How to Cross the Atlantic Without Crossing It

Introduction

It can be difficult to resist narratives of progress, especially those that develop around long-standing and seemingly intractable debates (they appear even to flourish in hard soil). The debate concerning the modal status of the progressive is a debate of this kind, one that continues close to fifty years after the development of the first modal analysis of the progressive and ranges from matters of detail to the central foundational question posed in the literature—the question of whether or not the progressive has a modal meaning at all. It, too, has attracted a narrative of progress. Both non-modal theorists, those who think that 'Mary is crossing the Atlantic' simply represents a part of a cross-Atlantic passage as underway,[1] and modal theorists, those who think that this sentence further anticipates the completion of a cross-Atlantic passage in some range of suitable possible circumstances,[2] can at least agree on the following: if she cross*ed*, she was cross*ing*. And that is a non-trivial point of agreement. If the truth of a sentence describing the actualization of an event secures the truth of one describing it as in progress, that suggests that the progressive is exclusively

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[1] See, among others, (Bennett and Partee 1978), (Bennett 1981), (Vlach 1981), (ter Meulen 1985), (Parsons 1989), (Szabó 2004), and (Szabó 2008).

[2] See, among others, (Dowty 1977), (Dowty 1979), (Landman 1992), (Portner 1998), (Higginbotham 2004), and (Hallman 2009b).

sensitive to actual developments, a result that would seem to support non-modal theories. Modal theorists have, however, been galvanized by this challenge. Alternatives to the original modal analysis[3] (which does not predict the entailment) have proliferated. These revisionary modal theories aim to explain why truth-value judgments should be constrained in this way if the progressive does, in fact, have a modal meaning and, in so doing, are supposed to clarify the motivation for modal approaches.

While it certainly *appears* to have opened the way for productive engagement on the modal question, I will argue that this agreement is ill-founded and in a way that raises questions about the framework within which the modal debate unfolds. To begin with, some progressives fail to conform to the expected entailment pattern. In particular, I claim that no such entailment holds between pairs of sentences like 'Mary crossed the Atlantic' and 'Mary was crossing the Atlantic' whose event predicates are associated with outcomes (e.g., Mary's arrival across the Atlantic).[4] These progressives fail to conform to this pattern, on the view that I defend, because they are invariably associated with substantive modal interpretations requiring the realization of these outcomes across idealized possible circumstances.

Although this entailment pattern might look to support a return to a more traditional modal analysis of the progressive, matters are complicated by the fact that not all progressives pattern with this distinguished class. Progressives like 'Mary is swimming,' whose underlying event predicates are not associated with outcomes, *are* entailed by their non-progressive counterparts and, so, do not share the modal interpretation of progressives like 'Mary was crossing the Atlantic.' There is, then, a modal asymmetry that calls for explanation, but perhaps not of a familiar sort; since neither the progressive nor outcome-associated event predicates are uniformly associated with these modal

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[3] See (Dowty 1977) and (Dowty 1979).

[4] I use 'outcome-associated' as a convenient label for bounded event predicates (i.e., those that would be classified as accomplishments and achievements—although I focus almost exclusively on the former) and, derivatively, as a label for those progressives that embed them. The relevant contrast is with unbounded event predicates (i.e., activities) for which I use the label 'non-outcome-associated.'

interpretations, neither can readily be assumed to bear a suitable modal meaning.

The view that I develop is responsive to these complexities and calls into question the assumption that modal interpretations must be explained in terms of modal meanings, an assumption that has, as surely as imperceptibly, guided the formulation of and investigation into 'the modal question.' My proposal links the modal asymmetry that we observe to the fact that outcome-associated event predicates interact with the progressive in a distinctive way and, in particular, to the fact that the progressive never represents the outcome associated with an event as holding—if Mary is crossing the Atlantic, she isn't already across—with the result that outcomes are invariably "displaced" in the progressive environment. Rather than see the displacement of outcomes as issuing from a modal element—the presence of which is non-obvious, at best—I suggest that we invert this traditional picture and see these modal interpretations as emerging from the displacement of outcomes. On this approach, the displacement of outcomes represents the extent of the specifically linguistic contribution—and a non-modal one at that—to the modal interpretations that we see in connection with some, but only some, progressives.

1   Modal Controversies

Modal accounts of the progressive can seem rather heavy-handed. In advance of serious linguistic inquiry, a progressive sentence appears simply to say that an event (in the loose sense of a happening) is underway or goes on for a little bit. Even after serious linguistic inquiry, this may be one's view of what progressive sentences come to. It is, more or less, the view of non-modal theorists.

In what follows, I present evidence that suggests that substantive modal interpretations do indeed attach to progressives. As will become increasingly evident, however, this hardly settles things. The classical modal approach assumes that all progressives bear these interpretations and that they do so in virtue of the progressive's having a modal meaning. More recently, a consensus

among modal theorists has emerged to the effect that these interpretations are absent whenever an in-progress event is fully actualized and that a more flexible modal semantics is required to account for this pattern. My own view is that these modal interpretations attach to some, but only some, progressives (irrespective of whether their events are fully actualized) and that there are reasons to think that they are not, ultimately, to be explained in terms of a modal meaning. This provides a vindication of sorts for non-modal approaches. These approaches have, though, failed to appreciate the delicate dialectical position that they are in: the rejection of a modal *meaning* has to be articulated in a way that acknowledges the presence of these modal *interpretations*.

1.1 The Non-intervention Case

Imagine that Mary, in a deeply compromised state of mind, forms a plan to cross the Atlantic by swimming from Hyannis to Quiberon, France. Despite the fact that she is a poor swimmer and despite having no assistance, she sets out. Now suppose, as would be expected, that she drowns shortly after departing from Hyannis—half an hour after, just to fix details.[5]

In this context, one feels the pull of saying that the following is false as a description of what Mary was doing at any given time in that half-hour:

(1$_{PG}$) Mary was crossing the Atlantic.

We know that the newspaper headline would read "Woman Drowns While Attempting to Cross Atlantic" and, in addition, that the headline "Woman Drowns While Crossing the Atlantic" belongs to a different story altogether.[6] This is not to say that one cannot render a different judgment concerning whether (1$_{PG}$) is true or false. And, in this spirit, it is important to acknowledge that

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[5] This example (details aside) was first discussed in (Landman 1992).

[6] In 1966, Hurricane Faith traveled across the Atlantic from the coast of Africa and reportedly killed, among others, two people who were in a rowboat in the Atlantic. It is said that they "drowned while trying to cross the Atlantic in a rowboat" (source: http://en.wikipedia.org/wiki/Hurricane Faith) and elsewhere that, at the time, they "were busy trying to cross the Atlantic" (source: http://scienceblogs.com/gregladen/2011/09/08/there-are-interesting-things-g/), etc.

some interpreters do judge (1_{PG}) to be true in the context provided. But the significance of this alternative judgment only properly comes into view alongside certain other observations such as that this judgment appears to be keyed to Mary's own view of her efforts and aims and that it can be challenged on the basis of broader considerations that do not privilege her perspective on things (though this is, nonetheless, what we attempt to give due place when we say things like, "She was trying to cross the Atlantic").

Modal accounts of the progressive readily explain our judgments in this case. That is because they assume that the progressive places modal constraints on the event described by its underlying predicate, constraints that take the form, in particular, of modal completion requirements. According to David Dowty's (1979) influential INERTIAL-WORLDS ACCOUNT, for example, a progressive sentence is true at an interval, i, and world, w, just in case there is an interval, i', that both includes and extends beyond i and is such that the clause embedded under the progressive is true at i' in every inertial world relative to i and w.[7] Since inertial worlds are worlds in which the course of events develops without disturbance, an event in progress need only culminate under ideal (and, therefore, possibly non-actual) circumstances.[8] If we grant the assumption that Mary doesn't arrive across under inertial conditions—because she hasn't the ability even under the most hospitable circumstances—the judgment that (1_{PG}) is false is explained. (Mary's taking an arrival to be possible might represent a way of satisfying this condition, explaining the availability of the alternative judgment.) If a modal completion requirement of this sort is present, that would also explain why our judgments shift if we imagine a version of the case in which Mary is an experienced captain whose failure to arrive across the Atlantic is due to her decision to respond to a distress signal rather than to any incapacity.[9] The difference between these cases appears to hinge only on

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[7] The account can be updated by relativizing these worlds to events rather than to worlds and times.

[8] Dowty himself provides various informal characterizations of inertial worlds, describing them primarily as worlds in which things develop in ways most compatible with the past course of events and also as worlds in which things take their natural course (the latter at the suggestion of David Lewis).

[9] It might be thought that if Mary is swimming, she needs to have crossed more of the Atlantic than if she's traveling

a difference in the modal status of the events whose progress we are evaluating: an arrival across the Atlantic is not possible in the first context (taking a broad view of the relevant facts), though it is in the second.[10]

1.2   Non-modal Accounts and Sisyphean Labors

Both the intuitiveness of this approach, in relating judgments about progress to judgments about projected outcomes under ideal possible circumstances, and its predictive success in cases like these have led many theorists to embrace modal analyses of the progressive. Despite this, modal analyses have continued to confront resistance from theorists who defend the view, broadly speaking, that the progressive represents a part of an event as holding at a time without any commitment to its eventual culmination (in this world or others). In light of this continuing debate, it is important to be very clear about the considerations that support modal approaches while also being sensitive to the question of whether these considerations present a barrier, in principle, to the development of viable non-modal theories. In my view, this debate has persisted largely as a result of confusion about these issues.

To begin with, one sometimes finds modal theorists defending modal accounts of the progressive on the basis of sentences like the following (based on an example of Higginbotham's (2004)):

(2) Mary is squaring the circle.

It isn't hard to see why. Like (1_{PG}), (2) encodes a description of what we might call an 'impossible' event since nothing Mary does with a straight edge and compass could count as a step towards squaring the circle. Moreover, like (1_{PG}), (2) is judged to be false.

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by boat. It appears, however, that these judgments do not shift when distances are varied (so long as these shifts are not extreme—in which case they may very well be taken to bear on the possibility of completion). This is expected if the progressive does not impose the condition that an event be realized to a sufficient degree. See (Landman 1992) for criticisms of this approach as well as for discussion of the dialectical spirit in which this suggestion might be raised.

[10] In fact, it is more than merely possible; if she continued to pursue her course, she would eventually have arrived across the Atlantic across a broad range of circumstances.

This sort of example doesn't provide evidence for a modal rather than non-modal analysis of the progressive, however. It is common ground that the progressive represents a part of the event represented by its underlying predicate as underway in the actual or base world—whatever other constraints on truth it introduces. So, non-modal theorists may (and sometimes do) explain the falsity of a sentence like (2) by appealing to the fact that this requirement fails to be met.[11] We need not assume that the progressive has a modal meaning to account for that fact, it appears. And even if we did, that would not compel us to assume that it has a modal meaning in the sense that is at issue in the present debate, which concerns whether the progressive imposes modal completion requirements. In fact, as we will see, there is ample evidence to suggest that the former requirement can be independently evaluated,[12]. leaving the non-modal theorist free to diagnose the falsity of a progressive like (2) by appeal to a violation of its partitive condition.

Nor, against popular belief, do modal analyses of the progressive find support in the so-called 'imperfective paradox,' that is, in the fact that progressives do not entail their non-progressive counterparts (e.g., that 'Mary was crossing the Atlantic' does not entail 'Mary crossed/will have crossed the Atlantic'). It is commonly supposed that if the progressive represents a part of a cross-Atlantic passage as underway, we incur a commitment to a complete cross-Atlantic passage. According to one influential line of thought, we incur a commitment to the completion of a cross-Atlantic passage under ideal (e.g., inertial) possible circumstances, not necessarily actual circumstances.

The absence of this entailment can, however, be explained without this sort of maneuver.[13] Non-modal theorists can explain it by assuming that the progressive represents a partial cross-

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[11] See (Szabó 2008) for discussion.

[12] I present one kind of argument for this claim in 2.1.1 and another in 4.1

[13] This reasoning also manifests in debates concerning the status of objects implicated in in-progress events. In this vein, we find Dowty asking a question like the following, "[T]o say that John was drawing a circle is not the same as saying that John was drawing a triangle . . . Yet if neither activity necessarily involves the existence of such a figure just how are the two distinguished?" (1977: 46) The implication is that these events are to be distinguished by the presence of these objects across inertial possible worlds. Here, too, I think the modal arguments are unconvincing. For non-modal treatments of in-progress objects, see (Parsons 1989), (Szabó 2008), and REDACTED. For a critical discussion of Dowty on this particular point, see (Declerck 1979).

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Atlantic passage as underway rather than a part of a (complete) cross-Atlantic passage.[14] The demand that we account for a complete but possibly non-actual event of a given type is only legitimate if one assumes—with the modal theorist—that the progressive relates an event to a complete event of which it is a part. But this is a tendentious assumption in the context of the present debate and the non-modal theorist is perfectly entitled to reject it. Once rejected, there is simply no further demand to be met. For the sake of comparison: consider the effect of combining 'began to' with 'cross the Atlantic.' Should we wonder why the resulting expression does not commit one to the existence of an entire cross-Atlantic passage? Must we pursue a modal analysis of 'began to' to explain the absence of such a thing?

Theorists who employ this sort of modal reasoning have also failed to notice that it does not secure a result that both modal and non-modal theories aim to secure: that 'Mary is crossing the Atlantic' entails that there is a partially actual cross-Atlantic passage. From the fact that there is an actual event that develops, under ideal possible circumstances, into an event of a given type—say, a cross-Atlantic passage—it simply does not follow that that actual event is itself a partially actual cross-Atlantic passage.[15] The modal theorist could attempt to derive this result by appeal to some further (modal) principle, but one worries that this is an *ad hoc* response to a problem that may itself be an artifact of poorly chosen theoretical assumptions. The more attractive option, in light of the foregoing considerations, would be to assume this directly, to see this as the contribution of the progressive's partitive meaning, which is precisely the assumption that the non-modal theorist has been urging.

If there is a case to be made for modal approaches, it rests solely, in my view, on the presence of modal completion requirements. The cases considered earlier suggest that progressives are

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[14] They may also dispute the assumption that its underlying event predicate exclusively represents complete events. For variations on these themes, see (Bennett 1981), (ter Meulen 1985), and (Parsons 1989).

[15] For a clear discussion of this problem, see (Hacquard 2009).

associated with these requirements, but this may be brought out more forcefully, perhaps, in cases that involve Sisyphean labors—those that can be initiated but are designed to fail. Take Sisyphus' own labor as an example. His curse was continually to begin (and continually to fail) to roll a boulder to the top of a steep hill. Unlike the task of squaring a circle, we do imagine that Sisyphus can initiate this task. (His not being able to complete the task is what makes it distinctively cruel.) And yet the following misdescribes Sisyphus' activity even if he comes very close to the top of the hill:

(3) Sisyphus is surmounting the hill.[16]

The falsity of (3) is to be explained in just the same way as the falsity of (1_{PG}) in the non-intervention context; in both cases the predicate of events embedded under the progressive is associated with an outcome that is impossible in the context of evaluation. Just as Mary cannot cross the Atlantic unassisted (taking a broad view of the facts), Sisyphus cannot surmount the hill. If we suppose, with the modal theorist, that a modal constraint is violated, the falsity of these sentences and those like them is explained.

The difficulty for non-modal theorists is that they do not have a principled way of explaining our judgments about these sentences in non-modal terms. What is it that drives the judgment that Sisyphean labors cannot be described as being progress? Consider that in the limit case, they can be realized up to the point of culmination, which is not itself a candidate for selection by the progressive, not a time relative to which an event can be said to be progressing. The explanation for our judgment that an event of that sort cannot be said to be in progress is that it cannot culminate, can develop no further than it has. To acknowledge that is, however, to acknowledge the insight that is at the heart of modal theories of the progressive.

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[16] I use 'surmount' rather than 'roll a boulder to the top' to avoid any possible ambiguity between an outcome-associated and non-outcome-associated reading (i.e., "motion terminating in a place" vs. "motion toward").

The case for a modal analysis of the progressive may rest on the presence of modal completion requirements, but that is not to say it is decided by them. Non-modal theorists have rightly resisted modal arguments that fail to properly acknowledge the partitive contribution of the progressive and this is not without consequences for how we frame the modal debate. If not all progressives are associated with modal completion requirements, the progressive may itself only contribute a partitive meaning. If the mistake of the non-modal theorist was to assume that no progressives are associated with modal completion requirements, the mistake of the modal theorist may be to assume that all progressives are.

1.3   The Intervention Case

Consistent with Dowty's analysis, we've seen evidence that at least some progressives require an event's culmination across ideal possible circumstances. Since Dowty's analysis, however, a consensus has emerged to the effect that sentences describing completed events entail their progressive counterparts whether or not these events would be completed across such possible circumstances and that this should be reflected in an analysis of the progressive.

To see why this entailment pattern has seemed attractive to so many, consider a slight variation on our original case, which I'll call 'the intervention case.'[17] The intervention case is as much like it as possible up to the point before which Mary drowns. The signal difference between them is that Mary is prevented from drowning in the intervention case (deus ex machina) and is granted safe passage across the Atlantic. Mary's arrival across the Atlantic leads to an unsurprising shift in our judgments about the truth of its non-progressive counterpart (sometimes labeled 'perfective' in recognition of its completion interpretation):

(1$_{PF}$) Mary crossed the Atlantic.

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[17] This case was originally discussed by Landman (1992).

But her arrival also influences whether (1_{PG}) is judged to be true *pre*-intervention. In particular, some interpreters judge that (1_{PG}) is true in the first half-hour of the intervention case, including those who deny that (1_{PG}) is true in the non-intervention case.

This is puzzling. After all, we have two cases that would seem to be identical up to a certain point in time—the point before which Mary drowns in the non-intervention case and before the intervention in the intervention case. We also have a characterization of those events that is evaluated before that critical juncture.
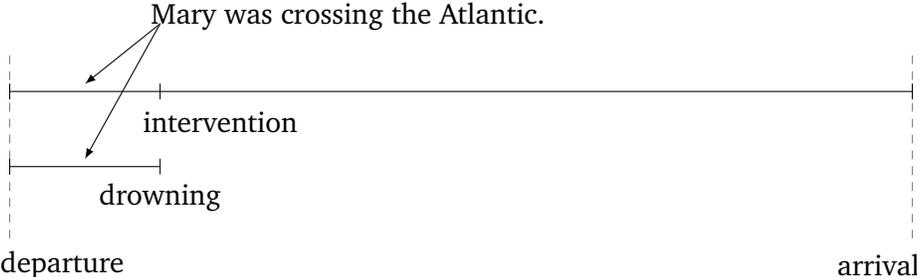
Why, then, should a late-coming and miraculous intervention influence our judgments regarding what was happening earlier on?

On any standard interpretation, the inertial-worlds account does not predict this shift. (1_{PG}) is predicted to be false in both of our cases at any given time between Mary's departure and the critical juncture because, at any such time, Mary is as incapable of reaching Quiberon in the one case as she is in the other. The intervention does nothing to change this since it would seem not to be a candidate for inclusion in the relevant inertial worlds. Since it is the intervention that enables Mary to reach Quiberon, inertial worlds in which it does not take place are not worlds in which Mary crosses the Atlantic (again, taking a broad view of the facts).

If the central question raised by the intervention case is, "Are all progressives associated with modal completion requirements?" the central question raised by the non-intervention case is, "How are we to understand these modal completion requirements?" If there is an entailment from the

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perfective to the progressive—and further investigation may lead us to reject this initially quite plausible assumption—both modal and non-modal theorists are faced with certain immediate challenges. Modal theorists face the challenge of accounting for the absence of substantive modal completion requirements in intervention-style cases. Non-modal theorists are free to explain the relationship between (1_{PF}) and (1_{PG}) in partitive terms (if a sentence characterizes an event as completely realized, it's hardly surprising that it was also partially realized), but they face the challenge of accounting for the presence of substantive modal completion requirements in non-intervention-style cases. Both equally confront the challenge of explaining our mixed intuitions in intervention-style cases.

The remainder of this paper constitutes an attempt to answer these questions, beginning with the second, and to reflect on their consequences for the modal debate. Since it is widely assumed that more recent modal theories of the progressive successfully meet the challenges outlined here, I'll turn to discussing the leading attempts to secure an entailment from the perfective to the progressive within a modal framework.

2 Revisionary Modal Accounts

2.1 A Counterfactual Account of the Progressive

Landman's COUNTERFACTUAL ACCOUNT (1992) of the progressive is in certain important respects continuous with Dowty's inertial-worlds account. Landman departs from the inertial-worlds model, however, in according the actual world a primary role in the semantics of the progressive. The central idea is that the progressive is sensitive to the continued development of an event but that it is only when its development is impeded or "stops" that it becomes sensitive to its continued development in non-actual worlds. The question then becomes, How would that event develop if

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it were to develop further than it actually does?

According to Landman, we answer this question by consulting the nearest possible world in which the event develops further, repeating this procedure more than once if the event's development is again impeded (so long as its development in these counterfactual settings offers a reasonable approximation of its development given what is internal to it). This procedure yields a 'continuation branch' for an event in the world of evaluation, which is the smallest set of pairs of events and worlds that reflect the full extent of its development. If an event develops without impediment in the actual world, its continuation branch will simply consist of that event (in its entirety) and the actual world.

Crucially, if we construct continuation branches for the events that are underway in the first half-hour of the intervention and non-intervention cases, we get different results. In the non-intervention case, the continuation branch for the event that is underway terminates shortly after one departs from the actual world. The worlds in which it constitutes an early stage of a successful cross-Atlantic passage are too far away from the actual world (on plausible assumptions about what is internal to it) to count as representing an idealized version of its development. In the intervention case, by contrast, the continuation branch only includes the actual world. Given that the event in question develops (let us assume)[18] into a complete cross-Atlantic passage and departures from the actual world are only licensed when events stop in the actual world, there is no need to consider its development in counterfactual settings.

Landman's analysis of the progressive allows us to relate these assumptions about continuation branches to our intuitions about (1_{PG}) across our two cases. According to it, a progressive sentence of the form 'PROG(e, P)' is true relative to a world w just in case there is some event f and some world w' such that the pair of f and w' is a member of the continuation branch for e in w and

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[18] As I will discuss shortly, Landman claims that there is disagreement on this point and that this accounts for our mixed intuitions about the truth value of (1_{PG}) in the intervention case.

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f is an event of type P. These truth conditions tell us that if Mary's early activity constitutes the early stages of a cross-Atlantic passage, then she was crossing the Atlantic all along (whether we knew it or not). If we assume that perfective sentences characterize events with the right developmental structure, an entailment from (1_{PF}) to (1_{PG}) follows.[19] More generally, we can say that the progressive counterpart of a perfective sentence is true throughout the development of the event that is characterized by the perfective sentence.

2.1.1 Mixed Intuitions

We have seen how Landman proposes to account for the intuition that (1_{PG}) is true as a description of what was happening early in the intervention case, but as Landman himself acknowledges, not everyone is of the mind that Mary was crossing the Atlantic early on. What do we make of the stalwarts who are unmoved by the fact that Mary eventually crosses the Atlantic? What explains our mixed intuitions about (1_{PG}) in the intervention context?

According to Landman, interpreters who reject (1_{PG}) in that context assume that the event that is underway early on is not a stage of Mary's cross-Atlantic passage, but a stage of some other event. Landman supports this view by pointing out that it is natural for these interpreters to offer that Mary was only *trying* to cross the Atlantic and a claim to that effect, Landman supposes, does not entail that an early stage of that event was then underway.[20]

However, consideration of the points of agreement (rather than disagreement) among interpreters tells against this explanation. A key observation, it turns out, is that interpreters agree on the truth of (1_{PF}) in the intervention context. Now, it is clear that (1_{PF}) describes a temporally extended event—a cross-Atlantic passage, in particular. But what are its boundaries in the case be-

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[19] Perfective sentences will have to characterize events that have stages. After all, the progressive is assumed to contribute a relation between an event stage and set of events, which holds just in case that stage is a stage of an event in that set of events (or, equivalently, just in case that stage develops into an event in that set of events).

[20] One might begin to challenge Landman's explanation by arguing that a 'try'-claim requires that a stage of the event described by its complement be actualized. See (Sharvit 2003) for a defense of this claim.

ing considered? Does the event it describes extend between Mary's departure from shore and her arrival or from the moment of intervention and her arrival? Landman's explanation of our mixed intuitions requires that interpreters disagree on this point. Those who deny that Mary was crossing the Atlantic early on tacitly assume that her cross-Atlantic passage spans between the point of intervention and Mary's arrival (since some other event was underway prior to that) while those who affirm that she was crossing assume that her cross-Atlantic passage spans between her departure and arrival.

Notice, though, that this is not an explanation that generalizes across relevantly similar cases. A good way to get a grip on our assumptions about the span of the event described by (1_PF) is through modification with an 'in'-adverbial. What becomes increasingly clear if we consider cases in which Mary continues to swim toward the opposite shore (though still in vain) and the intervention is deferred is that this sort of modification tracks the distance between Mary's departure from shore and arrival at the opposite shore, not the distance between the intervention and her arrival. So, for example, if Mary arrived at Quiberon five days after setting out from Hyannis, the following would be true, even if she swam toward Quiberon for four days with the intervention occurring on the fifth:

(4) Mary crossed the Atlantic in five days.

By contrast, the following would just be a mischaracterization of the facts:

(5) Mary crossed the Atlantic in a single day.

The sensitivity of the 'in'-phrase to the time of departure and its insensitivity to the time of intervention shows that (1_PF) is understood to describe an event that spans Mary's departure and arrival in cases that are relevantly similar to the intervention case. In the absence of good, independent reasons for denying that these are relevantly similar cases, we should assume that interpreters who

judge (1_{PF}) to be false early in the intervention case do assume that Mary's cross-Atlantic passage is underway then, undermining Landman's explanation of our mixed intuitions. Moreover, since these interpreters grant that her cross-Atlantic passage was underway (or partially realized) but deny that it was in progress, Landman's analysis of the progressive is also undermined by these observations.

In a sense, this is a welcome conclusion. On Landman's account, different explanations are offered for why it is that (1_{PG}) is judged to be false in the non-intervention case (i.e., Mary would not eventually cross the Atlantic were she to continue), and for why it is judged to be false in the intervention case (i.e., Mary is not participating in a cross-Atlantic passage that actually culminates, but some other event). But that explanation is neither the most constrained nor most intuitive one. Intuitively, those who have the stalwart intuition have it—are stalwart—because they think that it was no more possible for Mary to cross the Atlantic early on in the intervention case than it was for her to cross it in the non-intervention case. The two cases are just not relevantly different on this way of thinking, suggesting that it may have been premature to assume that the progressive is directly sensitive to the actualization of an event that it represents as being in progress.

2.1.2   The Role of the Actual World

The failure to account for mixed intuitions in the intervention case is, in fact, symptomatic of a more general problem for Landman's account. The problem is that it relates facts that concern the developmental course of a given type of event too closely to the evaluation of its progress as an event of that type. In fact, it cannot accommodate any variation in one's judgment about whether an event is in progress at any point in its development; if a complete event of a given type (actual or possible) is related (via its continuation branch) to a partially actual event, then, on this account, an event of that type was in progress throughout its actual development.

The intervention case is one case, among others, which reveals that our judgments about the progress of events are a good deal more flexible than this. Imagine, for example, that there is an intervention, that Mary is taken aboard a ship that is bound for the opposite shore, but that she jumps ship, making a second mad attempt to cross unassisted. We may say that Mary was crossing while aboard the ship but not when she leapt overboard only to perish at sea. Again, we can envision the headline reading: "Woman Jumps from Ship, Drowns in Attempt to Cross Atlantic." In this case, though, we would wonder at the suggestion that she was crossing all along (whether we knew it or not). Certainly, we would understand a person who reported that she was crossing while aboard a ship that was making passage across the Atlantic. But crossing all along? Her first attempt to cross the Atlantic seems rather like her second attempt. Nor would we judge that she was crossing all the while (whether we knew it or not) if Mary happened to jump ship short of an arrival across the Atlantic and never did make it across—even if she would have arrived across had she continued a little further. (We might imagine that she had one opportunity to jump overboard without being detected and that, had she missed it, she would have arrived across.)

In these cases, the robust effect that was observed in the intervention case is absent. This is, however, a difference between the intervention case and these cases that goes unrecognized on Landman's account. In each, there is an event underway that is related to a complete event of the relevant type via its continuation branch. It is a matter of indifference that the complete event is partially non-actual.[21] Note that this aspect of the account is otherwise well-motivated since it contributes to a unified rather than ad hoc explanation of (at least certain of) our judgments in the non-intervention and intervention cases. So it would not do to stipulate that the cases just work differently. But there is some irony in this difficulty: the analysis was designed to account for the striking influence of the actual world on our judgments about the progress of events, and yet, as

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[21] For more discussion of the contrast between these two types of cases, see my discussion of hindsight bias in 4.5.

this difficulty shows, it ultimately fails to do that.

Notice that these are all difficulties that an account like Dowty's avoids. Since this sort of account does not assume that the actualization of an event bears directly on the question of whether it is in progress, it comes under no pressure at all to generalize from this "basic" case to others (e.g., those where close doesn't count). It also allows us to accommodate variation in one's intuitions concerning whether a given type of event is in progress over the course of its development since the possibilities that matter are the ones that get projected and themselves vary at the time at which an event is said to be in progress. Finally, it allows us to offer a uniform explanation for the intuition that (1_{PG}) is false in the intervention and non-intervention cases. Whether this approach can account for the actualization effect that we observe in intervention-style cases is a question that we have to defer for the moment, but perhaps a different revisionary approach—one that hews more closely to the classical or non-revisionary approach—can deliver everything that we want.

2.2   An Ordering Semantics for the Progressive

Portner's ORDERING SEMANTICS (1998) for the progressive represents a more conservative attempt to meet the challenges posed by intervention-style cases (among others). Portner's aim is to respect "Dowty's central intuition" that "the semantics of the progressive is to be framed in terms of the theory of modality" (Portner 1998: 761). According to him, theorists like Landman have neglected this intuition and in so doing have missed an opportunity to relate these challenges "to more general issues in the semantics of modality" (Portner 1998: 761). They are, in a sense, purely technological; the old ideas call for more sophisticated implementation and current modal frameworks (such as those associated with (Stalnaker 1968), (Lewis 1973), and (Kratzer 1977; 1981; 1991)) allow for that.

The guiding idea is that the progressive is like other modal expressions (e.g., 'must') in that it contributes a modal base and ordering source. The modal base associated with the progressive is partly distinguished from other modal bases in being sensitive to events and event descriptions. In particular, Portner assumes that its modal base is a function from events and properties of events to propositions that, taken together, comprise the circumstances relevant to the completion of an event as an event of a given type. The ordering source is a function that takes an event and yields a set of propositions that establishes an ideal for worlds, namely, the ideal of non-interruption (or inertia, if you like, though this is a departure from official terminology). The modal base and ordering source (along with the ranking on worlds induced via the ordering source) generate the set of best worlds, to which our evaluations are sensitive.

According to Portner, a sentence of the form 'PROG(e, P)' is true relative to a world, w, just in case in all of the worlds w' that are best with respect to e and P, there is an event e' that is of type P and e is a non-final part of e' in w'. What these truth conditions tell us, in intuitive terms, is that a certain type of event is in progress just in case in all of the most favorable worlds that respect the prospects for its eventual realization as an event of that type, it develops into an event of that type.

2.2.1 The Role of the Actual World

The modal base associated with the progressive is intended to be flexible enough to explain our judgments in intervention-style cases. The problem is that it is too flexible; it is characterized as yielding the set of circumstances or propositions relevant to whether an event is completed as an event of a given type, but that condition might be interpreted in any number of different ways. For all that has been said, it might well be that consideration should be given to whether an event actually develops into an event of a given type; on this interpretation, we consider whether an event is completed in the actual world with the result that possible worlds play no substantive

role. Then again, it might be that consideration should be given to how an event actually develops but only within a particular horizon of opportunity. In that case, do the relevant circumstances yield information about an event's uninterrupted course of development (a variation on Landman's proposal)? Do the relevant circumstances yield as much information about whether an event develops into an event of a given type as is available up to and during the time at which that event is described as being in progress (a variation on Dowty's proposal)? Other, less familiar options are surely also available. The point is simply that Portner does not offer an analysis that decides in favor of one or another of these substantive options.

This indecision is reflected in Portner's remarks concerning one of the non-intervention type cases discussed by Landman. Here is Portner's description of the relevant case:

> Suppose that Mary is violently opposed to Roman occupation of her part of Gaul, and one day decides that it is her duty to do as much damage to the army as she can; she enters the town barracks one day at noon and attacks whomever she sees.

The first outcome considered is that Mary fails to wipe out the well-trained local garrison—she's simply out-matched. The robust intuition in this case is that Mary was not defeating the enemy, despite the zealousness of her attack. The second is that Mary does end up defeating the occupying Romans. In this case, Portner shares Landman's guiding intuition, which is that Mary was defeating the enemy, though this surely would have seemed improbable at the time.

In explaining these judgments, Portner invokes what might be seen as two competing views, and certainly distinct ones, on the role of the actual world in the evaluation of progressive sentences:

> "If somehow Mary succeeds in destroying the whole Roman army ... we know that she is not an ordinary person. The kind of modal base assumed above [where it is assumed that Mary cannot defeat her enemy] must be wrong; in putting propositions

like 'Mary can't fight for more than 48 hours straight' and 'Mary can't defeat more than 100 soldiers an hour' into it, we have vastly underestimated her abilities ...The part of the circumstantial modal base that represents her abilities must be revised" (Portner 1998: 775).

This is reminiscent of Dowty's proposal since facts pertaining to Mary's actual abilities at the time at which she is said to be defeating the Roman enemy are relevant to one's assessment of that claim. Her victory over the enemy is significant but only because it alerts us to the fact that it was no ordinary human being who went into battle. Elsewhere, however, Portner remarks that Mary's victory over her enemy represents a case "where a completely unexpected fact, that Mary defeated the whole Roman army, is incorporated into the modal base. Because it is there, we get to focus on completely ideal realizations of Mary's fight, where she defeats the whole army" (Portner 1998: 785-6). Since Mary doesn't celebrate her victory until well after the time at which she's said to be defeating her enemy, this marks a departure from the previous conception of the actual world's role in the evaluation of progressive sentences. Granted, the fact that Mary defeated the enemy does not itself make it the case that she was defeating the enemy, revealing a contrast with Landman's account on which it does. But the inclusion of a fact like that among the propositions generated by the modal base licenses the exclusion of anything that might earlier have presented a barrier to Mary's military ambition, a line of thought that is consonant with Landman's proposal.

The central concern among those parties interested in the entailment relations between perfective sentences and their progressive counterparts has been to clarify the role of the actual world in the evaluation of progressive sentences, but as this discussion shows, Portner's account fails to address this issue in a principled way. Depending on how you look at it, it leaves open or gives conflicting answers the questions raised so far. Why is it, for example, that there are mixed intuitions concerning whether (1_{PG}) is true early on in the intervention case? (Why should the proposition

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that Mary crossed the Atlantic be among the propositions produced by the relevant modal base for some interpreters but not others?) What explains the possibility of variation in one's intuitions concerning the progress of a cross-Atlantic passage over the course of its development? Why is there an actualization effect in the intervention case but *not* in those cases in which Mary comes close to getting across, though somehow not close enough to count? Evidently, we need an account that allows for flexibility in some places, but not others.

Each of these is a question for which we should expect an answer. It is not as though in asking them we are demanding that theorists be in a position to reveal the identity of particular modal bases and to explain their origin. That would be a silly demand, as Portner himself points out. Instead, these questions concern general, systematic, and striking phenomena—such as the possibility of judging that a given type of event is in progress at some of the times in its development but not others. An account that fails to provide answers (or provides the wrong ones) to questions like these should be rejected.

The aim of capturing an entailment from the perfective to the progressive seems to have led revisionary modal theorists away from an important idea. The idea is that the possibilities that are relevant to the evaluation of a sentence like 'Mary is crossing the Atlantic' are the possibilities that are projected at the time of its evaluation. These possibilities are not directly constrained by subsequent developments in the actual world (though they may be indirectly constrained by these developments and perhaps even in ways that are not at first readily apparent). And while taking this idea seriously leaves us with the burden of explaining the actualization effect that surfaces in intervention-like cases, it relieves many others. It puts us in a position, for instance, to provide principled answers to each of the questions just raised and that alone suggests that we think very carefully about how to explain that effect.

3 Counterexamples

A number of difficulties have emerged for the claim that there is an entailment from the perfective to the progressive. As we know, some interpreters deny that Mary was *crossing* the Atlantic early on in the intervention case despite granting that she *crossed* the Atlantic. On my view, this is because they assume that it isn't possible for Mary to cross the Atlantic unassisted just as those interpreters who take a broad view of the facts in the non-intervention case appear to do. It seems, then, that (1_{PG}) continues to be associated with substantive modal completion requirements even in those cases in which a cross-Atlantic passage is fully actualized. This is consistent with the sort of flexibility that we see in our judgments about the progress of that type of event, which seem to depend on projections for its completion that are anchored to the progressive's time of evaluation. That our judgments about what was earlier in progress can be influenced by the *actualization* of an event in particular, rather than late-emerging possibilities for its completion generally, suggests that the actualization of an event can influence these judgments by influencing what our earlier projections take into view. The question then becomes, How and under what conditions is that possible?

In what follows, I will offer further support for the rejection of the entailment from the perfective to the progressive by presenting what I take to be clear counterexamples to the alleged entailment, focusing on pairs of sentences that like (1_{PG}) and (1_{PF}) embed outcome-associated predicates of events. Theorists have assumed that an entailment from the perfective to the progressive holds whatever the type of the embedded predicate, but my line of argument suggests that it is restricted, in fact, to pairs of sentences that do not embed these predicates. In each of the cases that I present, the truth of a perfective sentence that embeds an outcome-associated predicate fails to guarantee that the event that it describes would—relative to some candidate time in the event's development—eventually be completed across suitable possible circumstances. Moreover,

in each, the progressive counterpart of that sentence is false. I take this to provide evidence for the hypothesis that outcome-associated progressives *invariably* require that their events culminate in their associated outcomes across a range of suitable possible circumstances (those that, to a first approximation, represent their undisturbed continuation).

3.1 *I Love Lucy*

The first counterexample that I will discuss evokes a famous scene from *I Love Lucy*. Here's how we are (re-)imagining it:

> Lucy is supposed to be sorting chocolates in a chocolate factory. There are eighteen of them on the belt before her to be sorted into boxes. But instead, while the foreman is distracted, Lucy begins to eat the chocolates. Worried that she might soon attract attention, Lucy gets back to work and sorts the remaining chocolates. She ate a total of six.

If we represent the chocolates eaten by Lucy with 'X'-ed boxes and those sorted with un-'X'-ed boxes, we get the following picture of the event as it unfolds over time:

$$\boxtimes\ \boxtimes\ \boxtimes\ \boxtimes\ \boxtimes\ \boxtimes\ \square\ \square\ \square\ \square\ \square\ \square\ \square\ \square\ \square\ \square\ \square\ \square$$

But though the perfective sentence below is true in this scenario, there is no time relative to which its progressive counterpart, (7), is judged to be true:

  (6) Lucy ate (exactly) one third of the chocolates.

  (7) Lucy was eating (exactly) one third of the chocolates.
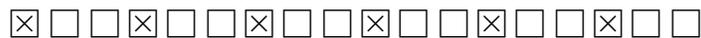
The reason seems to be that relative to any candidate time in the development of the event reported by (6), Lucy's eating a third of the chocolates is pure happenstance. Relative to any such time, it

is possible for Lucy to eat more or fewer than a third of the chocolates if she is not interrupted (if, for example, she does not attract the foreman's attention). This explains why, if Lucy had license to eat six of the eighteen chocolates and set out to do so, one would instead judge (7) to be true. And that is so however the relevant proportion of chocolates eaten to chocolates sorted is instantiated over time. So, for example, (7) would be judged to be true even in the following scenario in which, let us imagine, Lucy decides to eat those six chocolates that are least uniformly shaped:

$$\boxtimes\ \square\ \square\ \square\ \ \boxtimes\ \boxtimes\ \square\ \square\ \square\ \square\ \square\ \square\ \square\ \square\ \boxtimes\ \boxtimes\ \square\ \boxtimes$$

Clearly, an event that satisfies the description in (6) could be constituted in any number of ways and yet still satisfy its progressive counterpart in (7).

The view that the progressive does, to the contrary, impose a 'homogeneity' requirement—intuitively, the requirement that the parts of an event each look alike so that a description that applies to the whole applies to each part—motivates a recent proposal of Peter Hallman's (2009b).[22] He argues that the entailment under discussion fails in a very restricted range of cases but for what are essentially aspectual rather than modal reasons. The *I Love Lucy* case is, in fact, modeled on a key pair of cases that he takes to show this. In his version of the case, a machine is sorting transistors in a factory and rejects exactly six out of eighteen. If we represent the machine's rejection of a transistor with an 'X'-ed box and its acceptance of one with an un-'X'-ed box, we can see that each of the following diagrams serves equally well as a representation of its sorting schedule as it evolves over time:

$$\boxtimes\ \square\ \square\ \boxtimes\ \square\ \square\ \boxtimes\ \square\ \square\ \boxtimes\ \square\ \square\ \boxtimes\ \square\ \square\ \boxtimes\ \square\ \square$$

$$\boxtimes\ \boxtimes\ \boxtimes\ \boxtimes\ \boxtimes\ \boxtimes\ \square\ \square\ \square\ \square\ \square\ \square\ \square\ \square\ \square\ \square\ \square\ \square$$

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[22] Hallman's proposal is a development of (Mittwoch 1988), which argues that the progressive requires that its underlying predicate be homogeneous (see (Vlach 1981) and (Lascarides 1991) for similar proposals).

But while the perfective sentence in (8) is true in each of these scenarios, its progressive counterpart in (9) is judged to be true only in the first:

(8) The machine rejected (exactly) one third of the transistors.

(9) The machine was rejecting (exactly) one third of the transistors.

Hallman explains the shift in our judgments about (9) across the two sorting scenarios by appealing, roughly, to the fact that a third of the transistors are continuously rejected in the first though not the second. But his antecedent commitment to a revisionary modal framework leads him to assume that the progressive introduces modal completion requirements that are trivially satisfied in both transistor-sorting scenarios. The possibility that the entailment fails on account of the presence of a substantive modal completion requirement just doesn't come into view.

The chocolate-sorting cases reveal, however, that the failure of the entailment is not so restricted. We saw in those cases that though Lucy ultimately ate a third of the chocolates, whether she was eating a third of them at any given moment depended on whether she would eventually have done so under suitable possible circumstances, not on whether she repeatedly ate one third of the chocolates (which, in fact, she did not).[23] Similarly, (9) would be judged true if the machine were programmed to reject exactly one third of the transistors irrespective of whether its sorting schedule would be homogeneous in the relevant sense.[24] The failure of the entailment in these cases is to be explained in modal terms, not by appeal to a homogeneity condition associated with the progressive. That our judgments about (9) shift across the two transistor-sorting scenarios is an interesting fact and deserving of attention in its own right, but one whose bearing on the

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[23] Note that we don't want to trivialize the homogeneity condition by allowing that an event in which she ate six out of eighteen satisfies it even if none of its proper subparts are ones in which she ate one of sixteen chocolates. The condition wouldn't allow us to discriminate among our cases if it were trivialized in this way. (The same is true if we attempt to trivialize the condition by stipulating that the events in question have no proper subparts.)

[24] The same would hold if a warped conveyor belt systematically edged off a third of the chocolates—lest it be thought that intentionality is playing a crucial role in these cases.

relationship between the perfective and the progressive is, at present, far from clear.[25]

3.2   Slow Drift

Consider another case, along with an accompanying diagram, which fills in the details:

> Over the course of an afternoon, a slow breeze blows a leaf from one side of a pool to
> its opposite side.
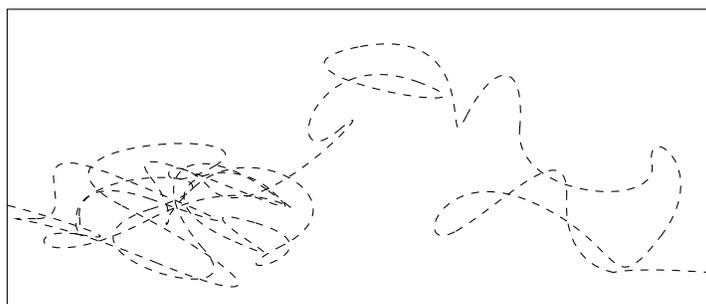
As the diagram suggests, the path traveled by the leaf over the course of the afternoon is seemingly unpredictable. It is natural to assume, in this case, that the leaf simply happens to arrive at the opposite end of the pool and as with the chocolate sorting cases, what we find is that though interpreters judge (10) to be true of the event depicted, there is no time at which (11) is judged to be true:

(10) The leaf floated across the pool.

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[25] It might be that, in the homogeneous case, we see a meaningful pattern of rejections, one that favors the machine's eventual rejection of a third of the transistors, whereas, in the non-homogeneous case, no pattern favoring that eventual outcome jumps out. That would provide us with a counterexample to the entailment and one that can be explained in modal terms. But it might be that Hallman doesn't present us with a counterexample to the entailment. It might be, for example, that in the 'homogeneous' context, (9) is understood to describe a plurality of events as underway, events in which one third of the transistors in them are rejected. This interpretation would seem to make (9) applicable to the first but not the second sorting scenario (though we would resist the assumption that the progressive imposes a 'plurality' requirement). (8) appears, by contrast, to describe a single event and appears only to be applicable to— or only to be readily applicable to—a plurality of events when supplemented in some way (such as with an adverb like 'repeatedly'). Another possibility, perhaps related to the last is that (9) receives a habitual interpretation. These assumptions comport well with the observation that (9) can be taken to suggest that something is happening "over and over," as Hallman himself observes (cf., 'The police were pulling over one third of the cars they clocked'). If these interpretations are available by 'default,' as Hallman suggests (2009b: 32) that is something that calls for further explanation (see (Higginbotham 2009a) for pregnant discussion of related issues, especially in 'Revision II: Telics and stages').

(11) The leaf was floating across the pool.

So, we appear to have another counterexample to the claim that there's an entailment from per-
fective sentences to their progressive counterparts where outcome-associated predicates are con-
cerned.

 That these sentences do embed an outcome-associated predicate is suggested by the fact
that (10) does not simply describe the direction of the leaf's motion, the most natural candidate
for a non-outcome-associated construal of the predicate 'float across.' The loops, as well as the
vertical, backtracking, and diagonal paths, all conspire to foreground an interpretation on which
we understand the leaf as arriving across the pool by floating (cf., 'The boat floated under the
bridge').[26] This explains why it would be exceedingly odd to point to segments of the leaf's course
and report, "The leaf floated across the pool here." On an outcome-associated construal, that
characterization applies properly to the completed whole, not to segments short of the whole.

 Still, it might be wondered whether the path taken by the leaf fails to provide us with stages
in the development of an outcome-associated event, a possibility that would threaten the claim
that we have a genuine counterexample to the entailment. Sandro Zucchi (1999) cautions, for
example, that a person's walk may eventually take him to a police station, but it need not be the
case that he was walking to a police station; his walking may fail to constitute a stage of his walk
to a police station, he explains, being a part of it instead. If the progressive is sensitive to the
staged continuation of an event (or, as we might say, to its *development*) and yet the scene depicted
is not one in which an event develops over time, perhaps that accounts for the impression of an
entailment failure.

 But the appeal to event parts in an explanation of this sort is a red herring. Let's imagine
some variations on the case in which (11) is taken to be true. It might be, for example, that the

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[26] For further discussion, see (Higginbotham 1995) and (Higginbotham 2009b).

circuitous path taken by the leaf is the result of a children's game that involves blowing the leaf from one end of the pool to the other. Or it might be that there is a wind so much stronger than countervailing winds that the leaf's eventual arrival across the pool is assured. These are cases in which (11) may be judged true at any candidate time you like. What has changed? Is it that we have gone from describing the parts of an event to describing its stages? How can we make sense of the notion that someone who uses (10) to capture the culmination of a certain type of event may deny that that event developed over the course of the afternoon? (What would (10) be understood to mean on this suggestion?) It seems much more clear that we would have shifted in these cases from thinking of a given outcome as accidental to thinking it as secure or robust.

As with our previous cases, what the absence of an entailment from (10) to (11) shows is that there is not an entailment from outcome-associated perfectives to their progressive counterparts. (11) is associated with a modal condition that requires its outcome to be secured across suitable possible circumstances, a condition that is not met in the case as presented.

3.3   Coin Toss

I want to conclude this discussion with a simple case (attributed to Richmond Thomason by Dowty (1977)), but one whose significance might easily be missed:

A fair coin is tossed and lands heads.
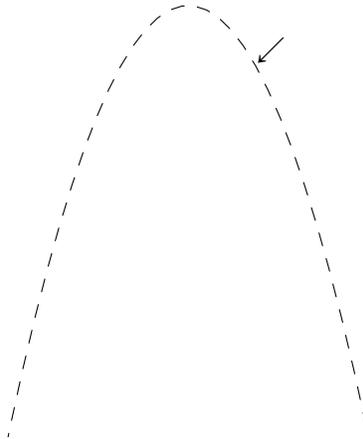
The following sentence is true in this case:

(12) The coin landed heads.

However, many would take the following sentence to be false as a description of what was happening at the moment indicated by the arrow, even knowing that the coin eventually lands heads:

(13) The coin was landing heads (then).

Again, (13) would be seen as suggesting somehow that it was determined in advance that the coin would land heads.

This truth-value judgment and the suggestiveness of the (13) can both be accounted for on the approach I have been defending. One may, under perfectly ordinary circumstances, think of a fair coin toss as being an indeterministic event. In the present case, this amounts to taking the view that the coin might have gone on to land tails instead of heads—that it just happened to land heads. If the truth of (13) requires that the coin land heads in every possible circumstance in which its descent is uninterrupted, it is no surprise that someone taking this position would judge that (13) is false; there are, on indeterministic assumptions, some possible circumstances in which the coin eventually lands tails and some in which the coin eventually lands heads (actual circumstances among them).

Of course, one may not share this outlook on the case. Fortunately, this approach also provides a constrained explanation for the judgment that (13) is true in this context. If one thinks of a coin toss as being a deterministic event, then it predicts that one will take (13) to be true; in every possible circumstance in which the coin continues to fall without interruption, it lands heads. It also straightforwardly explains the suggestiveness of (13) in the view of someone who does not conceptualize the event in this way. But even in this case, it is not the fact that the coin landed heads that explains the judgment that it was landing heads. That fact is only significant insofar as it reveals what was earlier to happen and that *is* explanatorily relevant.[27]

It might be said, however, that it is possible to deny the entailment from (12) to (13) while preserving the generalization that I have targeted for criticism. One might think, for example, that 'The coin landed heads' does not represent a temporally extended event but something more like the outcome of a coin toss. In that case, the lack of an entailment from 'The coin landed heads' to 'The coin was landing heads' does not tell against the generalization I have targeted as it only concerns predicates that represent temporally extended and outcome-associated events.

The problem with this response, however, is that it is blind to the complexity of certain event predicates. The descriptive content of the event predicate in 'The coin landed heads' can be understood as applying to the result of the coin toss—this is brought out by saying, for example, 'The coin landed heads at that very instant'—but that predicate can, all the same, be understood as representing both the coin's descent and its eventual outcome ('The coin landed heads in three

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[27] But perhaps the revisionary modal theorist can explain these two judgments as well by saying that the coin's actually landing heads is a relevant consideration for those who judge (13) to be true and irrelevant to those who judge (13) to be false (such a view could, for example, be attributed to Portner in one frame of mind—see my discussion on the instability of his account in 2.2.1—although his remarks on this case are in agreement with my presentation (Portner 1998)). The central problem for this strategy is that we are in need of an appropriately constrained explanation for why it is that some interpreters should take the coin's actually landing heads to be relevant to their judgment about (13) and why others should not (as I discuss at length in Part 2). It looks like the difference between these interpreters is that some view the coin's descent deterministically while others view it indeterministically. But then there is *no need to accord special status to the outcome of the toss*.

seconds flat'), as the application of standard diagnostics suggests.[28] In light of this, there is nothing suspect about the claim that 'The coin landed heads' is interpreted as describing an extended outcome-associated event.

4 The Displacement Account

It appears that certain progressives—those that embed outcome-associated predicates—invariably give rise to substantive modal interpretations requiring the completion of the events they describe under possible circumstances projected at the progressive's time of evaluation. This view allows us to explain a number of observations: that Mary may be said to be crossing the Atlantic if she is an experienced captain even if she only gets part-way across; that one may take issue with such a description if Mary is, in one's view, only making a fool's attempt to cross; and that, in general, progressive sentences are judged to be false when they describe events that cannot be completed. The counterexamples just considered provide another source of evidence for these interpretations. They show that events may happen, though they were not, on those grounds alone, happening. Lucy ate a third of the chocolates, a leaf floated across a pool, a coin landed heads, but these events were not in progress all the while. What is needed, at candidate times in their development, is a guarantee of their eventual realization across projected possible circumstances.

    This view raises a number of questions of its own, however. The discussion so far has focused almost exclusively on outcome-associated progressives, a pervasive tendency in the modal literature (and one that can hardly be seen as accidental). But when we step back and consider the modal patterns of these progressives alongside the patterning their non-outcome-associated counterparts,

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[28] The following sentence is, for example, ambiguous between an interpretation that highlights the result component and one that highlights the process component:
  'The coin almost landed heads.'
  That is, we may assume either that the coin landed and almost heads-up or that it didn't land but some process almost resulted in that outcome (cf., 'Mary almost caught the plane').

what we see is that 'Mary was crossing the Atlantic' and 'Mary was swimming' exhibit a modal contrast; non-outcome-associated progressives like 'Mary was swimming' do not bear the modal interpretations of their outcome-associated counterparts, a striking difference that has so far gone unaccounted for.[29] Naturally, we want to explain the emergence of the modal interpretations that attach to outcome-associated progressives in a way that respects this modal contrast. But can these modal interpretations be explained by appeal to the meaning of the progressive or outcome-associated predicates? Where else to look for an explanation if these options fail? There is also, of course, the actualization effect to make sense of, which inspired the revisionary approaches that we now have good cause to reject. If outcome-associated progressives give rise to modal interpretations that are sensitive to the development of events under projected possible circumstances, why should the actualization of an event trump our earlier projections for its continued development? Why should the fact that something happened, in and of itself, in some cases, provide a boost to our intuitions about its progress? Or do these characterizations already presuppose too much?

The account to be presented below addresses each of these questions and additionally possesses several other explanatory advantages. Among them is the fact that it allows us to explain the possibility of mixed intuitions in the intervention case while maintaining a uniform explanation for the judgment that (1_{PG}) is false across the non-intervention and intervention cases, to explain the possibility of change in our intuitions about the progress of an event over the course of its development, and to explain why it is the actualization of an event rather than, say, the late emergence of possibilities for its completion that are tied to the robust effect that I have, for this reason, labeled

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[29] According to revisionary theories, there is an entailment from both 'Mary crossed the Atlantic' to 'Mary was crossing the Atlantic' and 'Mary swam' to 'Mary was swimming.' Dowty's analysis of the progressive (1977) and (1979) also fails to predict an asymmetry here, as he acknowledges. In the case of 'Mary was swimming,' for example, the inertial-worlds analysis requires that there be an interval that extends beyond the progressive's time of evaluation and is such that 'Mary swims' is true at that interval in every relevant inertial world. In light of this, the entailment from 'Mary swam' to 'Mary was swimming' fails for just the same reasons as the entailment from 'Mary crossed the Atlantic' to 'Mary was crossing the Atlantic' fails; that an event unfolded provides no assurance that it would, relative to candidate times in its development, unfold across inertial possible worlds.

the 'actualization' effect.

4.1   An Asymmetry

Given the dialectic of this paper, the modal contrast between sentences like 'Mary was crossing the Atlantic' and sentences like 'Mary was swimming' will be easiest to observe if we consider whether the latter are entailed by their perfective counterparts.[30]   If the modal condition that attaches to progressives like 'Mary was crossing the Atlantic' attached to progressives like 'Mary was swimming,' it would be possible to claim that though Mary swam, she was not swimming, and for the same reason that we can claim that though Mary crossed the Atlantic, she was not (at some candidate time) crossing it. These progressives would both equally impose the condition that their underlying event predicates apply to events that unfold across projected possible circumstances. Since both sorts of predicates describe events whose course of development need not be modally robust—nothing in the nature of being a predicate that represents a temporally extended event, whether associated with an outcome or not, tells otherwise—it should be possible for this condition to fail to be satisfied in the case of progressives like 'Mary was swimming.'

As it happens, however, no failure to this kind is discernible. In this, I find myself in agreement with the consensus view on the matter, which is that there is an entailment from the perfective to the progressive in the non-outcome-associated case:

(14) Mary walked. → Mary was walking.

However, as I have argued, outcome-associated sentences pattern differently, revealing an asymmetry between outcome- and non-outcome-associated progressives:

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[30] One might also consider whether a modal condition attaches to sentences like 'Mary is swimming' where there is only a partially actual event of the relevant type underway at the time. This is, in fact, the context within which Dowty raises the possibility that even sentences like these have modal interpretations. I consider this argument—to my knowledge the only one of its kind—in REDACTED.

(15) Mary crossed the Atlantic. $\nrightarrow$ Mary was crossing the Atlantic.

What we see is that, from the fact that something happened, we can conclude that it was happening in the case of non-outcome-associated progressives but not in the case of outcome-associated progressives.

It is tempting to think, however, that the modal theorist can defend a modal analysis of the progressive while accommodating the *appearance* of a modal asymmetry of this kind. Two constraints should be kept in mind as we entertain this possibility. The first is that we want, as always, to maintain a unified analysis of the progressive and the second is that we want to avoid trivializing the modal condition that clearly does attach to outcome-associated progressives (otherwise, we fail to explain our judgments about them). Once this is borne in mind, the cases naturally divide into two: either (i) the relevant modal condition is trivially satisfied in the case of progressives like 'Mary is swimming' and for reasons that are aspectual rather than modal since, again, their underlying predicates are not more modally robust than their outcome-associated counterparts (though we know that their aspectual profiles differ) or (ii) they do not satisfy the modal condition but we fail to take notice of this.

The first option is particularly unattractive. Even supposing that the modal theorist has a right to the assumption that 'Mary is swimming' guarantees the existence of an actual swim event (a non-trivial assumption given the fact that the progressive has a stative semantics), we need to assume the following in addition: that there is an event that develops in every projected possible circumstance of which that actual event is an earlier part or stage and that the whole is itself a swim event. Now, it is unclear why one should think an event is guaranteed to develop further in these projected possible circumstances, but even if this were granted, there seems to be no non-*ad hoc* reason to assume that the whole would constitute a swim in virtue of having an actual swim event as an earlier part. It is not, it should be noted, supported by assumptions about the cumulativity or

homogeneity of these sorts of predicates.

The second option is both simpler and more natural than the first, but it ultimately doesn't secure the result that there is no modal asymmetry. According to this option, the relevant modal condition can fail to be satisfied in the case of non-outcome-associated progressives but this fact goes unnoticed because non-outcome-associated events are so short-lived; we don't readily imagine that a partial swim might fail to develop into a swim event across projected possible circumstances. The hypothesis certainly has some intuitive appeal, but it is important to see that it generates a mistaken prediction in the case of our judgments about outcome-associated progressives. In particular, it predicts that one should judge sentences like 'Mary was eating a third of the chocolates' and 'The leaf was floating across the pool' to be true very close to the completion of events of the relevant type. We can, after all, evaluate these progressives very close to the completion of the events described by their underlying predicates. And yet, we see that these sentences are judged false in the counterexample-supporting contexts that I earlier discussed. The conclusion to draw is that progressives like 'Mary was swimming' do not share the entailment-blocking modal interpretations of their outcome-associated counterparts.

4.2   The Displacement Hypothesis

Our goal, then, is to understand why it is that outcome-associated progressives give rise to modal interpretations that do not also attach to non-outcome-associated progressives. As we have seen, this modal asymmetry remains unexplained if we assume that our modal interpretations are encoded by the progressive and assume, as we should, that the progressive bears the appropriate modal meaning whether it combines with an outcome-associated or non-outcome-associated predicate. The partitive (or stative) component of progressive meaning fails to illuminate the source of this modal constrast for just the same reason. From this perspective, then, outcome-associated

progressives and non-outcome-associated progressives show no significant differences.

There is, however, a negative consideration that provides some traction. Though the progressive represents a partial event as underway in every case, still, we might ask whether there are parts of an event that it does not represent as underway. Interestingly, it turns out that the outcomes of the outcome-associated predicates embedded by the progressive are never represented by it as underway. Consider, for example, that if Mary is crossing the Atlantic, it is not the case that she is across. No such restriction is in evidence in the case of non-outcome-associated progressives, however. If Mary is swimming, there is no restriction on the parts of a swim event that might be underway; any such part is, in principle, available for selection by the progressive.

This property is, in my view, the linguistic basis we have been looking for to explain the modal contrast between outcome-associated and non-outcome-associated progressives.[31] The outcomes of outcome-associated predicates are, as I will say, "displaced" in the progressive environment (there is, if you like, no room for them and they are expelled) and, accordingly, I will call this property 'outcome displacement' or 'displacement' for short.[32] I adopt the following as a hypothesis about the distribution of this property and of our modal interpretations:

THE DISPLACEMENT HYPOTHESIS:

There is modal displacement[33] if and only if there is outcome displacement.

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[31] It should not be thought that an explanation that appeals to outcome displacement is uninformative. I am not saying that the modal difference between 'Mary is crossing the Atantic' and 'Mary is swimming' is to be explained (in part) by the fact that the former embeds an outcome-associated predicate. Rather, I am observing (i) that there is a significant difference in the way that the progressive interacts with outcome-associated predicates (i.e., it only exhibits a restriction in what it represents as underway when it combines with those predicates), (ii) which is, as far as the present evidence suggests, strongly correlated with the modal interpretations that attach to progressives embedding those predicates (as per the Displacement Hypothesis), and (iii) that we have reason to explain their modal interpretations partly by appeal to that property (rather than to explain that property by appeal to a modal meaning, as I go on to discuss).

[32] This isn't a consequence of the subinterval property (Bennett and Partee 1978). That property doesn't ensure that if Mary is crossing the Atlantic, she's not yet across. It just tells us that the event underway isn't itself a 'cross the Atlantic' event.

[33] 'Modal displacement' is a label for the type of modal interpretation that we see in connection with outcome-associated progressives and wherever else they may be found (an open empirical question). 'Displacement' in this context simply evokes the idea that these modal interpretations express displacement from the actual world.

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The Displacement Hypothesis captures the idea that the modal interpretations that we see in connection with certain progressives arise just where the outcomes of outcome-associated predicates are displaced (e.g., where a part of a given type of event is said to hold, though never its associated outcome). Note, though, that this hypothesis is formulated in a quite general way and extends beyond the progressive case with which we are presently concerned. In particular, (i) it extends to any expression that is associated with an outcome, (ii) does not specify what sort of thing (whether an event or a state, for example) is associated with an outcome,[34] (iii) nor how an outcome comes to be associated with it, (iv) nor how this outcome comes to be displaced.[35] We should on methodological grounds alone be led to pursue the strongest hypothesis we can. But there is, beyond this, reason to think that this hypothesis has to take as strong a form as this. There is evidence to suggest that the modal interpretations that we see in connection with progressives (specifically, on my view, outcome-associated progressives) also arise in connection with a host of other expressions[36] and, as I have argued elsewhere, that outcome displacement plays a crucial role in explaining the emergence of many (if not all) of these modal interpretations.[37]

4.3 Outcome Displacement as the Linguistic Basis for Modal Interpretations

The modal patterns of outcome-associated progressives and perfectives conform exactly to the Displacement Hypothesis. Just as outcome-associated progressives invariably give rise to modal interpretations what we see is that their associated outcomes are also invariably displaced in that

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[34] So, for example, in the context of a sentence like '*Mary was in Paris for a week, but she came home after a day on account of the bombings*' it might be supposed that the stative expression 'be in Paris' is associated with an outcome via modification with 'for a week.' Not only does it intuitively designate the endpoint of her stay, 'for a week' cannot be understood as contributing its 'normal' durative meaning (not, that is, without the assumption of hidden modality, in which case the pressing question becomes, What contributes this modal meaning? The stative expression 'is in Paris'? The 'for'-adverbial?).

[35] So, for example, it might be that certain expressions differ from the progressive insofar as they presuppose the displacement of outcomes.

[36] See, for example, (Bar-el *et al.* 2005), (Hallman 2009a), (Copley 2009), and (Copley and Harley 2015), along with references therein.

[37] See, for example, REDACTED, REDACTED, REDACTED, and REDACTED.

environment. We can be sure that if Mary is crossing the Atlantic, a portion of that passage is as yet unrealized and also that it would be realized under certain non-disruptive possible circumstances (though neither of these assumptions hold if Mary is swimmming or looking out the window or humming). The Displacement Hypothesis also comports nicely with what we are in a position to observe about outcome-associated perfectives. In the case of a sentence like 'Mary crossed the Atlantic,' for example, what we have is an outcome-associated predicate whose outcome is not displaced. ('Mary crossed the Atlantic but didn't manage to arrive across' is clearly unacceptable.) Moreover, no modal interpretation of the sort that attaches to its progressive counterpart attaches to it, just as predicted.

Important as these facts about distribution are, they do not alone provide an explanation for the emergence of our modal interpretations. Various considerations do, however, support the idea that the displacement of outcomes results in and, so, partly explains the emergence of our modal interpretations. Notice for a start that the modal requirements that attach to outcome-associated progressives take the form of continuation requirements of a certain sort. If we bracket the modal nature of these continuation requirements for a moment, what we see is that outcome displacement requires that some end not be reached at a given time and these continuation requirements require that that end be reached under appropriate circumstances that follow that time. This concord is impressive and opens the way for us to think of these modal requirements as picking up where the displacement requirement leaves off, as somehow issuing from the displacement of outcomes.

Now one might entertain an alternative proposal at this stage, namely, that displacement requirements are to be explained in terms of modal requirements. That is, one might assume that a modal condition attaches to outcome-associated progressives that requires their outcomes to be realized under projected possible circumstances, but not before. That modal condition does ensure that outcomes get displaced in the progressive environment, but it is unattractive for a number of

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reasons. First, a modal condition like this simply incorporates a displacement requirement—so it is not as though we achieve any economy or explanatory power by assuming it. Second, the proposal is something of a patchwork. Displacement seems to be the effect of a natural language system that has some independence from the modal system. Displacement seems, in particular, to belong properly to the aspectual system—one that concerns whether an expression is associated with an outcome or not, for example. It appears to be possible, in fact, to articulate the displacement constraint in these terms alone.

This all assumes, however, that the alternative proposal is a viable one. It may not be. It is not clear that our modal interpretations can, in fact, be anchored to modal meanings. We can't directly assume that the progressive contributes a modal meaning that underwrites these interpretations since we would then predict these interpretations in connection with non-outcome-associated progressives. Nor can we just assume that outcome-associated predicates contribute appropriate modal meanings. If they did, why wouldn't these predicates be associated with our modal interpretations in perfective settings, as we have seen that they are not? As usual, there are other options that might be considered, but it is worth emphasizing that the options surveyed here represent our best bets and they do not work. We can avoid these difficulties altogether by pursuing the idea that the displacement of outcomes results in and, so, partly explains the emergence of our modal interpretations. We confront no difficulty in attempting to base a semantic property like displacement in linguistic meanings (with the progressive providing the obvious candidate in the present case).

I suggest that we allow ourselves to be guided by the concord that we observe between outcome displacement and modal displacement and pursue the possibility that the form of explanation called for is an interface explanation. This style of explanation sees our modal interpretations as the result of an interaction at the language-cognition interface and treats them, in particular, as reflecting aspects of the use of sentences that exhibit displacement by thought systems that interface with

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the language faculty.[38] This framework makes it possible to conceive of these modal interpretations as providing a resolution to a kind of question (one that may arise at this interface), namely, how to understand expressions of this sort—those that have an end but are not at an end. It is instructive to consider, in light of this, that the projection of the continuation of an event up to its endpoint is a way of conceptualizing what it is to have an end without being at an end (not the only way, of course, but perhaps our way). On this approach, the modal interpretations to which outcome-associated progressives—and, by hypothesis, other expressions with displaced outcomes—give rise reflect aspects of the design of modal cognition rather than modal language.[39]

This approach also delivers an explanation for the asymmetrical entailment patterns of sentences like 'Mary was swimming' and 'Mary was crossing the Atlantic.' The entailment from 'Mary swam' to 'Mary was swimming' can be explained by the fact that the latter requires a swim event to be underway and that requirement is met whenever its perfective counterpart is true. No outcome is displaced in the context of that progressive sentence and, so, no entailment-blocking modal condition is predicted. Setting details aside, that is the whole story. The absence of an entailment from 'Mary crossed the Atlantic' to 'Mary was crossing to the Atlantic' can be explained by the fact that the outcome of an event predicate is displaced in the context of that progressive sentence, but not in the context of its perfective counterpart. Since the truth of 'Mary crossed the Atlantic' does not provide for the satisfaction of the modal condition that is predicted, there is no entailment in this case.

4.4 Arriving at the Start

We began with a puzzle about progress. Why do some interpreters who judge (1_{PG}) to be false

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[38] For some discussion of this general picture and for some examples of work pursued within it, see (Chomsky 2000), and (Pietroski 2010). For a developed proposal along these lines see REDACTED.

[39] For some suggestions about how to think of the interactions between modal vocabulary and modal cognition, see (Kratzer 2013).

in the non-intervention case judge (1_PG) to be true early on in the intervention case? The cases seem to be identical then, diverging only later when Mary drowns in the one and is saved in the other. This pattern is especially surprising on the assumption that, in each, the truth value of (1_PG) depends on whether Mary eventually gets across under projected possible circumstances. Why should what happens later change anyone's mind about *that*? We have seen that this pattern cannot be explained by appeal to an entailment from (1_PF) to (1_PG); there is no such entailment. In any case, that would not have explained why intuitions are mixed concerning whether (1_PG) is true as a description of what was happening early on in the intervention case, though intuitions about whether (1_PF) is true are not.

Now, one might attempt to explain away the intuition that (1_PG) is true in the intervention case and thereby bypass this question. One might, for example, propose that (1_PG) is being mistaken for a claim that is true though (1_PG) is not itself true. In fact, this is the treatment that Zoltán Szabó (2004) recommends for handling this sort of intuition (though he expresses some tentativeness). On his view, interpreters who take (1_PG) to be true early on in the intervention case are mistaking the progressive sentence to be evaluated for a futurate progressive, which conveys (roughly) that Mary was planning to cross the Atlantic. In favor of this proposal, it might be said that Mary was planning to cross the Atlantic early on and that that does not require that she actually was crossing the Atlantic.[40] Since 'Mary was crossing the Atlantic' may be associated with either a futurate or non-futurate progressives interpretation, one might be duped into endorsing the false (1_PG) on account of the fact (let us suppose) that its look-alike futurate counterpart is true.

I do not think that this proposal can be sustained and the question set aside, however. To begin with, even if the considerations cited in its favor were true, it does not explain the distribution of truth value judgments across our central cases. Recall that while some interpreters who judge

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[40] Though, if there is a hint of infelicity here, it may be a sign that this underdescribes what Mary was doing.

(1_{PG}) to be false in the non-intervention case judge (1_{PG}) to be true early in the intervention case, no one who judges (1_{PG}) to be false early in the intervention case judges (1_{PG}) to be true in the non-intervention case. There is, however, no reason to think that interpreters are more inclined to interpret 'Mary is crossing the Atlantic' as a futurate in the intervention scenario than in the non-intervention scenario and no reason to think that if you interpret it as a regular progressive in the intervention case, that you will be steadfast in your interpretation. The proposal simply does not discriminate between the non-intervention and intervention cases (you may misinterpret (1_{PG}) in either) and so leaves these specific distribution facts unexplained.

Aside from this, it is not clear that the considerations cited in its favor are, in fact, true. In particular, it is doubtful that 'Mary was crossing the Atlantic' is on any surer footing if interpreted as a futurate progressive than it is if interpreted as a regular progressive. Semantic analyses of the futurate progressive incorporate modal considerations (or like considerations) in roughly the same way as inertial-worlds-style treatments of the regular progressive, suggesting that, even if interpreted as a futurate claim, (1_{PG}) should be judged to be false early on.[41] And this seems correct. Anyone who doubts whether 'Mary was crossing the Atlantic' is true as a description of what Mary was doing in the Atlantic, would have responded sceptically to Mary's announcement that she was driving to the coast tomorrow and crossing the Atlantic. Mary surely planned to do these things, but that does not provide a guarantee that she was indeed crossing the Atlantic tomorrow.

4.5 Hindsight Bias

I think a different explanation of these facts is required and, in what follows, I offer a new proposal. What I propose, in short, is that the effect that we observe in the intervention case, among others, is due to an interaction between the interpretation of outcome-associated progressives and

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[41] See (Dowty 1979) and (Copley 2009). Though Copley pursues an alternative to this sort of modal framework in more recent work, it remains the case that the truth of (1_{PG})—construed as a futurate—is far from assured.

retrospective judgments, which have been shown to be subject to a bias favoring actual outcomes. I have in mind, in particular, a retrospective bias that has come to be known as 'hindsight bias' in the experimental psychology literature.[42] Hindsight bias manifests in the tendency for individuals with outcome information to judge an outcome to be more probable in hindsight than they would judge it to be with foresight alone—without any awareness of this fact. (It is the absence of any awareness of this tendency that differentiates hindsight bias from innocent outcome-oriented feedback learning.)

In one pioneering experiment by Baruch Fischhoff (1975), for example, participants were given a description of an unfamiliar historical battle between the British and the Gurkhas of Nepal (the target event). The participants were then presented with four mutually exclusive and exhaustive outcome scenarios: (i) British victory, (ii) Gurkha victory, (iii) military stalemate with no peace settlement, (iv) military stalemate with a peace settlement. Some subjects were informed that one of these outcomes was the actual outcome of the target event. They were then asked to rate the probability of each of the four possible outcomes. Others were not given outcome information and were also asked to rate the probability of each of the outcomes. Fischhoff found that in each of the cases he presented, outcome information boosted the perceived probability of outcomes. A subsequent experiment in which subjects were asked to rate the probability of these outcomes as "they would have if they had not known the [actual] outcome" (Fischhoff 1975: 293) revealed that subjects were unaware of the influence of this outcome information on their judgments.[43]

Although it is attractive to hypothesize that our puzzling shift in intuitions is due, in part, to the operation of hindsight bias, I think that some caution is appropriate. For one, the progressive is not directly sensitive to probability judgments, though experimental work on hindsight bias has

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[42] For a recent review of the literature, see (Roese and Vohs 2012).

[43] Another important strand of research on hindsight bias concerns its distortion of memory. See, for example, (Fischhoff and Beyth 1975), (Fischhoff 1977), and, more recently, (Hell *et al.* 1988).

focused on these judgments. An outcome-associated progressive may be judged to be true, though the realization of its outcome is improbable, as we have seen, or false, though the realization of its outcome is highly probable (e.g., 'The coin was landing heads' might be judged to be false though the coin was likely to land heads due to a biased toss). Moreover, the questions put to subjects in Fischhoff's hindsight experiments concern the probability of the occurrence of outcomes, but we, in interpreting outcome-associated progressives, are sensitive to the trajectories of events that are associated with outcomes (and in particular with whether those outcomes would be realized across projected possible circumstances). Consideration has to be given, then, to the potential for hindsight bias to coopt a mechanism that produces that sensitivity.

That being said, it is fruitful to consider the effect observed in our central pair of cases in light of this line of research. What this research suggests is that outcome information can have a significant and non-transparent effect on how we think about a given course of events. Moreover, it is plausible to assume that a bias favoring actual outcomes might register, in connection with outcome-associated progressives, as a bias promoting those developments that ensure the realization of an event's outcome across projected possible circumstances so that those developments are incorporated into the trajectory that earlier stages of an event are assumed to have.

4.6   Event Blindness and Other Evidence for the Hindsight Proposal

There is some promising evidence for the proposal outlined above. As I mentioned earlier, the robust effect observed in intervention-style cases depends on the presence of actualized outcomes. So, for example, the shift in intuitions about whether (1_{PG}) is true in the intervention scenario does appear to depend on the fact that Mary makes it across. Cases in which she does not get across but would have under more hospitable circumstances can feel different—as if close does not quite count.

It also appears that the effect that actualized outcomes can have is registered in connection with developments that robustly support the realization of an outcome. Consider that we do not see this effect where an outcome is actualized but is not brought about in a modally robust way, though we do see it where it is. We don't, for example, judge that Mary was eating a third of the chocolates upon learning that she ate a third of the chocolates (in the *I Love Lucy* case), though some of us readily judge that Mary was crossing the Atlantic, upon learning that Mary crossed the Atlantic in the intervention case (where the intervention does ultimately ensure Mary's arrival across).

Moreover, there is evidence that suggests that interpreters whose intuitions are boosted in the intervention case include the intervention in their projections for the development of the event that is underway early on. This evidence comes from a phenomenon that I will call 'event blindness.' In the intervention case, for example, interpreters who judge that Mary was crossing the Atlantic early on seem to neglect the actual occurrence of the intervention. They struggle to answer and are even surprised by the following sort of question: "Assuming that Mary was crossing the entire time, what effect did the intervention have?" In contrast, those who judge these sentences to be false are prepared to answer questions concerning the significance of its occurrence and relate it to their intuitions about the truth of (1_{PG}). That sentence is false early on, it is said, because the intervention came later. Event blindness is just what we would expect if interpreters assume that certain developments, like the intervention, do not mark a change in the natural course of events just as soon as they occur.

It seems not to be the case, then, that Mary's arrival across the Atlantic "trumps" our earlier projections for the continued development of Mary's journey. It is rather that her arrival can have an influence on what those earlier projections take into view. Some see the intervention as a part of what is on course to occur. Others see the intervention as a late-coming and miraculous episode

belonging to the history of the actual world and so take her prospects for success across projected possible circumstances to be as dim early in the intervention context as in the non-intervention context. This does not reflect a difference in our understanding of outcome-associated progressives. It reflects different ways of mobilizing that understanding or, perhaps, different ways in which it is mobilized for us.[44]

Conclusion

I have argued that some, but only some, progressives give rise to modal interpretations. Progressives like 'Mary is crossing the Atlantic,' those that embed outcome-associated predicates of events, invariably give rise to substantive modal interpretations and are not entailed by their perfective counterparts (e.g., 'Mary crossed the Atlantic'). Progressives like 'Mary is swimming,' those that embed non-outcome-associated event predicates, do not give rise to those interpretations and are entailed by their perfective counterparts (e.g., 'Mary swam'). This paper can be seen as an attempt to bring this modal asymmetry to light, to begin to make sense of it, and to consider its implications for the modal debate surrounding the progressive.

One of the barriers to recognizing this asymmetry has been the assumption that there is an entailment from the perfective to the progressive. The strongest single source of evidence against this assumption are the sorts of cases that I have argued constitute clear counterexamples to it. But our mixed intuitions in intervention-style cases and the failure of revisionary modal theories to account for the flexibility of our judgments in a way that is appropriately constrained is also

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[44] I have proposed that outcome-associated and non-outcome-associated progressives have the same linguistic profile but are nonetheless interpreted differently. From this perspective, there is a gap between the project of assigning truth values (relative to contexts) to sentences like 'Mary is crossing the Atlantic' and judgments that interpreters make (if and when they do) about their truth or falsity. Moreover, certain questions about the contextual sensitivity of these sentences—notoriously, the context sensitivity of the notion of an 'interruption' (see (Higginbotham 2004) for an illuminating discussion)—are to be addressed as questions about the cognitive system that generates these interpretations and the primitives that are appropriate to its study. (Though, clearly, with a good linguistic theory in hand one can use progressive sentences to probe the structure of that cognitive system or systems).

telling. Interpreters who deny that Mary was crossing early in the intervention case assume that Mary would not make it across, other things equal, just as interpreters who deny that she was crossing in the non-intervention case do. The possibilities that matter are those that are projected then. The judgment that she was crossing all along in the intervention case was puzzling because we assumed that there was no principled way to motivate the inclusion of the intervention among those early projections. But for some interpreters, those who are in the sway of a retrospective bias, being told that Mary actually crossed the Atlantic promotes the inclusion of the intervention among the possibilities that get projected early on. It is a unique advantage of the present account that it can maintain that whether an event of this sort is in progress at a time depends on the possibilities for its completion that are relevant then while acknowledging that the actualization of an outcome may, in certain circumstances, significantly influence what those possibilities take into view. This approach not only accounts for the actualization effect, it properly distinguishes between it and any sensitivity we might be thought to have to late-emerging possibilities for an event's completion; it accounts for the disagreement among interpreters in intervention-style cases; for the consistency (such as there is) in our judgments across the intervention and non-intervention cases; and for the possibility of variation in our judgments about the progress of an event over the course of its development.

The difficulty is to explain how it is that these modal interpretations can attach to some, but only some progressives. This is a considerable challenge; we want to maintain a unified semantics for the progressive, but that means that we can't simply assume that the progressive itself contributes a suitable modal meaning (and since non-outcome associated predicates are not themselves uniformly associated with these interpretations, the same is true in their case). I have proposed that we take a different direction, one that avoids the difficulties that confront us as soon as we assume that these modal interpretations are rooted in modal meanings. With respect to the

progressive, I proposed that we treat it as contributing a partitive (or stative) condition, one that *is* common across progressives—the insight, in my view, of non-modal theories of the progressive. The modal difference between progressives like 'Mary is crossing the Atlantic' and 'Mary is swimming' is to be explained by the fact that the progressive displaces the outcomes of outcome-associated predicates (if Mary is crossing the Atlantic, she isn't already across) and by the fact that outcome displacement engages modal cognition. Properly speaking, then, these modal interpretations are an interface phenomenon; they reflect a modal understanding (the cognitive part) of what it is for something to have an end without being at an end (the linguistic part). Many tasks remain ahead, of course, including that of testing the adequacy of the Displacement Hypothesis, whose scope extends well beyond the progressive case, assessing the benefits of an interface explanation against its alternatives (including any modal alternatives that seem promising), and the elaboration of frameworks for investigating explanations that appeal to the language-cognition interface.[45]

Word count: 17,978

References

Bar-el, Leora, Davis, Henry, and Matthewson, Lisa. 2005. On Non-Culminating Accomplishments. *Proceedings of the North Eastern Linguistics Society* 35.

Bennett, M. 1981. Of Tense and Aspect: One Analysis. *Syntax and Semantics* 14.

Bennett, Michael and Partee, Barbara H. 1978. *Toward the Logic of Tense and Aspect in English*. Indiana University Linguistics Club.

Chomsky, N. 2000. *New Horizons in the Study of Language and Mind*. Cambridge, MA: Cambridge University Press.

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[45] For some work in this direction, see REDACTED, REDACTED, REDACTED, and REDACTED.

Cipria, Alicia and Roberts, Craige. 2000. Spanish Imperfecto and Pretérito: Truth Conditions and Aktionsart Effects in a Situation Semantics. *Natural Language Semantics* 8: 297–347.

Copley, Bridget. 2009. *The Semantics of the Future*. Routledge.

Copley, B. and Harley, H. 2015. A Force-Theoretic Framework for Event Structure. *Linguistics and Philosophy* 38: 103–158.

Declerck, Renaat. 1979. Aspect and the Bounded/Unbounded (Telic/Atelic) Distinction. *Linguistics* 17: 761–794.

Dowty, David R. 1977. Toward a Semantic Analysis of Verb Aspect and the English 'Imperfective' Progressive. *Linguistics and Philosophy* 1: 45–77.

Dowty, David R. 1979. *Word Meaning and Montague Grammar: The Semantics of Verbs and Times in Generative Semantics and Montague's PTQ*, vol. 7. D. Reidel Publishing Company.

Fischhoff, Baruch. 1975. Hindsight $\neq$ Foresight: The Effect of Outcome Knowledge on Judgment Under Uncertainty. *Journal of Experimental Psychology: Human Perception and Performance* 1.

Fischhoff, B. 1977. Perceived Informativeness of Facts. *Journal of Experimental Psychology: Human Perception and Performance* 3(349-358).

Fischhoff, B. and Beyth, R. 1975. "I Knew It Would Happen": Remembered probabilities of once-future things. *Organizational Behavior and Human Performance* 13: 1–16.

Hacquard, V. 2009. On the Interaction of Aspect and Modal Auxiliaries. *Linguistics and Philosophy* 32: 279–315.

Hallman, Peter. 2009a. Instants and Intervals in the Event/State Distinction. Ms.

Hallman, Peter. 2009b. Proportions in Time: Interactions of Quantification and Aspect. *Natural Language Semantics* 17: 29–61.

Hell, W., Gigerenzer, G., Gauggel, S., Mall, M., and Müller, M. 1988. Hindsight Bias: An interaction of automatic and motivational factors? *Memory and Cognition* 16: 533–538.

Higginbotham, James. 1995. *Sense and Syntax*. Clarendon Press.

Higginbotham, J. 2004. The English Progressive. In *The Syntax of Time*, Jacqueline Guéron and Alexander Lecarme, (eds.), 329–359. MIT Press.

Higginbotham, J. 2009a. The English Progressive. In *Tense, Aspect, Indexicality*, 126–154. Oxford University Press.

Higginbotham, James. 2009b. *Tense, Aspect, and Indexicality*. Oxford University Press.

Kratzer, A. 1977. What 'can' and 'must' Can and Must Mean. *Linguistics and Philosophy* 1: 337–355.

Kratzer, A. 1981. The Notional Category of Modality. In *Words, worlds, and contexts: New approaches in word semantics*, H.J. Eikmeyer and H. Reiser, (eds.), 38–74. Walter de Gruyter.

Kratzer, A. 1991. Modality. In *Semantics: An International Handbook of Contemporary Research*, A. von Stechow and D. Wunderlich, (eds.), 639–650. Walter de Gruyter.

Kratzer, A. 2013. Modality for the 21st century. Lecture at the 19th International Congress of Linguists.

Landman, Fred. 1992. The Progressive. *The Journal of Semantics* 1: 120–124.

Lascarides, Alex. 1991. The Progressive and the Imperfective Paradox. *Synthese* 87: 401–447.

Lewis, David. 1973. *Counterfactuals*. Harvard University Press.

Link, Godehard. 1987. Algebraic Semantics of Event Structures. In *Proceedings of the 6th Amsterdam Colloquium,* Stokhof Martin Groenendijk, Jereon and Frank Veltman, (eds.), 243–262. Amsterdam: ILI.

ter Meulen, A. G. B. 1985. Progressives Without Possible Worlds. *Chicago Linguistic Society* 21: 259–280.

Mittwoch, Anita. 1988. Aspects of English Aspect: On the Interaction of Perfect, Progressive and Durational Phrases. *Linguistics and Philosophy* 11: 203–254.

Parsons, Terence. 1989. The Progressive in English: Events, States and Processes. *Linguistics and Philosophy* 12: 213–241.

Pietroski, P. 2010. Concepts, Meaning, and Truth: First Nature, Second Nature, and Hard Work. *Mind & Language* 25: 247–278.

Portner, Paul. 1998. The Progressive in Modal Semantics. *Language* 74: 760–787.

Roese, N. and Vohs, K. 2012. Hindsight Bias. *Perspectives on Psychological Science* 7(5): 411–426.

Saurer, Werner. 1984. *A formal semantics of tense, aspect and aktionsarten.* Bloomington, Indiana: Indiana University Linguistics Club.

Sharvit, Yael. 2003. Trying to be Progressive: The Extensionality of 'Try'. *Journal of Semantics* 20: 403–445.

Stalnaker, R. 1968. A Theory of Conditionals. In *Studies in Logical Theory*, Nicholas Rescher, (ed.), 98–112. Oxford: Basil Blackwell.

Szabó, Zoltán. 2004. On the Progressive and the Perfective. *Noûs* 38: 29–59.

Szabó, Zoltán. 2008. Things in Progress. *Philosophical Perspectives* 22: 499–525.

Taylor, Barry. 1977. Tense and Continuity. *Linguistics and Philosophy* 1: 199–220.

Vlach, Frank. 1981. The Semantics of the Progressive. In *Syntax and Semantics: Tense and Aspect*, vol. 14, Philip Tedeschi and Annie Zaenen, (eds.), 271–292. New York: Academic Press.

Zucchi, Sandro. 1999. Incomplete Events, Intensionality, and Imperfective Aspect. *Natural Language Semantics* 7: 179–215.