Modality Without Modals

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Introduction

One of the most striking features of natural language is that it can convey information and support thought about matters beyond the here and now. Modal and tense systems, for example, allow us to talk about what might be or must be and about what was or will be. But aside from these familiar systems, how do natural languages facilitate thought and talk beyond the here and now? How, in particular, do natural languages achieve modal displacement, if not through modal language?

Although it is commonly assumed that modal interpretations require modal expressions, I argue that a number of expressions give rise to modal interpretations, both in English and cross-linguistically, despite the fact they do not have *linguistically* encoded modal meanings (in contrast to 'might' and '-able,' for example). These expressions include certain progressives (e.g. 'Mary is crossing the Atlantic'), futurates (e.g. 'Mary is crossing the Atlantic tomorrow'), statives with 'for'-adverbials (e.g. 'Mary is in jail for five years'), and non-culminating accomplishments, which do not occur in English but have

been studied in connection with languages such as St'át'imcets, Skwxwú7mesh, Tagalog, Hindi, and Thai (in these languages, though not in English, one may say something like '*Mary crossed the Atlantic,* but she didn't get across'). What we are seeing in these cases, I claim, is modality without modals.

In light of these cases, what we need is an explanation of why these modal interpretations arise, when they do, and how they manage to give rise to these interpretations despite the fact that they do not have modal meanings. With this aim in mind, I advance the Displacement Hypothesis. According to it, event and state predicates like 'cross the Atlantic' and 'is in jail for five years' that are grammatically associated with outcomes (e.g. Mary's arrival across the Atlantic and Mary's completion of five year jail sentence) give rise to cognitively default modal interpretations when they describe an event or state as obtaining at a time by reference, in part, to an associated outcome that does not then obtain; in short, the displacement of these outcomes along a temporal dimension gives rise to their displacement along a modal dimension.

These striking patterns should lead us to us to reconsider some of our central assumptions about the theory of modality and, in particular, to pay closer attention to the place of modality in cognition and its connection to natural language. Moreover, these patterns contribute to an impressive body of evidence suggesting that natural language is saturated with modality; our explanation of why this is so, however, has to take into account the existence of these default modal interpretations.

1 The Progressive

1.1 Eventive and Stative Predicates

Progressive sentences such as 'Mary is crossing the street' allow us to describe a world that is in progress at a moment in time. How do they accomplish this? How exactly do progressive claims represent a dynamic world in a single frame?

There is good reason to think that the progressive, which is marked by the auxiliary verb 'be' and the verbal suffix '-ing,' combines exclusively with eventive predicates. These are predicates, such as 'cross the street,' that characterize what parts of the world are like over time. Since stative predicates, such as 'is blue,' are non-eventive predicates, characterizing what parts of the world are like in static snapshots, this restriction allows us to explain why attempts to combine the progressive with stative predicates result in marginal interpretations.

To see that there is a contrast along these lines consider the following progressive sentences:

(1) ?The sky is being blue.

(2) Mary is crossing the street.

Unlike (2), (1) does not have a straightforward interpretation. Still, (1) could be taken to mean, to put it impressionistically, that the sky is somehow doing what blue things do or appearing to do so. But here, plausibly, we have reinterpreted the stative predicate 'be blue' as an eventive predicate on a par with 'cross the street.' So, this way of "repairing" the meaning of a sentence like (1) reinforces rather than undermines the claim that the

progressive combines exclusively with eventive predicates.

In contrast to the predicates with which it combines, the progressive is a stative predicate. If we suppose that stative predicates are true at instants of time, but not at (larger) intervals of time, then this is to say that a progressive predicate such as 'is crossing the street' is true of something at an instant. That the progressive has a stative meaning is suggested by the fact that it patterns with statives across a variety of diagnostics for stativity. So, for example, stative and eventive predicates interact differently with point adverbials (such as those provided by the 'when'-phrases below). The stative predicate in (3), for example, is taken to indicate that Max was at a given location for a period of time surrounding my arrival whereas the eventive predicate in (4) is taken to indicate that Max ran after my arrival.

(3) Max was here when I arrived.

(4) Max ran when I arrived.

We can further observe that (5) patterns with (3) insofar as it is taken to mean that Max's running surrounded my arrival and not that it occurred after my arrival.

(5) Max was running when I arrived.

Moreover, we see that stative predicates and progressive predicates pattern together in the present tense environment. (6) and (7), for example, are interpretable in this environment.

(6) Max is here.

(7) Max is running.

However, (8) cannot be interpreted as picking out an event of running that is in the present (setting aside special contexts like the 'sportscaster'–present, e.g. 'He shoots; he scores!'):

(8) ?Max runs.

Since in these cases, as in others, progressive predicates pattern with stative predicates, in going forward we will assume that this is because they are also stative predicates.

1.2 An Early Analysis of the Progressive

Certain questions leap to mind once we accept (*i*) that the progressive is a predicate that is true of instants and (*ii*) that it combines with predicates that are true of non-momentary intervals. Immediately, one wonders, "How exactly are these meanings related?"

Bennett and Partee (1978) offer an account of the progressive that endorses a version of both of these claims and provides a candidate answer to this question. According to this account:

> 'Mary is crossing the street' is true at at an interval I just in case I is a moment
> of time, there exists an interval of time I' such that I is in I', I is not an endpoint
> for I', and 'Mary crosses the street' is true at I'.

According to this account, for a progressive claim to be true at an instant is for the clause that it combines with (in this case 'Mary crosses the street') to be true at some non-momentary interval of time that subsumes that instant of time and extends into the future.

This account has some very nice features. First, it provides a very intuitive characterization of the connection between the progressive and the clauses with which it combines—progressive sentences are true at all the non-final instants that make up the intervals at which their embedded clauses are true; we have here a simple part-whole relation. Another appealing feature of the account is that it allows us to make good sense of the contribution of a clause like 'Mary crosses the street' in non-progressive environments. Take, for example, the (simple) past tense. This account allows us to say, quite sensibly, that the simple past tense sentence 'Mary crossed the Atlantic' is true at a time just in case 'Mary crosses the Atlantic' is true at some interval of time before the present.

Despite these very attractive features, however, the Bennett–Partee account faces insuperable difficulties. The most obvious difficulty is that the truth of a claim like 'Mary is crossing the street' requires that 'Mary crosses the street' be true at some interval of time in the actual world. Clearly, though, 'Mary is crossing the street' might be true even if Mary is prevented from reaching the other side of the street. In light of this, if there is to be a connection between instant and interval in the case of progressive claims, it cannot be the one proposed here.

1.3 Modal Analyses of the Progressive

The canonical response to this difficulty is to assume that the relevant connection between the progressive and the clause (or predicate) with which it combines is modal. The variation between these modal analyses essentially comes down to how this modal connection is to be specified.

An example of an account that is in this tradition will help to animate these ideas.

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According to David Dowty's (1979) inertial-worlds account, which is nearly contemporaneous with Bennett and Partee's:

> 'Mary is crossing the street' is true at an interval, I, and world, w, just in case there is an interval, I', that includes I non-finally and is such that 'Mary crosses the street' is true at it in every inertial world (relative to I and w).

Since inertial worlds are supposed to be worlds where the natural course of events takes place with respect to a world and interval and the actual world may fail to be among these worlds, the actual world may not be relevant to the evaluation of a progressive claim. In particular, the truth of a claim like 'Mary is crossing the street' need not require that a street-crossing by Mary eventually unfold in the actual world (though it is now a requirement that it unfold in every relevant possible world).

One slight difficulty with this semantic proposal is that, unlike the Bennett-Partee account, it does not analyze the progressive as a stative predicate; the progressive is evaluated relative to an interval of time, not an instant. We can adjust for that, however, by simply replacing the non-momentary interval in question with an instant.

1.4 The Traditional Divide

There is a controversy concerning whether a modal approach such as Dowty's, broadly speaking, is the right approach to analyzing the meaning of the progressive. The dominant view in the literature today is that it is. Still, from the beginning, there has been staunch opposition to the view that the progressive has a modal meaning. The opposition view is that the progressive concerns the actual world alone.

In favor of the opposition view, it might be said that we can respond to the Bennett-Partee problem, quite simply, by claiming that the truth of a progressive claim like 'Mary is crossing the street' requires a state of the event described by 'Mary crosses the street' to be actualized at the present instant. The rallying cry of the opposition can be put in the following terms, "Why invoke a possible state of affairs in which Mary crosses the street simply to account for the fact that Mary may not actually cross the street?" (To my ears, the cry is loud and clear, as will become obvious below.)

One difficulty for a proponent of the opposition view, however, is that there is independent reason to think that there are modal constraints on the truth of a claim like 'Mary is crossing the street.' Consider, for example, the contrast between the following two cases with respect to whether 'Mary is crossing the Atlantic' is judged to be true as a description of what was happening at some candidate time:

NON-INTERVENTION

Mary is a very poor swimmer. She is attempting to cross the Atlantic between Hyannis and Quiberon. She departs from Hyannis, but drowns shortly afterward.

(9) Mary was crossing the Atlantic (initially).

REDIRECTION

Mary is an experienced captain. She is attempting to cross the Atlantic between Hyannis and Quiberon. She departs from Hyannis, but redirects her ship back to port shortly afterward, having encountered some inclement weather.

(10) Mary was crossing the Atlantic (initially).

These cases make for very interesting comparison since truth value judgments shift across them. In particular, whereas it is uncontroversial to claim that (9) is *false* as a description of what was happening earlier on in NON-INTERVENTION, it is uncontroversial to claim that (10) is *true* as a description of what was happening earlier on in REDIRECTION. This is so even if we assume that the same distance is traversed by Mary in each case. The difference between our judgments in these cases is plausibly illuminated by considerations having to do with whether it is possible for Mary to arrive across the Atlantic, other things being equal. After all, it is uncontroversial to assume that Mary would not arrive across the Atlantic, other things being equal, in NON-INTERVENTION whereas it is uncontroversial to assume that she would in REDIRECTION.

There is some reason to think, then, in accordance with modal approaches like Dowty's, that the progressive is sensitive to whether there is a certain modal relation between some actual state of affairs holding at an instant and some possible state of affairs holding at an interval. Approaches that reject appeal to some such modal relation seem not to have the resources to explain the truth value shift between our cases. The presence of a modal relation of this sort may also explain why the truth of a claim like 'Mary is crossing the Atlantic' provides no guarantee that there will ever be an actual cross-Atlantic passage by Mary.

1.5 An Asymmetry

I think there is a compelling case for the claim that some progressive sentences have modal interpretations—a case based, in part, on considerations like those advanced above (and, additionally, on considerations to be advanced below). I do not, however, think that there is a compelling case for the claim that all progressive sentences have modal interpretations. In my view, progressive sentences like 'Mary is crossing the Atlantic' have modal interpretations whereas progressive sentences like 'Mary is walking' do not. More, generally, what we see is that modal interpretations are present when the progressive combines with an eventive predicate that is associated with an outcome (Mary's arrival across the Atlantic, say, in the case of 'Mary is crossing the Atlantic') and absent when the progessive combines with an eventive predicate that is not associated with an outcome (as in the case of 'Mary is walking'). I will call progessive sentences of the former sort 'outcome-associated progressives' and those of the latter sort 'non-outcome-associated progressives.'

We can begin to see that outcome-associated and non-outcome-associated progressive claims are distinguished in this way by examining their entailment patterns. We can, for example, ask the question, "If something happen*ed*, was it also happen*ing*?" What we find is that we get different answers to this question, depending on whether we are considering an outcome-associated or non-outcome-associated progressive claim. To start, in the non-outcome-associated case, we have the following obvious entailment pattern:

(11) Mary walked. → Mary was walking.

It is plain that the sentence 'Mary walked' concerns the actual world alone; it tells us merely that a walking event held at some time before the present. But this claim re-

veals something important about its progressive counterpart, given the entailment pattern encoded by (11). It reveals that the actual world satisfies whatever (non-trivial) truth conditions are associated with the claim 'Mary was walking.' Modal accounts of the progressive that follow in the tradition of Dowty's inertial-worlds account impose substantive modal conditions on the truth of a claim like 'Mary was walking' and, as a result, they do not predict the entailment in (11). These accounts allow, in other words, that a given state of affairs may unfold in the actual world (i.e. Mary walks) though not in every relevant possible world.

Since these modal theories take the progressive to impose the same substantive modal conditions whether it combines with outcome-associated or non-outcome-associated predicates, they also predict the following rather surprising (but nonetheless actual) entailment pattern:

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

Again, there is no entailment here because a given state of affairs may unfold in the actual world (i.e. Mary crosses the Atlantic) though not in every relevant possible world. Taken together, the entailment patterns in (11) and (12) reveal that outcome-associated and non-outcome-associated progressives have asymmetric entailment patterns in connection to their simple past or perfective counterparts (in this case 'Mary crossed the Atlantic' and 'Mary walked'). This suggests that the truth of a claim like 'Mary was walking' is exclusively dependent on what the actual world is like whereas the truth of a claim like 'Mary was crossing the Atlantic' is not—a key contrast.

1.5.1 A Brief Aside on the Surprising Entailment

Although many theorists, including those who endorse a modal analysis of the progressive, have resisted the entailment pattern in (12), there is strong evidence in its favor. Consider, for example, that this pattern appears again and again across the following cases. In each, it is possible to evaluate the simple past/perfective sentence as true and its progressive counterpart as false:

COIN TOSS

A fair coin is tossed high in the air. It makes its descent and lands with heads facing up.

(13) The coin landed heads.

(14) The coin was landing heads (when it began to make its descent).

SLOW DRIFT

A gentle breeze blows a leaf across the surface of a pool. The leaf starts at one end of the pool and, over the course of an afternoon, is blown across the length of the pool.

(15) The leaf drifted across the length of the pool.

(16) The leaf was drifting across the length of the pool (in the early after-noon).

I LOVE LUCY

Lucy is supposed to be sorting chocolates at a chocolate factory. There are eighteen chocolates to be sorted. The foreman is distracted initially and Lucy eats six of them consecutively. She sorts the remaining chocolates.

(17) Lucy ate (exactly) a third of the chocolates.

(18) Lucy was eating (exactly) a third of the chocolates (initially).

To the extent that one thinks that the relevant event in each of these cases merely happens to happen, one will resist the claim that it was in progress.

From a certain theoretical perspective, this is an *un*surprising result. The same modal requirement that explains why some judge 'Mary was crossing the Atlantic' to be false when Mary has no hope of reaching the shores of France can be regarded as explaining some people's reluctance to judge that the events just described were in progress. One might judge, for example, that relative to some time between her departure and drowning, keeping other things equal, there is a possible world like the actual world up to then in which Mary drowns. Analogously, a coin turns up heads, but relative to an earlier time, keeping other things equal, there is a possible world like the actual world up to then in which it comes up tails. A leaf is blown across the length of a pool, but relative to an earlier time, keeping other things equal, there is a possible world like the actual world up to then in which the leaf drifts only a little further. Lucy eats a third of the chocolates, but relative to an earlier time, keeping other things equal, there is a possible world like the actual world up to then in which she eats more than one third of the chocolates. In each of these cases, a certain sort of modal condition is violated. According to an inertial-

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worlds-style theory, this is the condition that requires that earlier stages of these events have trajectories that lead to the realization of their associated outcomes across a select range of possible worlds.

1.6 A Symmetry

We see more evidence that outcome-associated and non-outcome-associated progressive claims are distinguished if we consider the question, "If something was happening, did it happen (or will it have happened)? We have already seen that the answer is negative in the case of outcome-associated progressives:

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

Moreover, as noted, there is evidence to suggest that the truth of a sentence like 'Mary was crossing the Atlantic' requires that it be possible for Mary to eventually arrive across the Atlantic across a range of possible worlds.

If we consider the case of non-outcome associated progressives, it may appear at first that we have another asymmetrical entailment pattern. After all, the following entailment pattern appears to hold:

(20) Mary was walking. $\rightarrow$ Mary walked.

However, as has been pointed out, this entailment fails to hold for purely temporal reasons. A temporal sliver of a walking event by Mary may be realized before the present (making 'Mary was walking' true, let us suppose), though it may not be the case that a temporally extended event of walking takes place before the present (making 'Mary walked' false). So, what we have, in fact, is the following pattern:

(21) Mary was walking. $\nrightarrow$ Mary walked.

It seems plausible, moreover, to assume that that an event of walking might be in progress though it is never wholly actualized. One could conjure up morbid scenarios in which Mary is assailed mid-step and no such event ever takes place (though I will not). If that is right, then the claim 'Mary was walking' neither entails that Mary walked nor that she will have walked.

The crucial question, however, for determining whether outcome-associated and non-outcome-associated claims pattern alike is whether modal accounts of the progressive are correct in claiming that the truth of a progressive claim like 'Mary was walking' requires that Mary walk in every relevant possible world. There is one argument in the literature, due to Dowty, in favor of this claim. Dowty invites us to suppose that the following claim is true:

(22) John was watching television when he fell asleep.

As he points out, the Bennett-Partee account wrongly predicts that there is an overlapping time during which John watches television and is asleep. This is because the account requires that 'John watches television' be true at an interval that includes and extends beyond the instant relative to which 'John is watching television' is true and that is a time during which John is assumed to be asleep. Dowty's remedy is to require that John watch television in all of the worlds in the set of worlds where the normal course of events proceeds (a set that may exclude the actual world, but, by hypothesis, must exclude the actual world in the present case).

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The problem with this approach, however, is that 'John is watching television' is insensitive to whether it is possible for John to watch television past the point at which he actually stops. Make the list of conditions that determine that John stops watching television when he actually does as long as you like or do the same for those conditions that ensure that John falls asleep when he actually does. It remains the case that the truth of this claim is impervious to any manipulation of this sort. However, outcome-associated claims like 'Mary is crossing the Atlantic' do show sensitivity to these manipulations, despite the fact that they introduce a mechanism of idealization that licenses departures from the actual world—another key contrast.

1.7 A Different Semantics for the Progressive

I take these patterns to show that outcome-associated progressive claims have modal truth conditions while non-outcome-associated claims do not. That is to say, the truth of a claim like 'Mary is crossing the Atlantic' depends, in part, on whether Mary arrives ashore across a range of possible circumstances whereas the truth of a claim like 'Mary is walking' depends not at all on whether Mary walks across a range of non-actual circumstances. This result is significant, in part, because it reveals that the progressive itself does not contribute modal truth conditions (otherwise, a claim like 'Mary was walking' would have modal truth conditions). For this reason, the long-standing debate between modal and non-modal theorists concerning whether progressive sentences have modal truth conditions is misconceived; the appearance of modality in progressive sentences has always been due to the presence of outcome-associated event predicates in the progressive environment. If there is a debate to be had it is about why modal interpretations emerge

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here.

It is also worth noting that the entailment patterns of non-outcome-associated progressives suggest a very attractive picture of progressive meaning. We can explain these patterns by assuming a claim like 'Mary is walking' entails that a part of an event of the sort described by 'Mary walks' holds at an instant and by assuming that 'Mary walked' represents an event as being comprised of such parts. Notice that this is to reject the view that the truth of a claim like 'Mary is walking' requires that there be a possible or actual event of the sort described by 'Mary walks,' which is consistent with the data presented. (Just as 'Mary started to walk' may pick out a part of an event of walking, though not the whole, so too 'Mary was walking' may pick out a part of an event of walking, but not a whole.)

I would like to propose that we treat the progressive as having this meaning and that we attempt to make sense of the interpretations of outcome-associated progressives in accordance with it. On this view, 'Mary is crossing the Atlantic' entails that a part of an event of the sort described by 'Mary crosses the Atlantic' holds at an instant. This is to reject the traditional explanation of the modal interpretations associated with these claims, which appeals to a relation between actual parts and possible wholes (as on Dowty's account). The main difficulty will be to understand the emergence of modal constraints in the case of outcome-associated progressive claims.

1.8 Where Are Modal Meanings to Be Found?

It is very tempting, I think, to assume that the modal truth conditions that attach to outcome-associated progressives are due to modal meanings—in particular, to modal

meanings associated with their underlying event predicates. One might implement this approach by assuming that 'Mary crosses the Atlantic' is true of an event just in case all of its parts eventually culminate in an event that realizes a given outcome (Mary's arrival across the Atlantic, let us suppose) across a range of possible worlds. When this clause combines with progressive and tense marking, as in the sentence 'Mary is crossing the Atlantic,' the result would be a sentence that is true at a given time just in case *a part* of an event holds then that eventually culminates in Mary's arrival across the Atlantic across a range of possible worlds.

This innocuous-seeming proposal leads to disastrous consequences, however, when combined with other (quite plausible) assumptions. If it is assumed, for example, that 'Mary crossed the Atlantic' results from the combination of 'Mary crosses the Atlantic' with the past tense, then 'Mary crossed the Atlantic' may be true even if an actual cross-Atlantic passage by Mary does not take place, contrary to fact. On the relevant interpretation, 'Mary crossed the Atlantic' would require simply that there was an event such that every part of it would eventually have culminated in a cross-Atlantic passage in every relevant possible world. Clearly, *that* may be true though the event did not, in fact, culminate in a cross-Atlantic passage in the actual world.

Nor does it help if one assumes that 'Mary crosses the Atlantic' requires a whole such event to be actualized in addition to requiring that these modal conditions are met. This would deliver the result that 'Mary crossed the Atlantic' entails that a cross-Atlantic passage occurred before the present. However, it imposes modal conditions that need not be met for that sentence to be true. We have already seen, for instance, that 'Mary

crossed the Atlantic' does not entail its progressive counterpart, which suggests that 'Mary crossed the Atlantic' does not inherit this modal condition from the clause 'Mary crosses the Atlantic.' Nor does there appear to be any other evidence in favor of this assumption.

The current stock of assumptions will not do, obviously, but one might be tempted to rescue this approach by adding to the stock. In terms of implementation, one might assume that a claim like 'Mary crossed the Atlantic' involves the contribution of a covert perfective marker in addition to the meaning contributed by the past tense and the meaning contributed by 'Mary crosses the Atlantic.' The semantics of perfectivity is not uncontroversial (though perfective markers are generally thought to provide a view of "completed" or "bounded" events) nor is it uncontroversial to assume that English has a covert perfective marker (in the context of "simple" past claims like 'Mary crossed the Atlantic,' for example). Still, there might be something to be gained by considering the possibility that this sort of meaning plays a role in explaining our puzzling data. Along these lines, we can think of this perfective marker, in the context of this discussion, as indicating that the actual world is the only world to consider. If we assume that 'Mary crosses the Atlantic' requires the existence of an event every part of which culminates in Mary's arrival across the Atlantic, across every relevant possible world, then combination with the perfective would narrow the set of relevant worlds to the actual world. The claim 'Mary crossed the Atlantic' would entail that a cross Atlantic passage occurred before the present, though 'Mary was crossing the Atlantic' would not (assuming that the progressive and perfective are in complementary distribution).

This particular strategy avoids an undesirable entailment, but at the cost of being

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ad hoc. The approach assumes that the perfective has a meaning that removes the modal significance of outcome-associated clauses like 'Mary crosses the Atlantic,' but this meaning is totally idle with respect to (or perhaps even unsuited to) non-outcome associated clauses like 'Mary walks,' which have no modal significance at all. Again, we confront a version of the same problem, namely, that outcome-associated and non-outcome associated predicates seem to give rise to very different interpretations in some environments and attempts to preserve semantic uniformity lead us to generalize to the worst case.

A further problem with this approach is that it assumes that perfective meaning suppresses the sort of modal interpretation that arises in connection with a claim like 'Mary was crossing the Atlantic.' However, there is good reason to believe that perfective meaning, even if present covertly, would not inhibit this sort of modal interpretation. In later sections, I will suggest that these modal interpretations surface, in fact, in those environments where the presence of a covert perfective marker is assumed to be present (or should be assumed to be present if this approach is to be undertaken in a consistent manner). (To anticipate, 'Mary was in jail for five years' may have a modal meaning, as may 'Mary crossed the Atlantic' in languages other than English—and in environments that are explicitly assumed to be perfective no less.)

In the face of these difficulties, I propose that we abandon our pursuit of these elusive modal meanings. For now, I will assume that the progressive has the meaning that I earlier proposed. My goal in going forward will be to pursue an alternative hypothesis concerning the source of our modal interpretations, which I will call 'The Displacement Hypothesis.' According to this hypothesis, event predicates like 'cross the Atlantic' that are

grammatically associated with an outcome give rise to cognitively default modal interpretations when they describe an event as obtaining at a time by reference, in part, to an associated outcome does not then obtain. It is this configuration that explains why some progressives (e.g. 'Mary is crossing the Atlantic') have modal truth conditions while others (e.g. 'Mary is swimming') do not. In the section to follow, I present evidence for this hypothesis by showing that it can explain the modal interpretations that attach to a different class of progressive claims and that this approach allows us to explain the otherwise puzzling features of these progressives.

2 The Futurate Progressive

2.1 Eventive and Stative Predicates

So far, we have encountered progressive sentences that represent parts of events as holding at a time, where these events are themselves wholly characterized by the overt predicate with which the progressive combines. So, for example, a claim like 'Mary is crossing the street' tells us that some part or stage of a *street-crossing* by Mary holds in the present. We know that much, if the claim is true, though we may not know how much of the street has been crossed. Call these sentences 'regular progressives' or simply 'progressives.' There are, however, other sentences with progressive marking that do not have this sort of interpretation. So, for example, a claim like 'Mary is running a marathon tomorrow' does not tell us that Mary is currently running (among other things). Call these sentences 'futurate progressives.'

What accounts for the difference in meaning between 'Mary is crossing the street' and

'Mary is running a marathon tomorrow' such that the former tells us that a street-crossing is underway while the latter does not tell us that a running event is underway? This contrast between regular and futurate progressives is somewhat puzzling given their striking overall similarities. Both have progressive marking, pattern with stative predicates, and combine with eventive predicates. However, if we assume that the progressive contributes the same meaning in both regular and futurate progressives and if we assume that the event predicates with which they combine have the same basic meaning, we get a result that we actually want to avoid. That is, we get the result that 'Mary is running a marathon tomorrow' describes a running of a marathon by Mary as underway in the present even though (in some sense) the plan is for Mary to run a marathon tomorrow.

One strategy for avoiding this result, which has been recommended in various places in the literature, is to assume that an event predicate like 'runs a marathon' may include preparatory stages. This approach suggests that, on its futurate construal, a claim like 'Mary is running a marathon' genuinely describes an actual part of an event characterized by the predicate 'runs a marathon,' though (and here comes the trick) that subpart is constituted by a preparatory activity like Mary's signing up for a marathon.

I think that the main idea guiding this approach is promising. It seems that we should attribute the difference between regular and futurate progressives to some feature of their event predicates, as this would allow us to retain a uniform semantics for the progressive across these sentences. Nonetheless, this particular implementation should be rejected. There is a particular structural difference between the event predicates that figure in regular progressives and those that figure in futurate progressives that is not

captured by it.

On the strategy considered above, the difference between these event predicates has to do with whether the relevant stage of an event of a given type is preparatory or not. But the difference between the regular and futurate construals of a claim like 'Mary is running a marathon,' say, has to do with the outcome or endpoint that is associated with that claim. Construed as a regular progressive, 'Mary is running a marathon' is associated with Mary's completion of a marathon (that is already underway). When construed as a futurate progressive, however, 'Mary is running a marathon' is no longer associated with the completion of a marathon in which Mary participates, but rather with the coming into being of a marathon in which Mary participates. This difference in associated outcomes is a structural difference that we should aim to capture. And we can capture this fact, I claim, in a way that accommodates the intuition that futurate progressives describe preparatory parts of events.

2.2   The Futurity of Futurate Progressives

This issue about outcomes can be framed, more broadly, as an issue concerning the futurity or future-orientation of futurate progressives. Futurate progressives somehow manage to concern the future but without any obvious means of doing so. Take, for example, the sentence 'The Yankees are playing the Red Sox tomorrow.' This claim is naturally taken to indicate that a Red-Sox Yankees game is scheduled to occur tomorrow. This sort of association is, in fact, quite characteristic of futurate progressives, which are taken to convey information about events that are planned, scheduled, or otherwise on course to occur. However, this future orientation cannot be explained simply by appeal to a

predicate like 'are playing the Red Sox,' nor by appeal to the future temporal adverbial 'tomorrow.'

A predicate like 'are playing the Red Sox' does not itself invariably carry futurate meaning since it can appear in the context of a regular progressive claim.

(23) The Yankees are playing the Red Sox (now).

As discussed, (23) is interpreted as meaning that a game between the Red Sox and Yankees is already underway, *not* that it is scheduled to occur in the future.

Nor is it the case that 'tomorrow' contributes futurate meaning in the context of a claim like 'The Yankees are playing the Red Sox tomorrow.' After all, 'tomorrow' occurs in sentences in which it clearly does not contribute futurate meaning. In the following future-tense sentence, for example, 'tomorrow' simply specifies the future time at which a given eventuality will occur:

(24) The Yankees will play the Red Sox tomorrow.

Note that (24) is associated with a future interpretation, not a futurate one. For that reason, in contrast to a claim like 'The Yankees are playing the Red Sox tomorrow,' 'The Yankees will play the Red Sox tomorrow' is false if no Yankees-Red Sox game occurs tomorrow. Nor is the presence of a future temporal adverb essential for the expression futurate progressive meaning. The following sentence, for example, can bear a 'showtime'-interpretation on which it expresses not what I am currently doing but what I am currently futurately doing:

(25) I'm performing on stage now.

Evidently, (25) may be true even if I am not currently performing on stage. In such a case, it is understood as meaning that the time has come for me to perform on stage—a paraphrase that captures a futurate flavor of meaning.

2.3 A Unified Account

I think that we can draw some fruitful parallels between futurate progressives and (regular) outcome-associated progressives—parallels that will help us to explain the similarities and differences between regular and futurate progressives (and in a way that genuinely illuminates the peculiar features of futurate progressives, including their distinctive future-orientation).

Recall that a claim like 'Mary is crossing the Atlantic' tells us that a part of a cross-Atlantic passage holds in the present. Importantly, however, the outcome associated with this claim, which intuitively consists in Mary's arrival across the Atlantic, does not hold in the present. (More generally, I will assume that these outcomes or endpoints are not themselves among the parts of an event of a given type that may represent a part of it as holding at a time that is "present.") This outcome nonetheless constrains the truth of the progressive claim. In particular, as we have seen, it enters into a *modal* condition that constrains its truth value.

We might consider whether something analogous is true in the case of a futurate progressive claim like 'The Yankees are playing the Red Sox tomorrow.' We might claim that it too tells us that a part of an event (of some type) holds in the present. We might further note that the outcome associated with this claim, which intuitively consists in the occurrence of a Yankees-Red Sox game, does not itself hold in the present. And we might

consider whether this outcome constrains the truth of this futurate progressive claim in the very same way that the outcomes associated with regular progressives do (that is, via a modal condition).

I would like to pursue these parallels as far as possible. In particular, I would like to propose that the event predicates that figure in futurate progressive claims are predicates that characterize the outcome portion (though not the *pre*-outcome portion) of outcome-associated events. So, for example, in the context of a futurate progressive claim like 'The Yankees are playing the Red Sox tomorrow,' the event predicate 'The Yankees play the Red Sox tomorrow' does not characterize the whole of an outcome-associated event but merely its outcome, with the result that the pre-outcome portion of this event is not overtly characterized. I call these predicates 'outcome-shifted predicates' on account of the fact that they characterize an outcome associated with an event, but not the whole of the event. This marks an important contrast with the event predicates that figure in regular progressive claims since those predicates characterize the whole of an event (whether outcome-associated or not).

I would like to propose, further, that the progressive contributes the same meaning whether it combines with an outcome-shifted event predicate or its unshifted counterpart. It simply contributes the meaning that a part of the event characterized by the event predicate with which it combines holds at a time. Futurate progressives are just sentences in which the regular old progressive combines with an outcome-shifted event predicate.

Moreover, just as with regular outcome-associated progressives, futurate progressives are associated with outcomes that are not actualized at the time at which events with those

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outcomes are said to be in progress. So, on its futurate construal, the claim 'The Yankees are playing the Red Sox tomorrow' tells us that a part of an event that is associated with a certain outcome (the realization of a Red-Sox Yankees game tomorrow, we may suppose) holds at a time, though that outcome does not then hold.

We can observe, moreover, just as is predicted by the Displacement Hypothesis, that futurate progressives give rise to modal interpretations. In particular, it appears, that outcomes constrain the truth of futurate progressives in just the same way as they constrain the truth of regular outcome-associated progressives. To see this, consider the following sentence:

(26) The Red Sox were playing the Yankees tomorrow, but the game was canceled due to a strike.

As (26) makes plain, a past tense futurate progressive claim may be true even if it is associated with an outcome that is never actualized. In order for this claim to be true, however, it must have been the case (at the relevant past time) that a Yankees-Red Sox game would have occurred, other things being equal. The claim would be false, for example, in a circumstance in which only those games that are scheduled by the Major League can occur and in which the Major League had not scheduled a Yankees-Red Sox game for tomorrow at the relevant past time. Nor would it be enough for some preparations to have been undertaken. These preparations would have to have robustly supported the eventual realization of a Yankees-Red Sox game. On the present proposal, then, the very feature of futurate progressives that explains their future-orientation (their outcome-shifted predicates) also explains their modal significance.

The present proposal also allows us to explain the fact that 'Mary is walking' and 'Mary is crossing the Atlantic' *both* give rise to modal interpretations when construed as futurate progressives, though it is not the case (as we have seen) that both of these claims give rise to modal interpretations when construed as regular progressives. When interpreted as futurate claims, both involve outcome-shifted event predicates and both describe events as obtaining at times by reference, in part, to associated outcomes that do not yet obtain. The Displacement Hypothesis predicts that this particular configuration will give rise to default modal interpretations—and this is what we see. However, when interpreted as regular progressives, 'Mary is walking' is not associated with an outcome, whereas 'Mary is crossing the Atlantic' is. Since 'Mary is walking' is not associated with an outcome, on this construal, it does not enter into a configuration that is expected to generate modal interpretations. Since 'Mary is crossing the Atlantic' is associated with an outcome and does enter into this configuration, it is predicted to trigger a modal interpretation—and this is what we see.

The present proposal is also able to account for the fact that futurates place constraints on the actual world that have a particularly open texture—having to do with plans, schedules, etc. Regular progressives also place constraints on what a part of the world is like at the time relative to which an event is said to be in progress—but these constraints seem to be a little less open. So, for example, the truth of a regular progressive claim like 'Mary is crossing the Atlantic' requires that a part of a crossing of the Atlantic is underway by Mary and not merely that there is some plan or schedule or edict that ensures that a cross-Atlantic passage is undertaken by Mary, other things equal. This

difference is explained by the fact that futurate progressives involve outcome-shifted event predicates. Recall that these predicates do not characterize the pre-outcome portion of an outcome-associated event but, rather, characterize its outcome. I claim that, in the absence of explicit characterization, the pre-outcome portion of such an event need only meet the requirement that it bring about or lead to an associated outcome, other things being equal. Surely, plans, schedules, and states of nature are among the sorts of entities that can satisfy this requirement—though none of this is in any sense written into the meaning of the progressive or into the meaning of outcome-shifted event predicates.

The considerations presented so far speak strongly in favor of the Displacement Hypothesis. In combination with spare and natural assumptions, the hypothesis is able to predict that (regular) outcome-associated progressives (e.g. 'Mary is crossing the Atlantic') and futurate progressives (e.g. 'The Yankees are playing the Red Sox tomorrow') give rise to modal interpretations, while (regular) non-outcome-associated progressives like 'Mary is walking' do not. The proposals presented in this section allow us to explain these modal interpretations in a uniform way—without requiring the assumption that the progressive has a modal meaning (a good thing) and without requiring that we posit an ambiguity in the meaning of the progressive across regular and futurate progressive sentences (a good thing too).

3   Statives with 'For'-Adverbials

I will present more evidence for the Displacement Hypothesis in this section. Although, I should say that this is evidence in favor of a more general formulation of the hypothe-

sis. Whereas my earlier formulation only concerned *event* predicates that are associated with outcomes, I will be concerned in this section with *stative* predicates that are associated with outcomes. The claim is that these predicates give rise to cognitively default modal interpretations when they enter into the configuration isolated by the Displacement Hypothesis.

The relevant data are drawn from Peter Hallman who has recently observed that statives with 'for'-adverbials appear to have modal interpretations. He takes the following examples to provide an illustration:

(27) Mary is in Paris for a week.

(28) Max is at his beachside cottage for the summer.

(29) Alice is in jail for five years

Hallman is particularly impressed by the fact that, in each case, the stative predicate (e.g. 'is in Paris for a week') may describe a state that obtains at an instant that falls within a larger interval at which some relevant state of affairs obtains—despite the fact that that state of affairs is unrealized. As with the parallel pattern in the case of progressive sentences, we should, Hallman suggests, take this as evidence for the presence of hidden modality. This hidden modality is more apparent in the past, he adds, since the outcome or endpoint that is associated with the relevant interval need not ever be reached, as the following sentences show:

(30) Mary was in Paris for a week, but she had to come home early because of a family emergency.

(31) Max was at his beachside cottage for the summer, but unfortunately it burned down the second week he was there.

(32) Alice was in jail for five years, but her lawyer managed to get her out after only three months.

Hallman ventures that these modal interpretations are due to "a special [modal] reading for locative prepositional phrases in conjunction with *for*-phrases."

I agree that these claims have modal interpretations, but I do not think that this is indicated by the fact that the outcome associated with the stative predicate in each of these cases need not be actualized. Nor do I think that this is an isolated pattern that reflects a "special reading" of locative prepositional phrases and 'for'-phrases. Just as it would be a mistake to think that progressive sentences have modal interpretations *on the grounds that* they describe a part of an event as obtaining at a time though the whole need not be entirely actualized, so too I think it is a mistake to think that statives with 'for'-adverbials have modal interpretations on the grounds that they are associated with a broader state of affairs that need not actually obtain. However, the sentences presented by Hallman do, nonetheless, bear modal interpretations. 'Alice was in jail for five years, but her lawyer managed to get her out after only three months' is only true if Alice would have served a five year jail sentence, other things being equal (though, as it happens, things were not equal). Similarly, the truth of 'Mary is in Paris for a week' requires an assurance that, other things being equal, Mary spends a week in Paris.

We need not assume that the presence of a modal meaning is required in these cases to avoid undesirable actuality entailments (e.g. the entailment that Mary spent or will

have spent a week in Paris, for example), as Hallman seems to take for granted. We may simply assume, as we did in the case of the progressive, that a sentence like 'Alice is in Paris for a week' indicates that a state obtains at present that is part of a larger state of affairs that is itself associated with an outcome (Alice's having been in Paris for a week, let us suppose) without also assuming that the broader state of affairs must be realized.

A slightly more general version of the Displacement Hypothesis—one that concerns states in addition to events—predicts that whenever a state is described as obtaining at a time, in part, by reference to an outcome that does not obtain at that time, the connection between the state and outcome will be interpreted modally. And this appears to be what we see in each of the cases presented by Hallman, given the basic analysis outlined above (again, assuming that the endpoint associated with the broader state of affairs is not among the states that may represent that broader state of affairs as obtaining at a time that is "present").

Note, however, that the Displacement Hypothesis is compatible with the possibility that the following sentences describe completed states of affairs and do not bear modal interpretations:

(33) Mary was in Paris for a week.

(34) Max was at his beachside cottage for the summer.

(35) Alice was in jail for five years.

In these cases, we may understand the given claim as telling us something about what happened over a given interval of time. On that assumption, these sentences do not

exhibit the sort of configuration that is relevant to the Displacement Hypothesis; in each case, a state of affairs is said to hold at a given interval—outcome and all. Since the Displacement Hypothesis only concerns those configurations where a part of an event or state of affairs is present at a given time though its outcome is not, it does not predict that these sentences give rise to modal interpretations. (If there really were some hidden modality in these cases, these facts would seem rather mysterious.)

It appears, then, that the Displacement Hypothesis allows us to recognize that there is a non-accidental modal pattern that holds across outcome-associated progressives, futurate progressives, and statives with 'for'-adverbials. This is a signal advantage of the proposal. To account for these cases by positing hidden modality would be to mistake what is, in fact, a systematic pattern for an accidental one.

4   Non-culminating Accomplishments

I want to conclude by discussing some very interesting cross-linguistic data that would seem to conform to the predictions of the Dispacement Hypothesis. I have in mind, in particular, non-culminating accomplishments, which are constructions that have been studied in connection with St'át'imcets, Skwxwú7mesh, Tagalog, Hindi, and Thai, among other languages.

Non-culminating accomplishments describe temporally extended and outcome-associated events, much like the predicate 'cross the Atlantic' does in English. However, in languages with non-culminating accomplishments, the following sort of sentence is an interpretable one (marking a contrast with English, in which it is not):

(36) Mary crossed the Atlantic, but she didn't get across.

Plainly, the outcome associated with 'Mary crossed the Atlantic' need not be realized in the actual world in such languages. In particular, it has been claimed (in connection with St'át'imcets, Skwxwú7mesh, for example) that that (36) would be true if Mary got partway across the Atlantic and would have gotten all the way across, other things being equal (even if she did not).

Interestingly, it has also been claimed that, out of the blue, 'Mary crossed the Atlantic' would be understood as meaning that Mary *did* cross the Atlantic. In order to account for this fact, theorists have claimed that this is merely an implicature, which may be canceled (as the possibility of (36) is taken to show).

I would like to suggest a different way of understanding these phenomena. I think it may well be fruitful to consider this pattern in light of the pattern exhibited by a sentence like 'Mary is/was in Paris for a week' in English. As with the sentence 'Mary crossed the Atlantic,' in the context of languages that host non-culminating accomplishments, a sentence like 'Mary was in Paris for a week' is interpreted, out of the blue, as meaning that Mary spent the whole of a week in Paris. Again, as in these languages, 'Mary was in Paris for a week' may also be interpreted as picking out a state that would have culminated in an associated outcome (Mary's having been in Paris for a week), other things equal. It need not be the case, though, as we have seen, that other things are equal in the actual world. For this reason, it is acceptable to say 'Mary was in Paris for a week, but she had to come home early because of a family emergency.' The Displacement Hypothesis allows us to explain why 'Mary was in Paris' is associated with a modal interpretation, when it is,

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and why it is not, when it is not. (An appeal to an implicature, in this case, would seem to obscure the broader modal pattern that has come into view.)

In light of these parallels, I would like to suggest that the modal significance of non-culminating accomplishments is to be explained by appeal to the Displacement Hypothesis. To take this approach is to assume that non-culminating accomplishments give rise to cognitively default modal interpretations and to deny that they encode modal meanings that generate these interpretations. It would seem that languages with non-culminating accomplishments are distinguished from English insofar as non-culminating accomplishments may describe a (proper) part of an event as obtaining at a time while their English counterparts may not. The task would then be, in making sense of these cross-linguistic differences, to figure out why it is that some expressions provide a view *into* events and states of affairs in this way while others do not. (Although, other facts, such as the preference for the completed interpretation of 'Mary was in Paris for a week' also require consideration.)

5   Modality and Modal Cognition

Across a range of cases, we have seen that certain expressions give rise to modal interpretations, though these expressions do not have linguistically encoded modal meanings. The expressions that give rise to th striking pattern provide us with a unique window into the place of modality in cognition and its connection to natural language. They reveal that modal cognition is structured richly enough to support thoughts about what events and states might be like or would be like, under various circumstances. This structure is

not, if the Displacement Hypothesis is correct, inherited from linguistic structure, though this is not to say that it is language-independent. After all, in each case, a certain richly structured event representation in a complex configuration came to be associated with a modal interpretation. But, importantly, language appears to play a triggering, not structuring, role in these cases. These striking patterns should lead us to reconsider the picture of language on which we can entertain richly structured modal thoughts on account of the fact that modal expressions recruit resources from modal cognition, which then come to be integrated in complex ways through richly structured linguistic combinations.

These patterns also contribute to an impressive body of evidence that suggests that modality appears everywhere in natural language. In the verbal domain alone it has been claimed that expressions of modality occur at every level (within lexical items, with voice, aspect, tense, mood, and complementizers). Why does natural language support thought about non-actual possibilities at every turn? Angelika Kratzer, one of the most important architects of the theory of modality in natural language semantics, has recently attempted to address this question and takes it to be one that will set the agenda for investigations of modality in the 21st century. On her view, modality occurs everywhere on account of the fact that syntax makes representations of events and individuals available everywhere. Modal expressions then combine with these individuals and events (which serve as their arguments) and, as a result, language comes to be saturated with modality. The patterns uncovered here, however, provide evidence for the existence of modal interpretations that are not due to the presence of modal expressions (and are not, therefore, due to their combination with individuals and events). In light of this, it seems that an alternative

explanation of the pervasiveness of modality is in order.