#### Non-culminating accomplishments: subject, speaker and syntactic structure

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#### Abstract

This study aims to establish a relationship between the morphosyntax, the lexicon and conceptual patterns involved in the phenomenon of (non-)culmination. The study argues that although the solution of the non-culmination problem crucially involves both the syntax and the lexicon, it cannot be solved within either of these language components. It is proposed that in the case of non-culminating accomplishments, the interaction between the syntax and the lexicon at the level of the sentence structure triggers a specific conceptual configuration. The configuration represents a goal-directed trajectory initiated by an intentional (human) subject targeting the change-of-state of an object. The same configuration can also be viewed in a reverse order, going from the observation of a change of state in the world to attributing an intentional or non-intentional cause to this change. It is proposed that non-culminating accomplishments are palimpsestic structures that involve two points of view simultaneously: the prospective goal-directed perspective of the intentional subject and the retrospective perspective of the speaker-narrator oriented from the result to its (effective or presumed) cause, the former being embedded in the latter.

**Key words:** non-culminating accomplishments, lexicon, morphosyntax, intentionality, goaldirected trajectory, point of view.

#### 1. Introduction

Talmy (1991) drew attention to the possibility of a non-culminating reading of accomplishment verbs combined with perfective aspect in Mandarin Chinese. This case is illustrated below by Talmy's example (1a) as opposed to (1b) (Talmy 1991: 516), in which the "satellite" (the second verb of the compound VV construction) unambiguously denotes the culmination point. In both sentences perfective aspect is marked by the particle *le* which follows the only verb in (1a) and the compound in (1b).

- (1) a. wǒ shā le tā (dàn-shì méi shā sǐ)
  I kill PFV him (but not-PAST kill die)
  'I killed him but he was not dead.'
  b. wǒ shā sǐ le tā
  - I kill die PFV him 'I killed him.'

Talmy emphasized that the negation of culmination (*but*-clause) in (1a) was only possible when the action is performed by the subject with the *intention* that it lead to the outcome indicated by the "satellite" in (1b), and hence requires an intentional (typically human) subject.

The recent renewed interest in non-culminating accomplishments has given rise to a number of studies on various genetically unrelated languages that confirm the intentionality requirement postulated by Talmy. In sentences with a non-intentional, typically non-animated, subject, the culminating reading is the only option (cf. a.o. Bar-el *et al.* (2005) on Salish languages St'át'imcets and Skwxwú7mesh; Martin (2015) on French; Smith (1997), Soh & Kuo (2005) on Mandarin Chinese; Beavers & Lee (2018) on Korean; Tatevosov (2008), Tatevosov & Ivanov (2009) on Karatchay-

Balkar and Mari; Kiyota (2008), Tsujimura (2003) on Japanese; Singh (1998), Gyarmathy & Altshuler (2017) on Hindi).

Studies centered on the non-culmination phenomenon typically propose a semantic analysis in terms of the event structure, aspectual composition, its modal and degree components. As a result, the semantic analysis becomes more and more fine-grained and hence more and more complex.

At the same time, electrophysiological measures (event-related potentials, ERP) used in neurolinguistic studies tend to show that the linguistic input is processed by the human brain at  $\pm$  250-500 ms after the stimulus onset and at 500-800 ms when some revision of previously computed linguistic material is needed (cf. e.g. Kutas & Federmeier 2011, Marslen-Wilson 2019).<sup>1</sup> The latter may be the case in sentences with non-culminating accomplishments, since the non-culminating reading does not emerge without a *but*-clause. This speed is challenging for semantic descriptions which tend to overgenerate the "desired output reflecting our description of the intuitive truth-conditions" (Ramchand 2018: 3).

Some approaches in terms of the event structure do not pay much attention to the syntax of sentences with non-culminating accomplishments. However, observational techniques such as neuroimaging (fMRI), which provide information on the loci of linguistic processing in the brain, seem to indicate that the main tool which makes humans able to "make sense out of words meaning" is the syntactic structure which projects onto incoming linear linguistic material turning it into hierarchically organized units (Hauser *et al.* 2002, Berwick *et al.* 2013, Friederici 2017). The human ability to combine words into phrases and phrases into sentences is based on a simple computational principle, the Merge operation. Merge, as defined by Chomsky (1995), is a recursive operation that combines two linguistic units x and y into a more complex unit z, which is a projection of x or y. The unit z in turn can combine with another unit, generating a larger hierarchical structure, etc. It is recursion that allows humans to produce an infinite range of meanings by combining a finite set of elements.

Chomsky's theoretical postulate is supported by neurobiological observations which suggest that the syntactic information and the lexical-semantic information of a linguistic input follow two different subcortical pathways: a dorsal tract (syntactic structure) and a ventral tract (lexical semantics), both connecting left-hemispheric posterior language regions (posterior superior temporal sulcus, pSTS) and inferior frontal gyrus (the Broca's area) (cf. Friederici 2017, Friederici *et al.* 2017, Berwick *et al.* 2013). Syntactic processing delivers the organizing structure of the sentence. It consists in retrieving all grammatically relevant information, e.g. syntax-based word order, case marking, functional words and regular inflectional morphemes, the latter, e.g. the English *-ed*, the French *-ait*, etc., stripped from their stems (Marslen-Wilson 2019). According to some studies, some features which are traditionally viewed as semantic, especially  $\pm$ animacy, are also involved in syntactic processing, beginning with its early stages (Bornkessel-Schlesewsky & Schlesewsky 2009, Malaia *et al.* 2013).

<sup>&</sup>lt;sup>1</sup> The first rate corresponds to the so-called N400 ERP, which is assumed to elicit lexical-semantic word integration into the sentence context (Kutas & Federmeier 2011). The second one corresponds to P600, assumed to elicit various types of conscious syntactic revision, e.g. in processing garden path sentences, and more generally, different kinds of reanalysis and repairs in building up a coherent sentence structure (Hagoort 2003).

Apart from being connected to the external world by a sensori-motor interface (speech perception and production), the language system (syntax and lexicon) is connected to the internal mental world (mind) by a conceptual-intentional interface which relates linguistic expressions to concepts and conceptual configurations, assumptions, reasoning, planning and other activities of the mental world. Empirical investigation of the conceptual-intentional interface relating sentences to the mental world is a challenging area for neuroscience (Berwick et al. 2013, Friederici et al. 2017). Internal semantic concepts cannot be assimilated to word definitions in lexical semantics. Concepts are more abstract, underspecified mental representations incorporating various kinds of associations. Even simple concrete words do not establish a direct relation between a mental representation and a real-world object. Rather they appear as instructions for "thinking about reality" (Friederici et al. 2017) or for "interpreting the world" (Berwick et al. 2013). This process relies on higher cognitive functions which are not specific to language processing, such as inferring and reasoning, often in terms of "causal thinking" about actions and goals, (presumed) causes and effects.

Our study aims to establish a relationship between morphosyntax, the lexicon and conceptual patterns involved in the phenomenon of (non-)culmination. We will argue that although the solution of the non-culmination problem crucially involves both the syntax and the lexicon, it cannot be solved within either of these language components. Certainly, it involves the interaction between the lexicon and the morphosyntax at the level of the sentence structure. In addition, as we will argue, in the case of (non-)culminating accomplishments, this interaction triggers a specific conceptual configuration. The configuration represents a goal-directed trajectory initiated by an intentional (human) subject, targeting the change-of-state of an object. Crucially, the same configuration can also be viewed in a reverse order, going from the observation of a change of state in the world to attributing an intentional or nonintentional cause to this change. We will argue that non-culminating accomplishments are palimpsestic structures that involve two points of view simultaneously: the prospective goal-directed perspective of the intentional subject and the retrospective perspective of the speaker-narrator oriented from the result to its (effective or presumed) cause, the former being embedded in the latter.

While the intentional goal-directed trajectory is a universal conceptual pattern, its realization in particular languages depends on the lexicon and the morphosyntax. As noticed by Talmy (1991: 516), the English gloss of a lexical verb as  $sh\bar{a}$  ('kill') in (1a) and (1b) can be misleading; the Chinese verb rather means "I assaulted him with intent to kill". A lexical-syntactic parameter allows such a meaning to be derivable in some languages but not in others.

In section 2 we discuss the relationship between two causal relations: the action-goal relation and the cause-effect relation. In section 3 various cases of non-culmination consistently reported in the literature on European and non-European languages are classified into five groups according to the lexical meaning of the verb and its relationship to the result state negated in the *but*-clause. Section 4 raises the question of whether and how Russian secondary imperfective aspect is relevant to the (non-) culmination issue and discusses the controversial case of the so-called 'delimitative' prefix PO-. After this overview of various cases of interaction between the lexicon and the morphosyntax, section 5 motivates our approach to non-culminating accomplishments in terms of a palimpsestic conceptual structure involving two simultaneous points of view: the *prospective* goal-directed perspective of the intentional subject and the *retrospective* perspective of the speaker-narrator.

## 2. Causes and goals

Martin's (2015) examples in (2a, b) illustrate Talmy's (1991) observation that the nonculminating reading of accomplishment predicates is restricted to human intentional actions; it is not compatible with non-intentional (non-animated) subjects.

- (2) a. Le docteur Li m'a soigné, mais je n'ai pas guéri du tout. 'Doctor Li treated me, but I didn't get better at all.'
  - b. Ce séjour chez ma sœur m'a soigné, ?? mais je n'ai pas guéri du tout. 'That stay at my sister's treated me, ?? but I didn't get better at all.'

Dowty (1979) defined accomplishments by an ordered combination of three predicates: *do-cause-become*. Similarly, Rappaport Hovav & Levin (e.g. 1998) define accomplishments, within a lexicalist approach, as an event structure consisting of two events, an activity and a change of state, linked by a causal relation, as in (3). In fact, structure (3) appears, rather, as tripartite (cf. Rothstein (2004) for a discussion of whether the accomplishment event structure is bi-eventive or tri-eventive).

(3) [x ACT] CAUSE [BECOME [y <state>]]

These definitions pose two problems. The first is that both Dowty's predicate *do* and the predicate *act* in (3) already imply that the subject of *doing* (something) or *acting* (in a certain manner) is a human (intentional) agent. Both definitions constrain the category of accomplishments to contain human (or at least animated) subjects (agents). If so, neither the unaccusative VP in  $(4)^2$  nor the transitive VP in (2b) or (5a)-(5c) below qualify as accomplishments since they combine with non-agentive subjects.

(4) a. The river froze (in one night).b. [VP froze the river]

The second problem, partly related to the first, is that these definitions don't specify the nature of the relationship between x's doing/acting and y's change of state, thus licensing an accidental causal relation. In sentences with non-human subjects the causal relation always appears as accidental relative to the choice of the affected object, as in (5a), unless the entity denoted by the subject DP is interpreted as an instrument/machine manipulated by a hidden human with a certain intent/ design, as in (5b, c) (cf. Alexiadou & Schäfer 2006).

- (5) a. The fire destroyed the forest.
  - b. The key opened the door.
  - c. The dishwasher washed the plates.

Why are accomplishments associated, at least by default, with human intentional actions? Why does this default association become a semantic constraint on the non-culminating reading, as unanimously reported in studies on various languages (cf. a.o. Beavers & Lee (2019) on Korean, Bar-el *et al.* (2005) on two Salish languages, Talmy (1991), Smith (1997) on Mandarin Chinese, Tatevosov & Ivanov (2009) on

<sup>&</sup>lt;sup>2</sup> For the sake of simplicity, we will use the term *unaccusative* for intransitive telic VPs, and the term *unergative* for intransitive atelic vPs, i.e. activities, such as *John danced*. Unaccusatives are VPs (whose unique postverbal argument may raise) while unergatives are vPs with a selected subject.

Karatchay-Balkar, Kiyota (2008) on Japanese, Gyarmathy & Altshuler (2017) on Hindi, Koenig & Muansuwan 2000 on Thai)?

Martin (2015) suggests that this restriction boils down to the subject's *agentivity*. In Demirdache & Martin (2015), this notion is strengthened by a control condition (the so-called *Agent Control Hypothesis*). Control is also central in Bar-el *et al.*'s (2005) study of two Salish languages. However, we assume, with Beavers & Lee (2019), that what is crucial for the non-culminating reading is not the function of agency as animacy and power potential (the agent's control of her own action) but the agent's *intention* to change the state of the Patient entity by performing a certain action.

Hommel (2017) defines *agency* (or *agentivity*) as "the impression that it is me who is carrying out (i.e. causally producing) a particular action". As we will argue in section 5, a human (or at least animated) subject is an Agent at the vP level, the level of the event description; his *agency* lasts as long as he is "causally producing" his action, i.e. from the first to the last point of the event. By contrast, the *intention* to carry out the action is ascribed to the subject before the onset of the event, in the pre-event domain, that is, not on the vP level but on the TP level, located above vP and below CP, the speaker's level. This proposal will be incorporated in the solution we offer for non-culmination in section 5. Our purpose here is limited to defining the difference between two causal relations, the action-goal relation and the cause-effect relation.

We assume, with Malaia *et al.* (2013), that features consistently reported crosslinguistically externalize either some core computations inherent to the neural language processing or some basic conceptual configurations hardwired in the human mind. The latter seems to be the case with the intentionality requirement for nonculminating accomplishments.

Causality, which is assumed to be a defining feature of accomplishments, is a universal concept (Pulvermüller 2018). Causal representations ("causal thinking") result from repeated experiences which contribute to create stable mental links specifying that some events necessarily (or typically) lead to some other events. There is also another kind of mental representation, namely the action-goal relation. This relation is not really causal. Rather, it involves an interplay between intentions, actions and assumptions about their result which allows humans to map actions onto their consequences.

(Non-intentional) causal relations and intentional action-goal relations are fundamentally different. The causal relation is inherently backward-oriented: it goes from perceiving the effects, e.g. the destroyed forest in (5a), to their (presumed) cause. The term *cause* is relational: something is a cause iff there are some effects. Cancelling (negating) the effects entails cancelling the cause (Pulvermüller 2018). This constraint seems to be independent of any particular language; it is consistently reported to hold in various unrelated languages. The action-goal relation is inherently forward-oriented. The perception of a human agent's action (e.g. Mary washing a shirt) activates a conceptual configuration that includes its typical goal (make the shirt clean). This forward-oriented action-goal relation is triggered by assigning an intention to the subject. An important point is that the action-goal relation holds even when the event is described retrospectively, which is the case for non-culminating accomplishments in sentences with perfective aspect.

The assumption that the action-goal conceptual configuration is hardwired in the human mind is supported by findings in the field of neurocognition. Saxe (2006)

observed that (non-linguistic) understanding human actions, e.g. body movements, in terms of goals is a basic cognitive function which involves a specific, usually rightlateralized, cortex region, the posterior superior temporal sulcus (pSTS). As pointed out by Saxe (2006), this region is recruited during both direct observation of an action and indirect observation of the effects of an action. Crucially, its left-lateralized counterpart, the left pSTS, is assumed to be involved in the processing of transitive sentences with animated (intentional) and non-animated subjects (Bornkessel-Schlesewsky & Schlesewsky 2009), and more generally in thematic roles assignment (who did what to whom) (Bornkessel et al. 2005), as well as, arguably, in the retrieval of the syntactic frames stored in memory (Hagoort 2003). These findings suggest that the interpretation of transitive sentences and the intentionality requirement for the non-culminated reading are based not only on the lexicon and syntax but also, crucially, on the accessibility of a conceptual configuration which pre-exists the speech act. The solution that we propose for non-culmination in section 5 accounts for how the action-goal configuration, which will be called here Goal-Directed Trajectory (GDT), influences the non-culminating construal.

# **3.** Varieties of non-culmination: lexical meaning of the verb and its relation to the negated result state

*Non-culmination* is an umbrella term that covers a variety of cases. Talmy (1991) supposed that English had only one case of non-culmination, namely *wash*-verbs (section 3.1). Later, however, several groups of verbs, or more exactly vPs, were proposed in European languages (English, French, German) as compatible with the non-culminating reading (cf. Martin & Schäfer 2012, 2017, Martin 2015, Demirdache & Martin 2015). According to the data reported on Mandarin Chinese, Japanese, Korean, Hindi, Thai and several other languages (cf. the references in sections 1 and 2), the possibility of non-culminating reading extends in these languages to verbs whose English, French and German lexical counterparts are necessarily culminating.<sup>3</sup>

Various cases consistently reported in the literature on European and non-European languages are classified below into 5 groups according to the lexical meaning of the verb and its relationship with the result state negated in the *but*-clause.

## 3.1. Wash-verbs

The transitive verbs in (6a) do not include the change of state of the theme entity in their lexical meaning. This contrasts with the transitive verbs in (6b, c), whose lexical meaning includes a change of state of the theme.

- (6) a. John washed/ ironed the shirt/ wiped the table/ treated the patient, but the shirt is still not clean/ not smooth/ the table is not dry/ the patient is not getting better.
  - b. John cleaned the table, #but it is still not clean.
  - c. John corralled the horse, #but it is still not in the corral.

<sup>&</sup>lt;sup>3</sup> It is worth noting, however, that the lexical meaning of a verb may evolve. An example thereof is the French verb *assassiner* ('assassinate'). According to the Littré dictionary (1873-1877), this verb had both a culminating and a non-culminating meaning, the latter preserved to the 18<sup>th</sup> century (<u>https://www.littre.org/definition/assassiner</u>). The latter use is illustrated in the dictionary by the following example: "On assassina Luc [le roi de Prusse Frédéric II], et on l'a manqué" (*They assassinated Luc [Frederick II, the king of Prussia], and missed him*), Voltaire, Lettre à d'Alembert, février 1762 (*Voltaire, Letter to d'Alembert, February 1762*).

The verbs in (6a) are activity verbs, or *manner* verbs in terms of Levin & Rappaport Hovav (e.g. 2013), and the nature of these activities is such that their temporal duration is not limited by the spatial extension of the theme entity: in principle, nothing excludes washing/ironing the shirt, treating the patient, etc. indefinitely. In this sense they are different from classical quantized-theme verbs such as creation and consumption verbs.

According to Talmy (1991), the expected result in (6a) (*the shirt be clean*, etc.) is nothing but a pragmatic implicature. The requirement of *but* in the negative clause of (6a) seems to be due to the same pragmatic inference as in (7), with a genuine unergative activity verb.

(7) Mary didn't sleep last night but she is not tired today.

Yet, the implicature in (6a) is not exactly of the same origin as in (7). The vPs in (6a) activate a complete situation template available in the comprehender's mind in which the human subject's action is motivated by the previous (unsatisfactory) state of the shirt/table/patient and is performed with intent to achieve a certain aimed state of the theme entity. In brief, despite the fact that the verbs in (6a) are atelic (activity) verbs, the vPs in (6a) are nevertheless assigned a (telic) action-goal template, or as we will call it, a Goal-Directed Trajectory (GDT). One could object that this pseudo-telicity is pragmatic. The point is that our neural comprehension system uses all the information it can as soon as it can, largely relying both on hardwired mental conceptual schemas and situation templates acquired by experience and stored in our memory (Kutas & Federmeier 2000: 467). This principle implies that the comprehender cannot freely use any kind of pragmatic inferences. Her range of available conceptual schemas is limited to those that are activated under the construal of the meaning of lexical items merged into phrases in syntax.

Tatevosov (2008) distinguishes two non-culminating readings (cf. also Tatevosov & Ivanov 2009). In the first, termed "Failed Attempt", the state of the theme entity does not undergo *any* change (cf. section 3.5). In the second, termed "Partial Success", a quantized theme undergoes *some* changes (cf. section 3.4). In (6a), where: (i) the agent's goal (make the shirt clean) is not included in the verb's denotation and (ii) the theme is not quantized and may (but need not) undergo some gradual changes along a scale specified in the *but*-clause (the shirt may be cleaner/smoother than before) but these changes do not realize the goal, neither reading is applicable *stricto sensu*. The fact that the theme entity may undergo some scalar changes correlates with a 'weak' reading of the negation in sentences with a non-intentional subject. In (8), as well as in Martin's (2015) example (2b), the negative clause does not negate the existence of effects but only their expected degree. In this 'weak' case, the negative clause is not judged as contradictory but only as incoherent.

(8) The sea washed the shore ?? but it is still not clean.

However, with respect to the applied conceptual schema of a goal-directed trajectory (GDT), in which possible changes do not realize the goal, sentences with *wash*-verbs are rather interpreted as Failed Attempt.

## 3.2. Transfer verbs

Martin & Schäfer (2012, 2017) discussed a range of verbs in French and German that license a non-culminating reading when combined with an agentive (human) subject. The authors termed them "defeasible causative verbs". The majority of the verbs

discussed are ditransitive (or indirect object) verbs like *teach, show, explain*, illustrated in (9). We will call them "transfer verbs". It should be observed that in the case of transfer verbs, non-culmination does not involve the theme entity change of state but the recipient's (failed) change of state (see (9a) and (9b) below).

The difference between the French and English versions in (9a) and (9b) consists in that in French the recipient argument is a prepositional indirect object, independently of whether the subject is agentive (human) (9a) or not (9b). In English a prepositional object is licensed with a human subject (9c) while the non-human subject is associated with obligatory culmination in double object VPs of the form V NP NP (9c), but is not grammatical in the otherwise synonymous V NP PP structure (9d) (cf. e.g. Oehrle 1976).

- (9) a. Macha a enseigné à Jean le russe, mais il n'a rien appris.'Masha taught Russian to Jean, but he learned nothing.'
  - b. La vie a enseigné à Jean l'humilité, #mais il n'a rien appris. 'Life taught Jean humility, but he learned nothing.'
  - c. Masha taught Russian to John, but he learned nothing.
  - d. Life taught John humility, #but he learned nothing.
  - e. #Life taught humility to John.

This syntactic constraint cannot be part of the lexical entry of *teach, explain, show,* etc. in a grammar without global rules. We propose that the non-culminating reading of transfer verbs, in e.g. (9a), is related to the intentional GDT assigned to the human subject, in the same way as with *wash*-verbs. A GDT is trivially directional and is defined by an internal time extending from the intention to the goal. The preposition *to* being directional, in (9c) it adds an internal time defining a GDT, and hence requires an intentional subject. In French, however, the preposition *à* is locative; the directional meaning is brought about by directional verbs: *Pierre est à l'école* ('Pierre is in the school') vs *Pierre va à l'école* ('Pierre is going to the school'). This makes *à* compatible with both a GDT in (9a), in which the perspective is assigned to the subject, and with a retrospective causal reading in (9b), where the perspective goes from observing the effects (Jean's humility) to their (presumed) cause. The retrospective perspective is assigned to the speaker and lacks internal time.

Martin & Schäfer (2012, 2017) account for the contrast between (9a) and (9b) in terms of a sublexical modal component equipped with an energetic modal base.<sup>4</sup> When the subject is agentive (9a), the modal base contains causally successful worlds. When the subject is non-agentive (9b), there is still a sublexical modal component, but the modal base is circumstantial realistic. It is not clear, however, where the sublexical modal component comes from given that the verb does not contain a modal morpheme, unless it is assumed that it is contributed by perfective aspect (cf. 3.4).

We propose that, just as with *wash*-verbs, the lexical meaning of transfer verbs does not include the recipient's change of state. In this sense, they can hardly qualify as causative. However, these verbs do activate conceptual associations with a responsive recipient-internal process: *teach* – *learn*, *explain* – *understand*, *show* – *see*, *tell* – *hear and be aware of what is told*.<sup>5</sup> The intentional subject's GDT in sentences like (9a) is

<sup>&</sup>lt;sup>4</sup> Koenig & Davis (2001) define a sublexical modality component as a type of semantic information encoded by the verb which evaluates the relationship between the event participants at various world and time indices.

<sup>&</sup>lt;sup>5</sup> In the specific case of *offer*, defined in Martin & Schäfer (2012) as "willing to give", i.e. as a modal future-oriented state, Martin & Schäfer postulate a sublexical modal component which licenses the

aimed at causing such a recipient-internal process. In this sense, these verbs can indeed be viewed as causative. However, associated recipient-internal processes are such that the intentional subject has no control of them and even no access to them (contra Demirdache & Martin's (2015) *Agent Control Hypothesis*). As pointed out by Pulvermüller (2018), a teacher has no access to the learner's internal state as they have no shared reference object. In this respect, the French verb *enseigner* ('to teach') contrasts with the verb *apprendre* on its indirect-object use. The latter denotes both teaching and learning processes, so that the two processes are not separable from each other, *apprendre*-teaching entailing *apprendre*-learning.

Macha a appris à Jean le russe #mais il n'a rien appris.
 'Masha successfully taught Jean Russian but he learned nothing.'

With transfer verbs that do not lexically entail the recipient-internal process, the two processes (*teach-learn, explain-understand, show-see*, etc.) are dissociated. Masha can go on teaching John Russian even if she is aware that John will never learn anything. As for John, his (in)ability to learn may depend on a range of factors independent of teaching, such as attention, motivation, etc. In short, sentences with transfer verbs and intentional subjects involve *two* distinct processes, an external one, on the part of the subject, and an internal one, on the part of the recipient.

When the subject is non-agentive (non-human), as in (9b), there is still a human recipient. His state, and the (presumed) cause that has led to this state, is necessarily described from the external viewpoint. This viewpoint is assigned to the speaker-narrator, external to the discourse world. The speaker having access to both the recipient's state and its (presumed) cause, her viewpoint is often undistinguishable from the recipient-acting-as-narrator viewpoint, that is, the recipient recalling a past causal event.<sup>6</sup>

Transfer verbs, like *wash*-verbs, are not classical incremental theme accomplishments (*write a letter, eat an apple*). What distinguishes them from *wash*-verbs is that, being ditransitive (or indirect-object verbs), they trigger an additional conceptual schema relative to a recipient-internal process.

## 3.3. Transitive psychological verbs

'This situation showed them the problem, but they didn't see it.'

non-culminating reading even with a non-agentive subject, e.g. *The circumstances offered him a great job, but he chose another option*. Piñon (2014) argues that *offer* is stative with non-agentive subjects. On his analysis, *offer* is a possibility put at the disposal of the recipient, and the result state is a possibility to accept. Given modal and/or stative properties of *offer*, it will not be taken into account here.

<sup>&</sup>lt;sup>6</sup> Martin & Schäfer (2012) mention some at first glance intriguing cases like (i) (their (17a)). In (i), which contrasts with (ii), non-culmination turns out to be compatible with a non-agentive subject.
(i) *Clairement, cette situation leur a bel et bien montré le problème! C'est fou qu'ils ne l'aient pas vu !*

<sup>(1)</sup> Ctatrement, celle situation teur à ber et bien montre le probleme? C'est jou qu'its ne t'alem pas vu?
(1) Clearly, this situation well and truly showed them the problem! It is crazy that they didn't see it!'
(ii) Cette situation leur a montré le problème, #mais ils ne l'ont pas vu.

The problem raised by (i) is easily explained within our approach. In (i) the all-knowing speaker intervenes to dissociate himself from the recipient: cancelling the effects on the intended recipient does not entail cancelling the cause since the effects do hold for the speaker. In (ii), where no such intervention occurs, there is no dissociation between the speaker's perspective and the recipient's viewpoint. As pointed out by an anonymous reviewer, such pragmatic modulations occur without a need to incorporate them into the semantics of the morpheme.

In agentive sentences with transitive psychological verbs like *inciter* in (11a), the vP argument (*Jean*) may be interpreted as either theme or patient/experiencer.

- (11) a. Marie a incité Jean à la vengeance (mais en vain).'Marie incited Jean to vengeance (but in vain).'
  - b. Le meurtre de son frère a incité Jean à la vengeance (#mais en vain). 'His brother's murder incited Jean to vengeance (but in vain).'

The role of theme is activated within the atelic (activity-like) reading of the verb; here, the *theme* is an event participant that is targeted by the subject's activity without being affected by it. Yet, similarly to *wash*-verbs and transfer verbs, this reading is not exactly atelic as it is associated with a goal-directed intentional trajectory.

Psychological verbs differ from *wash*-verbs and transfer verbs in that the intended goal is inscribed in their lexical content (*incite (to), amuse, reassure, encourage,* etc.). However, in the same way as with *wash*-verbs and transfer verbs like *teach* and *explain*, the agent's activity may continue after attaining its lexicalized goal, when the theme participant already has the inspired feelings. Although the agent can control her own action, she has no access to the theme participant's feelings and hence has no control of the effects of her action, in the same way as with transfer verbs.

Generally, the assignment of a psychological state to a participant activates the experiencer role. Putting aside the *but*-clause in (11a), the culminating reading of the vP makes it possible to assign the experiencer role to Jean. However, within the event template of a GDT, the sentence is interpreted as being about the agent (*Marie*) and her successfully achieved change-of-state goal. This template does not activate the experiencer role but the patient role for the undergoer of the change of state. As for the experiencer role, it is associated with the result-state template due to the speaker's retrospective perspective in which the event described in vP is not a GDT but a Cause. Under the latter construal, Marie may have incited Jean to the vengeance without intending this result and/or there was no action at all on her part (cf. Ruwet 1995, Mari & Martin 2009). In (11b), the result-state template, and hence the speaker's point of view, is the only option. The only human participant, Jean, is assigned the experiencer role while the vP event with a non-human subject, itself entailing an event, is a Cause.

Sentences with transitive psychological verbs raise the question, which has no consensus in neurolinguistic literature, of whether thematic roles are assigned during the syntactic processing (Malaia *et al.* 2013)<sup>7</sup> or, as proposed in "Syntax-First" models, at the following stage, when the syntactic structure, the semantic meaning and other relevant information are assembled together (Bornkessel *et al.* 2005, Friederici 2017). It is assumed that the locus of this complex processing is the left posterior superior temporal sulcus (pSTS) (Bornkessel-Schlesewsky & Schlesewsky 2009, Friederici *et al.* 2017, Friederici 2017), while its right-hemispheric counterpart is involved, according to Saxe (2006), in (non-linguistic) interpreting human actions in terms of goals. Be that as it may, we assume that thematic roles assignment is associated to specific conceptual configurations licensed by the feature  $\pm animated$  (usually  $\pm human$ ) interpreted as  $\pm intentional$ . As observed in Bornkessel-Schlesewsky & Schlesewsky & Schlesewsky (2009), the feature  $\pm animated$ , and hence, arguably,  $\pm intentional$ ,

<sup>&</sup>lt;sup>7</sup> In linguistic literature this standpoint is supported e.g. by Jackendoff's "Parallel Architecture" theory (Jackendoff 2009), and by Ramchand (2008, 2018).

traditionally viewed as semantic, is involved in syntactic processing beginning with its early stages (cf. section 1).

## 3.4. Incomplete accomplishments

Tatevosov and colleagues qualified vPs like (12) as "Partial Success" accomplishments (Tatevosov 2008, Tatevosov & Ivanov 2009, Lyutikova & Tatevosov 2010, Tatevosov 2017). The vPs in (12) are typical incremental theme accomplishments (cf. Krifka 1998, Rothstein 2004). Their *not-complete* nonculmination does not require the subject's intentionality (cf. Beavers & Lee (2019) for a similar claim). It is compatible with intentional subjects (12a), non-human subjects (12b), accidental human actions (12c), as well as with unaccusative and anticausative verbs (cf. Kearns 2007) (12d).

- (12) a. John ploughed the field/ filled (in) the form/ painted the wall, but not completely.
  - b. The fire destroyed the village, but fortunately not completely.
  - c. John accidentally painted the wall, but fortunately not completely.
  - d. La rivière a gelé, mais pas complètement. 'The river froze but not completely.'

The main feature that distinguishes the vPs in (12) from the cases examined in 3.1 – 3.3 is that the process of the patient's change of state starts and ceases at the same time as the agent's activity (12a, c) or as the causal event (12b). Given that the object is quantized, the right boundary of the event is limited by the object's dimensions (cf. Verkuyl's (1989) "specified quantity of A", +SQA). In sentences with an intentional subject this boundary may coincide, or not, with the agent's intention to *finish* her activity or to cease it voluntarily before attaining the object's spatial boundaries. As the verb *finish* implies intentionality and triggers a GDT, non-intentional subjects are not compatible with a *not-finish* vP in the *but*-clause (cf. Martin 2019, Arche 2014).

(13) The fire destroyed the village, # but it didn't finish destroying it.

The situation is slightly more intricate with degree-achievements-like accomplishments (*bake the cake*). In this case the right boundary of the event is a conceptually or contextually given point of an object-internal process which can be described by an anticausative verb (cf. Hay *et al.* 1999, Kennedy & Levin 2008, Piñon 2008, Martin 2019). We will not enter into the details of this particular case: it boils down to defining the point at which the cake is (sufficiently) baked.

We will assume, with Martin (2019), that sentences with incomplete accomplishments are true at the coarse granularity level, but false at a finer granularity level, and that their truth or falsity depends on a non-maximal or maximal reading of the (in)definite DP argument. More importantly, we assume that incomplete accomplishments crucially differ from the other cases of non-culmination in that their culmination point is not given by an activated conceptual configuration, but is determined externally, typically by the spatial extension of the object. This property makes them insensitive to the intentionality requirement, which is crucial for all the other cases of non-culmination. Hence, this case will not be taken into account in the following part of this chapter.

# 3.5. "Failed Attempt" accomplishments

The most striking case of non-culmination is one in which the verb seems to lexicalize culmination in an achievement-like way, yet the sentence is still compatible

with a negative *but*-clause. This configuration is termed "Failed Attempt" in Tatevosov (2008) (cf. also Tatevosov & Ivanov 2009, Lyutikova & Tatevosov 2010, Tatevosov 2017). Such cases are found in, among other languages, Mandarin Chinese, as illustrated in Talmy's example (1a) repeated in (14), in Japanese (15), Korean (16), Hindi (17).<sup>8</sup> As pointed out by various authors, non-culmination is only possible if the subject is human (intentional).

- (14) wǒ shā le tā (dàn-shì méi shā sǐ)
  I kill PFV him (but-not PST kill die)
  'I killed him but he was not dead.'
- (15) Hanako-ga doa-o sime-ta kedo mada simat-tei-nai. Hanako-NOM door-ACC close-PST but yet close-TEI-NEG 'Hanako closed the door but it is not closed yet.' (Kiyota 2008)
- (16) ku-ka changmwun-ul kkay-ss-ta haciman he-NOM window-ACC break-PST-DECL but changmwun-i kkay-ci-ci anh-ass-ta. window-NOM break-PASS-COMP NEG-PST-DECL 'He broke the window. But it was not broken.' (Beavers & Lee 2019)
- (17) miiraa ne kamiiz Taangii par wo Taangii nahii Mira ERG shirt hang-PFV but it hang NEG
   'Mira hung the shirt but it did not hang.'<sup>9</sup>

(Singh 1998)

In certain languages, a perfective marker, such as *LE* in Mandarin Chinese and the perfective suffix in Hindi, does not entail culmination. The verbal *LE* in Chinese is a marker of terminativity: it can be used with activities. With accomplishment-like VP's similar to *write (a) letter* it sometimes indicates terminativity and sometimes culmination, depending on the unbounded (massive-like) *vs* bounded reading of the singular NP (Soh & Kuo 2005, Soh & Gao 2006, Song 2018). Similarly, the perfective verbal suffix in Hindi does not entail culmination; it can be used with verbs denoting atelic events (Singh 1998, Altshuler 2013). The Japanese particle *-ta*, although sometimes labelled a 'perfectivity marker' (Singh 1998, Tsujimura 2003), is rather a past tense marker. Korean possesses only a past tense marker (Beavers & Lee 2019). In Thai, the perfective markers discussed in Koenig & Muansuwan (2000) do not entail culmination; some of them (e.g. *maa*) do not require the event to be bounded in the past and are compatible with past, present and future readings.

In English and French, perfectivity boils down to terminativity as well. The English simple past and the French *passé composé* combine with activity verbs, triggering a terminative reading: *Mary danced/Marie a dansé*. However, while the passé composé also entails terminativity with stative verbs, the English simple past is aspectually "neutral" with states (Smith 1997): *Mary loved John > Marie a aimé Jean* (passé compose)/*Marie aimait Jean* (imparfait). Setting aside explicit telicity markers in

<sup>&</sup>lt;sup>8</sup> The abbreviations used in glosses are the following: PFV 'perfective', IPFV 'imperfective', PST 'past tense', NEG 'negation', DECL 'declarative', PASS 'passive', COMP 'complementizer', M/F 'masculine/feminine', NOM 'nominative', ERG 'ergative', ACC 'accusative', LOC 'locative'.
<sup>9</sup> Singh's (1998) translation: 'Mira tried to hang the shirt, but couldn't'.

English such as particles and resultative clauses, the culminating reading is strongly implicated (and possibly entailed) when terminativity expressed by these past tenses interacts with lexical telicity located at the VP/vP event description level.

Processes denoted by telic unaccusative and anticausative verbs cannot but culminate when combining with terminativity (except the case of incomplete accomplishments, cf. 3.4). When the process is transitive, as in (14)-(17), the possibility of non-culmination boils down to the question as to whether, at the lexical level, an achievement-like telic VP (*close the door, break the window, hang the shirt*) can refer to the *do*-component of the process without entailing the change of state of the object. This does not seem to be the case in English and French, where a sentence like #John opened the door but it didn't open appears contradictory as its first clause entails the door's change of state.

Processes like *open the door* seem to be similar to right-bounded achievements (*attain the summit*). However, as pointed out in Piñon (2008), the latter presuppose a preparatory phase, which is out of the scope of the negation in a sentence like *John didn't attain the summit*. Such is not the case in *John didn't open the door* or *John didn't kill the chicken*, which qualify as accomplishments not only because they imply some scalarity but also because they have a well-defined left boundary (cf. Piñon 2008). Still, these accomplishments clearly differ from the canonical incremental theme accomplishments in that their *telos* is not defined by the extension of the object, but is, rather, lexicalized by the verb.

Vendlerian event types are generalizations of the way in which processes are conceptualized. In contrast, lexical items are language-specific phonological exponents of strings of features. For instance, the question of whether Mandarin Chinese has monomorphemic achievement and, most especially, accomplishment verbs is controversial (cf. e.g. Tai 1984, Soh & Kuo 2005). According to Song (2018), Mandarin has very few monomorphemic achievements and "probably no" monomorphemic accomplishments. According to Tai (1984), there are three types of verbs in Chinese: states, activities and results (punctual achievements). Accomplishments are realized by resultative  $V_1$ - $V_2$  compounds in which  $V_2$  describes either the state brought about by the  $V_1$  event, as in *xué huì* ('study-know' *=learn*) or a punctual result attainment, as in as in *shā sĭ* ('kill die') in Talmy's example (1b/14) or *xiĕ wán* ('write-finish') (cf. Tai 1984, Soh & Kuo 2005, Soh & Gao 2006).

Resultative V-V compounds are also used to mark culmination in Japanese (18a), in Hindi (18b), and in Thai (in post-VP position, cf. Koenig & Muansuwan 2000).

(18) a. watashi-wa keeki-o tabeteshimatta. I-NOM cake-ACC ate-finish-PFV/PST 'I ate the cake up.' (Singh 1998)

b. mãẽ ne kek khaa liyaa.
I ERG cake eat take-PFV
'I ate the cake up.'

(Singh 1998)

The question as to which features are lexicalized by a monomorphemic verb can be idiosyncratic, especially in the case of accomplishments because of their composite nature. It seems plausible that in languages in which some 'satellites', in the sense of

Talmy (1990, 2000), especially  $V_2$  in  $V_1$ - $V_2$  compounds, are available for marking culmination, monomorphemic verbs tend to be associated with the characteristic features of activities. For instance, the same vein as Talmy (1991), Basciano (2015) noticed that the Chinese *shā* ('kill') "is more like *perform an action aimed at killing someone*".

Koening & Muansuwan (2000) propose, for Thai, that perfective aspect functions as a partitive maximality operator which requires a maximal stage, but not necessarily culmination, of the event in the extension of the VP it combines with. A similar view is supported by Altshuler (2013) for Hindi. As this aspectual operator starts with a complete event in its extension, it is assumed to be associated with a 'sublexical' modal component (Koenig & Muansuwan 2000, Koenig & Davis 2001, Martin & Schäfer 2012, 2017) which triggers one or another kind of inertia modality (Bar-el *et al.* 2005, Tatevosov 2008, Tatevosov & Ivanov 2009).

However, these accounts disregard the crucial condition, namely the agent's intention, without which the non-culminating reading is either incoherent or contradictory (cf. Beavers & Lee 2019). We propose that all cases of non-culmination (except incomplete accomplishments, cf. 3.4) are based on the interplay between the intentional subject's prospective perspective on the event and the speaker-narrator's retrospective perspective, the two perspectives being located at two different syntactic levels (cf. section 5). Various authors indicate that native speakers' judgments on the non-culminating reading may vary (cf. e.g. Tsujimura (2003) on Japanese, Martin (2015) on French, Yagi (2019) on English). These hesitations do not depend on grammaticality judgments. Rather, they show that there are two ways to construe an event, either from the subject's prospective perspective and her efforts towards the goal or from the retrospective speaker's perspective.

# 4. Russian secondary imperfective aspect and the controversy of the 'delimitative' PO-

In Tatevosov and colleagues' work on non-culmination (Tatevosov 2008, Tatevosov & Ivanov 2009, Lyutikova & Tatevosov 2010, Tatevosov 2017), the semantic treatment proposed by the authors is typically based on sentences in Russian in which a prefixed imperfective verb (a *secondary* imperfective, cf. 4.1) is equipped with an additional PO-prefix, the so-called 'delimitative' PO-, as illustrated in (19a, b) (examples (16a, b) in Tatevosov & Ivanov 2009, the translation is theirs).

- (19) a. Vasya po-otkry-va-l dver' (i brosil).
   Vasya PO-open-IPFV-PST.M door.ACC (and give\_up.PFV-PST.M)
   'Vasya tried to open the door for some time (and gave up).'
  - b. Vasya po-zapoln-ja-l anketu (i brosil). Vasya PO-fill-IPFV-PST.M form.ACC (and give\_up.PFV-PST.M) 'Vasya spent some time filling in the form (and gave up).'

However, Gyarmathy & Altshuler (2019, fn 18) observed in relation with these examples that "it makes no sense to talk about culmination with respect to PO-perfectives" because "PO-perfectives are atelic". This controversy calls for some comments. Our comments will be limited to two questions: (i) how Russian *imperfective* aspect is relevant to the non-culmination issue despite the fact that non-culmination *is* an issue only when the aspect is perfective; (ii) how 'delimitative' PO-in (19) is not relevant to this issue.

## 4.1. Russian inflectional (secondary) imperfective aspect and (non-)culmination

Russian aspect has a double nature. On the one hand, it is lexical (or "verbclassifying", cf. Arkadiev & Shluinsky 2015) in the sense that any monomorphemic verb is either imperfective or perfective. The majority of monomorphemic verbs are imperfective. For instance, the monomorphemic verb *kryt*' (something like 'cover', e.g. *kryt' kryšu* 'cover.IPFV (with a) roof.ACC'), which is part of the bimorphemic *ot-kryt*' ('open.PFV') in (19a), is imperfective at the lowest lexical level, the V-level. However, some monomorphemic verbs (change-of-state verbs) like *stat*' ('become'), *sest*' ('sit\_down'), *dat*' ('give') are perfective. Perfectivity, although closely related to lexical telicity, means not only that the process has a *telos*, but also that the verb denotes a unique (*at most* one) process which is construed from a retrospective (perfective) viewpoint, i.e. as having attained its *telos*.

Bimorphemic verbs are derived, as in German or Dutch, by attaching a derivational ("lexical", in Svenonius' 2004 terms) prefix to a monomorphemic verb, be it imperfective (in most of cases) or already perfective. Derivational prefixes have a low, VP-internal, attachment point (cf. Babko Malaia 1999, Svenonius 2004, Romanova 2004), so that derived bimorphemic verbs are "prone to lexicalization and semantic non-compositionality" (Arkadiev & Shluinsky 2015).<sup>10</sup> The great majority of prefixes are derived from locative/ directional prepositions which communicate directionality to the process denoted by the root verb. What distinguishes Russian from German and Dutch is that the prefix makes the bimorphemic verb not only telic but also perfective, i.e. it describes the process from a retrospective point of view, as having attained its *telos*, just as with monomorphemic perfective verbs.

This system is viable because there is an inflectional suffix, -yva- (-va-/-a-), which heads an Aspect Phrase mediating between the event description below it in VP or vP and the Tense Phrase above it. This functional morpheme makes it possible to derive the so-called secondary imperfective from the majority of prefixed perfective verbs without changing their lexical meaning. This is the case of the trimorphemic imperfectives *ot-kry-va-t*' (ot-V-va 'open.IPFV') in (19a), and *za-poln-ja-t*' (za-V-ja 'fill\_in.IPFV') in (19b). Imperfectivized prefixed verbs (secondary imperfectives) keep their directionality (goal-orientedness) contributed by the prefix throughout the derivation.

The Russian imperfective aspect shares with the canonical imperfective viewpoint aspect (cf. e.g. Smith 1997) the property of describing an event, whether atelic or telic, as unbounded. However, this unboundedness can manifest itself at two levels, depending upon the temporal location of the reference time. The canonical imperfective viewpoint aspect meaning arises when the contextually defined reference time is included into the temporal trace of the event (Smith 1997). This case boils down to a progressive reading of the vP, as in (20).

(20) Vasya za-poln-ja-l ankety, kak vdrug Vasya za-fill-IPFV-PST.M form.ACC when suddenly zazvonil telefon. za-ring-PFV-PST phone.NOM

<sup>&</sup>lt;sup>10</sup> This tendency, typical of derivational aspectual systems (cf. Arkadiev & Shluinsky 2015), is confirmed by neurolinguistic studies which observe that, in contrast to inflectional morphemes, derivational morphemes are retrieved together with their stems, as full words stored in the memory. The latter data are based on morphologically rich languages such as Polish (Bozic *et al.* 2013), Russian (Klimovich-Grey & Bozic 2017), German (Hanna & Pulvermüller 2014).

'Vasya was filling (in) the form when suddenly the phone rang'.

Another meaning arises when the reference time is interpreted as located at the speech time. Then the unbounded time interval extends by default from some unspecified time point in the past up to the speech time. This interval is equivalent to the so-called *perfect time span* (Klein 1992, Kiparsky 2002). The event being unbounded as well, the perfect time span is filled in with an undetermined number of events (a *sum*, in the sense of Link (1983), made of *at least one* event). This configuration yields the existential (experiential) perfect meaning (Vogeleer 2017).<sup>11</sup> The time span can also be bounded externally by a *for*-adverbial, deriving a configuration that corresponds to the terminative perfective viewpoint aspect. The common feature of the existential perfect meaning and the terminative perfective meaning is that in both the reference time is located at the speech time and the viewpoint is that of the speaker.

Altshuler (2013) argues that an imperfective operator (imperfective aspect) requires a *stage* of an event such that this stage is neither necessarily maximal nor necessarily a proper part of the event to which the predicate applies. In other words, if the event is telic, which is the case with all secondary imperfective verbs, and the reference time is located at the speech time, Russian imperfective aspect is compatible with both culminating and non-culminating readings: the former corresponds to the maximal part and the latter to a proper part of the event.

However, as shown in (21a, b), the two options are available only if the sentence has an intentional subject. In (21a), where the subject is intentional, the vP with a secondary imperfective can have either an existential perfect reading or, with a *for*-adverbial, a terminative perfective reading. The two readings are compatible with both non-culmination and culmination. In contrast, in (21b), where the subject is non-intentional, the predicate is incompatible not only with the non-culminating reading but also with imperfective aspect *tout court*.

- (21) a. Vasya pro-bi-va-l dyru v stene (dva dnja)
  V. through-strike-IPFV-PST.M hole.ACC in wall.LOC (two days) no ne pro-bi-l/ i pro-bi-l.
  but not through-strike.PFV-PST.M/ and through-strike.PFV-PST.M (Lit.) 'Vasya pierced.IPFV a hole in the wall (for two days) but didn't pierce.PFV it/ and pierced.PFV it.'
  - b. #Snariad pro-bi-va-l dyru v stene (dva dnia), shell through-strike-IPFV-PST.M hole.ACC in wall.LOC (two days) (no ne pro-bi-l/ i pro-bil). (but not through-strike.PFV-PST.M and through-strike.PFV-PST.M) (Lit.) '#The shell pierced.IPFV a hole in the wall (for two days) (but didn't pierce.PFV it/and pierced.PFV it).'

In (21a), the perfect- (or *for*-) time span is filled in with a plurality of Vasya's actions unified by his intention to attain the goal; this licenses both the non-culminating and the culminating reading. When the unifying goal-directed intention is not available, as in (21b), the relevant time span can only be filled in with a plurality of events each of

<sup>&</sup>lt;sup>11</sup> In the Russian linguistic tradition this case is known as *obščefaktičeskoe značenie nesoveršennogo vida* ('general factual meaning of imperfective aspect'), which is sometimes divided into more detailed categories (cf. e.g. Padučeva 1996).

which is necessarily culminated. This option is only available, however, if the subject and/or object NP is plural, as in (22).

(22) Takije snariady legko pro-bi-va-l-i dyry v stenax. such shells easily through-strike-IPFV-PST-PL holes.ACC in walls.LOC 'Such shells easily pierced.IPFV holes in walls.'

Altshuler's (2013) definition of imperfective aspect in terms of *stages* which are neither necessarily maximal nor necessarily proper parts of the event is only applicable to sentences with an intentional subject, in which the subject's goal-directed intention unifies stages of her action as parts of one and the same event, whether culminated or not. When the intentionality requirement is not satisfied, the perfect- or *for*- time span can only be filled in with a plurality of events each of which is culminated.

#### 4.2. Delimitative PO-

'Delimitative' PO- has been classified as one of the "superlexical", i.e. nonderivational, or inflexional, prefixes (Svenonius 2004, Romanova 2004). It has an adverbial-like meaning, similar, but, as will be argued below, not identical to the meaning of *for*-adverbials (for example, *for some time*, used in the translation of (19a)). While derivational prefixes originate VP-internally, delimitative PO- is assumed to have a high point of attachment in syntax (Babko-Malaya 1999, Svenonius 2004).

Note that the prefix PO- need not have a high point of attachment. It may also merge with a lexical root verb, fulfilling a derivational function within V or VP. PO- is highly productive in this use and its meaning varies according to the type of monomorphemic verb it combines with. The 'delimitative' meaning of PO- arises when it is adjoined to unergative monomorphemic verbs which denote events lacking directionality. The most obvious example of this are motion verbs. Monomorphemic motion verbs form two classes, both of which are imperfective: (i) unaccusative verbs of directed motion; (ii) unergative non-directional (multidirectional) verbs, e.g. idti ('go', directional) - xodit' ('walk', non-directional), plyt' ('swim', directional) plavat' ('swim', non-directional), etc. When PO- combines with an unaccusative directional motion verb, it functions as a derivational prefix, and the new bimorphemic verb acquires an inchoative perfective meaning: po-yti v magazin ('POgo.PFV (start going) into (the) shop.ACC'), po-plyt' k beregu ('PO-swim.PFV (start swimming) towards (the) bank.DAT'). That is, when a directional root already defines a goal-directed trajectory in the lexicon, PO- contributes a pre-event time with the event time, linearly. By contrast, when combining with non-directional motion verbs, PO- acquires a 'delimitative' meaning which does not modify the meaning of the root verb, but contributes a terminative perfectivity: *po-xodit' po komnate* ('powalk.PFV in (the) room.LOC (for a while)'), po-plavat' v bassejne ('PO-swim.PFV in (the) pool.LOC (for a while)'). However, the function of PO- is not purely temporalaspectual (terminative perfectivity). When PO- combines with unergative (nondirectional) verbs, it has a measuring function, which consists in picking up a portion of the undirected activity (a massive, i.e. undirected, event) denoted by the verb, something like (do) a bit of walking/swimming, in the same way as a bit of sugar picks up a portion of a mass. In this 'translation', the past tense of the light verb do, as in John did a bit of swimming, accounts for the temporal-aspectual function of PO-, while *a bit of -ing* translates its measuring function.

PO- can have this same function not only with unergative verbs but also with some transitive verbs, as in (23a). Russian being a determinerless language, the distinction between the (implausible) referential reading of the NP, as in (23b), and its non-referential reading, as in (23c), is not marked.

- (23) a. Segodnja utrom on počital knigu.
  - This morning he PO-read.PFV.PST book.ACC
  - b. This morning he read a book for some time.
  - c. This morning he did a bit of book-reading.

When PO- is adjoined to a secondary (prefixed) imperfective verb, the measuring function of PO- deprives the verb of its directionality contributed by the derivational prefix and turns the event into a massified (undirected) activity. In (24a) PO- is adjoined to a secondary imperfective *PO-pro-bi-va-t' dyru* ('PO-through-strike-IPFV hole.ACC'), in which the derivational prefix *pro*- ('through') provides directionality (goal-orientedness). The temporal-aspectual function of PO-contributes terminative perfectivity, which could be paraphrased by *for a while*. However, such a translation does not account for the measuring function of PO-. Though awkward, the translation in (24a) has the advantage of accounting for both the terminative perfective function of PO- (the simple past of the light verb *do*) and the measuring function (*a bit of -ing*). As shown in (24b), the delimitative PO- is compatible with neither the assertion nor the denial of the event culmination in the following clause. The 'best' continuation implicated by PO- is ...and abandoned/ gave up/stopped.<sup>12</sup>

- (24) a. Vasya PO-pro-bi-va-l dyru i Vasya PO-[through-strike-IPFV]-PFV-PST.M hole.ACC and brosil. stop.PFV.PST.M 'Vasya did a bit of hole-piercing and stopped.'
  - b. Vasya PO-pro-bi-va-l dyru
    Vasya PO-[through-strike-IPFV]-PFV-PST.M hole.ACC
    (??) i probil/ (??) no ne probil.
    and through-strike.PFV.PST.M/ but not through-strike.PFV.PST.M
    'Vasya did a bit of hole-piercing and he pierced (it)/ but did not pierce (it).'

Gyarmathy & Altshuler (2019) are right to qualify delimitative PO-perfectives as "atelic" (cf. also Martin 2019), and hence not relevant to the (non-)culmination issue. But that is not the whole story: secondary imperfective verbs equipped with PO-, as in Tatevosov & Ivanov's (2009) examples (19a)-(19b) and in (24), describe the event not only as atelic but also as a portion of a massified event deprived of its original goal-orientedness.

#### 5. Intentional subject, speaker and syntactic structure

The overview of various cases of interaction between the lexicon and the morphosyntax in sections 3 and 4 allows us to propose a general solution to the

<sup>&</sup>lt;sup>12</sup> This explains Tatevosov's intuitive judgment (Tatevosov 2017) that Vasya's tentative actions in (19a, b) are unordered, chaotic. This also explains why Tatevosov & Ivanov's translation of (19a) by *tried to* is misleading: while *tried to* lexically describes the subject's efforts towards the goal, the measuring function of PO- is responsible for the impression that Vasya performed some idle purposeless actions instead of striving to achieve the goal (in (19a), make the door open).

problem of non-culmination which subsumes our observations in the preceding sections.

Since in languages like English, French or German the non-culminating construal only occurs with a small subset of verbs, one might seek a lexical-semantic account. For example, one could stipulate that with VPs like *wash the shirt, amuse the children, explain the rule,* etc., the result of the agent's activity is only an implicature (as was stipulated by Talmy 1991). However, that would not account for the fact that even with these verbs, culmination becomes obligatory with a non-intentional subject.

We propose that the key concept of the non-culmination phenomenon is an intentional Goal-Directed Trajectory. The GDT is a conceptual configuration, a pre-established pattern in the mind which emerges whenever a part of it (an intentional subject, a goal or an instrument) is triggered in syntax. Although the solution to the problem of (non-)culminating construals crucially involves both the lexicon and the syntax, it cannot be solved within either component of the grammar. Rather it involves the interaction between the lexicon and the morphosyntax on one level of the sentence structure, enriched by the interaction between syntactic structure and language-independent conceptual configurations on a higher, conceptual-intentional, level (cf. section 1).

In Ramchand's (2018) framework, in which semantic classification is associated with functional nodes, an accomplishment consists of the projection of three subevents of the event that vP describes onto three syntactic-semantic nodes: Initiation Phrase (InitP), Process Phrase (ProcP) and Result Phrase (ResP).



In this framework one might associate the non-culmination construal with a syntactic structure lacking a subject in the specifier position of ResP (and possibly of ProcP). However, it would then be necessary to add a condition stipulating that the lack of subject in Spec ResP is optional when the initiator is human but obligatory when it is non-human.

Here we assume a grammar with an autonomous syntax in which lexical entries cannot stipulate the manner in which their arguments are projected in syntax, and functional syntactic nodes, limited to checking formal features of lexical items, bear no semantic information. To do otherwise would be to stipulate the interpretive contrasts which need to be explained.

We assume that the syntactic structure is derived bottom up via iterative applications of the syntactic operation of Merge (Chomsky 1995): VP > vP > TP > CP. The derivation starts at the VP level by the merger of V and a nominal NP/DP complement (for a transitive (or unaccusative) sentence). On the vP level, which is a force-dynamic event description level, a +human DP merged in Spec vP may be construed

as the Agent of the event *type* the vP denotes. The subject's agency lasts as long as she is carrying out her action, i.e. from the first to the last point of the event. By contrast, *the intention to achieve a goal* by carrying out the action is ascribed to the subject *before* the onset of the action, in the pre-event domain on the TP level. At this, structurally higher, TP/CP phase the event description is placed by the speaker in a discourse-related time. An event *type* described in vP thus becomes an event *token* in TP/CP (Gehrke & McNally 2015). The existence of the event in time and in a world is asserted by the speaker in CP, who anchors its worldly and temporal properties via Origo (the speaker's coordinates) (cf. Ramchand 2018). An Accomplishment always culminates in the event *type*). However, it may or may not culminate on the higher TP/CP level, where the event is placed in episodic time and its arguments may achieve referential status.

Conceptual configurations, while independent of the grammar, are triggered, among other, non-linguistic, stimuli, by words and phrases. Because a concept is an entire mental object, it is not necessary for every part of a conceptual configuration to correspond to every part of a syntactic structure. We propose that two particular conceptual configurations interact with syntax to determine whether a sentence asserts or denies culmination of an accomplishment defined in vP. One configuration is that of a Goal-Directed Trajectory (GDT) and the other is the notion of Point of View (PoV) associated with human entities.

Some lexical predicates, all VP accomplishments, all structures containing purpose clauses are associated with a conceptual configuration construed as a GDT. A verb like *murder* lexically includes the culmination of a GDT, while verbs like *soigner (un patient)/treat (a patient)* or *expliquer (la règle)/explain (the rule)* include a GDT without lexically including its culmination, and therefore allow the non-culmination construal. Non-culminating accomplishments are formed freely in the grammar by the addition of a purpose clause to a vP denoting a culminated event.

(26) a. Johni went to Paris [PROi to see Marie]
b. [TP1 Johni T [vP1 [vP ti [VP went [PP ti to Paris]]]] [TP2 PROi to [vP2 ti see Marie]]]

In (26), TP1 John went to Paris can be a culminated accomplishment (if (26a) is not followed by something like but he took the wrong train and arrived in Lyon). TP2 is a non-culminating accomplishment containing a non-finite directional tense morpheme to. From the point of view of the subject, the entire sentence TP1 is non-culminated since the goal is not yet attained. In fact, John may never have gotten to Paris. The speaker may accept the subject's non-culminating point of view. On the other hand, from the point of view of the speaker, TP1 may be construed as a causal structure: seeing Marie was the cause of a trip which was successful. The speaker may even invoke a cause which overtly contradicts the subject's claim as in John said he went to Paris to sketch in the Louvre but he really went to Paris to see Marie. Both situations illustrate what we may call the 'layering' property of non-culmination. A single event on the level of tense construal may contain coherent or conflictual points of view. Semantic classification of functional nodes, as in (25), cannot account for this layering property of the goal-directed structure.

However, under either construal, the sentence must be coherent in syntax. In (26b) the prospective T2 merges with the matrix T1 within a Tense Chain (Guéron & Hoekstra 1988), and the anaphoric PRO subject of TP2 is bound by the agentive subject of TP1.

While a GDT controlled by an intentional agent may fail to culminate, an event not involving an intentional agent is not a GDT at all. It only involves the speaker's retrospective point of view.

Although the GDT is universally available, its syntactic realization in a particular language would depend both on the lexicon and on the morphosyntax. For example, in English the result state contributing culmination to an intentional activity may be represented by any category of small clause. In some other languages small clauses are restricted to verbal categories. This is the case in languages with serial verb constructions (e.g. West African languages of Kwa family; Suriname, Mauritian, Haitian Creoles), in which resultative small clauses are expressed by V2 of certain syntactic structures linearized as V1 (DP1) V2 (DP2) (cf. e.g. Collins 1997, Veenstra & Muysken 2017). In Mandarin Chinese, Japanese, Thai, Hindi (cf. 3.5), it is V<sub>2</sub> of V<sub>1</sub>-V<sub>2</sub> compounds that contributes culmination (cf. e.g. Beavers *et al.* (2010) on distinctions between serial verb constructions and V-V compounds). The difference between English-style small clauses and verbal small clauses would follow if nonverbal constituents lacking a formal Tense feature can be integrated into the finite Tense Chain defined in Guéron & Hoekstra (1988) in some languages, while only verbs, which lexically bear a T feature, can be so integrated in others.

We take Point of View (PoV) to denote a temporal perspective on an event by a human entity. The speaker implied by the speech act contributes a PoV on the higher syntactic TP/CP level. As the speaker's PoV includes the entire discourse background, she can supply referential (27a) or global discourse information, as in (27b). She can even attribute a goal to a state of affairs which is not intentional at all (27c). To accept (27c) is to attribute to the universe a goal-directed trajectory initiated by an intentional agent, which is probably not what the speaker really means.

(27) a. Oedipus wants to marry his mother.

b. Then, John poisoned Paul with this substance, but he didn't know that it was harmless.

c. Grass is green to aid photosynthesis.

On the vP level the temporal perspective of an intentional subject takes scope only over the event description. The subject's perspective is *prospective*: the subject can introduce a trajectory towards a goal such as change of state of an object, but she cannot know during the event if the goal will be reached. On the vP level, the intentional subject is an Agent and her prospective PoV is continuous internal to the event description. However, the subject's intention originates not in vP but before the onset of activity, on the TP level. On this level, there is an unavoidable temporal gap between the subject's intentional state of mind (in TP) and the onset of the activity in vP. The intentional property of the argument in Spec TP is transmitted to its trace in Spec vP, as in (28). We propose that here the mental properties of the subject in Spec vP to create a subject capable of both intending and reaching a goal. The event description in vP denotes a necessarily intentional and necessarily culminating event.

(28) [TP John<sub>i</sub> T<sub>Past</sub> [vP t<sub>i</sub> [VP murder Bill]]]

The speaker's temporal perspective, located on the TP/CP level, takes the entire sentence in its scope and is *retrospective*. While the speaker, located outside the event world, cannot initiate an event, only the speaker can assert the successful culmination

of an event (and the result state that follows from it), or the failure of culmination. The speaker-narrator's knowledge includes the intention of the subject-participant. Consequently, a state which seems to have no temporal role in VP, as in (27c), or an activity or accomplishment presented from the subject's PoV in vP may acquire a new temporal role, that of Cause, from the retrospective all-englobing perspective of the speaker on the TP/CP level. The speaker puts together all the pieces of the puzzle: her PoV creates a construal of the sentence which is more than the sum of its parts.

In addition to lexically-based and syntactically derived non-culminating accomplishments (*wash the shirt, explain the rule, amuse the children*), there are lexically-based and syntactically derived obligatory culminating accomplishments with human (cf. (28)) and non-human subjects (29b). In this case, the speaker, who perceives the existence of a state, retrospectively attributes it to a causal event. In (29a) the causal (from the speaker's PoV) event embeds the intentional subject's goal-directed trajectory. What takes ten minutes is the entire intentional event. In (29b) it is the sole causal event that takes ten minutes (cf. Martin 2019).

(29) a. Mary killed the mosquito in ten minutes.b. The poison killed John in ten minutes.

We describe a non-culminating accomplishment as a palimpsest: it embeds an event description presented from the limited prospective PoV of an intentional subject in TP in which the intention is acquired within an assertion presented from the speaker's PoV in CP. The two Points of View are construed simultaneously. While the subject's temporal perspective goes from left to right, from intention to culmination, the speaker's retrospective perspective goes from right to left. In such palimpsestic structures, the coexistence of the two points of view creates a dynamic construal which simultaneously goes both left to right, starting with intention, and right to left, starting with a result. To ignore one of these points of view is to miss Full Interpretation.

Martin & Schäfer (2012, 2017) attribute non-culmination to a sublexical modal component with an energetic modal base. One or another kind of inertia modality is also evoked by other authors (cf. 3.2 and 3.4). However, inertia worlds exist independently of *intention* and refer to an implied time span following the time of the event vP describes. Within our account there is no need to introduce an additional modal machinery, all the more so because the verbs in question do not contain a modal morpheme. The agent's prospective perspective on the goal of the event follows from the fact that the intentional subject occupies a position in Spec TP in which the property of intention is acquired and which binds an argument in Spec vP provided with physical force by the event description in vP. The non-culminated accomplishment marked by the speaker's *but*-clause identifies a palimpsest. There is a prospective event-internal PoV for the subject, but there is also a closed retrospective discourse world for the speaker who attests to the failure of the subject's attempt to reach, not the *telos* of her action, but the intentional goal that inspired the action and was supposed to coincide with the telos. Because the speaker's PoV dominates the subject's PoV, every non-culminating event can also be construed as a culminating event. This shows that the level of construal of (non-)culmination is the TP/CP phase, the only syntactic level which can manifest the speaker's point of view.

## 6. Conclusion

Neurobiological observations support the hypothesis of partial independence of the syntactic and lexical-semantic processes which combine to produce syntactic structures. The output of the syntactic component interfaces with a conceptual-intentional component. We have proposed that this component contains hardwired mental configurations which inspire and maintain syntactic structures, and that an account of non-culminating accomplishments requires reference to such configurations.

In particular, we pointed to the mental configuration of a Goal-Directed Trajectory in which an intentional source engages in a path toward changing the state of some targeted individual or object in the discourse world. We distinguished the Goal-Directed Trajectory, described from the prospective point of view of a subject participant located in the Specifier of TP, from the retrospective point of view of the speaker-narrator associated with the higher CP domain. While only an intentional (human) subject can inaugurate a GDT, only the speaker, who relates a perceived effect to its cause, can say whether the subject's goal was achieved or not. Non-culminated accomplishments thus need an overt commentary (a *but*-clause) by the speaker.

We have discussed non-culmination in several types of vPs in English and French. We have also discussed non-culmination in Russian both in sentences with secondary imperfective verbs and in sentences with complex secondary imperfectives with the 'delimitative' prefix PO-. We have shown under what circumstances event culmination is possible, impossible, or optional in such sentences. This variety of interpretations cannot be understood without a palimpsestic construal of the sentence structure which encompasses two simultaneous points of view, the prospective point of view of the subject and the retrospective point of view of the speaker-narrator in CP.

Structures which have previously been analysed in descriptive terms turn out to depend on the interaction of precise grammatical mechanisms with specific mental configurations. Note that the matching of lexical and grammatical units with mental units is not necessarily one to one/parallel. Rather, like Marcel's experience with the madeleine dipped in tea, a single grammatical unit may introduce an entire meaningful configuration which was already in the mind, just waiting for an overt stimulus to trigger it.

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