About imperfectivity phenomena

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0 Introduction

Though licencing conditions for each reading — and perhaps also the default values — may vary cross-linguistically, it seems to hold universally that any sentence of natural language may alternate somehow between episodic and dispositional readings. The terms *episodic* and *dispositional* in that statement should be considered as intuitive cover terms which hide phenomena of potentially different nature. For example, by means of quantificational or frequency adverbs and *when*-clauses, sentences become dispositional in the sense of expressing a series of events which occur with some regularity. For example, as in the contrast between *Mary swam last night* and *Mary always swam* or *Mary swam whenever she needed to unwind.*

On the other hand, morphological markers usually yield a contrast between 'episodicity' and a more nomic type of dispositionality. The past tenses of Romance languages are an instance of this. Those languages have an imperfective past tense expressing nomic dispositionality and a perfective past tense expressing the episodic. For example, in French when the verb *fumer,* to smoke, appears in the *imparfait* tense in a sentence such as *Jean fumait* it means that many situations were such that Jean was smoking in them. As the paraphrases suggest, the nomic variety of dispositionality has as features that the eventuality happens at intervals, that it is presented as being in course at a certain point. Another important component is that such nomic dispositional sentences tolerate exceptions.

It is widely accepted that the perfective vs. imperfective opposition of Romance is closely related to the more abstract episodic vs. dispositional opposition. But the latter is standardly taken to hold as well in languages which do not mark it overtly. For example, the English sentences in the past tenses such as *Mary swam* can also convey that Mary was formerly in the habit of swimming, much like Romance imperfective tenses. Due to such behaviour, it is assumed that in its habit-conveying uses the verb is in the scope of a cover operator of genericity, which is a silent counterpart to Romance imperfective morphology.

The similarity between the generic use of English past tense sentences and Romance imperfective ones has motivated that they receive similar treatment. For example, in Lenci & Bertinetto (1995: 262), the Italian imperfective tense is considered a morphological counterpart of *Gn*, the generic operator. In their treatment, *Gn* is an aspectual operator. After feature-checking in $\mathrm{ASP_0\rlap{/}D}$ it adjoins to a higher projection at LF. The material it c-commands at LF is unselectively-bound and fills its restrictor, which is assumed to be the locus of the presuppositions of habitual sentences; a contextual variable C restricts the interval which the *Gn* operator binds. Notice that, in that view, genericity/habituality is derived in the syntax and semantics, the role of pragmatic factors is to limit the intervals/ situations where the claim made by the sentence holds.

Since they typically express events that are in course at a point of reference, periphrases formed with *be* followed by a verb in gerund form (henceforth, ***be . . . -ing***) are taken to be a grammaticalised means of expressing imperfectivity. Thus the semantic

process involved in obtaining the reading of be-ing periphrases are presumed to follow the lines of the Gn operator. For example in the readings of the sentences of (1) explicited by the *now* adverbials, a certain variety of the imperfective operator — namely, a progressive operator PROG — applies to the VP and yields a time interval where the event takes place. The habitual readings induced by the *much* intensifiers are obtained by a further operation over the progressive value.

(1) a. The dog is barking now/too much these days.
   b. O cachorro está latindo agora/muito essa semana. *(Braz. Portuguese)*
   c. El perro está gruñendo ahora/mucho esta noche. *(Spanish)*
   d. Il cane sta abbaiando adesso/molto quest'anno. *(Italian)*

As is also well known, the content of the PROG operator turns out to be no simple matter, the main issues were set in Bennet & Partee (2004) and Dowty (1979) and gave rise to a respectable literature. Part of the picture there is the claim that *be . . . -ing* denotes eventualities in progress and that habituality comes in as (some sort of) coercion or a different operator altogether occasioned by context linguistic or not.

Such privileging of the single-eventuality progressive reading seems to be the standard Montagovian strategy. For example, according to Bennet & Partee (2004: 63, 90), the PTQ definition of the English Present Simple captures its 'reportive' — single-eventuality, episodic reading — meaning. Since the definition of other tenses builds on the definition of Present Simple, the reportive strategy spread throughout the tense system and influenced the shape of the analysis that were to come: habituality had to be accounted for by coercion or separate operators.

However, the alternation of progressive vs. habitual values with *be . . . -ing* periphrases causes some problems for that strategy that starts with reportive verb content definitions and goes into modal imperfectivity operators and coercion. Those problems seem to hold for English to a meaningful extent, but are specially crucial in Romance where *be . . . -ing* periphrases are actually much more common as habituals then as strictly progressives. And where, due to that factor, it is difficult to pin down which reading is actually the case. Thus, despite the surface similarity of the periphrases in (1), in what concerns Romance, Dowty's Eventual Outcome Strategy, which is a consequence of the reportive view, gives no reason to posit that progressive is coerced into habitual. It might as well be the other way around, since habitual meaning is actually more frequent.

In what follows, I will inquire a bit more into the problems that arise with progressives and propose a strategy to deal with the alternation which aims also at being general for the dealing with the perfective vs. imperfective alternation. Pragmatic principles will play a different role than that played in Lenci & Bertinetto (1995) and the literature stemming from Krifka et al. (1995). Instead of limiting the intervals/situations the sentence is claimed to hold in, they will determine the licencing of episodic and dispositional readings. For reasons of space I can only approach progressives here. In Gonçalves (2006) I argue for a similar treatment of present simples. In the view argued for here, the semantic content of *be . . . -ing* periphrases remains 'Dowtyan' in spirit but is radically simplified: BE-INGφ says simply that the interval in which the sentence holds is a sub-interval of where φ holds. With this type of definition, the adequate values of *be . . . -ing* sentences arise from their bidirectional interaction with Gricean Maxims.

1 Motivating the short interval view of *be ... -ing*

In this section I will present part of a problem raised by Szabó (2004) which motivates a claim for abandoning Dowty's Eventual Outcome strategy with respect to the semantics of *be ... -ing.* I will then show that, although cross linguistic considerations seem to favour his plea, the conclusion may be avoided by looking at *be ... -ing* periphrases as expressing short intervals instead of events in course. I show also that the short interval analysis has empirical cross-linguistic motivation. Szabó reviews the development of definitions of progressive from Montague, 1974 (2a) to Bonomi, 1999 (2b). He then notes that despite the added elements and the loss of intuitiveness, (2b) still faces serious issues. To see this consider the entailment pattern in (3).

(2)   a.   PROGφ is true at an instant t iff φ is true at every instant t' in some open interval containing t.

   b.   PROGφ is true at t in w iff there is an event e at t in w, and for every $\langle e\star, w\star \rangle$ on the continuation tree for e in w, if φ is not true of $e\star$ at $w\star$, then there is a $\langle e', w' \rangle$ on the continuation tree for e in w such that e' is a continuation of $e\star$ in w' and φ is true of e' at w'.

(3)   If *Mary crossed the street* is true at t', then *Mary was crossing the street* is true for at least sometime before t'.

The point is that this robust entailment pattern is not captured with (2b). By that definition, the truth of *Mary was crossing the street* requires an event which occurred earlier than the utterance to have within its continuation branches an accomplished crossing of the street by Mary. However, (2b) allows *Mary crossed the street* to be true without it being the continuation of some other event; it suffices that the event that satisfies *Mary crossed the street* be earlier than the utterance time. Szabó (2004: 23) concludes that, by (2b), we could take *Mary crossed the street* to be true without *Mary was crossing the street* ever having been true, which is very counter-intuitive. As he also points out, that problem could be fixed by assuming that every non-instantaneous event **e** has an **e**′ preceding it, such that **e** is the continuation of **e**′. However, Szabó claims this would bring unwanted consequences for the multiple-choice paradox which (2b) aimed at dealing with. Suppose Leo sets out from Chicago and (after bordering the lake) drives east undecided if he is going to Boston or New York City; he passes through Cleveland, where he still hasn't made up his mind; next, in Albany, he decides to go to New York, where he arrives safely. By assuming that any initial temporal part of a non-instantaneous event counts as a development part we will predict that, in Cleveland, Leo was already driving to New York and that sentences such as *Leo was already driving to New York for hours when he decided to drive to New York* are acceptable.

Szabó takes this as part of the motivation for suggesting that the enterprise of explaining the truth of *Mary was crossing the street* in terms of *Mary crossed the street* should be abandonned and that what is actually feasible and needed is an explanation of the latter in terms of the former. Looking at phenomena from the perspective of Brazilian Portuguese suggest that the abandonement is not necessary as long as we are ready to accept that, instead of denoting progressiveness, *be ... -ing* periphrases denote intervals which are short in relation to their simple present tense counterparts, a point to which I turn directly.

In his use of *be . . . -ing* sentences as a test for stativeness of a verb, Vendler had a view of the semantic value of those periphrases which may be summarised in the biconditional in (4), and which I will call **the biconditional view** of *be . . . -ing.*

    (4)   A *be . . . -ing* sentence is meaningful if that sentence is read as describing a process which is ongoing at utterance time, i.e., as a progressive.

By this biconditional view, *be running, be eating an apple* are fine; but not *be reaching the top, be loving Lucy, be living in Rio.* The latter two occurrences are, of course, fully acceptable, albeit not as progressives strictly, despite the stativity of the main verbs. Vendler could hold the biconditional view because he also held the view that contextually-driven re-interpretation of the state verb as an event verb made such sentences acceptable. This is the main idea behind coercion. The biconditional view and the idea of re-interpretation are key ingredients in the analysis of aspect. Thus, technicalities apart, existing aspectual analysis in linguistics are Vendlerian in an important sense.

    Vendler's argument for verb classes remains in general compelling, no doubt. But, at least for linguistic purposes (i.e., inquiring about the content of expressions, instead of assuming it) I think it is fair to claim that his view on the value of *be . . . -ing* periphrases was far from being the only alternative. It is perfectly plausible to drop the **biconditional view** for the more descriptive **short interval** view.

    (5)   A *be . . . -ing* sentence is meaningful iff it is read as pertaining to an interval which is short in relation to its simple present counterpart; if the main verb is either an accomplishment or an achievement, than the sentence may also be read as a progressive.

If we adopt this view we predict that the following sentences hold in a sub-interval of where their present simple counter-parts hold, which seems adequate. Notice, that we, as of yet, say nothing about the oddity that many native speakers will see in *knowing the answer.* But on the other hand, we do not have to make special provisions for accepting *loving only her pet canary* etc.

    (6)   a. John is knowing the answer to that question/to our problems.
            b. Mary is loving only her pet canary.
            c. Wait for Rick, he is finding his watch.
            d. I am seeing the monitor but not the mouse from here.
            e. John is crossing Oak st. to get home from work, not Pine st.
            f. He has lost weight because he is working out

    The short interval view allows one to remain open about the semantic value of *be . . . -ing.* This has a welcome empirical cross-linguistic consequence. In languages such as Brazilian Portuguese where stative verbs occur freely in *be . . . -ing* form, the short interval view will have the advantage of not throwing doubt on the existence of verbal classes. Since in such languages there is no restriction on sentences such as *John is liking this play,* by using the biconditional view along with coercion the argument for distinguishing events from states becomes circular. We arrive at the conclusion that there is coercion in that sentence because *like* is a stative verb which, as such, cannot be in progress. (But) We arrive at the conclusion like is a stative because the *be . . . -ing* is semantically progressive and thus must have undergone coercion. I will get back to this point.

I propose that the short-interval view can be implemented in a framework along the lines of Blutner (2000). By giving *be ... -ing* periphrases an analysis in which they denote short intervals the readings for the sentences arise from the bidirectional interplay of semantic and pragmatic material. In such a setting we may simply take the semantic content of *be ... -ing* periphrases to be:

(7) BE-INGφ is true at t iff there is an event within the boundaries of t and t is a proper subpart of an interval t' such that φ is true at t'.

Notice that this definition is not reportive. The event holds within a certain interval, which leaves open the possibility of other similar events within that interval and there is no requirement that the event of which BE-INGφ holds be concomitant to utterance time. In other words, the definition is not committed to there the existence of a single event nor to a series of them. Notice also that the question of why we can conclude that *Mary has run* if we know that *Mary is running,* but not that *Mary has eaten an apple* if we know that *Mary is eating an apple* has not been answered. The existing solutions to the paradoxes can plausibly be recast into this approach, though I cannot get into the details here.

As stated in the short interval view, progressive reading only arises when the arguments of the verb are definite descriptions or proper names. Thus, the set of sentences below are predicted not to have progressive reading in English. The same goes for Brazilian Portuguese counterparts with the bare singulars.

(8) a. Dogs are barking.
    b. Carnivores are becoming extinct.
    c. Ten-year olds are knowing the answer to that question.

An important point to notice is that, while a sentence like *Dogs are barking* does not have a reading saying that the dog kind is barking at the utterance time, in it can be read as *There are dogs barking* if the existence of the event is given where the sentence is uttered. For example, if the conversational agents can hear the barking. Thus, I will sometimes refer to that reading as the weak progressive. Consider now these sentences with definite description arguments.

(9) a. The dogs are barking.
    b. The carnivores are becoming extinct.
    c. The ten-year olds are knowing the answer to that question.

As definite descriptions the arguments here carry a presupposition of maximality and salience. Suppose *the dogs* in (9a) triggers a presupposition which is satisfied such that it commits the speaker to the presence of the dogs at the situation of utterance. And that concomitance of the event and the utterance time is available also to the hearer either because (s)he witnesses it or because the speaker's utterance, by its intonation for example, gives away such commitment. In such cases, the hearer will verify that (9a) is true at utterance time, and will thus interpret it as a progressive. Now suppose that *the dog* has its maximality and salience presupposition requirements satisfied in some other way which does not permit the hearer to conclude truth at utterance time of the purported event. In such a case the habitual interpretation will be preferred. The behaviour of *be ... -ing* periphrases in those cases is uniform for the languages in (1). It suggests that the licencing of progressive depends on the event being evidenced at utterance time. Also,

the strategy used for the (9a) sentence predicts that (9b) and (9c) are ungrammatical with the progressive reading, as required. That the presupposition of the definite description is satisfied in a way that permits evidentialiy is a necessary, but not sufficient, requirement for the progressive reading to arise. Since the predicates in (9b) and (9c) are respectively kind-level and state, evidentiality of the event is not an option, nor is the progressive reading.

With respect to verb classes, it seems that by considering progressive as licenced by the filling of requisites for commitment to truth at utterance time (i.e, evidentiality) and by adopting the short interval view, we can take out the circularity of be-ing when used as a test for stativeness. The strategy would be to identify as statives those verbs that in *be ... -ing* form are read only as pertaining to a short interval with respect to present simple.

2 The *be ... -ing* periphrases in OTS

Blutner (2000) argues for an optimality-theoretic framework which captures Gricean maxims and balances informativeness and efficiency in natural language processing. Gricean maxims are formulated as the I-principle (Say no more than you must (given Q)), which is the speaker's perspective of comparing different syntactic expressions to convey the meaning intended; and the Q-principle (Say as much as you can (given I)), the hearer's perspective which compares alternative syntactic candidates for a certain meaning and acts as a blocking mechanism. The principles are a metric for optimality and appear as the constraints Avoid Accommodation and Be Strong. Where Be Strong captures the speaker's goal of being informative, and strength is based on entailment relations. Avoid Accommodation counterbalances that tendency. With Blutner's definition (11), the result of optimization under one perspective has influence in structures that compete in the other perspective.

(10) a. *AvoidAccommodation:* The higher the number of discourse markers involved in accommodation, the higher the cost of the expression.

  b. *BeStrong:* Evaluate form, context pairs $\langle A, \tau \rangle$ higher according to the strength of τ.

  c. Constraint ranking: *AvoidAccommodation* $\gg$ *BeStrong*.

(11) a. $\langle A, \tau \rangle$ satisfies the Q-principle iff $\langle A, \tau \rangle \in$ **Generator**, and there is no other pair $\langle A', \tau \rangle$ *satisfying the I-principle* such that $\langle A', \tau \rangle$ is less costly than $\langle A, \tau \rangle$;

  b. $\langle A, \tau \rangle$ satisfies the I-principle iff $\langle A, \tau \rangle \in$ **Generator**, and there is no other pair $\langle A', \tau \rangle$ *satisfying the Q-principle* such that $\langle A', \tau \rangle$ is less costly than $\langle A, \tau \rangle$;

  c. $\langle A, \tau \rangle$ is called **super-optimal** iff it satisfies both the Q-principle and the I-principle.

With the semantics proposed for *be ... -ing* in (7), the OTS framework can account for how the habitual and progressive values arise. Suppose the sentence *The dog is barking* is uttered in a scenario where both speaker and herear are committed to the truth of the barking event because they hear it, for example. The preferred reading for the sentence is the progressive one in this case. That is reflected in the tableau below, where the hand '☞' indicates optimality in the production perspective and the arrow '➡' indicates

optimality from the comprehension perspective.

forms		Avoid A	Be Strong		Avoid A	Be Strong
The dog barks	☞➡					*
The dog is barking		*	*	☞➡		
Interpretation		Habitual			Progressive	

By hypothesis, the progressive value requires evidential identification of the event, thus the background must have information about its simultaneity to utterance time. With that in mind, suppose the speaker wants to convey the progressive. Since *The dog is barking* entails *The dog barks,* the former ranks higher with respect to *BeStrong.* The hearer prefers the progressive interpretation since the habitual one would require assuming that the event at the utterance time was not the one talked about, which makes it more costly with respect to *AvoidAccomodation.* Suppose in this scenario the speaker wants to convey habituality. Knowing the entailment pattern mentioned between the sentences, (s)he will choose the present simple which is stronger, given his/her communicative aim. The hearer will prefer the habitual value for *The dog barks,* because by the definition of weak optimality, all things being equal with *AvoidAccomodation,* it ranks higher with *BeStrong.* There being no particular pragmatic requirement for habituals, that concomitance to utterance time is given by pragmatic evidence has no effect on the conditions for obtaining the habitual interpretation, thus *The dog barks* fares equally well with both interpretations with respect to *AvoidAccomodation.*

3 Imperfective tenses

I will close with a general remark of how the strategy for *be ... -ing* can be extended to account for imperfective tenses. Present tense *be ... -ing* periphrases convey the notion of progressive as concomitance of the event to the utterance time. That notion can be generalised to other tenses if formulated as concomitance to the reference time. Thus we should expect not only concomitance to utterance time, but rather concomitance to reference time in general, to be a byproduct of evidentiality of the event which needs the presuppositions associated with definite descriptions to be licenced. Since imperfective tenses of Romance tipically convey overlap with reference time, we should expect that the lines argued for *be ... -ing* hold also for those tenses. I will focus on French *imparfait* and its counterpart in Brazilian Portuguese *imperfeito,* and argue that those lines can pausibly deal with differences between them. Consider the following sets of sentences.

(12) a. Quand Marie arriva,   Jean fumait.
　　　　when   Marie arrived-PS Jean smoked-IMPF
　　　　'When Marie arrived, Jean was smoking.'

　　　b. Quand Marie arriva,   les   garçons fumaient.
　　　　when   Marie arrived-PS the-PLU boys   smoked-IMPF
　　　　'When Marie arrived, the boys were smoking.'

　　　c. ?Quand Marie arriva,   des   garçons fumaient.
　　　　 when   Marie arrived-PS some boys   smoked-IMPF
　　　　'When Marie arrived some boys were smoking.'

(13) a. Quando a   Maria chegou,   o   João fumava.
　　　　when   the Maria arrived-PS the João smoked-IMPF
　　　　'When Maria arrived, John used to smoke.'

b. Quando a Maria chegou o João estava fumando .
  when the Maria arrived-PS the João was-IMPF smoking

  'When Maria arrived, John was smoking.'

c. ??Quando a Maria chegou, menino fumava.
  when the Maria arrived-PS boy smoked-IMPF

  'When Maria arrived boys used to smoke'

d. ??Quando a Maria chegou, menino estava fumando.
  when the Maria arrived-PS boy was-IMPF smoking

  'When Maria arrived there were boys smoking/boys used to smoke'

As desired, by interpreting the state denoted by *imparfait* as necessarily continuous with the event of the *when*-clause in (12a), the arrival overlaps with either the state of 'John being puffing away at a cigarette' or 'John being a smoker'. However, the reading 'John being puffing away at a cigarette' is disprefered for (13a). In Brazilian Portuguese for both readings to be possible, the imperfective tense must be in *be . . . -ing* form, as in (13b). This difference can be accounted for by the short-interval analysis of *be . . . -ing* and the lack of a grammaticalised *be . . . -ing* periphrases in French. Brazilian Portuguese allows bare singular arguments which, roughly, denote kinds. With such arguments the *imperfeito* sentences (13c) and (13d) are odd weak progressives in out-of-the-blue contexts. If one is forced to interpret (13c), it is acceptable contrastively as saying that some grouping of boys (but not of girls) used to smoke, likewise for (13d). But the weak progressive reading of (13d) remains odd even when read contrastively. The conclusion is that the absence of the definite description worsens the concomitance to utterance time reading in Brazilian Portuguese. The French counter-part to those sentences (12c) requires the partitive *des* and the absence of the definite article. With the *passé simple when*-clause, the *imparfait* is odd with the weak concomitance to reference time reading as with the habitual reading. Thus, in French, the absence of the definite descriptions worsens both readings. That the role of pragmatics in licencing the concomitance to utterance time reading. Since the presuppositions of definite descriptions are necessary but not sufficient for licencing the concomitance to utterance time reading, it is natural to assume that they are necessary also to licence the habitual reading of the imperfective tenses. If so, that the habitual reading is also worsened in French can be explained by the obligatory partitive *des* blocking one of the requirements of habitual readings, namely that of maximality. On the other hand, in Brazilian Portuguese since bare nouns are accepted nothing blocks maximality and the habitual interpretation remains available. Thus, exploring the independent and overt differences between the two languages may afford a unified explanation for their similar tenses under the hypothesis that the notion of concomitance to utterance time is arrived at pragmatically.

REFERENCES

Bennet, Michael and Barbara Partee. 2004. Toward a logic of tense and aspect in English. In: Barbara Partee (ed.). Compositionality in Formal Semantics: Selected Papers of Barbara Partee. Blackwell. 58–109, [1978].

Blutner, Reinhard. 2000. Some aspects of optimality in natural language interpretation. Journal of Semantics 17: 189–209.

Dowty, David. 1979. Word Meaning and Montague Grammar. Dordrecht: Reidel.

Gonçalves, Cláudio. 2006. On the semantics and pragmatics of present tenses. Revista Letras 68. Forthcoming.

Krifka, M. et al. 1995. Genericity: An introduction. In: G. Carlson and F. Pelletier (eds.). The Generic Book. University of Chicago Press. 1–124.

Lenci, A. and P. M. Bertinetto. 1995. Aspect, adverbs and events: Habituality vs. perfectivity. In: F. Pianesi J. Higginbotham and A. Varzi (eds.). Speaking of Events. Oxford University Press. 245–287.

Szabó, Zoltan. 2004. On the progressive and the perfective. Nous 38.