HABITUALITY, PLURACTIONALITY, AND IMPERFECTIVITY

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1. Introduction

Habituality, as commonly conceived, presupposes a more or less regular iteration of an event, such that the resulting habit is regarded as a characterizing property of a given referent. The notion of habituality is thus strictly related to iterativity, although the two should not be confused. In this chapter we aim to define the respective features of habituality and iterativity and to place them in the framework of the broader notion of "verbal pluractionality" on the one side, and of "gnomic imperfectivity" on the other side.

The latter term is proposed here for the first time (see section 3). As for pluractionality, it was originally introduced by Newman (1980) and was subsequently used to cover the variety of phenomena studied by Dressler (1968), Cusic (1981), and Xrakovskij (1997) among others. These include first and foremost the following:[1]

- Event-internal pluractionality (called "multiplicative" by Shluinsky, 2009): the event consists of more than one sub-event occurring in one and the same situation (*Yesterday at 5 o'clock John knocked insistently at the door*).
- Event-external pluractionality: the same event repeats itself in a number of different situations (*John swam daily in the lake*).

Some scholars (e.g., Bybee et al., 1994) use "iterativity" as a synonym of event-internal pluractionality; however, as explained below, by "iterativity" we intend a subtype of event-external pluractionality, not to be confused with habituality. The two types of pluractionality may be combined, as in: *John knocked daily at Anne's door*. Since in this chapter we only deal with event-external pluractionality, the term "pluractionality" should be understood from now on in this particular sense, unless otherwise specified. It is also useful to distinguish between "macro-event" (the whole series of singular events making up a pluractional event) and "micro-event" (each of the singular events comprised in a pluractional event).

Pluractionality may be expressed by a number of devices: reduplication, affixes, free morphemes, lexical tools (adverbials and verbal periphrases). These are not mutually exclusive, neither paradigmatically (for one and the same language may present, e.g., affixes and periphrases) nor syntagmatically (for one and the same sentence may exhibit, for example, both dedicated affixes and frequency adverbials). The morphological markers can be dedicated morphemes, or morphemes conveying pluractionality alongside other meanings. The availability of alternatives proves that pluractionality is a cognitively prominent feature.[2] Note that the context may occasionally suggest pluractionality by mere pragmatic inference, as in: *John and Anne wrote letters to each other*, where the combination of plural direct object and reciprocal yields the intended interpretation.

A special case of pluractionality is "reduplicativity," whereby the event is repeated exactly twice, often implying a sort of reverse action (Dressler's "reversative"), particularly with movement verbs. Many languages present dedicated reduplicative morphemes, such as the It., and generally Romance, prefix *re-/ri-* (which, however, does not always carry this meaning): e.g., *andare* 'go' vs. *riandare* 'go again'. As the English translation shows, reduplicativity can be expressed lexically. Another type of context typically yielding pluractionality is provided by correlative constructions (called "polypredicative iterative-correlative" by Xrakovskij and "usitative" by Shluinsky), such as: "When(ever) /each time /if X, (then) Y."

With respect to the frequency of the micro-events, one may further distinguish "frequentative" (Dressler; Bybee et al.) or "saepitive" (Xrakovskij) from "raritive" (Xrakovskij) or "discontinuative" (Dressler). Here again, although the prevailing means of expression are lexical (cf. adverbs like *often* and *seldom*), one may find dedicated morphemes (as in West Greenlandic; Van Geenhoven 2004), showing that these distinctions are indeed cognitively relevant. At the bottom end of the frequency scale one finds "potentiality," i.e., mere predisposition rather than actually implemented pluractionality (cf. Shluinsky's notion of "capacitative"). Such is the case of sentences like *This engine vibrates*, which may refer to an engine that has not yet been switched on. See section 3 for further discussion.

To these notions, the following ones, definitely marginal for our concern, could be added:

- "Distributive"/"non-distributive" pluractionality (Dressler), depending on whether different vs. identical participant(s) are involved. Distributivity further divides into subject- vs. object-distributive; the two options are not mutually exclusive.

- "Dispersive"/"ambulative" (Dressler), whereby the action takes place in different points of space simultaneously vs. successively.

A point worth mentioning (although falling within the realm of event-internal pluractionality) is Xrakovsky's observation (1997, p. 4, 8) that plurality and duration are strictly related: *John addressed incessant questions to the policeman* conveys at the same time the meaning that the questions were many and that the event covered a certain time-extension. Van Geenhoven (2004) exploited this observation for a unified analysis of two readings of "*for* X time" expressions, depending on the type of predicate involved (durative vs. non-durative). If intensity is taken into consideration, one can further distinguish between "intensive," "attenuative," "accelerative," "exaggerative," etc. Although the above inventory is not exhaustive, it suffices to show the wide range of phenomena comprised under the general category of pluractionality.

Adverbials play an important role in pluractional sentences. The relevant types may be classified as follows:

- Cyclicity adverbials: every five minutes, annually, every Sunday, always at noon . . .
- Frequency adverbials: whenever the train was late, always, rarely, sometimes, occasionally, time and again, often, regularly . . .
- Habituality adverbials: habitually, usually . . .
- Reiteration adverbials: (about) seven times, several times, many times . . .

These types are not mutually exclusive. Complex adverbials can combine, e.g., reiteration and cyclicity: *twice a day*, *almost ten times a year*. Besides, different types of adverbials may coexist in one and the same sentence: e.g., *Sarah always* (frequency) *wrote to me every Christmas* (cyclicity). Furthermore, two adverbials may independently refer to the two types of pluractionality: e.g., *Every Saturday evening* (cyclicity, event-external)*, Sam knocked twice* (reiteration, event-internal) *at her girlfriend's door*.

The structure of this chapter is as follows. In section 2 we propose four aspectually-inspired criteria to distinguish, within pluractionality, habituality from mere iterativity. In section 3 we widen the scope, placing habituality at the intersection of pluractionality and gnomic imperfectivity. In section 4 we provide a formal assessment of the above notions. In section 5 we compare the expression of habituality in English and in the Slavic languages. Sect. 6 recapitulates our main claims. It is advisable to constantly keep Figure 30.1 in mind: this will help the reader to articulate the conceptual space described in the chapter.

2. Habituality vs. Iterativity

In this section, we propose a set of criteria to distinguish habituality from iterativity within event-external pluractionality. The aim is to show that the distinction depends on aspect. To set the stage, consider the following examples:

(1) a. In the past few years, Franck has often taken the 8 o'clock train.
     b. When he lived in the countryside, Franck would usually take the 8 o'clock train.

Both sentences are pluractional. However, (1a) presents a plain state of affairs: it is a fact that Franck has taken the given train several times in the given period. All arguments and circumstantials are on the same level; the sentence establishes a relation between an individual (Franck), an object (the train) and a time-interval (the past few years). Sentence (1b), by contrast, presents a situation (taking a morning train) as a characterizing property of an individual (Franck) during a given interval. The important difference is that (1b), asserts a property which should be understood as a defining feature of the individual at stake, whereas (1a) falls short of this, merely asserting something about his habits. Thus, although the two sentences might speak of the same facts, they present them in crucially different ways. This difference has to do with aspect, as shown by a number of criterial features.

The first is numerical specification of the micro-events. We call this REITERA-TION SPECIFIABILITY. Languages like English or Dutch—where the Simple Past is ambiguous between perfective and (with specific regard to habituality) imperfective reading—do not show any restriction (2a), but languages with an explicit aspectual contrast in the past domain, such as the Romance languages and Bulgarian, are affected by it (2b-e). And since the dedicated imperfective morphology often does not distinguish between general imperfective, progressive and habitual (Comrie, 1976), this indicates a strong link between habituality and imperfectivity:[3]

(2) a. Last year, John visited his mother eleven times.
     b. Pendant l'année passée, Jean a visité [PF] sa mère onze fois.
     c. *Pendant l'année passée, Jean visitait [IPF] sa mère onze fois.
         "Last year, Jean visited [PF = (b) /IPF = (c)] his mother eleven times."
     d. *Pendant l'année passée, Jean visitait [IPF] sa mère à peu près onze fois /
         quelques fois /plusieurs fois /un nombres indéterminé de fois.
         "Last year, Jean visited [IPF] his mother more or less eleven times/a certain
         number of times/several times/an indefinite number of times."
     e. Pendant l'année passée, Jean visitait [IPF] sa mère rarement/souvent.
     f. Pendant l'année passée, Jean a rarement/souvent visité [PF] sa mère.
         "Last year, Jean seldom/often visited [IPF= (e) /PF = (f)] his mother."
     g. Last year, John seldom /often visited his mother.

The reason why (2c) is rejected by native speakers (or at least considered as stylistically very marked) is straightforward: specifying the number of micro-events is equivalent to specifying the duration of the macro-event, i.e., tantamount to closing the interval corresponding to the event-time (its "temporal trace"). As (2d) shows, even when the numerical specification is not sharp, the interval is implicitly closed. These examples show that interval-closure is compatible with perfective tenses (2b), but incompatible with imperfective ones (2c–d). By contrast, (2e) is perfectly acceptable, because *rarement* 'seldom' and *souvent* 'often' (unlike, despite appearance, *quelques /plusieurs fois* 'some /several times') do not refer to the number of the micro-events, but to their frequency of occurrence. Needless to say, *souvent* and

rarement are also compatible with perfective tenses (2f), but this should cause no surprise.

Further support to the aspectual interpretation of the above data stems from the Past Progressive (3b), as opposed to the Simple Past (3a), in conjunction with adverbials of delimited duration. Whatever the formal implementation of this contrast may be, it is a fact that perfectivity implies intervals of (at least potentially) specifiable duration, whereas imperfectivity is orthogonal to this:[4]

(3)   a. Little Mary cried for 10 minutes.
      b. *Little Mary was crying for 10 minutes.

The closing of the event-time interval may also be obtained via numerical specifications attached to internal arguments, as in (4). In (4b) a frequency adverbial is needed to project the repeated event over an unspecified number of occurrences (unless the progressive reading is intended):

(4)   a. Louis a écrit [PF] cinq lettres [iterative]
      b. Louis écrivait [IPF] cinq lettres *(chaque soirée). [habitual]
         "Louis wrote [PF = (a) /IPF = (b)] five letters."

We call ITERATIVITY the kind of pluractionality conveyed by (2a–b) and (4a), and HABITUALITY that conveyed by (2e) and (4b). The important point to be retained is that this contrast is aspectual in nature. This was implicit in Comrie (1976) and Bybee et al. (1994), who placed habituality within the realm of imperfectivity, although they were not fully explicit concerning iterativity as it is here understood.[5] The reason why this observation is not universally pointed out could have to do with the aspectually ambiguous nature of the tenses that may convey habituality in some languages. However, if (2a) is analyzed *vis-à-vis* (2b–c), it becomes immediately obvious that it is a case of iterativity, rather than habituality. As for (2g), it is compatible with both readings (habitual (2)[e] and iterative (2)[f]). Indeed, Binnick (2005) observes that the English Simple Past is not a marker of habituality: it may simply convey this reading in the appropriate contexts. The semantic interpretation lying behind the contrast iterative /habitual will be detailed below.

As a corollary, one should observe that habituality adverbials (cf. section 1) are compatible with habitual sentences, but much less so with iterative ones. This may go unnoticed in languages with non-explicit aspectual morphology, but becomes obvious otherwise. 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:

(5)   a. ??D'habitude, Olivier a écrit [PF] des poèmes. [iterative]
         "Usually, Olivier wrote [PF] poems."
      b. D'habitude, Olivier écrivait [IPF] des poèmes. [habitual]
         "Usually, Olivier wrote [IPF] poems."

The second feature is TEMPORAL LOCALIZATION. Habituality can occur at all temporal domains (6), including future-in-the-past (Binnick, 2005), whereas

iterativity is impossible to obtain in the present domain (7). Since iterativity presupposes a closed interval, (7b) is obviously ill-formed, for the speech-time's time-sphere is unbounded by nature.[6] By contrast, since habituality consists of attributing a property to a given referent, rather than asserting anything specific about the pluractional event itself, it may have present-reference. When the Present tense is used as in (6e) to depict situations including (but not restricted to) the present time-sphere, it can only have a habitual meaning; indeed, due to the cyclicity adverbial (*chaque année*), the reiteration specification remains vague:

(6) *Habitual*
  a. Dans le passé, les membres de ce club mettaient [IPF] une cravate rouge dans les occasions officielles.
  "In the past, the members of this club wore [IPF] a red tie on official occasions."
  b. Les membres de ce club mettent une cravate rouge dans les occasions officielles.
  "The members of this club wear a red tie on official occasions."
  c. Les membres de ce club mettront une cravate rouge dans les occasions officielles.
  "The members of this club will wear a red tie on official occasions."
  d. Marc imaginait [IPF] que, dans le futur, les membres de ce club mettraient une cravate rouge dans les occasions officielles.
  "Marc guessed [IPF] that, in the future, the members of this club would wear a red tie on official occasions."
  e. Chaque année, Luc perd son parapluie trois fois.
  "Every year, Luc loses his umbrella three times."

(7) *Iterative*
  a. L'année dernière, Luc a perdu [PF] son parapluie trois fois.
  "Last year, Luc lost [PF] his umbrella three times."
  b. *Luc perd son parapluie trois fois.
  "Luc loses his umbrella three times."
  c. Je prévois que Luc va perdre son parapluie trois fois l'année prochaine.
  "I foresee that Luc will lose his umbrella three times in the next year."

This said, one should add that habituality is best observed in the past-domain, for self-explaining reasons. In Bybee et al.'s corpus, 19 languages exhibit a marker expressing habituality in all temporal domains, 10 have it restricted to the past and only 2 have a marker restricted to the present. Besides, in many languages the perfective/imperfective opposition is not marked in the future-domain, so that the contrast iterative/habitual must be inferred from the context.

The third feature concerns the role of the TIME-FRAME. The sentences presented so far provide some examples of framing adverbials. Apparently, they have the same function in both iterative and habitual contexts. For instance, in both (2a)—iterative—and (2e)—habitual—the framing adverbial localizes in time the pluractional event. If the adverbial were not there, the reader would interpret the pluractional event with respect to the whole life of the individual mentioned. Alternatively, a broader situational context would provide the appropriate frame: e.g., *when he lived in Paris /during his mother's illness*. However, the framing adverbials of iterative and habitual sentences do not share the same constraints. A strictly

delimited time-frame is acceptable in (8a), while it does not sound perfectly felicitous in (8b), for the sentence is not self-sufficient. In order to improve it, one should best add something like: . . . *in the following period/afterwards, he took a long holidays*; the framing interval should thus be viewed against the background of other (preceding or following) analogous intervals. This suggests that the real object of discourse of the imperfective situation is Jacques himself, rather than what he did in the given period. In other words: while the time-frame of (8a) is exactly delimiting, for it refers to the events contained in it, the identical adverbial of (8b) cannot possibly delimit its topic of discourse, for Jacques's existence obviously extends beyond the given period. Similar observations may be attached to the subsequent example: the vaguely delimited time-frame of (8c–d) is hardly compatible with the perfective view. The same holds with respect to the vaguely defined period alluded to by *auparavant* "earlier" in (8e–d):

(8) a. Entre le 1 mai 2009 et le 31 mars 2010, Jacques a écrit [PF] des articles /six articles.
       "Between May 1st 2009 and March 31st 2010, Jacques wrote [PF] some articles /six articles."
   b. ?Entre le 1 mai 2009 et le 31 mars 2010, Jacques écrivait [IPF] des articles.
       "Between May 1st 2009 and March 31st 2010, Jacques wrote [IPF] some articles."
   c. Dans le passé, je me levais [IPF] tous les jours à 7 heures.
   d. ??Dans le passé, je me suis levè [PF] tous les jours à 7 heures.
       "In the past, I got up [IPF = (c) /PF = (d)] every day at 7 o'clock."
   e. Même si auparavant je me levais [IPF] tous les jours à 7 heures, maintenant je me lève à 8 heures.
   f. ?Même si auparavant je me suis levé [PF] tous les jours à 7 heures, maintenant je me lève à 8 heures.
       "While earlier I got up [IPF = (e) /PF = (f)] every day at 7 o'clock, now
       I get up at 8."

This difference can be captured by proposing that framing adverbials receive a different interpretation depending on aspectual choice: "strictly delimiting" in perfective-iterative sentences, "vaguely localizing" in imperfective-habitual sentences. In terms of information structure, these adverbials behave as Topics in both interpretations.[7] Their function is to restrict the temporal validity of the situation, unless the latter is assumed to be valid at all times (9a), or at least during a period coinciding with the life-span of the referent (9b). The temporal delimitation may include the speech-time (9c) or be separated from it (9d). When the latter situation applies (as is typical of past habitual contexts), there is a conversational implicature to the effect that the intended situation is no longer valid. Such implicature may however be cancelled (9e). But here again a significant contrast arises: while (9f) is acceptable as a habitual sentence, (9g) should rather be interpreted in the experiential sense ("it has already occurred, at least once, that X"). This contrast stems again from the aspectual nature of the pluractional event. Sentence (9f) merely cancels (due to the adverb *dèjà* "already") the implicature that the property attributed to Serge does not extend to speech-time; (9g), by contrast, is not about a characterizing property of Serge, but about a contingent series of actions performed by him. Since perfective-iterative sentences are purely factual, the events they refer to may be purely occasional and thus do not have a characterizing import:

(9) a. The Earth revolves round the Sun.
     b. Philip used to go to bed very early.
     c. These days, Jim walks to work.
     d. Last year, Jim used to walk to work.
     e. Last year, Jim used to walk to work and he still does.
     f. L'année dernière, Serge jouait [IPF] déjà au tennis deux fois par semaine.
     g. L'année dernière, Serge a déjà joué [PF] au tennis deux fois par semaine
         "Last year, Serge already played [IPF = (f) /PF = (g)] tennis twice a week."

The extension of the time-frame can be very large (*in the past*) or fairly short (*last week*). The latter option poses an interesting puzzle, apparently contradicting the numerical-specifiability constraint. Given (10a–b), one can easily compute the exact micro-events' number. This should lead to unacceptability of (10b) for reasons discussed in relation to (2c–d); yet, (10b) is perfectly acceptable. The solution to this puzzle will be provided in section 4:

(10) a. La semaine dernière, Pierre est allé [PF] au cinéma à chaque soirée.   [iterative]
          "Last week, Pierre went [PF] to the movies every night."
      b. La semaine dernière, Pierre allait au cinéma à chaque soirée;   [habitual]
          maintenant il ne sort presque jamais.
          "Last week, Pierre went [IPF] to the movies every night; now he hardly gets out."

The fourth defining feature of the iterative/habitual contrast is DETERMIN-ABILITY. The framing adverbial of sentence (2g), repeated as (11a), receives two readings depending on the intended interpretation. In the perfective-iterative reading, *last year* is strictly delimiting, so that the number of visits is (in principle) exactly countable. In the imperfective-habitual reading, instead, the same adverbial does not refer to a strictly delimited period of time within which the visiting events could be enumerated, but should rather be taken as a reference time with respect to which John's characteristics of sporadical /frequent visitor is asserted. Determin-ability can be regarded as an extension of the reiteration-specifiability feature. Since, in the habitual interpretation, the topic of discourse is John's habits, it makes no sense to define the exact number of visits that occurred in the given period of time, nor to define the numerical threshold needed to assess the relative frequency in connection to adverbs such as *seldom /often*. To clarify this point, let us make the conventional assumption that, in the given context, *seldom* means "once every six months" and *often* means "twice a week." Considering that one year contains 2 semesters and 52 weeks, the perfective-iterative reading would directly entail that John visited his mother twice (*seldom*) vs. 104 times (*often*). No such deduction is allowed, however, with the imperfective-habitual reading, where the only thing that matters is the relative density of visiting events in the reference interval. In the latter reading, (11a) simply asserts that John is a "once-every-six-months-visitor" vs. "twice-a-week-visitor." To provide another illustration, consider (11b–c). Suppose, to simplify the matter, that in the intended period there were 1000 club members and that there was one meeting every month. In the iterative reading (11b), one can easily count how many tie-wearing events (and by how many people) there were in

the given interval. In the habitual reading (11c), by contrast, it makes no sense to indulge in such computations. What this sentence asserts is that whoever might have been a club member and for no matter how many meetings there might have been, every club member adopted the given behavior:

(11)   a. Last year, John seldom /often visited his mother.
       b. L'année dernière, les membres du Chelsea Club ont mis [PF] une cravate bleu dans leur réunions.
       c. L'année dernière, les membres du Chelsea Club mettaient [IPF] une cravate bleu dans leur réunions.
           "Last year, the members of the Chelsea Club wore [PF = (b) /IPF = (c)] a blue tie during their meetings."

Table 30.10 recapitulates the four features discussed in this section. It is immediately obvious that they are intimately related to one another. The subtle but crucial semantic difference contrasting iterativity and habituality will be made explicit in section 4.

3. Habituals and Other Gnomic Imperfectives

As noted above, habitual sentences, unlike iterative ones, are intrinsically characterizing: they attribute a defining property to the intended referent(s). This makes them similar to other types of sentences, which equally have a characterizing function. In languages with explicit aspectual marking (at least in selected temporal domains, like the past), all such types of sentences are expressed by means of imperfective devices. Since their function consists of expressing a generalization of some kind, we shall refer to the whole class as "gnomic imperfectives." To this class we assign the following types: habituals, attitudinals, potentials (Shluinsky's "capacitative"), individual-level (= IL) predicates, generics:[8]

(12)   a. At that time, John would easily get angry with his colleagues.   [habitual]
       b. John smokes cigars.   [attitudinal]
       c. John speaks French.   [potential]
       d. Elina is Finnish.   [IL-predicate]
       e. Dogs have four legs.   [generic]

Table 30.1

	Perfective-iterative	Imperfective-habitual
Reiteration specifiability	+ specifiable	– specifiable
Temporal localization	only past- and future-referring	all temporal domains
Time-frame	strictly delimiting	vaguely delimiting
Determinability	potentially determinable	non-determinable

Not all of these types involve pluractionality (as pointed out in Figure 30.1 in section 6). From this point of view, habituals and generics are definitely orthogonal. As for attitudinals and potentials, they are intermediate cases, for the number of repetitions needs not be large, although in general at least some micro-event repetitions must have occurred, in order to so qualify the individual(s) at stake. In this section we shall briefly examine the respective differences, while the semantic profile will be treated in section 4.

Generics and IL-predicates are not only stative, they actually denote a permanent stative property, even when their referent(s) no longer exist: in (13a), for instance, the permanent property is delimited by the mammoths' period of existence. By contrast, habituals are often based on eventive predicates, as proved by their compatibility with agentive adverbs like *deliberately* in (13b):

(13)   a. Les mammouths étaient [IPF] des mammifères   [generic]
          "Mammoths were [IPF] mammals."
       b. Jean laissait [IPF] toujours la fenêtre délibérément ouverte.   [habitual]
          "Jean always left [IPF] the window deliberately open."

A feature opposing not only habituals to generics, but also the former to attitudinals and potentials, is the availability of passive conversion. While (14a) is the straightforward passive of (13b), (14c) is by no means the passive of (14b), for although it is a property of beavers to build dams, it is not a defining property of the latter to be built by beavers (human beings do as well). For identical reasons, this constraint extends to attitudinals and potentials: (14d–e) are not the passive cognates of (12b–c). Conversely, (14f–g) are connected by passive conversion, but of course the former is by no means an attitudinal sentence:

(14)   a. La fenêtre était [IPF] toujours laissée délibérément ouverte par Jean.
          "The window was [IPF] always left deliberately open by Jean."
       b. Beavers build dams.
       c. ≠ Dams are built by beavers.   [semantically incongruous]
       d. ≠ Cigars are smoked by John.   [semantically incongruous]
       e. ≠ French is spoken by John.   [semantically incongruous]
       f. John has smoked two cigars.
       g. Two cigars have been smoked by John.

An interesting feature of attitudinals and potentials consists of their actional nature. Although they are based, unlike IL-predicates and generics, on eventive predicates, they yield a stative predicate by actionality coercion. For instance, although *smoke* is an eventive predicate in most contexts, as in (14f–g), sentence (12b) features a stative reading of the same predicate. Equally, although *speak* is normally eventive, its potential cognate in (12c) is stative. This property of attitudinals and potentials has been described at least since Bertinetto (1986). The permanent-stative nature of these predicates is confirmed by their incompatibility with the progressive (15a–b) or with agentive adverbs (15c–d). Sentence (15a) cannot be a characterization of Joe's personality, for smoking

cigars needs not be a habit of his; he might be smoking cigars for the first time in his life. As for (15c), although it is characterizing in nature because of its habitual meaning, it is ostensibly eventive due to the agentive adverb (hence, it is not attitudinal). Similar observations can be made for the potentials in (15b, d):

(15)   a. Joe is smoking cigars in order to irritate his boss.
       b. Jim is speaking French in order to exclude Jack from the conversation.
       c. Joe deliberately smokes cigars in order to irritate his boss.
       d. Jim deliberately speaks French in order to exclude Jack from the conversation.

The stative coercion induced by attitudinals and potentials yields, so to say, a "second-order" stativization. The lexical meaning of the predicate involved remains eventive; every act of smoking or speaking is an event, rather than a state. Since, however, these sentences depict a general property of the given referent(s), they by definition refer to a state (the state of being a smoker, of being able to speak French, etc.). Lenci (1995) provided a formal account of this particular actional coercion. This type of coercion should thus be kept apart from that occurring in sentences like (16), where the event is a state to begin with, due to the inanimate nature of the subject involved (literally speaking, frontiers do not run and announcements do not read). These are metaphorical extensions of the verb's meaning, producing new homophonic dictionary entries:

(16)   a. The state frontier runs along the river.
       b. The announcement reads: "No entry."

Some scholars (such as Carlson, Doron, and Scheiner, among others) pointed out that even plain habituals are stative. This point deserves discussion. It is indeed a fact that habitual sentences, to the extent that they are characterizing, may be regarded as stative, despite the possible (indeed, frequent) eventive nature of the predicate involved (see (13b) above). This follows from their semantic interpretation: the property attributed to the intended referent(s) is valid at all instants, independently of whether the referent is performing the event in question at the given moment. From this point of view, habituals are exactly like all other types of gnomic imperfectives. However, stativity should not be considered a defining feature of habituality: it is a necessary but by no means sufficient condition. Should stativity be a sufficient condition, then all stative predicates would implement habitual situations, but this is ostensibly not the case, as shown by (17a), depicting a purely contingent situation. Besides, stative predicates can appear in perfective contexts, clearly incompatible with habituality (17b). Moreover, in order for contingent (i.e., non-permanent) stative predicates to appear in habitual contexts, they need to be accompanied by explicit adverbs, such as *souvent* 'often' in (17d). Thus, they need lexical support to convey habitual meaning, whereas eventive predicates, at least in the appropriate contexts (as in (17)[e]), may express habituality in-and-by themselves, provided the appropriate aspectual choice is made:

(17) a. A wine bottle is on the table.
      b. Une bouteille de vin a été [PF] sur la table pendant toute la journée.
          "A bottle of wine was [PF] on the table during the whole day."
      c. L'année dernière, Jean était malade.   [non-habitual]
      d. L'année dernière, Jean était souvent malade.   [habitual]
          "Last year, Jean was [IPF] (often) ill."
      e. L'année dernière, Paul prenait le métro pour aller au bureau.
          "Last year, Paul took [IPF] the underground to go to his office."

Note, finally that some predicates may have both a contingent and a permanent stative meaning, so that their relation to gnomicity varies according to the context:

(18) a. At the moment, the Aula Magna contains two hundred people.   [contingent]
      b. The Aula Magna contains three hundred people.   [permanent]
      c. The doctor is available right now.   [contingent]
      d. Firemen are always available.   [permanent]

The next section will detail the semantic analogy between all types of gnomic imperfectives.

4. FORMALIZATION

Spelling out the inferences licensed by habitual sentences and defining their semantic import has been the matter of an intense research debate, at the crossroad of theoretical semantics and philosophy of language. The goal is to provide an explicit and formal semantic representation of habitual sentences. Different models have been proposed. Their many differences notwithstanding, they share the common assumption that habitual sentences *stricto sensu* like (12a) should receive the same type of formal analysis as attitudinal, potential, individual-level and generic sentences (12b–e). This assumption is supported by the many properties these sentences share, justifying their grouping into the class of "gnomic imperfectivity." This section will focus on the formal semantic representation of the whole area covered by gnomic imperfectivity. However, we shall also highlight the specific features of the different subtypes of this class.

Our main tenets can be summed up as follows. Gnomic imperfective sentences form a coherent aspectual class, based on a common semantic representation identifying a specific subtype of imperfective aspect (i.e., gnomic). The different subtypes of gnomic imperfectivity depend on the lexico-semantic and pragmatic inferences associated with the event predicate and its arguments. All gnomic imperfective sentences express a law-like generalization, taken to represent a characterizing property of an individual or a class of individuals in a certain period of time. Formalizing gnomic imperfectivity amounts to providing a formal, explicit description of the notions of "law-like generalization" and "characterizing

property." The major contribution brought by formal semantic analysis is to specify the domain covered by gnomic imperfectivity, and to clarify its boundaries with respect to close notions such as iterativity (as here defined), often and unwarrantedly confused with habituality.

The various models that have been proposed to formalize the semantic area of gnomic imperfectivity share more or less the following assumptions:

- There is a restricted set of predicates, i.e., IL-predicates like *tall*, *man*, *similar to*, etc., which inherently express characterizing, gnomic properties of individuals.
- Other predicates, such as *smoke*, *arrive*, *run*, etc., do not inherently express characterizing properties, but rather specific eventualities, hence the term "episodic" predicates. However, episodic predicates can also be used to express law-like generalizations over such eventualities and may thus represent characteristic properties via a dedicated *semantic operator*. In the literature, this operator is called "generic" or "habitual," depending on the author.
- The semantic operator brings about a semantic shift, with the effect that the sentence turns out to express a characterizing, gnomic property. We shall henceforth refer to this operator as the "gnomic operator." IL-sentences thus present the same semantic representation as the other gnomic sentences.

The main parameters distinguishing the different formalization proposals concern the logical structure of gnomic sentences and the spelling out of the precise interpretation of the gnomic operator.

4.1. The Logical Structure of Gnomic Sentences

There are two main views on the logical form of gnomic sentences (cf. Krifka et al., 1995). In the former, the gnomic operator is a monadic operator that takes an episodic predicate and turns it into a characterizing one. In the latter, gnomic sentences have a relational structure, induced by a dyadic gnomic operator.

An example of the former approach is the classical analysis of Carlson (1977), whose ingredients consist of a monadic operator *GEN*, and of a rich ontology including individuals (e.g., John), stages (i.e., spatio-temporal slices of individuals such as John), and kinds (e.g., men, lions, etc.). Carlson assumes a distinction among episodic predicates, such as *is smoking* (19a), taking stages as their arguments (19b), hence labeled "stage-level predicates"; predicates ranging over individuals, such as *tall* (19c, d), hence labeled "IL-predicates"; and predicates directly taking kinds as arguments, such as *extinct* (19e, f), hence labeled "kind-level-predicates." The gnomic operator *GEN* acts as a "sort-shifting" operator, changing stage-level predicates into individual- or kind-level ones, and IL- into kind-level predicates (19g–l):

(19) a. John is smoking.
  b. $\mathbf{smoke_s(john_s)}$
  c. John is a tall.
  d. $\mathbf{tall_i(john_i)}$
  e. Dinosaurs are extinct.
  f. $\mathbf{extinct_k(dinosaur_k)}$
  g. John smokes.
  h. $\mathbf{(Gn(smoke_s))_i(john_i)}$
  i. Italians smoke.
  l. $\mathbf{(Gn(smoke_s))_k(italians_k)}$

According to Carlson's analysis, generic sentences like (19i)—or equivalently (12e)—express properties about kinds.[9] Crucially, the different types of gnomic sentences have the same logical structure, which in turn is exactly the same as the one assigned to non-quantificational episodic sentences such as (19a), the only difference lying at the sortal level of the predicate arguments (i.e., stages vs. individuals vs. kinds). Since IL-predicates are stative, Carlson's *GEN* operator turning stage-level predicates into individual-level ones can be regarded as a sort of stativizing device. Monadic operators for habitual sentences are also proposed by Boneh and Doron (2008; 2009) and by Scheiner (2003). Disregarding the differences, these are all stativizing operators, since they take scope over predicates of event and return a stative predicate HAB(P). However, these proposals do not rely on Carlson's ontology of stages and kinds, but rather on a neo-Davidsonian ontology, containing events and times among individual entities (cf., among others, Davidson, 1967; Krifka, 1992).

Krifka (1988), Schubert and Pelletier (1989), Chierchia (1995b), and Lenci and Bertinetto (2000), among others, proposed for gnomic sentences the following relational logical form, associated to a sentence-level dyadic operator:

(20) $\text{GEN}(x_1, \ldots, x_n; y_1, \ldots, y_n)[\text{restrictor}(x_1, \ldots x_n)][\text{matrix}(x_1, \ldots, x_n, y_1, \ldots, y_n)]$

The restrictor specifies the conditions under which the state of affairs expressed in the matrix-clause hold. The variables $x_1, \ldots, x_n$ range over individuals or eventualities, and are bounded by *GEN*, thus receiving a generic, quasi-universal interpretation. The variables only occurring in the matrix are instead existentially interpreted. Models that adopt this kind of representation also typically assume that predicates have an extra argument ranging over eventualities (cf. Davidson, 1967). The examples in (21) illustrate how some cases of gnomic sentences can be represented according to the structure in (20) (for more details cf. Krifka et al., 1995):

(21) a. Italians smoke after dinner.
  b. $\mathbf{GEN(x,e)\ [italian(x)\ \&\ smoke(x,e)][after\_dinner(e)]}$
  c. John smokes.
  d. $\mathbf{GEN(e)\ [normal\_smoking\_situation(john,e)][smoke(e,john)]}$

Leaving aside for the moment the specific interpretation of the *GEN* operator, which will be discussed in section 4.2, the logical form in (21b) amounts to saying

that the typical situations in which Italians smoke are situations occurring after dinner. Notice that in (21a, b), the material filling the restrictor and the matrix-clause is derived from the sentence structure, after being "split" according to criteria determined by the sentence syntactic and/or informational structure. Indeed, many scholars have associated the relational structure of gnomic sentences with the bipartite structure induced by topic/focus articulation (Krifka, 1988; Diesing, 1992; Chierchia, 1995a; Krifka et al., 1995). Topic materials fill the restrictor clause, while focus materials fill the matrix. However, the relational analysis is extended to gnomic sentences like (21c), whose relational structure is not equally self-evident. In this case, it is commonly assumed that the restrictor contains pragmatically determined conditions about the normal constraints governing the occurrence of events. According to this analysis, (21c) can be paraphrased by saying that "in a normal smoking condition, typically John smokes" (Krifka et al., 1995). Chierchia (1995a) proposed that IL-sentences can also be assigned a relational schema similar to the one in (20):

(22)   a. John is intelligent.
        b. **GEN**(e) [**C(j,e)**][**intelligent(john,e)**]

In (22b), *C* is a contextually determined predicate identifying the normal "felicity" conditions for being intelligent. Thus, (22a) amounts to stating that, in situations such that one can show intelligence, John is normally intelligent. The relational approach is thus able to assign a uniform semantic representation to all subtypes of gnomic sentences.

The logical structure in (20) is exactly parallel to the one proposed for sentences containing quantificational event adverbials such as *often*, *always*, *seldom*, etc. (cf. among others, Lewis, 1975; Kratzer, 1981; Partee, 1995). The generic operator *GEN* is thus considered by most scholars a sort of covert, default quantificational adverb, normally associated with aspectual morphology. The only difference between the logical forms of (23a) and (23c) would depend on whether the quantificational adverb is overtly expressed (thus replacing the default one) or not:

(23)   a. John smokes after dinner.
        b. **GEN**(e) [**smoke(john,e)**][**after_dinner(e)**]
        c. John always smokes after dinner.
        d. **Always**(e) [**smoke(john,e)**][**after_dinner(e)**]

This type of analysis has the advantage of highlighting the strong semantic similarities between habitual sentences and sentences containing overt quantificational adverbs. Yet, the mere identification of the generic operator with a quantificational adverb is questionable, as argued by Lenci and Bertinetto (2000). This identification is prima facie justified by the fact that in languages such as English, in which past habitual imperfectivity is not overtly marked, the presence of an explicit quantificational adverb is the only device to make a sentence univocally habitual. Indeed, while (24a) is ambiguous between an episodic and a pluractional interpretation, (24b) has a pluractional reading only:

(24)   a.   John smoked after lunch.
       b.   John always smoked after lunch.

However, when past habitual imperfectivity is overtly marked by aspect morphology, the presence of a quantificational adverb is neither necessary nor sufficient to generate a gnomic interpretation, which is directly conveyed by the imperfective aspect (25a). Conversely, the same quantificational adverb with the perfective aspect, as in (25b), does not produce truly gnomic sentences, and only has an iterative reading referring to the factual occurrence of a series of events. Lenci and Bertinetto (2000) suggested that gnomic sentences have a relational structure like that in (20), but claimed that the operator is purely aspectual, and should not be equated to a default quantificational adverb. The crucial argument in this respect is the redundant nature of the adverb *toujours* in (25a), as opposed to its necessary presence in (25b). With raritive adverbs this becomes even more obvious. Sentence (25d) could not possibly be interpreted as a characterization of Jean's habits, due to the sporadic nature of the event; it is a mere contingent observation. Sentence (25c), by contrast, retains its characterizing meaning. In the latter case, the adverb is no longer redundant and concurs in specifying the relative frequency of Jean's smoking habits. Here again, it is thus obvious that the presence of an explicit adverb has no impact on the possible triggering of the gnomic reading, despite its contribution to the pluractional meaning of the sentence. The actual discrimination between habitual vs. iterative pluractionality is triggered by aspect morphology:

(25)   a.   Jean fumait [IPF] (toujours) après le repas.   [habitual]
       b.   Jean a toujours fumé après le repas.   [iterative]
            "John (always) smoked [IPF = (a) /PF = (b)] after lunch."
       c.   Jean fumait [IPF] rarement après le repas.   [habitual]
       d.   Jean a rarement fumé après le repas.   [iterative]
            "John (seldom) smoked [IPF = (c) /PF = (d)] after lunch."

One advantage of the relational model for gnomic sentences is its ability to account for the interaction between the interpretation of generic sentences and their syntactic and/or informational structure. For instance, it can explain why passivization disrupts generic sentences, as shown in (26) (cf. (14) above). Since one of the effects of passivization is demotion of the active subject from topic position, in (26b) *dams*, instead of *beavers*, is mapped onto the restrictor of the generic structure. Thus, this sentence implausibly states that being built by beavers is a characterizing property of dams. By contrast, (26a) correctly expresses a gnomic statement about beavers, i.e., their property as dam-builders. A parallel analysis can be developed to account for the contrast in (26c–d).

(26)   a.   Beavers build dams.
       b.   ??Dams are built by beavers.   [semantically incongruous]
       c.   John smoked cigars.
       d.   ??Cigars are smoked by John.   [semantically incongruous]

Despite its merits, the relational approach has its own weak points. Although one can relationally interpret even simple sentences such as *John smokes* or *John is intelligent*, this does not appear to be equally felicitous for other types of IL-predicates. The relational approach more or less explicitly assumes that gnomic sentences express generalizations over specific eventualities; hence, their close relationship to standard quantificational structure. This analysis can be extended to permanent stative predicates such as *intelligent* or *smoker*, as one can for instance assume that the IL-predicate *intelligent* can be viewed as a generalization over the different situations in which one behaves in an intelligent way. However, this analysis yields counterintuitive results with predicates like *tall* or *similar to*. Exploiting the analysis in (22), one would for instance propose that *John is tall* means that "in the normal situations for being tall, John is tall," which sounds extremely odd.

As a preliminary conclusion, we can say that monadic and relational models are both able to assign a common semantic representation to the whole family of gnomic sentences. However, they differ for the details of semantic structure they focus upon. Proposals adopting a gnomic operator acting at the verb phrase level emphasize two particular facets of gnomic sentences (including habituality), i.e., the fact that: (i) they express a characterizing property of some individual; (ii) they behave like a subset of stative predicates (IL-predicates, generics) that do so inherently. Thus, IL-statives and generics are assumed as a kind of benchmark for the logical structure of the larger class of gnomic sentences. As for relational models, they foreground the strong similarities between, on the one hand, sentences expressing generalizations over events and, on the other hand, conditionals, *when*-clauses and sentences containing quantificational adverbs. The latter structures end up providing the basic logical schema to be extended to the other classes of gnomic constructions.

4.2. The Interpretation of the Gnomic Operator

The gnomic operator has different formal interpretations in the literature on generics and habituals. A critical survey of the major approaches can be found in Krifka et al. (1995). Here we would like to focus on a particular aspect of this debate: the opposition between "extensional" vs. "intensional" interpretations of the gnomic operator. In extensional models (such as, among others, those of Bonomi, 1995; Bonomi and Zucchi 2001; Delfitto 2002; Scheiner, 2003), both episodic and gnomic sentences refer to events occurring in the actual world. The difference lies in the fact that in gnomic constructions the event expressed by the predicate is bound by a "quasi-universal" adverbial quantifier. The problem with the assumption that gnomic sentences are kinds of general statements consists in the fact that (27a) does not exactly mean (27b), but rather something one could more appropriately paraphrase as (27c):

(27)   a.   John goes to work at 8am.
         b.   John always goes to school at 8am.
         c.   John normally/typically/usually goes to school at 8am.

This difference stems from the well-known fact that generics and habituals express generalizations that tolerate exceptions (Krifka et al., 1995). For instance, (27a) is appropriate even if it happens that John sometimes goes to work at a different hour. The problem is that there is no principled way to specify the number of exceptions gnomic statements can tolerate before running into falsity. Gnomic sentences seem to express quasi-universal generalizations that only hold for "normal" or "prototypical" conditions.

Besides the "fault-tolerance" character of gnomic generalizations, there are other problems that the extensional interpretation of the gnomic operator has to face. As we saw above, the mere notion of regular iteration of an event is neither necessary nor sufficient to define an event as gnomic. First of all, event repetition is entailed by no more than a subtype of gnomic sentences, i.e., habituals *stricto sensu*, but this is not a necessary condition for the other types of gnomic constructions. This is illustrated by attitudinals and potentials as in (28a–b), which do not necessarily presuppose iteration, or even the occurrence of a single event. When we interpret them gnomically, these sentences are perfectly felicitous in conditions such that John actually never received a single letter from *Antarctica*, and the machine designed to crush oranges was never switched on. The generalization expressed by these sentences is simply supported by some feature connected to the "potential" function of the subject, rather than on its concrete actualization. Since extensional models assume that gnomic sentences express statements about the actual world, there is no easy way for them to tackle such cases:

(28)   a.   John handles the mail from *Antarctica*.
         b.   This machine crushes oranges.

The mere occurrence of repeated micro-events suffices to characterize the macro-event as iterative, while habituality requires that micro-events' reiteration defines a sort of law-like generalization, indicating a characterizing property of an individual for a certain period of time. Contrasts like those in (25) therefore cast doubts on the suitability of the extensional approaches to provide a proper semantic representation of gnomic sentences. Such approaches risk blurring the crucial semantic difference between truly habitual statements—expressed by imperfective aspect (25a, c)—and the iterative ones—expressed by perfective aspect (25b, d)—reporting factual event iterations rather then normative generalizations. Similarly, it is hard for extensional approaches to properly capture the contrast between habituality and iterativity with respect to reiteration specifiability and determinability (cf. section 2). Notice that universal, and even almost universal, quantifiers are not incompatible with the specification of the exact number of individuals for which the statement holds:

(29)   Every student/ Most students in my class, that is 10, passed the exam.

Thus, the incompatibility of habituality with reiteration adverbials (2c–d), just as the impossibility of inferring the exact number of occurrences of habitual events (11)), must depend on semantic properties other than the (quasi-)universal quantification mechanism per se.

Intensional models of the gnomic operator try to address this issue by suggesting that gnomic sentences have an inherently normative character, akin to modal and counterfactual sentences (cf. Dahl, 1975; Kratzer, 1981; Krifka et al., 1995; Lenci and Bertinetto, 2000; Boneh and Doron, 2008; 2009). In this view, gnomic sentences do not express contingent statements about the actual world, but rather statements that need to be evaluated with respect to a contextually determined set of possible worlds or situations, the so-called "modal base" associated with the gnomic operator. The gnomic operator is thus interpreted intensionally as expressing a universal quantification over the set of possible worlds of the modal base. Thus, a habitual sentence like *John smokes in the garden* is true if and only if, in every possible world of the modal base that is most normal according to some contextually determined principle, every event of smoking by John occurs in the garden.

Leaving aside the formal details of this type of interpretation (the interested reader can refer to Krifka et al., 1995; Lenci and Bertinetto, 2000; Boneh and Doron, 2008), we shall focus here on the major reasons to prefer the intensional approach in the formalization of the semantics of habituals, as well as gnomic sentences in general:

1. Universal quantification over possible worlds is the hallmark of modal necessity. The fact that gnomic sentences express this sort of intensional quantification explains the law-like character of the generalizations they express. Since the set of possible worlds of the modal base can be suitably restricted, the gnomic generalization does not need to apply to every possible world, but only to pragmatically restricted ones. In other terms, while every gnomic sentence expresses a universal quantification over possible worlds, the set of possible worlds quantified over would be an open parameter, to be lexically or pragmatically determined. For instance, *A triangle has three angles* undoubtedly has a stronger normative character than *Italians drink cappuccino at breakfast* or *John smokes in the garden*. Our claim is that these sentences all share the same intensional possible world semantics, while differing in modal-base choice. The former is a linguistically and grammatically relevant fact, determining the semantics of the gnomic imperfective aspect, while the latter is a mere pragmatic factor.

2. When so conceived of, gnomic sentences appear to be neatly distinguished from iterative sentences. For instance, the contrasts (25a–b) and (25c–d) can be accounted for by the fact that, although both sentences in each pair contain the same quantificational adverb, only the former has an intensional interpretation, determined by the modal-like gnomic operator associated with the habitual aspect.[10]

3. The fact that gnomic statements express law-like generalizations and yet allow for a potentially undefined number of exceptions is naturally explained by the intensional analysis. The universal quantification over possible worlds is only restricted to the most "normal worlds" in the relevant base (cf. Kratzer, 1981). Again, the criterion of what accounts

for a "normal" world or situation is a non-linguistic issue, and should be explained in cognitive and pragmatic terms.

4. The intensional explanation can also account for the behavior of attitudinal and potential sentences like (28). The definition of the intensional, gnomic operator does not require that the actual world belongs to the modal base. Thus, (28b) is true if and only if in all the worlds most normal with respect to the functioning design of the orange-crushing machine, the given machine crushes oranges. Given suitable contextual conditions, the generalizations expressed by gnomic sentences may not be actualized.

5. The non-determinability of habitual statements directly follows from their intensional character as generalizations over a potentially open-ended set of possible worlds and situations. This also explains the puzzle in (10), where the event occurrences simply matter as an intensional characterization of the agent's behavior, rather than as an exhaustive description of his acts.

To sum up, the hallmark of what we call "gnomic imperfective aspect" is the fact that it expresses law-like generalizations with a strong normative character. The use of intensional semantics based on quantification over possible worlds provides a useful formal model to make this unifying feature of gnomic sentences explicit. Gnomic generalization is undoubtedly involved by habituality, a subtype of gnomic imperfectivity. Indeed, most of our generalizations are "inductively" derived by observing the regular occurring of events; this is surely the case with sentences like *John goes to work at 8am*. However, law-like generalizations can also be derived "deductively." Simply observing the design of a machine, one can truly assert: *This machine crushes oranges*. We argue that the distinction between truly habitual sentences and other gnomic sentences lies outside the domain of aspectual semantics, and concerns other lexical and pragmatic factors. For instance, a sentence like *John sold used cars* involves, in the habitual reading, a normative generalization over multiple car-selling events by John. Yet, under special contextual conditions, the same sentence can be regarded as attitudinal, simply referring to John's particular profession as car-seller, without entailing that any single car-selling event actually occurred (as might be the case for an unsuccessful car-seller).

In conclusion, the intensional approach has the advantage of providing a sort of division of labor between the truly semantic properties of the gnomic imperfective aspect, and other accessory pragmatic parameters. This points to a deep relationship between modality and habituality and indeed, in a number of cases, one and the same marker can express both meanings. This is the case, e.g., of the past-habitual devices to be found in English (cf. *would*), Romance (cf. the modal uses of the Imperfect), Hebrew (Boneh and Doron 2009), or Udmurt (Ugro-Finnic; cf. Bybee et al., p. 158). In Bargam, spoken in New Guinea, the evidential marker is also used to convey habituality (Swintha Danielsen, pers. comm.). Considering that modality-oriented grammatical devices are typically involved in hypothetical constructions, i.e., in prototypically intensional structures, the convergence in formal expression of modality and habituality markers lends further support to our view.

5. Habituality in English and Slavic

The English periphrases "*used to /would* + Infinitive" are often quoted as habitual devices (although they occur in habitual contexts far less often than the Simple Past; cf. Tagliamonte and Lawrence, 2000). Not all scholars agree on this, however. Binnick (2005) rejects *used to* as a habitual device, as opposed to *would*, considered as the past form of habitual *will*.[11] The main reason to deny habitual value to *used to* lies in its usage with stative verbs, as noted at least since Comrie (1976). Sentences (30a–b) feature permanent stative predicates, although the extension of validity of the two events is different. Example (30b) could, e.g., be uttered during Phil's life-time; in that case, it would not by definition cover the whole of his life. These sentences convey the idea that the given situation held at some past interval, detached from the speech-time. Bertinetto (1992) considered this periphrasis as expressing "confinement-in-the-past," rather than habituality. Binnick (2005, p. 350–351) claims that *used to* is a "current relevance" tense like the English Present Perfect, although symmetric to it: while the latter expresses current validity of a past event's result, *used to* divorces "the past situation from the present era." However, as Binnick himself points out (p. 345), this is no more than a conversational implicature, as proved by (30c) (see also (9)[e]). By contrast, the Present Perfect's entailment of current relevance cannot be canceled (30d). This does not mean that Binnick's claim concerning the present-oriented nature of *used to* is incorrect; it indicates, however, that this periphrasis behaves like the French Imperfect in contexts like (30e), corresponding to (30c):[12]

(30) a. The temple of Diana used to stand at Ephesus.
      b. Phil used to be the conductor of the parish choir.
      c. Erik used to be a member of the Volapük League (and he still is).
      d. Erik has broken his right leg (*which is now perfectly OK).
      e. Erik était [IPF] un membre de la Ligue Volapük (et il l'est toujours).
          "Erik was [IPF] a member of the Volapük League (and he still is)."

This suggests a possible interpretation. The reason why *used to* is compatible with stative non-pluractional contexts stems from its imperfective nature, conveying some of the functions of the Romance Imperfect, namely its gnomic value. Consider the following examples. Sentences (31a–b), just like (31c), may have intensional meaning (cf.(11)): the former may refer to anybody who might have been a Club member at the given time (beyond those who actually were), the latter to anybody who might have been Prime Minister (beyond the one who actually was). Needless to say, they can also refer to the people who were actual club members and actual Prime Minister, but the important fact is that the intensional reading is available. By contrast, the perfective Past in (31d) can only refer to those who were actual club members: it has no intensional force. This proves that the English periphrases at stake, like the Romance Imperfect, have gnomic import. This reading is admittedly also available to the English Simple Past (*wore*, *drove*) in the relevant, i.e., habitual,

reading of (31a–b), which proves once more that the imperfective-habitual value can be expressed by this tense as well. However, as already observed, the Simple Past is aspectually ambiguous. Its prevalent perfective value is apparent in (31e), where the two periphrases are excluded due to the impossibility of the gnomic reading. By contrast, the gnomic (habitual) reading is perfectly acceptable in (31f) with any of the three devices.[13] As for the French Imperfect in (31g), it is acceptable also in the non-habitual reading, but this is not surprising, for this tense may express any imperfective value, including progressivity:

(31) a. In that period, the members of the Chelsea Club used to wear /would wear blue ties.
     b. In that period, the Prime Minister used to drive /would drive a limousine.
     c. A cette époque, le Premier Ministre conduisait [IPF] une limousine.
       "In that period, the Prime Minister drove [IPF] a limousine."
     d. Pendant une certaine période, les membres du Chelsea Club ont mis une cravate bleu.
       "For a certain time, the members of the Chelsea Club wore [IPF] a red tie."
     e. Woody Allen directed /*used to direct /*would direct *Annie Hall*
     f. Woody Allen directed /used to direct /would direct a film a year.
     g. Woody Allen dirigeait [IPF] *Annie Hall* /un film par an.

The imperfective-gnomic value of *used to /would* is also proved by the incompatibility with reiterative adverbials, witness (32), unless the events are projected onto a cyclic dimension (Binnick, 2005, p. 353). The contrast (a) vs. (b) in (32) proves, alongside (2) vs. (4), that (depending on context) the aspectually ambiguous Simple Past can be understood as iterative (32a), or habitual (32b), whereas the periphrases only allow the habitual reading. We would like thus to propose that the reiterative-adverbials-test be used as a kind of "litmus test" for assessing the actual semantic value of any alleged habitual device. Should the grammatical device under analysis disallow such adverbials, its habitual value is confirmed; otherwise, it should at best be regarded as an ambiguous device (as the English Simple Past), if not as a mere iterativity device (as the Romance Simple Past):

(32) a. John left /*used to leave /*would leave several times. [= there were several episodes of John's leaving]
     b. John left /used to leave /would leave several times *(every month /every summer / . . .).

This said, we would like to point out a major difference between *used to /would* and the Romance Imperfect. As (33a–b) show, with inherently-permanent stative predicates the two English periphrases are ungrammatical. Apparently, both entail that the situation referred to should be viewed as non-immune from interruption. Although the situation can be permanent, as in the relevant interpretation of (30a–b), it should nevertheless allow for interruption. Indeed, any temple may cease to exist and anybody may at some point cease to be choir-conductor; by contrast, Sam in (33) cannot possibly have shortened (excluding implausible scenarios). The crucial difference between the predicates in (30a–b) and the one in (33) has to do with the cancelability of the intended property, and ultimately with its defining

and necessary character: while being tall is a necessary property for the relevant individual, being choir-conductor is not. We propose to call "defeasability" this specific feature of *used to* /*would*. It is important to note that the French translation in (33b) only admits the Imperfect; the Simple Past is no more acceptable in Modern Romance language.[14] This conclusively demonstrates that sentences like those in (33) are gnomic:

(33) a. Sam was tall /*used to be tall /*would be tall.
      b. Sam était [IPF] grand /*fut grand.

Slavic languages are a traditional topic in aspectual matters. One should, however, consider the very peculiar structure of these languages. The best way to address the issue is by having Bulgarian in mind, rather than Russian or any other of the major North-Slavic languages. Bulgarian has by and large preserved the structure of Old Church Slavonic, where the viewpoint-aspect opposition in the past-domain between perfective /imperfective tenses (Perfect and Aorist vs. Imperfect) coexisted with the explicitly marked lexical (actional, in the Vendlerian sense) contrast telic / atelic. The latter contrast is referred to, in the non-Slavic literature, as "perfective"/" imperfective."[15] This terminological merger between the aspectual and the actional domain is infelicitous, for it is a frequent cause of misunderstanding, although, admittedly, the confusion is in part justified by the less than perfect alignment of the Vendlerian contrast telic/atelic with the Slavic verbs' grammatical opposition. Not all "perfectives" are telic (cf. the so-called delimitatives), while "imperfectives" are occasionally used in telic contexts.[16]

Most other Slavic languages have lost (or are in the way of losing, as with Serb and Croatian) the two-way distinction still to be found in Bulgarian, so that the surviving distinction (the lexical opposition "perfective"/"imperfective") has taken up the job of conveying the aspectual contrast perfective vs. imperfective. Thus, "perfective" verbs are typically used in viewpoint-aspect perfective contexts, and *vice versa* for "imperfective" verbs. However, since the originally actional meaning is not obliterated, the combined result is a syncretic system, where actional and aspectual meanings are inextricably intertwined.

Interestingly, the various Slavic languages differ in their treatment of habituality. While Russian makes use of "imperfective" verbs (34b–c), Bulgarian exploits both kinds of predicates: if the event is telic, the verb is "perfective"; however, the tense (the Imperfect, as in Romance) is imperfective (34a). This shows that in Bulgarian the two-way distinction is consistently preserved: the tense takes care of the viewpoint-aspect value, while the lexical choice conveys the convenient telicity value. Since Russian only has at its disposal what used to be an actional distinction, the solution adopted consists of selecting the "imperfective" predicate irrespective of its telicity value (cf. (34b, c)). This, however, is not the solution adopted by all Slavic languages. The opposite selection is done by Czech, as noted by Klimek (2006): in this language, habitual correlative constructions are expressed by "perfective" verbs

(34d), although other types of view-point-aspect imperfectivity (such as progressivity) are expressed by "imperfectives":

(34) a. Štom   na-piš-ex[P]   pismo   na   mama,   tja   se obaždaše[I].
         when   PREV-write-1SG.IMPF letter   to   Mom   she   called-SG.IMPF
     b. Każdyj raz,   kogda ja   pisal[I]   pis'mo   mame,
         every   time   when   I   write.PAST letter   to Mom
         ona   mne   perezvanivala[I].
         she   to.me   call_back.PAST
         a–b= "Every time I wrote a letter to my Mom, she called me back."
     c. Vsegda kogda   on   dostigal[I] veršiny, on zažigal[I] signali'nye ogni.
         Always when   he   reach.PAST the top, he give.PAST smoke signals.
     d. Pokaždé když vystoupil[P] na   vrchol tak poslal[P]   kouýové signály.
         Always when climb.PAST   on   top   then send.PAST   smoke signals.
         c–d= "Every time he reached the mountain top, he gave smoke signals."

The interpretation we propose is based on the following preliminary observation: in a habitual (hence, imperfective) situation, every micro-event within the macro-event is inherently perfective, for no micro-event could reiterate itself unless the previous occurrence has been completely carried out. As it happens, while Czech focuses on the perfectivity of the micro-events, Russian focuses on the imperfectivity of the macro-event (by means of a hybrid actional-aspectual device). Both choices are logical, except that neither of them is entirely adequate. Interestingly, Polish is an intermediate case: in the examples below, either both clauses contain "imperfective" verbs (35a), or just the second one does (35b). This situation occurs in order to avoid possible ambiguity as regards simultaneity vs. sequence (Klimek, 2006):

(35) a. Za każdym razem gdy   upadał[I],   podnosił[I] się.
         At every   time   when   he.fall.PAST,   he.stand_up.PAST
         "Whenever he fell, he stood up."
     b. Zawsze   kiedy wspiął się[P]   na szczyt, dawał[I]   sygnały dymne.
         Always   when he reach.PAST.MASC the top,   he give.PAST.MASC smoke signals
         "Every time he reached the mountain top, he gave smoke signals."

The lesson to be learned from (34–35) is that the way habituality is expressed in different Slavic languages is idiosyncratically diverse. Yet, it would be wrong to infer from this that habituality is aspect-neutral (Filip and Carlson, 1997). Even if one widens the term "aspect" to include both view-point-aspect and actionality, this would not account for the situation of Bulgarian. The point is that most Slavic languages present defective systems, where aspect and actionality are strictly intertwined.[17] Identifying the lexical choice "perfective"/"imperfective" with the basic view-point-aspect distinction (perfective/imperfective) is not only implausible on a broad typological scale, but unsatisfactory even on the Slavic scale.

6. Conclusions

While habituality and iterativity are often conflated, strong empirical evidence supports our claim that these categories should be kept apart, their prima facie similarity notwithstanding. The organization of their respective domains can be summarized as in fig. 30.1. The semantic space of habituality and iterativity is structured along two orthogonal dimensions: whether a predicate expresses a gnomic, characterizing property (horizontal axis), and whether it expresses the reiteration of a micro-event (vertical axis). Both habitual and iterative sentences have a positive value along the latter dimension, but they lie at the opposite side with respect to the former, since only habituals present the repetition of a micro-event as a law-like generalization. On the other hand, gnomic generalizations are also expressed by other types of statements—such as generics, IL stative predicates, attitudinals, etc., where event repetition is *vice versa* either lacking or inessential.

The two dimensions should be taken as forming a gradient space, rather than expressing polar oppositions. For instance, a habitual sentence such as *John goes to school at 8am* expresses event repetition at its highest degree, while *Mary seldom smokes in the lounge*—while preserving its gnomic character—is on the low scale of the event-repetition parameter. Conversely, a generic statement such as *Two plus two equals four* has a null value along the repetition dimension and a top-most value along the gnomic dimension. As we saw in section 4, among gnomic sentences there exists a variety of intermediate cases, where event repetition, although possible, is easily cancelable, depending on pragmatic conditions. Similarly, the space covered by the gnomic dimension is continuous, since generalizations may differ as to the type of normative force they convey.

To sum up, we have argued that the area covered by gnomic generalizations should receive a common grammatical representation in aspectual terms, mirroring the aspectual value that we propose to call "gnomic imperfectivity." On
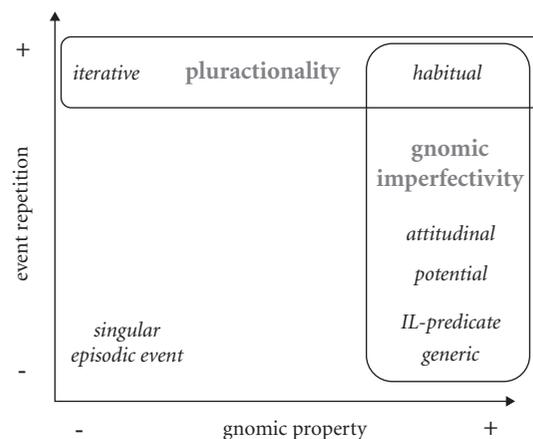
Figure 30.1. The domains of gnomic imperfectivity and pluractionality

the other hand, habitual and iterative sentences can be subsumed under the general phenomenon of (event-external) pluractionality, whose relationship with aspect is not univocal, for natural languages use various linguistic devices besides aspect to express event repetition. Habituals *stricto sensu* thus represent the intersection between the domains of pluractionality and gnomic imperfectivity.

NOTES

1. The terminology varies from scholar to scholar. The one adopted here aims at being as transparent as possible.

2. In Italian, for instance, one finds not less than three periphrases in addition to the tenses that can, in and by themselves, express habituality: "*avere l'abitudine di /solere /esser solito* + Infinitive." The first of these periphrases differs, however, from the other two inasmuch as it is compatible with perfective tenses. According to the criteria defined below, it should thus be considered a device conveying iterativity, rather than habituality proper.

3. In this chapter French will be used to illustrate explicit aspectual contrasts, although French only exhibits such contrast in the past-domain. For ease of the reader, PF and IPF stand for *perfective* and *imperfective*, respectively.

4. Needless to say, (3b) can be rescued under special circumstances. For instance, if it is pragmatically implied that little Mary was crying, as usually, for her daily 10 minutes.

5. Recall that in Bybee et al. the term "iterative" refers to what we call event-internal pluractionality.

6. Xrakovskij (1997: 31) observes that in the speech-time's domain only event-internal pluractionality may be found. The data in (6)-(7) show however that event-external pluractionality may be involved, provided it refers to habituality rather than iterativity.

7. As for the Topic vs. Focus interpretation of temporal adverbials, see De Swart (1999). As an example, consider:

(i)   a.   *At 5 o'clock*, Peter had already left. (Topic)
       b.   Peter had already left *at 5 o'clock*. (Focus)

8. We are aware of the vagueness of some of these labels (e.g., the distinction between potential and attitudinal), as well as of the difficulty of spelling out their semantic properties. Further investigation may suggest merging some of them or, alternatively, identifying further subtypes. Our argument in this chapter does not rest on any specific commitment as to the number of these types. We simply aim at stressing the commonalities among them, supporting the grammatical relevance of the domain that we call "gnomic imperfectivity."

9. For more details about the treatment of generic sentences and generic noun phrases, cf. Krifka et al. (1995) and Carlson (this volume).

10. Cf. Lenci and Bertinetto (2000) for an explanation of the incompatibility between habituality and iterative adverbials, within an intensional model of gnomic statements.

11. In this chapter we shall not discuss Future *will*. Suffice it to say that we regard it as a possible habitual device for the obvious reason that the Future tense, in most languages,

may receive this interpretation in the appropriate context. For instance: *Once this happens, the tiger will hunt for a slower prey, humans* (= example (113) of Binnick 2005).

12. Additional reason for the present-oriented nature of *used to* is the existence of its past-oriented version *had used to* (Binnick, 2005, p. 348), although its degree of grammaticalization is by far lower.

13. A poorly investigated topic is that of non-finite verb forms which may be interpreted habitually. Baker and Vinokurova (2009) quote such a case from Sakha (or Yakut, a Turkic language spoken in Siberia), but this is certainly a much more extensive phenomenon, as the following example suggests (cf. 31a-b):

(i)   By *wearing* a blue tie, the Chelsea Club members exhibited their soccer identity.

(ii)   By *driving* a limousine, the Prime Minister shows his status.

14. The contrast perfective vs. imperfective was available in such contexts in the early phases of the Romance languages (Dauses 1981). It is beyond the scope of the present chapter to discuss the matter. See however Bertinetto (1987).

15. To avoid misunderstanding, we put these terms in quotation marks when they are used in the senses they are given in Slavic grammar.

16. See Bertinetto and Lentovskaya (2012) for a historical reconstruction of the Slavic verbs' system.

17. Needless to say, Germanic and Romance languages are also defective, although in a different way.

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