BLS 35, No 1 2009. DOI: http://dx.doi.org/10.3765/bls.v35i1.3595
(published by the Berkeley Linguistics Society and the Linguistic Society of America)

Promiscuous Modification and Cross-Categorial Scale Structure

M. RYAN BOCHNAK
University of Chicago

0. Introduction

I use the term "promiscuous modification" to refer to the two-fold properties of certain proportional modifiers in English and other languages: first, they are able to modify various syntactic and semantic categories; second, they appear to be able to modify at a distance. That is, while they can adjoin to one constituent syntactically they appear to modify another semantically. The focus of this paper is the modifier *half* in English, which indeed fits the description of promiscuous modification. First, it can appear with a wide range of syntactic categories, such as adjectives in (1), partitives as in (2), and verb phrases as in (3):

(1) The cake is half baked.
(2) Half of the books are on the table.
(3) The girls half washed the dishes.

Second, *half* has the ability to modify at a distance. For instance, the sentence in (1) has two distinct readings. On one reading it describes a situation where the cake is half-way through the process of baking, in which case we can say that *half* is modifying the adjective *baked*, in particular the scale associated with the adjective *baked* (see Kennedy and McNally 2005). On the second reading, (1) describes a situation where half of the cake is fully baked and the other half is not baked at all. For example, it might be the case that a cake is too large to fit into an oven and must be divided into two halves that are baked separately. In this case *half* appears to be modifying *the cake* at a distance, in that it names the proportion of the cake that is baked. However, there are constraints on these long-distance effects. Notice that in (3) a long-distance reading is possible where *half* appears to be modifying the object *the dishes* at a distance, although there is no reading where *half* modifies the subject *the girls* at a distance.

The focus of the present paper will be to argue for an account of these long-distance effects based on argument structure and event structure of the verb phrase. I will propose a scalar-based semantics for *half* that allows for and explains the cross-categorial nature of *half*. In particular I claim that the promiscu-

ous behavior of *half* is the result of its scalar meaning, and that the successful application of this modifier simply relies on its input being associated with an appropriate scale over which *half* can operate. In section 1 I argue that *half* is a modifier at the VP level (contra Piñón 2005) and that the long-distance effects can be explained in terms of argument selection. Section 2 is devoted to showing that *half* is a modifier of telic event descriptions. In section 3 the semantics of the VP use of *half* is fleshed out in more detail. Section 4 concludes and offers proposals for future extensions of this work.

1. Verb Phrase Modification and Argument Structure

One possible explanation of the long-distance effects associated with *half* is to say that this is an instance of floating quantification (see, e.g., Sportiche 1988). The idea would be that in (1) *half* and *the cake* form a constituent at some level of underlying representation and *the cake* undergoes leftward movement, leaving the quantifier behind. This line of argumentation has been used to account for the synonymy of (4a) and (4b), where *all* as a floating quantifier forms a constituent with *the girls* at an underlying level:

(4) a. The girls all washed the dishes.
b. All the girls washed the dishes.

However, such an account cannot be the right analysis for *half*. First, replacing *all* with *half* in (4) leads to sentences that are no longer synonymous. Indeed, as has already been observed in (3), *half* cannot modify *the girls* at a distance in this environment, and furthermore *half* is able to modify *the dishes* at a distance, but a corresponding reading is unavailable for *all* in (4). Second, while *all* is able to float through auxiliaries with ease, this is not the case for *half* as shown by the contrast between (5) and (6):

(5) The dishes {all} must {all} have {all} been {all} washed.
(6) The dishes {*half} must {*half} have {?half} been {half} washed.

Based on this evidence, *half* should not be treated as a floating quantifier on par with *all*.

Instead, I propose that the facts can best be dealt with by analyzing *half* as a VP modifier. In particular, the long-distance effects associated with *half* are sensitive to the distinction between a verb's internal and external arguments. Kratzer (2003) provides extensive evidence exposing asymmetries between a verb's external and internal arguments (also see Tenny 1994). Without going into too much detail, I will briefly review a couple of Kratzer's arguments here. The first piece of evidence comes from deverbal nominalizations that require a verb's internal argument to be realized. Compare (7a) with (7b):

(7) a. *The constant assignment is to be avoided.
b. The constant assignment of unsolvable problems is to be avoided.

The ungrammaticality of (7a) is due to the fact that the internal argument of the verb *assign* must be realized within the nominalization. However, since the verb's external argument is not (overtly) required in its nominalization, this means that it does not have the same effects on verb phrase meaning as the internal argument does.

The second asymmetry between internal and external arguments comes from constructions that allow or disallow self-action readings. Comparing the adjectival passive in (8a) and the verbal passive in (8b), we notice that while neither explicitly realizes the verb's external argument, only the adjectival passive is compatible with a reading where the climbers secured themselves; this reading is unavailable with the verbal passive:

(8) a. The climbers are secured with a rope.
b. The climbers are being secured with a rope.

Kratzer argues that in verbal passives, the external argument, while not overtly expressed, is still present as a silent pronoun, which accounts for why (8b) is incompatible with a self-action reading. In contrast, the adjectival passive in (8a) allows a self-action reading, which means that the external argument of the verb can be missing altogether. This contrast is taken as further evidence that the external argument does not serve the same function in verb phrase meaning as the internal argument, and therefore these two types of arguments are not associated with the verb in the same way. In fact, this evidence is taken to suggest that the external argument is not even a real argument of the verb.

These and other arguments show not only that the internal and external arguments of a verb need to be treated differently, but that the external argument is not even part of the verb phrase. Kratzer argues that this treatment of the external argument is necessary both at the level of logical representation and in the syntax. The proposal, then, is that instead of being introduced with the verb phrase, the external argument enters the syntax inside a voice (little *v*) projection. This analysis explains why adjectival passives and some nominalizations there is no external argument present: these are derived from VP only, which contains only the verb and its internal argument but crucially not the external argument.

Returning to the discussion on *half*, recall the contrast between (1) and (3), repeated here as (9) and (10):

(9) The cake is half baked.
(10) The girls half washed the dishes.

Earlier it was noted that sentences like (9) allow a reading where *half* semantically modifies the subject, but sentences like (10) do not allow this option. This

difference in behavior can now be explained if we take *half* to be a modifier at the VP level. If the adjectival passive in (9) is derived from a VP structure, as Kratzer argues, then *the cake* is actually the internal argument of the verb *bake*. In contrast, the external argument *the girls* in (10) is introduced outside the VP. In that case, if *half* is a VP modifier, then this explains its inability to modify *the girls*: this argument is introduced outside the VP, and is therefore unavailable for modification by *half*. This prediction is indeed borne out in nominalizations and adjectival passives with *half*:

(11) the half washing of the dishes (by the girls)
(12) The dishes are half washed.

In (11) the external argument *the girls* is optional and is introduced with a *by* phrase and there is no reading available where *half* semantically modifies this constituent. In (12) there is no external argument present, but there is a reading where *half* appears to modify *the dishes*, which is the internal argument of *wash*.

Analyzing *half* as a modifier at the VP level easily accounts for the asymmetries observed between (9) and (10) with respect to long-distance effects with *half*. (9) is derived from a VP structure where *the cake* is the internal argument of the verb *bake*, which is under the scope of *half*. In (10) *the dishes* is the internal argument of *wash* and thus under the scope of *half*, while *the girls* is introduced into the syntax and semantics outside of VP and outside the scope of *half*. Thus, the first piece of the puzzle with respect to long-distance modification is solved. A verb's internal argument may be targeted for modification by *half*, but its external argument may not. The semantics of *half* that allow it to access the internal argument for modification are discussed below in section 3.

2. Modifying Event Descriptions

I have just shown that long-distance effects associated with *half* (or lack thereof) can be explained by analyzing *half* as a modifier of the verb phrase. However, *half* is not able to modify just any VP. Compare the sentences in (13), which seem odd (on the relevant reading), with those in (14):[1]

(13) a. ?? Alana half ate pancakes.
b. ?? Keelin half swam.
c. ?? Taylor half pushed the cart.
(14) a. Alana half ate a stack of pancakes.
b. Keelin half swam around the lake.
c. Taylor half pushed the cart to the store.

[1] The sentences in (13) do have interpretations where *half* is used to make an evaluative statement about the quality of the event named by the verb, and result in atelic interpretations only. I set aside this reading for now, but see Bochnak (2009) for discussion.

While the sentences in (14) denote telic eventualities, those in (13) have atelic interpretations. Telic events are those that make reference to a particular endpoint, whereas atelic eventualities are those that do not. In particular, telicity has been construed as being related to the boundedness or measuring out of an event (Krifka 1992, 1998). An event may be interpreted as telic if it references a bounded, or "quantized" incremental theme, as argued by Dowty (1991), Krifka (1992), and others. An incremental theme is one whose parts are incrementally affected through the duration of the event. Classic examples of bounded incremental themes are *an apple* in *John ate an apple* and *a circle* in *John drew a circle*. In the case of *an apple* for example, it is typically the case that over the course of an event of eating an apple, pieces of the apple are consumed in succession until the entire apple is consumed, or at least the relevant parts. That is, there is a mapping from sub-events to parts of the incremental theme, and also a mapping between the parts of the incremental theme and sub-events. This intuition is captured by Krifka's object-event homomorphism. Thus, while in (14a) *a stack of pancakes* corresponds to a bounded incremental theme that gives rise to a telic interpretation, *pancakes* in (13a) is an unbounded quantity, thereby resulting in an atelic interpretation. In (13c) the theme argument *the cart* does not give rise to a telic interpretation because it is not an *incremental* theme - the entire cart is affected throughout the duration of the event. In addition, a telic event may also be interpreted as bounded by naming a bounded path, as argued by Jackendoff (1996). Thus (14b-c) have telic interpretations thanks to the bounded path arguments, *around the lake* and *to the store*, respectively, while (13b-c) can only have atelic interpretations.

Sentences with incremental themes or bounded paths where *half* modifies the VP do indeed denote telic events, as evidenced by their acceptability with *in* adverbials and their oddity with *for* adverbials:

(15) Alana half ate a stack of pancakes in 10 minutes / ?? for 10 minutes.
(16) Keelin half swam around the lake in 10 minutes / ?? for 10 minutes.
(17) Taylor half pushed the cart to the store in 10 minutes / ?? for 10 minutes.

Thus the application of *half* as a VP modifier results in telic interpretations when there is a bounded incremental theme or bounded path argument that measures out the event. The result is a reading where *half* identifies the proportion of the event that is completed. When applied to atelic events *half* only has an evaluative reading, and not one associated with measuring out events. In the next section I show how bounded themes and path arguments relate to telicity with *half*.

3. A Semantics for VP *half*

3.1. Telicity and Maximalization

Taking the notion of telicity via boundedness one step further, Filip (2008) argues that telicity is the result of a maximalization operation over events. Filip's proposal is that telicity as a property of the VP relies on the application of a maxi-

malization operator over events MAX_E that maps sets of partially ordered events onto sets of maximal events. This covert operator requires an incremental theme to provide an ordering criterion for events; that is, this operator depends on the object-event homomorphism described above. Filip's notion of incremental theme is taken in a wide sense, including not only theme arguments, but also bounded paths as well as implicit bounded "themes" that are available from the context of utterance or world knowledge. The ordering criterion based on the bounded incremental theme induces a closed scale of objects along which events are ordered, thanks to the object-event homomorphism. The MAX_E operator selects the endpoint of the closed scale, resulting in a telic interpretation.

The connections between telicity, boundedness and the MAX_E operator should by now be apparent. Without a bounded theme argument, the scale of objects would have no upper endpoint for MAX_E to pick out, resulting in an atelic interpretation. This is why unbounded themes such as bare mass or plural nouns result in atelic interpretations - the corresponding scale of objects is an open scale without a maximal value and so does not license the application of MAX_E. Scale closure is also crucial for the successful application of *half*. As has already been shown, a telic interpretation of a verb phrase modified by *half* relies on the presence of a bounded incremental theme or path argument. Given that the restrictions on *half* mirror those of MAX_E with respect to bounded themes and telicity, I propose that *half* is in fact an overt counterpart to Filip's MAX_E operator that relies on the presence of a closed scale of objects induced by a bounded incremental theme. Whereas MAX_E selects the endpoint on the scale, *half* selects the midpoint and results in a telic interpretation relative to that midpoint on the scale.

Let us consider a couple of examples to see exactly how this works:

(18) a. The girls washed the dishes.
b. The girls half washes the dishes.
(19) a. The cake is baked.
b. The cake is half baked.

In (18a) the MAX_E operator selects the endpoint of the scale of objects associated with the bounded incremental theme *the dishes* and the result is a telic interpretation with respect to the amount of dishes in the denotation of *the dishes*. Likewise in (18b) *half* selects the midpoint on the scale of objects and results in a telic interpretation with respect to half of the amount of dishes in the denotation of *the dishes*. Similarly (19a), being derived from a VP (see section 1), is interpreted as maximal with respect to the quantity of cake, while (19b) is maximal with respect to half of that quantity. Thus, the application of *half* results in a telic interpretation by maintaining an upper bound against which the event is measured, and that upper bound is the midpoint on the closed scale of objects.

3.2. Scales and *half*

The idea that *half* operates over a closed scale is also proposed by Piñón (2005), and is reminiscent of the scalar treatment of *half* as a modifier of gradable adjectives by Kennedy and McNally (2005). Kennedy and McNally argue that different adjectives are associated with different scale types (open, closed, partially closed) and that *half* can only modify those adjectives that are associated with fully closed scales. This analysis straightforwardly derives why *half* is acceptable with adjectives like *full*, *open* or *baked*, which are all associated with fully closed scales, but infelicitous with adjectives like *tall*, *old* or *expensive*, which are associated with open scales:

(20) a. The glass is half full.
b. The door is half open.
c. The cake is half baked.

(21) a. ?? The building is half tall.
b. ?? The man is half old.
c. ?? This car is half expensive.

The fact that *half* can only apply to adjectives with fully closed scales provides us with some insight into the cross-categorial nature of this modifier. Given its distribution with both adjectives with fully closed scales on one hand and VPs associated with fully closed scales of objects on the other hand, we can say that *half* is able to modify both adjectives and VPs so long as they are associated with the appropriate type of scale.

We are now in a position to posit a semantics for the VP use of *half*. Let F be a set of event descriptions associated with a fully closed scale of objects S_F, and let **meas**[α,β] be a function that returns a measurement of a closed interval $I \subseteq S_F$ with endpoints α and β. The meaning of *half* is given as follows:[2]

(22) $[\![\textit{half}]\!] = \lambda F \lambda e.\exists p[\textbf{meas}[\min(S_F),p] \geq \textbf{meas}[p,\max(S_F)] \wedge F(e)$ w.r.t. $p]$

In prose, *half* takes a set of event descriptions F as its input and returns another set of event descriptions that are maximal with respect to the midpoint p on the scale of objects induced by the theme in F. This analysis explains how we are able to get the long-distance readings with *half*: the scale of objects is induced by the incremental theme argument but is available for modification at the VP level because it provides the basis for marking telicity, which is a property of the VP. Therefore, both syntactically and semantically, *half* modifies the VP, but we are able to get readings where *half* appears to be semantically modifying the theme at

[2] In (22) I give the literal meaning of *half* as *at least half*, following the 'classic' neo-Gricean view of the meaning of scalar and number terms (see, e.g., Levinson 2000), but nothing in my analysis really hinges on this assumption. See Ionin and Matushansky (2006) and especially Geurts (2006) for arguments in favor of giving number terms a meaning of *exactly n*. I leave open the question of whether *half* should be treated as a number term or a scalar term.

a distance because the theme is responsible for inducing the scale of objects over which *half* operates. This also explains why certain readings are unavailable. For example, in sentences like (18b), *half* is not able to semantically modify the DP subject *the girls* because it is the external argument, which is introduced outside the VP and does not induce a scale of objects at the VP level over which *half* can operate. In addition, when there is no internal argument present, there is no longer a telic reading associated with *half* due to the lack of a scale of objects from within the VP, and so we only get the evaluative reading in these cases.

To see the meaning of *half* in action, consider the following derivation for *half wash the dishes* (ignoring tense):

(23) a. [[*wash the dishes*]] = $\lambda e.$**wash**(*the.dishes*)(*e*)

b. [[*half*]] ([[*wash the dishes*]])

$= \lambda F \lambda e.\exists p[$**meas**$[\min(S_F),\mathrm{p}] \geq$ **meas**$[\mathrm{p},\max(S_F)] \wedge F(e)$ w.r.t. $p]$
($\lambda e'.$**wash**(*the.dishes*)(e'))

$= \lambda e.\exists p[$**meas**$[\min(S_{w.t.d.}),\mathrm{p}] \geq$ **meas**$[\mathrm{p},\max(S_{w.t.d.})] \wedge$
wash(*the.dishes*)(*e*) w.r.t. $p]$

In (23b) the scale targeted by *half* is the scale of objects made available by the presence of the incremental theme *the dishes*. Since *the dishes* is a bounded, or quantized, incremental theme, the corresponding scale of objects is closed, a prerequisite for the successful application of *half*. Again, this analysis explains why VPs with unbounded or non-quantized incremental themes (e.g. *dishes*) cannot be modified by *half* - the scale of objects they induce are also unbounded, i.e. open, and thus are inappropriate targets for *half*. It should also be clear from (23) why *half* cannot target the external argument of the verb. Since the external argument is not a lexical argument of the verb and is introduced into the syntax and semantics above VP, the event description modified by *half* makes no reference to the external argument, leaving it unavailable for modification. I assume that adjectival passives such as (19b) are derived from an unaccusative syntax where *the cake* is the internal argument of *bake* (see section 3.1). Thus, the derivation of (19b) proceeds in exactly the same way as in (23), and existential closure of the event argument yields the event state described by the adjectival passive (taking states to be a type of event).

3.3. Abstract Events

The meaning for *half* in (22) relies on making reference to the point $\max(S_F)$ on the scale of objects, which is the maximal endpoint of the scale that is targeted by Filip's $\mathrm{MAX_E}$ operator. However, making reference to the maximal endpoint should not presuppose the existence of a maximal event in the first place. Indeed, the sentence *The girls half washed the dishes* does not entail that all the dishes were eventually washed. This observation does not pose a real problem for this analysis, however. The point $\max(S_F)$ just makes reference to a maximal event, which remains abstract and possibly unrealized. This view is similar to an idea by

Moltmann (1997) that adverbs of completion (such as *half*, *mostly*, *completely*) actually denote relations between abstract and concrete events. Piñón (2005) in his analysis of adverbs of completion also makes reference to abstract maximal events embedded under a possibility operator. This idea perhaps suggests a possible intensional analysis for *half* and similar modifiers, but this idea will not be explored here.

4. Concluding Remarks

I have shown that the use of *half* as a modifier of verb phrases has a scalar meaning parallel with its use as an adjectival modifier as discussed by Kennedy and McNally (2005). This analysis explains the property of *half* that it appears to be able to modify certain constituents at a distance while in the syntactic position of modifying VPs that denote telic event descriptions. These long-distance effects are in fact an illusion since they ultimately derive from local modification at the VP level. VP event descriptions are associated with scales that are induced by the incremental theme argument. Since it is the theme argument that provides the scale targeted by *half*, this gives rise to the illusion of long-distance modification when in fact modification is strictly local at the VP level.

For now, the question of exactly how the scale of objects induced by the theme argument gets passed up to the VP level in the first place remains a mystery. Filip (2008) seems to hint that it has something to do with the object-event homomorphism, but provides no formal details. In Bochnak (2009) I suggest that part of the VP meaning is a degree argument that needs to be saturated in order to arrive at an event description. Thus, *half* supplies the degree argument with the value of the midpoint on a scale associated with the VP, i.e., the scale of objects. Likewise, Filip's MAX_E operator saturates the degree argument by supplying it with the maximal value on the scale.

In addition, a scalar meaning for *half* provides a starting point for explaining the modifier's cross-categorial promiscuity. Since both gradable adjectives and event-denoting VPs are associated with scales, *half* is able to appear as a modifier of either of these categories, so long as the scales being targeted are fully closed. Further discussion of this matter in Bochnak (2009) extends the scalar analysis of *half* to its use in partitives and its evaluative use. In particular, it is argued that *half* also targets fully closed scales in these contexts as well, which accounts for the modifier's promiscuous behavior across various syntactic and semantic categories.

This scalar analysis of *half* as a VP modifier may be helpful to account for other puzzles that have surfaced in the literature. For example, as noted by Morzycki (2002) there is a series of other proportional modifiers that result in "ambiguities" due to perceived long-distance modification effects:

(24) a. The campus is completely nauseating.
b. Oklahoma is wholly Republican.

In (24a) *completely* can be construed as either modifying the parts of the campus that are nauseating, or the degree to which the campus induces nausea, i.e., the scale of *nauseating*. Similarly in (24b) the use of *wholly* can either make a comment about the parts of Oklahoma that are Republican, or the extent to which the state is Republican. Treating these modifiers as parallel with *half* with respect to this behavior provides further evidence for their status as VP modifiers and not as floating quantifiers, notably because the modifiers in (24) are morphosyntactically marked as adverbs. While *half* has the same phonological shape no matter which category it modifies, these other modifiers are clearly marked as adverbs in (24), making it difficult to argue for an underlying representation where *completely* and *wholly* directly modify *the campus* and *Oklahoma*, respectively. Instead, if we analyze these modifiers as modifying the VP and having access to the scale of objects induced by the internal argument, we can easily account for the multiple readings of the sentences in (24) without having to posit underlying structures where DPs are syntactically modified by adverbs. Again, like the long-distance effects associated with *half*, those in (24) are actually derived from local modification of a VP that is associated with a scale of objects thanks to the verb's bounded incremental theme argument. (Although the categorical status of *Republican* as being derived from a verb is at best questionable, assuming that all adjectival passives are derived from an unaccusative syntax still yields the desired results for the perceived long-distance effects).

In addition, the counterparts of *half* in other languages have been shown to behave in similar ways with respect to multiple available readings. For example, Moltmann (1997) provides the following example from German:

(25) Der Baum ist halb vertrocknet.
'The tree is half dried out.'

According to Moltmann this sentence has two readings: one in which the tree has reached the half-way point on the scale of dryness, and another in which only half of the tree is fully dried out. Moreover, as has been pointed out by Doetjes (1997) French *beaucoup* shows similar properties, displaying what she refers to as "quantification at distance:"

(26) Jean a beaucoup lu de livres.
Jean AUX a.lot read of books
'Jean read a lot of books.'

In (26), the most salient reading is one where *beaucoup* quantifies over the number of books read and does so at a distance, although there is also another reading where *beaucoup* quantifies over the number of book-reading events. Given the parallels between the available readings for sentences with *half* discussed in this paper and those for the sentences in (24)-(26), it seems likely that a unified analysis that treats all these modifiers as VP modifiers alongside *half*

would be able to account for the relevant facts, both in English and cross-linguistically. However, I leave this question to further study.

Acknowledgments
I would like to thank audiences at the Berkeley Linguistics Society meeting in February 2009 and at the University of Chicago LingLunch series at which this work was presented. I am especially grateful to Chris Kennedy and Peter Alrenga for their helpful comments and suggestions.

References

Bochnak, M. Ryan. 2009. *Half* as a promiscuous modifier. Ms., University of Chicago.

Doetjes, Jenny. 1997. Quantifiers and selection: On the distribution of quantifying expressions in French, Dutch and English. Ph.D. diss., Leiden University.

Dowty, David. 1991. Thematic proto-roles and argument selection. *Language* 67(3):547-619.

Filip, Hana. 2008. Events and maximalization. In S. Rothstein, ed., *Theoretical and crosslinguistic approaches to the semantics of aspect*, 217-256. Philadelphia: John Benjamins.

Geurts, Bart. 2006. Take 'five': The meaning and use of a number word. In S. Vogeleer and L. Tasmowski, eds., *Non-definiteness and plurality*, 311-329. Philadelphia: John Benjamins.

Ionin, Tania, and Ora Matushansky. 2006. The composition of complex cardinals. *Journal of Semantics* 23(4):315-360.

Jackendoff, Ray. 1996. The proper treatment of measuring out, telicity, and perhaps even quantification in English. *Natural Language and Linguistic Theory* 14(2):305-354.

Kennedy, Christopher, and Louise McNally. 2005. Scale structure, degree modification and the semantics of gradable predicates. *Language* 81(2):345-381.

Kratzer, Angelika. 2003. The event argument. Ms., University of Massachusetts, Amherst.

Krifka, Manfred. 1992. Thematic relations as links between nominal reference and temporal constitution. In I. Sag and A. Szabolsci, eds., *Lexical matters*, 29-53. Stanford, CA: CSLI.

Krifka, Manfred. 1998. The origins of telicity. In S. Rothstein, ed., *Events and grammar*, 197-235. Dordrecht: Kluwer.

Levinson, Stephen C. 2000. *Presumptive meanings: The theory of generalized conversational implicature*. Cambridge, MA: MIT Press.

Moltmann, Friederike. 1997. *Parts and wholes in semantics*. New York: Oxford University Press.

Morzycki, Marcin. 2002. Wholes and their covers. In B. Jackson, ed., *Proceedings of Semantics and Linguistic Theory (SALT) XII*, Ithaca, NY: CLC Publications.

Piñón, Christopher. 2005. Adverbs of completion in an event semantics. In H. J. Verkuyl, H. de Swart, and A. van Hout, eds., *Perspectives on aspect*, 149-166. Dordrecht: Springer.
Sportiche, Dominique. 1988. A theory of floating quantifiers and its corollaries for constituent structure. *Linguistic Inquiry* 19(2):425-451.
Tenny, Carol. 1994. *Aspectual roles and the syntax-semantics interface*. Dordrecht: Kluwer.

M. Ryan Bochnak
University of Chicago
Department of Linguistics
1010 E. 59th St.
Chicago, IL 60637

bochnak@uchicago.edu