. 1977. *Of cabbages and kings: Tales from Zinacantan*. Washington, D.C.: Smithsonian Institution Press.
- Lee, Hyo Sang. 1991. *Tense, aspect, and modality: A discourse-pragmatic analysis of verbal affixes in Korean from a typological perspective*. Los Angeles: University of California dissertation.
- Lenci, Alessandro & Pier Marco Bertinetto. 2000. Iterativity vs. habituality: On the iterative interpretation of perfective sentences. In James Higginbotham, Fabio Pianesi & Achille C. Varzi (eds.), *Speaking of events*, 245–287. New York: Oxford University Press.
- Lindvall, Anne. 1997. Aspect marking and situation types in Greek, Polish and Swedish. *Working Papers [Lund University, Dept. of Linguistics]* 46. 197–216.
- Mahootian, Shahrzad. 1997. *Persian*. London: Routledge.
- Mari, Alda, Claire Beyssade & Fabio Del Prete (eds.). 2013. *Genericity* (Oxford Studies In Theoretical Linguistics 43). Oxford: Oxford University Press.
- Mithun. 2016. Modality and mood in Iroquoian. In Jan Nuyts & Johan van der Auwera (eds.), *Oxford handbook of mood and modality*, 223–257. Oxford: Oxford University Press.
- Mønnesland, Svein. 1984. The Slavonic frequentative habitual. In Casper de Groot & Hannu Tammola (eds.), *Aspect bound: A voyage into the realm of Germanic, Slavonic and Finno-Ugrian aspectology*, 53–76. Dordrecht: Foris.
- Nedjalkov, Igor. 1997. *Evenki*. London: Routledge.
- Newton, Brian. 1979. Scenarios, modality, and verbal aspect in Modern Greek. *Language* 55(1). 139–167.
- Nicolova, Ruselina. 2017. *Bulgarian grammar*. Berlin: Frank & Timme.
- O'Brien, Josephine. 2003. *Tense and aspect in the interlanguage of Gulf Arab learners of English*. Leicester: University of Leicester dissertation. Available at: <https://ira.le.ac.uk/bitstream/2381/30848/1/U601127.pdf>.
- Okell, John & Anna Allott. 2001. *Burmese/Myanmar dictionary of grammatical forms*. Richmond: Curzon.
- Rahimian, Jalal. 2010. Contrastive analysis of aspectual oppositions in English and Persian. *Iranian Journal of Applied Language Studies* 2(2). 133–166.
- Romeo, Nicoletta. 2008. *Aspect in Burmese: Meaning and function* (Studies in Language Companion Series 96). Amsterdam: John Benjamins.
- Sakurai, Eiko. 2015. Past habitual tense in Lithuanian. In Peter Arkadiev, Axel Holvoet & Björn Wiemer (eds.), *Contemporary approaches to Baltic linguistics*, 383–436. Berlin: De Gruyter Mouton.
- Sasse, Hans-Jürgen. 2002. Recent activity in the theory of aspect: Accomplishments, achievements, or just non-progressive state? *Linguistic Typology* 6(2). 199–271.
- Savić, Stefan. 2017. The perfective and the imperfective aspects in Xhosa. *Stellenbosch Papers in Linguistics* 52. 45–72.
- Savić, Stefan. 2020. *Tense and aspect in Xhosa*. Makhanda: Rhodes University dissertation.
- Shluinskij, Andrej. 2005. *Tipologija predikatnoj množestvennosti: količestvennye aspektual'nye značenija* [A typology of pluractionality: quantitative aspectual meanings]. Moscow: Moscow State University dissertation.
- Smith, Carlota. 1991. *The parameter of aspect*. Dordrecht: Kluwer.
- Sohn, Sung-Ock. 1995. *Tense and aspect in Korean*. Honolulu: University of Hawai'i Press.
- Storch, Anne. 2014. *A grammar of Luwo: An anthropological approach*. Amsterdam: John Benjamins.
- Stunová, Anna. 1986. Aspect and iteration in Russian and Czech. A contrastive study. In Adrie A. Barentsen, Ben M. Groen & Rob Sprenger (eds.), *Dutch studies in Russian linguistics* (Studies in Slavic and General Linguistics 8), 467–501. Amsterdam: Rodopi.

- Taleghani, Azita. 2008. *Modality, aspect and negation in Persian*. Amsterdam: John Benjamins.
- Tomelleri, Vittorio. 2010. Slavic-style aspect in the Caucasus. *Suvremena Lingvistika* 36(69). 65–98.
- van der Klis, Martijn, Bert Le Bruyn & Henriette de Swart. 2022. A multilingual corpus study of the competition between past and perfect in narrative discourse. *Journal of Linguistics* 58(2). 423–457.
- Vinogradov, Igor. n.d. *The temporal and modal semantics of the perfective/imperfective distinction in Tzotzil (Mayan)*. Unpublished manuscript.
- Yang, Suying. 1995. *The aspectual system of Chinese*. Victoria: University of Victoria dissertation.

Corpora

- Albanian National Corpus: albanian.web-corpora.net.
- British National Corpus: <https://www.english-corpora.org/bnc/> (managed by Oxford University Computing Services on behalf of the BNC Consortium).
- Bulgarian National Corpus: <http://search.dcl.bas.bg>.
- Corpus of Modern Greek (CMG): <http://web-corpora.net/GreekCorpus/search/>.
- CCL Corpus: http://ccl.pku.edu.cn:8080/ccl_corpus/ (created by Beijing University, China).
- Eastern Armenian National Corpus (EANC): http://www.eanc.net/EANC/search/?interface_language=en.
- Corpus of Contemporary American English (COCA): <https://www.english-corpora.org/coca/>.
- The Georgian National Corpus (GNC): <http://gnc.gov.ge/gnc/page>.
- Hellenic National Corpus of Greek Language: <http://hnc.ilsp.gr/>.
- Ossetic National Corpus (ONC): http://corpus.ossetic-studies.org/search/index.php?interface_language=en.
- Russian National Corpus (RNC) (including the Russian-Bulgarian parallel corpus): <https://ruscorpora.ru/>.