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Mental action and event structure in the semantics of *try*[*]

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Abstract Sharvit (2003) proposes a semantics for *try* inspired by Landman's (1992) account of progressive aspect. This paper discusses two empirical shortcomings of Sharvit's analysis and proposes a new solution that retains Sharvit's insight that *try* has an aspectual meaning but argues that (a) as suggested by much work in action theory, volitional events include an initial stage corresponding to a 'mental action' and (b) *try* picks out the 'mental action' stage of an event. The proposal is formalized by adapting Condoravdi's (2009) theory of progressive meaning.

Keywords: aspect, event structure, action theory, progressive aspect

1 Introduction

Control predicates such as *want*, *claim* and *try* as exemplified in (1) can be divided into two classes. On the one hand, there are those like *want* and *claim* that may participate in a syntactic frame in which the controlled position is replaced by an overt subject via ECM (2a) or via finite complementation (2b). On the other hand, there are those like *try* that never allow for an embedded subject (2c).[1]

(1) a. John **wanted** [to open the door].
b. John **claimed** [to have opened the door].
c. John **tried** [to open the door].

(2) a. John **wanted** [(for) Bill to open the door].
b. John **claimed** [that Bill opened the door].
c. * John **tried** [(for) Bill to open the door / that Bill opened the door].

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1 Control verbs that behave like *try* in this respect include implicative verbs, aspectual verbs, and circumstantial modals. However, the control status of the latter two classes has come under question in recent years; see Rochette 1999, Fukuda to appear on aspectual verbs and Bhatt 1998, Hackl 1998, Wurmbrand 1999 on circumstantial modals.

The existence of this split raises an important question: does it have a semantic basis? Is there something about the meaning of *try* (and other predicates in its class) that imposes an identity requirement between its subject and the subject of its complement? A crucial precondition to answering this question — and the focus of this paper — is a thorough understanding of what *try* in fact denotes. As it happens, *try* has received very little attention in formal semantics, with the recent exception of Sharvit 2003. Sharvit proposes that *try* has the semantics of an aspectual morpheme, with a particular similarity to progressive aspect. (See also Cinque 2006 for crosslinguistic evidence from restructuring and verbal morphosyntax that *try* instantiates conative aspect.) Sharvit formalizes this proposal using a semantics based on Landman's (1992) 'continuation branch' approach to progressive aspect.

However, as I will show below, Sharvit's approach faces empirical shortcomings that motivate a new account informed by two lines of inquiry. The first line of inquiry is in the philosophical literature on action theory, where it has been proposed that *trying* denotes mental action (O'Shaughnessy 1973, Hornsby 1980, Pietroski 2008, Lorini & Herzig 2008). The second line of inquiry is an updated understanding of the semantics of the progressive as found in Condoravdi 2009.

I will retain Sharvit's core idea that *try* is closely related to progressive aspect, but I will argue that (a) volitional events include an initial stage corresponding to a 'mental action', (b) *try* picks out the 'mental action' stage of an event, and (c) the theory of aspectual meaning that most readily lends itself to formalizing this approach is Condoravdi's. For Condoravdi, the semantics of the progressive has two components: there must be an event that has been realized to a contextually determined degree in the evaluation world, and worlds in which the event progresses further must be ranked higher than the evaluation world with respect to a contextually determined ordering source. In a nutshell, what I will propose is that *try* is amenable to a similar analysis, with two important differences. First, rather than being sensitive to a contextually determined degree, *try* merely asserts that the event has been realized to a degree above zero. Second, rather than being sensitive to a contextually determined ordering source, the ordering source associated with *try* is always based on the intentions of the entity named in subject position.

The rest of this paper is organized as follows. Section 2 reviews Sharvit's (2003) semantics for *try*. Section 3 identifies two empirical challenges facing Sharvit's account. Section 4 introduces the action-theoretical concept of 'mental action' and shows how it can be applied to the semantics of *try* in a way that responds to the challenges raised in the previous section. Section 5 reviews Condoravdi's semantics for the progressive, and section 6 uses this as the basis for a new formalization for the semantics of *try*. Section 7 returns to the syntactic question raised at the outset of the introduction and offers preliminary remarks on what the semantics of *try* may tell us about its syntax. Section 8 concludes.

2 Sharvit 2003: A 'continuation branch' semantics

2.1 The obligatory existential reading

Sharvit (2003) proposes an aspectual semantics for *try*, with a formalization based on Landman's (1992) account of the progressive. Sharvit's empirical motivation for an aspectual semantics for *try* has to do with an entailment pattern that obtains with *try* in combination with certain kinds of event descriptions. In particular, Sharvit notes that a hallmark of propositional attitude verbs like *want* is the availability of non-existential readings for indefinite NPs in their scope, as in (3a). In some cases, *try* behaves the same way, as in (3b):

(3) a. John **wanted** to find a syntax book, but there were no syntax books around.
b. John **tried** to find a syntax book, but there were no syntax books around.

(Sharvit 2003: 404)

Sharvit observes, however, that for some kinds of event descriptions, this parallel does not obtain: whereas indefinite NPs in the scope of *want* consistently allow non-existential readings, this is not always the case for *try*:

(4) a. John **wanted** to cut a tomato, but there were no tomatoes to cut.
b. John **tried** to cut a tomato, ##but there were no tomatoes to cut.

(5) a. Mary **wanted** to push a cart, but there were no carts to push.
b. Mary **tried** to push a cart, ##but there were no carts to push.

(6) a. Bill **wanted** to start a car, but there was no car to start.
b. Bill **tried** to start a car, ##but there was no car to start.

(Sharvit 2003: 405)

On the view that *try* denotes a garden-variety propositional attitude, this patterning is unexpected. Sharvit's intuition about this patterning — which forms the basis of her account — is as follows:

> "Intuitively, it seems that *try* differs from its cousins *want*, *expect*, *believe*, etc. in that it doesn't simply express an attitude of some individual toward some 'proposition', but that it also expresses some activity . . . This required 'action' is extensional, in the sense that it has to go on in the actual world for the sentence to be judged true." (Sharvit 2003: 407)

For Sharvit, the 'extensional action' component of *try* makes *try* akin to progressive aspect.

2.2 A semantics for the progressive based on Landman 1992

According to Landman (1992) (cf. also Dowty 1979), the progressive establishes a relationship between an event description and some event in the evaluation world. (7), for example, is used to assert that there is some event in the evaluation world that bears a particular relationship to a John-cross-the-street event. Given that (7) is consistent with a situation in which John does not *successfully* cross the street (he may, e.g., change his mind halfway through and turn around), the fundamental problem of the progressive is to specify the nature of this relationship.

(7) John was crossing the street.

Landman's (1992) answer to this problem relies crucially on the idea of a continuation branch: in order to evaluate a sentence in the progressive, we use the evaluation world w and the ongoing event e to construct a sequence of event-world pairings that track the progression of e in worlds potentially different from w. For Landman, every event has a uniquely determined continuation branch: we trace the progression of e in w, and if something interrupts e in w, then we go to the closest world where e is not interrupted and which is a reasonable option for e in w. If there is no such world, then the continuation branch stops. For a progressive sentence to be true for an event e in w, then e's continuation branch must contain an event that verifies the given event description.

Sharvit modifies Landman's proposal slightly by considering that every event has multiple continuation branches that differ in their tolerance for what a realistic progression is. One particular class of continuation branches — *realistic* continuation branches — play an important role in Sharvit's account. Sharvit defines a realistic continuation branch as follows:

(8) a *realistic continuation branch* of e relative to w is a sequence $\langle\langle e_1, w_1\rangle, \ldots, \langle e_n, w_n\rangle\rangle$ such that (a)–(d) hold:

a. $w_1 = w$, $e_1 = e$, and for any m, e_m is an event in w_m;

b. if $n > 1$, then for any m such that $n > m \geq 1$: (i) e_m is a proper stage of e_{m+1}; and (ii) there is an event in w_m (Max-w_m) which is the maximal event in w_m of which e is a proper stage;

c. for any m such that $n > m \geq 1$, w_{m+1} is a reasonable option for e in w (i.e., there is a reasonable chance on the basis of what is internal to e in w that e continues in w as far as it does in w_{m+1}), and: (i) if e_m is Max-w_m, then w_{m+1} is a world maximally similar to w_m where whatever interrupts Max-w_m in w_m doesn't interrupt it in w_{m+1}, and (ii) if e_m is not Max-w_m, $w_{m+1} = w_m$; and

d. either there is no Max-w_n, or: (i) e_n =Max-w_n and (ii) there is no closest world to w_n that has an event of which e_n is a proper stage that is a reasonable option for e in w.

(Sharvit 2003: 412–413)

With this definition in place, Sharvit proposes that the progressive is sensitive to realistic continuation branches:

(9) For any event e, property of events P, and world w, $e \in \text{PROG}(w)(P)$ iff:

a. e is an event in w; and

b. for any realistic continuation branch C for e relative to w, there is an event e' and a world w' such that $\langle e', w' \rangle$ is in C and $e' \in P(w')$.

(Sharvit 2003: 414)

We can illustrate how the semantics in (9) works by considering two hypothetical scenarios discussed by Landman (1992):

(10) Mary was crossing the street (when a bus hit her).

(11) Mary was wiping out the Roman army (when a soldier incapacitated her).

To evaluate the truth of (10), we construct a continuation branch based on the evaluation world and the ongoing event in question. We stay in the evaluation world until Mary gets hit by bus, at which point we shift to a maximally similar world in which a bus does not hit her and which is a reasonable option, and continue to trace the progression of the event. Under normal circumstances, the continuation branch will contain an event in which Mary successfully crosses the street, and so the sentence is judged true. In a scenario like (11), on the other hand, the prospect of Mary's success is so unlikely that we will never be able to construct a continuation branch based only on reasonable options which contains an event of Mary successfully wiping out the Roman army. Hence under normal circumstances, (11) is judged false.

2.3 Sharvit's semantics for *try*

Sharvit's core proposal is that like the progressive, *try* has a continuation branch-based semantics, but differs from the progressive in two important ways. First, whereas the progressive is sensitive to realistic continuation branches, *try* is sensitive to continuation branches that are possibly non-realistic but sufficiently similar to any realistic continuation branch. This difference is designed to account for contrasts like the following.

(12) a. # Mary was wiping out the Roman army.
b. Mary tried to wipe out the Roman army.

(13) a. # Mary was swimming across the Atlantic Ocean.
b. Mary tried to swim across the Atlantic Ocean.

Given the high unlikelihood of success in Mary wiping out the Roman army or swimming across the Atlantic, the progressive is usually judged false in such situations, but it is not hard to imagine situations in which the corresponding *try*-sentences are judged acceptable. For Sharvit, this is because although both the progressive and *try* assert the existence of some event related via a continuation branch to the given event description, *try* admits a lower threshold of likelihood for success.

The second important way in which *try* differs from the progressive is that *try* has an attitudinal component. In the spirit of Heim's (1992) semantics for *want* (where *want* quantifies over the subject's 'desire' worlds), Sharvit proposes that *try* quantifies over the subject's 'success' worlds. Sharvit defines 'successful' as 'preferable to [the entity named by the subject] relative to the evolvement of the event in question' (p. 420). This readily accounts for the intuition that *try*-sentences tell us something about the goals of the subject, and also correctly rules out *try*-sentences in cases where the subject cannot be an attitude-bearer, as in e.g. pleonastic *it* as used with weather predicates:

(14) # It tried to rain last night.

Sharvit's semantics for *try*, implementing the two key features just discussed, is as follows. (The bolding and underlining are mine and are meant to highlight the key ways in which *try* differs from the progressive.)

(15) For any event e, property of events P, individual a, and world w, $e \in \text{TRY}(w)(P)(a)$ iff:

a. e is an event in w;

b. there is **a (possibly non-realistic) continuation branch C of e relative to w (sufficiently similar to any realistic continuation branch of e relative to w)** such that there is an event-world pair $\langle e^*, w^* \rangle$ in C such that $e^* \in P(w^*)$; and

c. for every w' compatible with what a believes in w: any world w'' maximally similar to w' such that there is a (possibly non-realistic) continuation branch C$'$ of e relative to w'' (sufficiently similar to any realistic continuation branch of e relative to w'') and an event-world pair $\langle e^*, w^* \rangle$ in C$'$ such that $e^* \in P(w^*)$, is **more successful to a in w relative to e** than any w'' maximally similar to w' where there is no such continuation branch C$'$.

(Sharvit 2003: 420–421)

Having proposed this semantics, Sharvit's explanation for the 'obligatory existential reading' associated with *try* is as follows. Certain events require that the participant named by the direct object be present from the beginning while others do not. The former (given certain assumptions made explicit by Sharvit about the homogeneity of events in the 'stage-of' relation) are correctly expected to give rise to the obligatory existential reading.

(16) a. John tried to cut a tomato, #but there were no tomatoes.
b. John tried to push a cart, #but there was no cart.

(17) a. John tried to paint a picture, but (in the end) there was no picture.
b. John tried to find a book, but there was no book.

An event of cutting a tomato or pushing a cart, for example, requires that the tomato and the cart be in existence from the very beginning in order for the event to get underway. An event of painting a picture or finding a book, on the other hand, is different: the picture and the book respectively are the end result.

3 Challenges for the continuation branch approach to *try*

3.1 Unlikely outcomes

Recall that for Sharvit, a key difference between *try* and the progressive is that whereas the progressive is sensitive to realistic continuation branches, *try* is sensitive to possibly non-realistic continuation branches that are sufficiently similar to any realistic continuation branch. Thus although it has a higher tolerance for unrealistic outcomes than the progressive, *try* is still sensitive to outcome likelihood. Here I would like to question the idea that outcome likelihood plays any role at all in assessing the truth of *try*-sentences. Consider the minimal pairs in (18)–(20), which test the relative felicity of *try* and the progressive in situations of increasingly unlikely success. In each case, the *try*-sentence is felicitous despite the extreme unlikelihood of the outcome.

(18) a. # John was unknowingly paralyzed and **was** rais**ing** his arm.
b. John was unknowingly paralyzed and **tried** to raise his arm.

(19) a. # John **was** cutt**ing** a tomato with his mind.
b. John **tried** to cut a tomato with his mind.

(20) a. # John **was** mak**ing** two plus two equal five.
b. John **tried** to make two plus two equal five.

As context for (18), imagine a situation in which John is unknowingly paralyzed and is asked to raise his arm. Short of a miracle, (18a) is false, whereas assuming John is being cooperative, (18b) is plausibly true, despite the fact that its outcome is next to impossible. For (19), imagine that John believes he has telekinetic powers and intends to use them to cut a tomato. (19a) is infelicitous unless the speaker believes she is witnessing John's telekinesis, but (19b) can be uttered without such a belief. Finally, (20) illustrates the same point in cases of outright logical impossibility: it is impossible to be making two plus two equal five, but it is not impossible to try to make two plus two equal five.[2]

I conclude from the foregoing considerations that outcome likelihood does not play a role in assessing the truth of *try*-sentences.

3.2 Entailment patterns with (incremental) themes

Here I present a second challenge for Sharvit's continuation branch approach to *try*. There is a systematic asymmetry between *try* and the progressive with respect to entailment patterns for incremental themes (and in some cases non-incremental themes). (21) and (22) illustrate the asymmetry for incremental themes. When a progressive sentence contains an incremental theme, there is an entailment that the incremental theme began to change in the appropriate way: if the progressive holds of an eating-an-apple event, part of the apple is necessarily eaten; likewise, if the progressive holds of a raising-one's-arm event, the arm necessarily moves upward. The corresponding *try*-sentences, however, have no such entailment, as illustrated in the (b) examples. (23) illustrates that this same asymmetry holds also for some non-incremental themes: although 'push a cart foward' is an atelic event description, (23a) nonetheless entails the cart moved forward, whereas again the corresponding *try*-sentence does not.

(21) a. John **was** eat**ing** an apple. $\rightarrow$ Part of the apple was consumed.

b. John **tried** to eat an apple. $\not\rightarrow$ Part of the apple was consumed.

(22) a. John **was** rais**ing** his arm. $\rightarrow$ John's arm moved upward.

b. John **tried** to raise his arm. $\not\rightarrow$ John's arm moved upward.

(23) a. John **was** push**ing** a cart forward. $\rightarrow$ The cart moved forward.

b. John **tried** to push a cart forward. $\not\rightarrow$ The cart moved forward.

2 Sharvit (2003) does consider the problem of logically impossible outcomes, and suggests that a solution can be had by employing Cresswell and von Stechow's (1982) notion of structured propositions. My point here is to show that logical impossibility is just one subtype of a systematic insensitivity to outcome likelihood that *try* exhibits.

Notice that this asymmetry has to do with the *extensional* component of the meaning of *try* and the progressive, i.e., with what is entailed to hold in the evaluation world. For Sharvit, the extensional components of *try* and the progressive are identical: some event e holds in w. The relevant difference between *try* and the progressive lies only in that *try* tolerates a lower outcome likelihood and has an attitudinal component. Consequently, the above asymmetries are not captured. If the relevant entailments hold for the progressive, then they should hold for *try* as well; conversely, if the relevant entailments do not hold for *try*, then they should not hold for the progressive either.

The asymmetries in (21)–(23) suggest that the difference between *try* and the progressive has to do not with the relative likelihood of the outcome, but rather with how close the outcome is to being realized. For the progressive, the event must be developed sufficiently so that the theme argument has started to be affected in the right way, whereas for *try*, this is not the case. In what follows, I develop a formalization of this idea.

4 Mental action and event structure

As is apparent from examples like (24) (repeated from above), *try*-sentences do not entail any externally observable action, nor any particular likelihood of success in executing an externally observable action.

(24) John was unknowingly paralyzed and **tried** to raise his arm.

Examples like (24) are in fact familiar in the philosophical literature on action theory, where it has been proposed that *trying* denotes MENTAL ACTION (see especially O'Shaughnessy 1973, Hornsby 1980, Pietroski 2008; cf. also 'intention in action' as defined by Searle (1983) and 'volition' as defined by Lorini & Herzig (2008)). The basic idea is that voluntary bodily movements are preceded and caused by an internal spark on the part of the agent. Typically, such mental action leads to an observable result, but as we see from the paralysis example, this is not always the case.

What I want to do here is preserve Sharvit's proposal that *try* has an aspectual meaning and synthesize this with the idea that *trying* denotes mental action, in a way that accounts for the data in the previous section. In this section I will sketch the basics of the proposal before presenting a formalization in the next two sections. I begin with the assumption that linguistically, eventualities are decomposable into 'stages', and the function of aspectual morphology is to focus portions of an eventuality (Moens & Steedman 1988, Parsons 1990, Smith 1991, Kamp & Reyle 1993, Caudal 2005). With that in mind, the core proposal consists of two ideas. First, events that are brought about volitionally may include a 'preparatory stage'

whose onset corresponds to a mental action and whose transition into the 'inner stage' of an event occurs precisely when the (incremental) theme begins to change in the appropriate way.

(25) ——————I————————————-I————————————-
PREPARATORY INNER STAGE ENDPOINT RESULT STATE

Imagine for example an eventuality of John (voluntarily) opening a door. The preparatory stage begins when John executes a mental action to move in such a way as to achieve this end. His arm moves and then his hand grasps the knob and turns it. Any of these actions can be described as John trying to open a door. Once the door begins to move in the appropriate way, the inner stage of the eventuality has been reached, and the situation can now be described as John opening a door. Accordingly, the second key idea is that whereas progressive aspect entails that an event progresses to somewhere in the 'inner stage', *try* entails that an event progresses to somewhere in either the 'preparatory stage' or the 'inner stage':[3]

(26) ——————I————————————-I————————————-
PREPARATORY INNER STAGE ENDPOINT RESULT STATE
[- - - - - PROG - - - - - -]
[- - - - - - - - - - - - *try* - - - - - - - - - - - -]

This new conception of *try* and its relationship to the progressive lends itself toward an account of the data in the previous section. First consider the problem of unlikely outcomes. Under the new proposal, *try*-sentences are insensitive to outcome likelihood and instead care about whether an eventuality exists in its preparatory stage. Since the onset of the preparatory stage corresponds to a mental action, it is possible for someone to try to raise his arm even if he is paralyzed. Second, recall the entailment patterns with (incremental) themes. Since such themes do not begin to change until the inner stage has been reached, and progressive aspect focuses on the inner stage, we correctly predict that progressive sentences but not *try*-sentences should entail that the theme has begun to change in the appropriate way.

5 Condoravdi's (2009) semantics for the progressive

In order to formalize the proposals from the previous section, we need a theory of aspectual meaning that allows us to make distinctions in the degree to which an event has been realized. Condoravdi's (2009) semantics for the progressive provides

3 Oftentimes, pragmatic reasoning will narrow the scope of *try* to the preparatory stage alone. However, this is cancellable: *John tried to open the door, and in fact succeeded.*

just this. In this section I review Condoravdi's proposal and then in the next section I will apply it to *try*.

Two background concepts are important for Condoravdi's semantics for the progressive. The first is the idea that degree semantics as employed in analyses of gradable adjectives can be applied to verb meaning as well. This idea has been used to explain variable telicity for degree achievements and incremental theme verbs (see especially Kennedy & Levin 2008, Piñón 2008), and Condoravdi adopts the idea that an event type is realized to degree d, where $0 \leq d \leq 1$.

The second important concept is that of an ordering source (Kratzer 1981). An ordering source o is a function from worlds w to sets of propositions that are true relative to some ideal in w. Ordering sources can be used to order worlds according to the definition in (27). World u is ranked higher than world v relative to an ordering source o in w if and only if the set of propositions in $o(w)$ that are true in v is a subset of the set of propositions in $o(w)$ that are true in u.

(27) $u \leq_{o(w)} v \Longleftrightarrow \{p|p \in o(w) \wedge v \in p\} \subseteq \{p|p \in o(w) \wedge u \in p\}$

Condoravdi's semantics for the progressive is given in (28).

(28) PROG(e, P) is true in w relative to c with contextual standard d_c iff:

a. **Degree of realization:** for some d, P(w, e, d) and $d \geq d_c$,

b. **Ordering source:** there are e', d', and w' such that $e \subset_{nf} e'$, $d \leq d'$, $w' \leq_{o_i} w$, and $P(w', e', d')$

(Condoravdi 2009: 14)

Let's unpack these two conditions. The first condition is that there must be a degree that exceeds a contextually determined threshold and that satisfies P(w,e,d), where P is the given event description, e is the event in question, and w is the evaluation world. For Condoravdi, the motivation for such a condition has to do with sentence pairs like the following. Just as there is contextual variability in how far the event must have progressed to judge (29a) true, so there is contextual variability in what counts as "part of" in (29b). This parallelism is captured on the view that just as "part of" picks out a contextually determined degree as its threshold, so does the progressive.

(29) a. Mary **was** swimm**ing** across the Atlantic.

b. Mary swam across **part of** the Atlantic.

(30) a. Mary **was** wip**ing** out the Roman Army.

b. Mary wiped **part of** the Roman Army.

(Condoravdi 2009: 15)

The second condition is that there must be a triplet e′, d′, and w′ that also satisfies the event description P and that is related to e, d and w in a particular way: e is a nonfinal substage of e′, d is less than or equal to d′, and w′ ranks higher than w relative to some ordering source *o*. The ordering source component is crucial, and it is important that the specific choice of ordering source be contextually determined. This is designed to account for a puzzle observed by Bonomi (1997) and exemplified in (31).

(31) CONTEXT: I boarded a plane headed to NYC but which was hijacked and ended up in DC.

a. I was flying to NYC. (in view of the schedule of the flight)

b. I was flying to DC. (in view of the actual course of events)

(adapted from Condoravdi 2009: 15)

The observation is that the progressive can be used to truthfully assert two seemingly contradictory propositions regarding the same situation. In a context where I boarded a plane headed to NYC but which is hijacked and ended up in DC, it is truthful to assert that I was flying to NYC, but it is also truthful to assert that I was flying to DC. For Condoravdi, the ordering source is where this contradiction is resolved: when I assert that I was flying to NYC, the evaluation is relative to an ordering source based on something like the schedule of the flight, the intentions of the pilot, my intentions, etc. When I assert that I was flying to DC, on the other hand, the evaluation is relative to an ordering source based on what actually ended up happening. In this way, Bonomi's puzzle is solved.

6 A new semantics for *try*

My proposed semantics for *try* is given in (32).

(32) TRY(e, P, a) is true in w iff:

a. **Degree of realization:** for some d, P(w, e, d) **and d $>$ 0**;

b. **Ordering source:** there are e′, d′, and w′ such that e $\subset_{nf}$ e′, d $\leq$ d′, w′ $\leq_{o_a}$ w, and P(w′, e′, d′)
(**where o$_a$ is an ordering source based on a's intentions**)

On this approach, the semantics of *try* differs from Condoravdi's semantics for the progressive in two important respects. The first has to do with the 'degree of

realization' condition: whereas the progressive requires that the event in question be realized to a degree that meets or exceeds a contextually determined threshold, *try* requires merely that the event be realized to any arbitrary degree above zero.[4] This has the desirable consequence that the event may exist in a preparatory stage (see data in section 3.1) and any (incremental) theme need not yet be affected (see data in section 3.2).

The second difference between *try* and the progressive is that whereas the progressive is evaluated relative to a contextually determined ordering source, *try* requires an ordering source based on the intentions of the entity named by the subject. This correctly captures the fact that in the aforementioned hijacking context, using *try* does not give us the same flexibility as the progressive:

(33) CONTEXT: I boarded a plane headed to NYC but which was hijacked and ended up in DC.

(34) a. I tried to fly to NYC.
b. # I tried to fly to DC.

In summary, the proposal is that *try*-sentences must satisfy two conditions: the 'actional' component, requiring that the event in question be realized to some degree above zero, and the 'attitudinal' component, requiring that the entity named by the subject bear an intention relative to the given event description. Accordingly, the prediction is that there are two ways in which *try*-sentences may be judged false. First, there may be attitude without action, i.e., a situation in which the entity named by the subject bears the appropriate intentional attitude toward the event description but there is no related action. Here, *try* forms a useful minimal pair with *intend*, which names the relevant attitude stripped away from any action. Thus it is possible to intend to do something without trying to do it (the attitude is present but not the action), but it is not possible to try to do something without intending to do it (because trying entails an intentional attitude).[5] This is illustrated in the following minimal pair.

(35) a. John intended to eat an apple, but he never tried to do so.
b. # John tried to eat an apple, but he never intended to do so.

The second way in which *try*-sentences may be judged false is when there is an action but no attitude. This may happen in one of two ways. First, in (36a),

4 Given the move to considering the preparatory stage to be the beginning of the event scale, we also need to add an additional condition to Condoravdi's semantics for the progressive, namely that the contextually determined degree threshold be located somewhere in the inner stage ($d_c \in$ INNER STAGE). This ensures that the progressive always entails that the inner stage has been reached.

5 This point is further corroborated by the observation that *try to X* is roughly paraphrasable as *act on one's intention to X*. I thank David Beaver for drawing my attention to this fact.

the subject is expletive and hence may not bear an attitude, and so the sentence is correctly predicted to be infelicitous. Second, in (36b), the subject is a potential attitude bearer, but we see that it is not contradictory to assert that an agent did something without trying to do so: the action is present but not the attitude.

(36) a. # It tried to rain.
b. John did not try to cross the street; he crossed the street accidentally.

In closing this section, let us briefly reconsider the 'obligatory existential reading', the empirical motivation that Sharvit presents for her analysis of *try*:

(37) John **tried** to cut a tomato, ##but there were no tomatoes to cut.

For Sharvit, the contradictory status of such examples follows from the twofold proposal that (1) *try* entails the existence of some event related via an appropriate continuation branch to an event of cutting a tomato, and (2) a cutting-a-tomato event requires the presence of a tomato from the beginning.

On my proposed semantics for *try*, however, we do not expect such examples to be contradictory, since it is conceivable that the preparatory stage of a cutting-a-tomato event need not include an actual tomato. I would therefore like to suggest that Sharvit's 'obligatory existential reading' is an implicature rather than an entailment, having to do with the way we reason about rational agents. In the above case, for example, the pragmatic reasoning may go as follows: since John is engaged in an action with the intention of cutting a tomato, then assuming John is of sound mind, there must be a tomato to cut.

As expected, there is evidence that this implicature, although strong, is cancelable. The felicity of (38a) is usefully contrasted with (38b), which brings out a clear difference between *try* and the progressive not captured by Sharvit's approach. Whereas the progressive really does bring about Sharvit's 'obligatory existential reading' effect, it appears that the effect may be cancelled with *try* under appropriate conditions.

(38) a. John **tried to cut** a tomato, but he was hallucinating and there was no tomato to cut.
b. John **was cutting** a tomato, #but he was hallucinating and there was no tomato to cut.

7 Syntactic matters

In this section, I offer some preliminary remarks on how the proposed semantic analysis of *try* may relate to its syntax. In particular, the syntactic observation is that *try* is obligatorily a control verb, disallowing overt embedded subjects via ECM or finite complementation:

(39) *John tried (for) Bill to open the door.

(40) *John tried that Bill open the door.

As the proposed semantics stands, structures like these are not obviously ruled out.[6] However, the proposed semantics for *try* does make these facts look non-accidental: it is a general property of aspectual morphemes that they do not introduce arguments. This holds both for grammaticalized aspectual morphemes like the progressive and for aspectual verbs like *start* and *continue*.

(41) *John **was** Bill open**ing** the door.

(42) *John **started** (for) Bill to open the door.

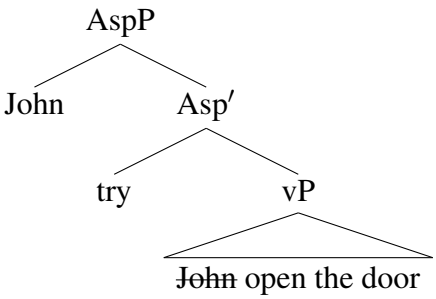
(43) *John **continued** (for) Bill to open the door.

Of course, *try* differs from these other aspectual morphemes in that it does impose a semantic restriction on its subject, but the similarity is that in all of these cases, there can be no more arguments than are licensed by the event description that the aspectual morpheme operates on. This can be captured if we assume that *try* is a raising predicate: it combines with a *v*P (i.e., a verb in combination with all of its arguments), and the subject of the *v*P raises to occupy the subject position associated with *try*. In order to capture the fact that *try* nonetheless entails something about its subject, we might hypothesize that from the raised position, the subject can bind a variable that is part of the meaning of *try* and that corresponds to the attitude-holder associated with the intentional ordering source.[7] On this view, *try* does not introduce an argument; rather, it imposes a restriction on an argument that is already present. The proposed syntactic parallelism between *try* and aspectual morphemes like the progressive is illustrated in the following trees.

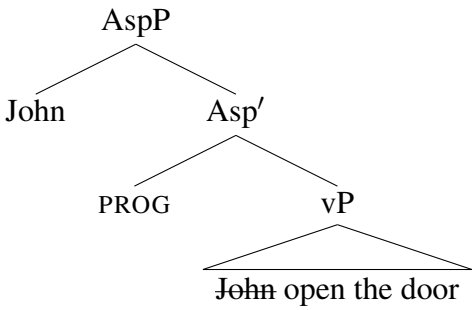
6 Given the semantics in the previous section, the predicted meaning for (39) is something like 'An event of Bill opening the door was underway (i.e., realized to a degree above zero), and the progression of this event is in line with John's intentions.' A case could be made, however, that the variant in (40), in which *try* embeds a finite clause, is ruled out on the grounds that *try* semantically requires an event description as its complement. If finite complements denote propositions rather than event descriptions, then a type mismatch results here.

7 See Hacquard 2006: 130 for a similar suggestion for root modals. Hacquard suggests that a raising-only analysis of root modals can be maintained if, when the subject raises, it may bind a variable in the modal's accessibility relation.

(44)



(45)



Cinque (2006) in fact proposes based on crosslinguistic evidence from restructuring and verbal morphosyntax that *try* realizes an inflectional-layer functional head ('conative aspect') and hence instantiates a monoclausal raising structure rather than a biclausal PRO-control structure as on the traditional view. If Cinque is correct, then the ban on embedded subjects under *try* follows not directly from the semantics but rather from a general syntactic ban on the introduction of arguments by inflectional heads. The semantics may still be indirectly responsible, however, since it is likely that the semantic status of *try* as an aspectual morpheme is ultimately responsible for its realization as an inflectional morpheme in the first place.

8 Conclusions and outlook

This paper had two main goals. One goal was to provide an updated analysis of the semantics of *try* using Sharvit 2003 as a starting point. I maintained Sharvit's core proposal that *try* is closely related to progressive aspect, but presented two empirical shortcomings of her account that suggested an approach unlike Sharvit's 'continuation branch' analysis. As an alternative, I proposed, following much work in action theory, that 'trying' denotes mental action, and I presented a formalization based on Condoravdi 2009. According to the new account, *try* requires the existence of some event that has been realized to any degree above zero and has a modal component with an ordering source based on the intentions of the entity named by the subject. The empirical advantages that this account has over Sharvit's (2003) semantics for *try* are that it allows for *try* to be compatible with event descriptions that have a highly unlikely probability for full realization and it also accounts for entailment patterns with incremental (and some non-incremental) themes. One of the implications that this analysis has which extends beyond the semantics of *try* is that the linguistic notion of event structure must be enriched to include a 'mental action' stage. Further research will be needed to know whether there is support for this idea in other aspectual morphemes or in other event semantics-related phenomena.

The second goal of the paper was to investigate the relationship between the semantics of *try* and its syntactic status as a verb that requires control and disallows

overt embedded subjects. Although the semantics proposed in the paper does not derive the syntactic behavior of *try*, I suggested that there is nonetheless an important connection: aspectual morphemes as a class disallow overt embedded subjects, and so if *try* has an aspectual meaning as proposed by Sharvit and maintained in this paper, then its syntactic status plausibly follows from this more general fact about aspectual morphemes. This view converges with Cinque's (2006) evidence from crosslinguistic morphosyntax and restructuring that *try* is a functional morpheme that realizes conative aspect in the inflectional layer of the clause. In this connection, this work is part of a larger project (Grano In prep.) aimed at understanding the relationship between the semantics of control verbs and their (in)ability to occur with overt embedded subjects; other verbs under investigation include *want*, aspectual verbs, implicative verbs, and root modals.

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