RECENT ‘EVENTS’ IN SEMANTICS

KEN-ICHIRO SHIRAI

Chukyo University*


Keywords: Davidsonian event-based theory, formal semantics, thematic roles, progressives, stage/individual-level distinction

1. Introduction

The book under review (E&G, henceforth) consists of fourteen papers which are directly or indirectly related to event-based theories of grammar, especially the Davidsonian event-based theory. Though this volume covers a broad range of topics in semantics and the syntax/semantics interface, the editor remarks in the introduction that they may be classified into four groups, which are “fairly representative of the kind of linguistic work which the Davidsonian approach has led to.” (E&G: 7) According to this classification of the papers, I will give an outline of the contents of this volume.

The first group of papers, by Carlson, Mittwooch, and Wyner, are concerned with the thematic argument structure, each dealing with different aspects of this problem in an event-based semantics. Carlson discusses the conception of thematic roles in terms of event individuation. Mittwooch presents an analysis of cognate objects in Hebrew, depending crucially on the Davidsonian event argument. Wyner deals

* I would like to thank two anonymous EL reviewers for suggesting improvements on an earlier version of this article.

English Linguistics 18: 1 (2001) 142-166 — 142 —
© 2001 by the English Linguistic Society of Japan
with subject-oriented adverbs like *reluctantly*, along the lines of the Dowty-style theory of thematic proto-roles (see Dowty (1991)).

The second group of papers, by Greenberg, Kiss, and McNally, are concerned with issues relating to the distinction of stage-level and individual-level predicates (see Carlson (1977)), and they all criticize in some respect this distinction. Greenberg deals with the distribution of a pronominal copula in Hebrew present-tense nominal sentences, in terms of the generic/nongeneric distinction. Kiss discusses existential/generic readings of bare plural NPs in English, with their specificity feature as the crucial factor for this distinction. McNally deals with the classification of utterances as thetic or categorical (see Kuroda (1972)), and also discusses the readings of English bare plurals.

The third group of papers, by Abusch, Glasbey, Krifka, and Zucchi, are concerned with the theory of aspect and tense in English. Abusch discusses how the temporal location of future events is expressed in a number of syntactic configurations. Glasbey presents an analysis of progressives in the framework of channel theory (see Barwise and Seligman (1997)). Krifka deals with the distinction between telic and atelic predicates. Zucchi discusses the so-called ‘aspect shift’ of predicates.

The last group of papers, by Chierchia, Kratzer, Landman, and Lasersohn, treat a variety of different semantic topics. Chierchia presents a very extensive theory on the mass-count distinction of nominals in natural language. Kratzer discusses problems of scope relations in those contexts involving the intermediate readings in *because*-clauses and attitude reports. Landman deals with the cumulative readings of sentences with plural NPs, extending his earlier theory of plurality. Lasersohn presents an event-based analysis of collectivizing adverbials like *together*.

In this review article, mainly for reasons of space, I will confine myself to discussing those papers that appear to me to have direct bearings on the most fundamental issues relating to the notion of ‘events’—that is, what events are, and how they should be located in natural language semantics. The organization of this article is as follows. In the next section, I give a very sketchy outline of the Davidsonian event-based theory, employing some arguments presented in Rothstein’s ‘Introduction’ and Mittwoch’s paper. This intends to serve as some preliminaries for the following discussion in the article. In section 3 I take up Carlson’s paper and discuss his proposal on the conceptual significance
of thematic roles. In section 4 I move on to the papers by Glasbey and Zucchi, and discuss the role of events in verbal aspects like the progressive. In section 5 I take up the papers by Greenberg and McNally, and discuss the well-known distinction of stage/individual level predicates. In the last section, summarizing the foregoing discussion, I would like to make some comments on the theoretical status of events in natural language semantics.

2. Davidsonian and Neo-Davidsonian Theories of Events

According to the Davidsonian logical representation, verbs are in general given an additional ‘event’ argument—that is, a non-thematic argument denoting an event.¹ For example:

(1) a. John cut the bread.
b. Cut(John, the bread)
c. £e [Cut(e, John, the bread)]
d. £e [Cutting(e) & Actor(John, e) & Patient(the bread, e)]

Davidson claims that (1a) should be interpreted as asserting that there is a three-place cutting relation between an event and two individuals (John and the bread). As the logical representation for (1a), he proposes (1c), instead of the more traditional one of (1b). Thus, according to the Davidsonian theory, verbs logically have one more argument of event-position than is overtly apparent from the traditional argument structure of the verb. Note that the event variable e is bound by an existential quantifier in the formula. The Davidsonian event-based analysis has been adapted subsequently to incorporate the linguistic notion of thematic roles, and this new variation of event-based account is called the ‘neo-Davidsonian’ theory. Hence, (1a) has the logical representation shown in (1d). Here, ‘Cutting(e)’ means

¹ In his original work (Davidson (1967)), Davidson assumed an event argument only for dynamic verbs. In the later literature, Kratzer (1995) claimed that the presence/absence of an event argument correlates with Carlson’s distinction of stage/individual level predicates. However, it has been shown evidently that both stage and individual level predicates should have an event argument (see Chierchia (1995), among many others).
that \( e \) is an event of cutting, and 'Actor(John, \( e \))' and 'Patient(the bread, \( e \))' indicate that the individual named John and the entity referred to by *the bread* participate in the event as its actor-role and patient-role, respectively.

The most basic question for both the original Davidsonian and the modified neo-Davidsonian theories is whether there is sufficient linguistic evidence to justify enriching a logical representation by positing the Davidsonian event argument. Unlike the usual thematic arguments of a verb, this argument does not surface as an overt argument, being bound by an existential quantifier which has no apparent counterpart in the sentence. So what sort of evidence do we have for the existence of the Davidsonian event argument? Some of the major pieces of evidence adduced in the literature will be in order.

One of the original motivations for positing an event argument was that it provides a very natural and simple account for entailment relations among sentences with certain adverbial modification. Consider, for example, the sentences (2a–d) below:

(2)

a. John cut the bread slowly in the kitchen.
b. John cut the bread slowly.
c. John cut the bread in the kitchen.
d. John cut the bread.

According to the (neo-)Davidsonian analysis, (2a) will be given the following logical representation:

(3) \( \exists e \ [\text{Cutting}(e) \& \text{Actor}(John, e) \& \text{Patient}(\text{the bread}, e) \& \text{Slow}(e) \& \text{In}(\text{the kitchen}, e)] \)

Here, the adverbial modifiers in (2a) are formulated to be added conjunctively to the representation. Thus, the fact that (2a) entails each of (2b–d) can be explained in a very simple way because the above (sub-)formulas are represented conjunctively in the whole representation.

Another sort of original motivation was concerned with anaphoric dependencies in natural language. Let us first consider the following example, which is taken from Rothstein’s ‘Introduction’ (E&G: 5):

(4) Mary swam the channel last week. It took a long time.

In (4), the pronoun it clearly refers to an event described in the first part of the discourse—that is, the event of Mary swimming the channel. Note here that the second sentence in (4) does not mean that Mary was swimming the channel slowly; it is the whole event of Mary swimming the channel that took a long time.
However, this is not in itself direct evidence that the verb does introduce an event argument, since pronouns can also be dependent on those discourse-oriented entities that are not associated with particular semantic or syntactic elements in the sentence. Rothstein rightly points out that “the question of whether we make reference to events in our discourse is independent of the question of whether a verb introduces an event argument.” (E&G: 5)

For more direct evidence for an event argument being involved in anaphoric dependencies, look at the following example, which is provided by Mittwoch (E&G: 310):

(5) The car collided with a lorry, killing both drivers.

In (5), what killed the drivers is the collision event itself; both vehicles together, not either of them, could be responsible for the killing. So it seems that an event argument supposedly introduced by the verb collide is active syntactically as well, functioning as the subject of the participial construction in (5).

There is no doubt that we are making reference to events in our speech, and that the notion of events should play a significant role in a variety of linguistic phenomena. However, these intuitive facts do not imply that the theoretical status of events in linguistics is clear enough to employ them as a pre-theoretical primitive in linguistic frameworks, including event-based theories. Indeed, the ontological status of events remains vague in the philosophical literature; a number of different theories have been proposed on what events really are. Davidson’s ‘causal theory’ of events is just one of them.

3. Thematic Roles and Events

In this section, I will review Carlson’s paper, “Thematic Roles and the Individuation of Events.” We have a long history of research in linguistics on thematic roles, which have been alternatively called ‘case roles/relations’ and ‘thematic relations,’ but there remain many unsolved questions on the conception of this notion, leaving open such basic issues as how many roles there are and what role a given NP in a given sentence may be playing. Carlson does not intend to give a definite answer to these issues. His aim in the paper is to offer some perspective which may lead us to clarify the status of thematic roles in the linguistic theory.

Specifically, he proposes that thematic roles are thought of as “en-
tities that play a conceptual role in the individuation of events.” (E&G: 35) His proposal is made within event-based frameworks along the lines of neo-Davidsonian theory, and is built on two basic assumptions for events. One is concerned with his notion of events, and the other with his particular way of characterizing the event variable.

On the notion of events, he makes the following remarks (E&G: 39):

By “event” I intend a spatially and temporally bounded, ephemeral constituent of the world that has but a single occurrence. These are to be distinguished from event-types, which unlike (token) events may occur and re-occur.

As is shown in the above quote, his idea of events (as tokens) is a rather extensional one; events are just some sort of entities in the world, with specific (spatio-temporal) properties being allowed for them. They reside in the world much the same way as ordinary objects exist in the world. From logical points of view, this notion of events is not an unfamiliar one. In the usual individual-event semantics, events stand on a par with ordinary individuals; both sorts of entities are ‘first-class citizens,’ those things that can be referred to in their own right.

As I sketched in section 2, the Davidson-style analysis assumes that a verb has an implicit argument denoting an event, an event argument. Thus, in the logical representation of a sentence a variable which ranges over events has to be posited. Here, Carlson assumes that this variable ranges over singular events, not pluralities of events. As a consequence of this assumption, he is committed to the claim that verbs denote only singular events. This is apparently a strong assumption, since there seem to be a variety of sentences which, by our intuition, involve a plurality of events. However, in such cases, Carlson argues that “this ability to express a plurality of events arises from operator in the sentence, such as a plural NP, distinct from the verb itself.” (E&G: 44) This issue is, thus, related to the analysis of sentences involving plural noun phrases. Let us consider the following pair of sentences to illustrate his ideas:

(6) a. John and Bill met in Cleveland.
    b. John and Bill met each other in Cleveland.

Intransitive verbs like meet only take NPs which denote collective entities (groups). Sentence (6a) is not ambiguous; it is given only a group-reading, not a distributive one. However, it should be noted
here that sentence (6a) seems to entail either of the following sentences:

\[(7)\]

a. John met Bill in Cleveland.

b. Bill met John in Cleveland.

Carlson claims that this fact can be explained as a matter of lexical entailments attributed to the meaning of (intransitive) *meet*, so it does not necessarily follow that sentence (6a) by itself should express a multiplicity of events corresponding to the ones expressed by (7). On the other hand, sentence (6b) does express a plurality of events of John meeting Bill and Bill meeting John. Carlson insists that this multiplicity is in fact triggered by the presence of the reciprocal expression of *each other* in the VP. Therefore, these facts do not necessarily indicate that verbs like *meet* really denote a plurality of events—that is, they cannot serve as counterexamples to his contention that verbs denote only singular events.

However, it will be easily noticed that the above way of argument by Carlson is not decisive as it is. The discussion in this paper is based on his idea of event individuation by thematic roles, which originally appeared in his earlier paper (Carlson (1984)). In what follows, I will present the essential points of his proposal in that paper.

Carlson claims there that thematic roles in the linguistic theory should have an ‘intermediate’ status between syntactic phenomena and purely semantic phenomena. He first points out that thematic roles could not be regarded simply as syntactic phenomena. Although in the (generative grammar) literature they have been commonly included in syntax at some level, he mentions that nothing of significance to syntax rests on which thematic role a given NP is assigned. What really matters is that some thematic role or other is to be assigned. He then points out that it is also untenable to consider thematic roles to be purely semantic phenomena. He mentions that “thematic roles have certain properties that are puzzling under the usual set of assumptions about the nature of model-theoretic semantic interpretation.” (Carlson (1984: 271)) By the model-theoretic semantic interpretation here, he intends that of the (traditional) situation semantics (see Barwise and Perry (1983)). In situation semantics, linguistic meaning, as well as meaning in general, resides in ‘structural constraints’ on the reality. Kissing *means* touching, for instance, because of what kissing is; the semantic relation (or constraint) that kissing entails touching comes from the nature of the world. Carlson then claims that this realistic
A semantic view of natural language meaning is not consistent with the most fundamental nature of thematic roles in linguistics, which he calls ‘thematic uniqueness’—that is, no verb seems to be able to assign the same thematic role to two or more of its arguments. He points out that a formal system that does not observe thematic uniqueness would be easily definable, e.g. a function-argument system in the usual predicate logic.

In the present paper, he tries again to defend his thesis of thematic uniqueness, which is given in terms of informal observation as follows (E&G: 40):

An event has at most one entity playing a given thematic role (in slogan form: “Two agents, two events!”).

Returning to his analysis of sentence (6a) with the group reading, he argues that just one event should be involved because only one Agent is relevant in that event; the group consisting of John and Bill is the (sole) Agent in (6a). Hence his analysis of sentence (6a) would be appropriate, given his thesis of thematic uniqueness.

I am quite sympathetic with his endeavor to “merge what have been to date two quite distinct concerns, the analysis of thematic roles in linguistics, and issues about event individuation from philosophy.” (E&G: 35) But I am doubtful of his specific claim that thematic uniqueness arises from the need to individuate events—that is, “to tell how many events one has “going on” in a space at the same time.” (E&G: 37) First of all, I differ in opinion with him about his extensional view of events, where the notion of events are to be identified with spatio-temporal portions of the world. Second, his argument for the ‘intermediate’ status of thematic roles presupposes very restricted views of model-theoretic semantics, where it is assumed that meaning resides in the reality, and not in any ‘intermediate’ process between linguistic expressions and the world. Anyway, from the discussion given in the paper alone, what one could say at most about the function of thematic roles is that they are supposedly playing one of the conceptual roles in our cognitive process of event individuation. There should be a variety of factors involved in the process. Carlson himself seems to admit this weakness, but his paper is just too short to discuss in any depth cognitive issues about the individuation of events.
4. Progressives and States

Now I move on to the papers by Zucchi and Glasbey, where they take up some issues about English progressives in connection with the notion of stativity.

In his paper, "Aspect Shift," Zucchi deals with what he calls 'aspect shift.' According to Vendler's classification of semantic aspects, predicates are divided into several classes like states, activities, achievements and accomplishments. In the literature, there have been proposed several criteria or 'tests' for identifying the aspectual classes (see Dowty (1979), among many others), but these criteria are not absolute in nature; it appears that predicates in some contexts may behave as if they belonged to more than one aspectual class.

Consider, for example, the following sentences, which are taken from the paper (E&G: 350):

(8) a. John is resembling his father more and more as each day goes by.
    b. [context: John runs a specific distance every day]
       John ran in an hour.
    c. John baked the cake in an hour/for an hour.

In (8a), the predicate resemble, which is usually regarded as stative, occurs in the progressive. In (8b), the predicate run, which is basically classified as activity, is allowed to be used with an in-adverbial in the given context. Furthermore, some predicates like bake the cake allow quite naturally both for- and in-adverbials, as is shown in (8c).

As a starting point to discuss the notion of stativity, Zucchi takes up Partee (1977)'s analysis of the verb be, where 'active be' is proposed in addition to stative be. After introducing Partee's distinction of stative/active be, Zucchi points out that Partee's analysis of be in the progressive relies on the general assumption that stative verbs cannot occur in the progressive. He then presents a problem for this assumption. It has been noticed that stative predicates are unable to occur in the pseudo-cleft construction, as is seen from the following examples:

(9) a. *What John did was know the answer.
    b. *What John did was resemble his father.

Now he argues that if stative predicates are identified by the inability to occur with active do in the pseudo-cleft construction, we can no longer identify the class of predicates that are unable to occur in the progressive with the class of stative predicates. The reason for this
argument is that there are some predicates which do occur in the pro-
gressive, but do not accept active *do*. For instance, consider the verb
*lie* in the following sentences (E&G: 353):

(10)  a. *What the blender did was lie on the kitchen table.*
    b. The blender was lying on the kitchen table.

From the above argument, Zucchi concludes that we must concede
that some stative predicates do occur in the progressive. Therefore,
we will have to explain why stative *be*, unlike other stative predicates
like *lie*, cannot occur in the progressive. Mere supposition of stative
*be* in Partee (1977) does not of itself account for this fact.

He goes on to look for those accounts for (non-)occurrence of the
progressive which have been proposed independently of the notion of
stativity. Here, he takes up Dowty (1979)'s analysis of the progres-
sive. According to Dowty's theory, a predicate *P* can occur in the
progressive only if *P* is an interval predicate, where a predicate *P* is de-
defined as an *interval predicate* iff the property it expresses cannot be tru-
ly predicated of objects at instants. Based on this definition, the verb
*know*, for instance, is not an interval predicate because it can apply to
instants as well as intervals—that is, if *x* knows *y* during a certain inter-
val, then it is also true that *x* knows *y* at every instant within that inter-
val. Thus, *know* cannot be used in the progressive. On the other
hand, the verb *lie* is arguably an interval predicate, and it can occur in
the progressive, as is illustrated in (10b).

Zucchi, then, presents a basic problem for Dowty's theory on the
progressive, considering those cases where *be* is involved in the pro-
gressive, like below (E&G: 355):

(11)  a. John was noisy.
    b. The motor was noisy.
(12) a. John was being noisy.
    b. *The motor was being noisy.

He points out that it is not obvious at all that (11a) and (11b) differ in
their ability to be true at moments. But these sentences differ in how
readily they can be turned into progressive ones, as is shown in (12).3

2 For discussion of this argument, see the paper (E&G: 354–355).
3 The difference of grammaticality between (12a) and (12b) can be explained by
Partee (1977)'s definition of 'active *be*'—that is, active *be* is partly defined as select-
ing only animate subjects.
Based on the foregoing discussion, Zucchi finally concludes that the progressive of copular predicates and the progressive of non-copular ones must be formulated separately. Hence he posits two different sources for progressive sentences in English. He coins a special term ‘the active progressive’ for those progressives involving copular VPs with active be, and formulates the copular VPs in progressive form as follows (E&G: 357):

\[ \lambda P \lambda x \lambda e [P(x)(e) \wedge \text{doing}(e, x)] \]

Note here that the formula in the above logical translation includes the logical predicate doing, which is intended to be the same predicate that translates pseudo-cleft do in English. From this formulation, it follows that the progressive of copular predicates be anomalous if the predicate with which it combines does not denote the type of eventualities that can be done, thus accounting for the inability of stative be to be used in the progressive.

As for the other type of progressives, he provides the non-copular VPs in progressive form with the following logical formulation (E&G: 357):

\[ \lambda P \lambda x \lambda e [P(x)(e) \wedge \text{in-progress}(e)] / \forall x [\text{Interval}((P)(x))] \]

The formula in the above translation includes the form of in-progress, with restriction of \( \forall x [\text{Interval}((P)(x))]. \) The symbol ‘/’ means that the condition after ‘/’ excludes non-interval predicates from the domain of the function denoted by the expression preceding ‘/’. This implies that the non-copular progressive can occur only with interval predicates.

I admit that Zucchi’s analysis of the progressive is a very sophisticated one from the descriptive point of view; it covers a large range of distribution patterns of progressive sentences in English. But it is not elegant as a theory of the progressive. He divides the English progressive into two disjoint classes, depending on whether the relevant VPs contain a copula or not. In my opinion, what he has shown in the paper is simply that the behavior of be in the progressive may be unique with respect to the notion of stativity. As far as his analysis of the non-copular (‘standard’) progressive is concerned, he has not gone beyond the former theories of the progressive in the literature. He is

---

4 In the formulation, the variables designated by \( x, P, e \) range over individuals, properties of individuals, and eventualities respectively. ‘Eventuality’ is the term to cover all of the aspectual classes including states (see Bach (1986)).
employing Parsons (1990)'s event semantics basically as it is, with the supplement of some ideas in Dowty (1979)'s interval semantics.\(^5\) However, it has been shown in the present formal semantics that intensionality should be involved in the notion of progressive (see Landman (1992), Bonomi (1997), Naumann and Piñón (1997), among others). Indeed, Landman provided conclusive evidence that the progressive does create an intensional context, which could not be solved by Parsons' extensional notion of 'incomplete object' (see Landman (1992: 5–10)).\(^6\)

In her paper, "Progressives, States and Backgrounding," Glasbey presents an analysis of the progressive in ‘channel theory’ (see Barwise and Seligman (1997)). Channel theory has developed from situation theory (see Barwise (1989), among others), advancing the theory to the utmost of its information-theoretic view of meaning. Glasbey’s discussion of the progressive is also related to the notion of stativity, but her concerns are quite different than Zucchi’s.

It has been proposed in the literature that the progressive can be seen as a stativizer—that is, an operator which converts a non-stative sentence into a stative one (see Vlach (1981), among others). She calls this sort of analysis the ‘progressive-as-stativizer’ (PAS, henceforth), and argues against it in the paper. She claims that the PAS account of the progressive cannot explain properly the difference between lexical statives and progressives, in connection with the following distribution patterns of at the time and at the same time (E&G: 107):

\[(15)\]
\[
a. \text{Emily climbed Ben Nevis.} \\
b. \text{Fiona climbed Snowdon at the same time.} \\
c. *\text{Fiona climbed Snowdon at the time.} \\
d. *\text{Fiona was a girl at the same time.} \\
e. \text{Fiona was a girl at the time.} \\
f. \text{Fiona was climbing Snowdon at the same time.} \\
g. \text{Fiona was climbing Snowdon at the time.}
\]

\(^5\) In the paper, Zucchi discusses English for-adverbials in connection with the progressive. In this discussion, he does offer some revision of Parsons' theory and proposes that his idea of 'culmination' of events should be relativized to some extent. But this revision is mainly of technical significance, and I do not think that it would save the Parsons-style extensional treatment of the progressive from being basically defective.

\(^6\) See also Shirai (1999: 44–48) for relevant discussion.
In the above discourse sequences, we are considering those cases where (a) is followed by one of (b–g). Our intuitive judgment is that in cases where the second sentence in the sequence is neither a lexical stative nor a progressive, as in (15a, b) and (15a, c), *at the same time* (*atst*, henceforth) is acceptable but *at the time* (*att*, henceforth) is ruled out. On the other hand, if the second sentence is a lexical stative, as in (15a, d) and (15a, e), *att* is acceptable but *atst* is ruled out. However, in (15a, f) and (15a, g), where the second sentence is a progressive, either *att* or *atst* is acceptable. To sum up, an event-state sequence requires *att*, while an event-event sequence requires *atst*, but an event-progressive sequence allows both. These facts indicate that there should be a significant difference between lexical statives and progressives in what they are serving in the sequence of discourse.

She then turns to the discussion of discourse structure, taking up the notion of ‘back grounding,’ which has so far been widely used in the discourse theory. This notion is concerned with the relation between two sentences, where the eventuality described by the second one has a relation of temporal overlap, as opposed to temporal succession, with the eventuality described by the first. Based on this discourse-oriented notion, she makes the following generalization: where a backgrounding relation obtains, *att* is appropriate, and where it does not, *atst* is appropriate. It is natural to suppose that an event-state sequence corresponds to backgrounding and an event-event sequence to non-backgrounding. Thus we can explain the first two cases given in (15). Moreover, the fact that the progressive allows either *att* or *atst* can be explained if we assume, as Glasbey claims in the paper, that progressives may be functioning in discourse either as backgrounding or as non-backgrounding. What she has shown so far is that the lexical dis-

---

7 I will not go into the details of her proposal, where she employs STDRT in her analysis of phrases in form of ‘the X’ and ‘the same X’. STDRT is a version of situation theory framework, coupled with the discourse representation theory (DRT) notation. For DRT, see Kamp and Reyle (1993) among others.

8 Glasbey claims that the discourse relation is regarded as backgrounding in (15a, g) but not in (15a, f). For this claim, she notes that (15a, g) conveys the impression that Fiona’s climb took considerably longer than Emily’s, whereas in (15a, f) the two climbs could well have taken approximately the same length of time (E&G: 112).
tinction of stative/non-stative does not match up with the discourse-oriented distinction of backgrounding/non-backgrounding. She points out that attempts in the literature to view the progressive as a stativizer have been confusing these two notions.

Now she moves on to propose her own analysis of the progressive within the framework of channel theory. As a starting point, she takes up Smith (1991)'s analysis of the progressive, which is based on the discourse representation theory formalism. She points out that Smith's formulation of the progressive is basically defective in that she employs event-typed discourse referents as corresponding to complete events. It is a well-known fact in the formal semantics literature on the progressive that events in progress do not necessarily turn out to be completed. Indeed, in some cases, it would be even counterintuitive to suppose any complete event for the progressive.

In this regard, consider the following famous example, which was given by Landman (1992):

(16) Mary was swimming across the Atlantic. Intuitively, it would not be appropriate to use (16) to describe a scene where Mary has just set out from some coast in France, even though she is determined to swim USA-ward. As Glasbey rightly points out, the notion of events being completed in the progressive is of 'conceptual' rather than 'real' status. Furthermore, she argues that 'conceptual' events can be identified with situation-theoretic objects of '(event) types.'

The above example also indicates that we need some notion of 'normality' or 'expected outcome' in the formulation of progressives. In the case of (16), for instance, under the normal course of events we may not suppose that Mary would be able to get across the Atlantic. Glasbey claims that this notion of normality can be captured properly in channel theory. Her basic idea can be seen from the following quote (E&G: 118):

The intuitive idea is that a constraint expresses what is normal or expected. Constraints are intended to model the way that agents classify the world—they correspond to the natural regularities we perceive around us and use to enable us to reason with limited information.

To illustrate her proposal, look at the following example, which is attributed to Irene Heim:

(17) Irene was making fish stew, but the cat was eating the fish.
She notes that (17) shows those cases where a pair of ‘conflicting’ progressives are both arguably true in the same set of circumstances, and points out that the key notion here is that of ‘perspective.’ Then, she claims that the notion of different perspectives can be obtained in channel theory—that is, in channel theory each perspective may be regarded as corresponding to a distinct channel. In the case of (17), for instance, “we can view the first channel ($C_1$), corresponding to the first progressive, as reflecting the point of view of Irene (given her intention to make the stew), and the second channel ($C_2$), corresponding to the second progressive, as reflecting the perspective of the cat, given its intention to eat the fish.” (E&G: 121)

In this review article, I will not take issue with channel theory itself. But it seems to me open to question whether this general theory of meaning would be able to apply to natural language semantics as well, while maintaining its strong flavor of information-theoretic standpoint as it is. Here, the most basic question is, I think, what is the status of constraints in natural language semantics. In the above quote, Glasbey remarks that constraints correspond to “the natural regularities we perceive around us.” So in her view of constraints, they are relativized to be agent-dependent. But we should take notice that constraints in this sense are still to be objective (or absolute), to the extent that the natural regularities should be objective in nature. Constraints basically reside in the world, being only relativized to our way of perceiving these regularities. Therefore, the status of constraints in the linguistic meaning may not be clear at all, unless it has been clarified how our way of perception is to be related to the world, through the linguistic mediation of lexical and/or constructional meaning. Lots of work needs to be done in order to make any judgment on this fundamental issue in natural language semantics.9

Apart from the above general points, I would like to make some comments on Glasbey’s specific claims given in the paper. First, she claims that the conceptual status of events in the progressive may be identified with the situation-theoretic notion of ‘types.’ In situation

---

9 As far as I know, there has been no other application of channel theory to natural language semantics than Glasbey’s analysis of the progressive.
theory, however, types are abstract (mathematical) entities, in the sense that they are parameterized objects. This will not necessarily imply that their status should be conceptual in the cognitive sense as well. Here, we have to face one of the most basic issues in formal semantics, that is, the so-called 'partiality' of information. In my opinion, the partiality that has so far been discussed in situation theory would not fit in well with that which is related to the notion of events. 'Events' and 'situations' have often been confused with each other in the literature, but they basically reside in quite different spheres. Situations are partial entities existing in the world, whereas the partiality of events does not reside in the reality-as-it-is, but in our process of perception in itself, presumably based on our way of recognizing the notion of time. Second, her account of example (17), where she is making a sloppy use of the term 'perspective,' seems to me dubious; it would not be so apparent to see how the speaker may shift his or her perspective to that of the cat! Lastly, it is not quite clear what sort of 'normality' should be common in the general meaning of the progressive.

5. Stage/Individual Level Distinction

In this section, I take up the papers by Greenberg and McNally. Both of them criticize the famous distinction of stage/individual level predicates, originally proposed by Carlson (1977). In what follows, then, I will focus the discussion on those issues which are directly concerned with this distinction.

In her paper, "An Overt Syntactic Marker for Genericity in Hebrew," Greenberg deals with present-tense nominal (copular) sentences

10 I do not have the space to give details here, but the interested reader should refer to Shirai (1999) for my claim concerning the partiality relating to the notion of events.

11 In the literature, some authors are employing the term 'situation' simply as a more inclusive notion than that of 'event'—that is, situations in this sense include states together with events.

12 The concept of progressive, just being like that of future, is basically a modal one (see, e.g., Bonoma (1997)). Our life is beautiful partly because unexpected things might happen.
in Hebrew. The distinctive feature with Hebrew copular sentences is that the copula of the present-tense ones has the form of a nominative third person pronoun, as illustrated in the following examples (E&G: 125):

(18) a. dani hu gavoha
    Danny 3ms.sg. tall
    ‘Danny is tall.’

b. ha-‘etim Seli hem kxulim
    the pens mine 3ms.pl. blue
    ‘My pens are blue.’

The distribution of a pronominal copula (Pron, henceforth) can be divided into three cases: (i) it is obligatorily present (OBLIG. + Pron sentences); (ii) it is obligatorily absent (OBLIG. – Pron sentences); (iii) it may be deleted from the sentence, without causing any ungrammaticality. First of all, Greenberg claims that there is a semantic distinction which correlates with the presence/absence of Pron in case (iii). See, for example, the following pair of sentences (E&G: 127):

(19) a. ha-Samayim hem kxulim
    the sky 3ms.pl. blue
    ‘The sky is generally blue, blue by their nature.’

b. ha-Samayim kxulim
    the sky blue
    ‘The sky is blue now/today.’

She observes that (19a) expresses a ‘general’ or ‘permanent’ statement, whereas (19b) reports an ‘episodic’ or ‘temporary’ fact. The problem is how to characterize this kind of observation in a more formal way. For this purpose, she points out that there are two independently motivated semantic distinctions available in the literature—that is, the stage/individual level distinction and the generic/nongeneric distinction. As for the above examples, either of the accounts based on the two alternative distinctions will do. However, looking over extensive data in Hebrew, she argues that the generic/nongeneric distinction is more appropriate for characterizing the distribution pattern of Pron in Hebrew. Her central claim in the paper is this (E&G: 128):

(20) a. OBLIG. – Pron sentences can be interpreted as nongeneric only.

b. OBLIG. + Pron sentences are interpreted as generic only.

For reasons of space, I will not discuss in detail her arguments for the above claim, but only take up some crucial examples given in the
(21) a. ha-cipor ha-zot *(hi) xasida  
the bird the this 3fm.sg. stork  
'This bird is a stork.'  
b. ha-'is ha-ze (hu) more  
the man the this 3ms.sg. teacher  
'This man is a teacher.'

The predicate in either of the above sentences is to be classified as individual level—that is, as expressing permanent, or at least tendentially stable, properties. However, Pron is obligatorily present with (21a), but not with (21b). This suggests that the idea of 'generic-only' in her generalization of (20b) is stronger than that of 'tendentially stable.' She points out that the OBLIG. + Pron cases in Hebrew express not merely permanent properties, but inherent and nonaccidental ones. In the above examples, be a stork should express a more inherent and nonaccidental property of its subject than be a teacher, although either of the predicates expresses a tendentially stable property. If the bird stopped being a stork, we could no longer use the same NP and refer to the same individual as before. In contrast, even if the man changed his job, we may still use the same NP to refer to the same individual as before. Of course, be a teacher can also be asserted to be inherent, nonaccidental properties of their subjects, depending on the context of utterances.

Crucially, the stage/individual distinction, as originally proposed by Carlson (1977), is a distinction between predicates. However, what matters in the above examples is not a lexical property of the predicate, but possible ways in which the eventuality described by the whole sentence is to be interpreted in the given context—that is, whether it may express a generic, nonaccidental statement or an episodic, accidental one. Thus, the lexical distinction of stage/individual level predicates cannot be used here. I completely agree with Greenberg on this point.

However, I am not quite sure how the generic/nongeneric distinction employed in her account could be formalized in the framework of formal or model-theoretic semantics. For the formulation of genericity, she is assuming the 'Gen-operator' à la Chierchia (1995), coupled with the possible-world treatment of modality by Krazter (1981). But much remains unresolved in such formal settings, especially with the full for-
mulation of the Gen-operator.13

In her paper, "Stativity and Theticity," McNally discusses, and also criticizes, the stage/individual distinction in terms of another dimension of dichotomy — the thetic/categorical distinction of statements (see Kuroda (1972), among others). She is concerned with the readings of English bare plurals, and reaches the same conclusion as Greenberg’s that the explanation for their readings should be made at the sentence level, rather than at the lexical level of predicates. But her story is quite different from Greenberg’s.

To begin with, as for the empirical criteria for identifying the theticity of sentences with respect to the readings of bare plural subject NPs, McNally makes the following assumption: the failure of a predicate in English to license a (weak or nonspecific) existential bare plural subject indicates that the predicate cannot appear in a thetic sentence; moreover, such an existential reading is sufficient to indicate that a sentence is thetic (E&G: 294). For example:

(22) a. Thunderstorms are scary.
    b. Thunderstorms appeared on the horizon.

The subject NP in (22a) cannot be interpreted as existential, and this empirically indicates that be scary is not among those predicates that can be used in thetic sentences. The subject NP in (22b), on the other hand, can be given an existential reading, indicating that the sentence is regarded as thetic, not categorical.

In what follows, I will only discuss some of the crucial examples presented in the paper (E&G: 299–301):

(23) a. Holes were in those pants.
    b. Dents were under the driver’s side windows.
(24) a. Coins were in those pants.
    b. Dead bugs were under the driver’s side windows.
(25) a. Holes have appeared in those pants.
    b. There are dents under the driver’s side windows.

13 In Chierchia (1995), the Gen-operator is regarded just as a Q-adverb (the so-called ‘adverb of quantification’) with a special modal character, but he is not explicit on how this modal notion can be formulated in the semantical framework. He remarks: "What is specific to Gen relative to other Q-adverbs is the nature of its modal dimension. To spell this out is a very hard task" (ibid.: 195). His main concern in the paper is rather with the syntax/semantics interface.
McNally observes that sentences like those in (23) will be given a generic reading for their bare plural subjects, and thus sound odd. For instance, it would be implausible to suppose that it is a characteristic property of holes that they be located in a particular pair of pants. However, this fact cannot be ascribed to the usage of locative predicates in themselves. Indeed, we can easily find examples like (24), where existential readings of bare plural subjects are normally available. Nor can we relate it to any properties associated with the bare plural NPs in (23), since many examples like those in (25) are allowed with existential readings.

McNally claims that what is special with examples like (23) is that the nominal expressions in the subject NPs in (23) denote relations between individuals that are subject to a condition that could be stated as follows (E&G: 300):

(26) For all $a$, where $a$ denotes a "location-sensitive" relation between entities $x$ and $y$ at interval $t$:
$$\forall x, y[ a(x, y) \iff \forall l[ \square [\text{in}(x, l, t) \rightarrow \exists z [\text{in}(z, l, t) \wedge z \leq y \wedge \text{LOC}_i(x, y)]]],$$
where $l$ is a variable over locations and $\text{LOC}_i$ identifies the relevant locative relation. For instance, if $x$ is a hole and $y$ is a pair of pants and $x$ is in location-sensitive relation ($a$) with $y$, then it will follow that it is necessarily true that any location $l$ containing $x$ contains at least some part ($z$) of $y$ as well and, moreover, that $x$ and $y$ stand in whatever locative relation ($\text{LOC}_i$) is relevant to defining $x$ in terms of $y$—in this case, a 'part/whole' relation.

These facts indicate, as McNally claims in the paper, that we have to be concerned with the complete descriptions of eventualities in order to explain the readings of bare plurals. She then proposes the general notion of 'location independence' to account for the existential/generic readings of bare plurals, which is given below (E&G: 301):

(27) An eventuality $e$ is location independent for participant $x$ bearing role $R$ in $e$ at interval $t$ iff: $\mathbf{Gn} \ l [ \text{in}(x, l, t) \rightarrow [R(x, e) \wedge \text{in}(e, l, t)]]$.

14 The idea of 'location independence' stems from some part of Chierchia (1995)'s definition of the Gen-operator. However, McNally rejects Chierchia's lexical treatment of genericity, which was proposed with his hypothesis that individual-level predicates should be inherently generic.
Note here that the condition which she imposed on entities denoted by nominals like holes and dents in (26) is stronger than the condition given in (27) above. Thus, if (26) is satisfied, (27) will be met, too.

Employing the definition of 'location independence,' McNally presents the following generalization (E&G: 301):

\[(28)\] If an eventuality \( e \) is location independent for any participant \( x \) in \( e \) (with respect to the relevant role and interval), then \( e \) cannot be described in a thetic sentence.

The above generalization states that the failure of predicates to appear in thetic sentences, thus, their inability to license existential readings of their bare plural subjects, is due to the fact that the eventualities described by the sentences are to be characterized as being 'location independent.' Note here that this generalization will account for the generic readings of subject NPs in sentences like (23), since the eventualities described by these sentences should be location independent in her sense. Thus, her analysis of theticity crucially relies on the complete description of eventuality corresponding to the whole sentence, involving its argument NPs as well as its predicate.

It should also be noted here that in her definition of 'location independence,' the variable for the Gn-operator ranges over only locations, rather than over situations or occasions themselves, which include the temporal aspects of eventualities as well. To support this, she presents several examples in the paper, where stative predicates that express even transient states do not appear to license simple (weak) existential readings of their bare plural subjects. For example (E&G: 298):

\[(29)\] a. The diners complained because plates were dirty.
  
  b. Today, people in the office were in a good mood.

The above sentences express some kind of generalizations over the denotations of the italicized NPs in some temporally constrained domain. With examples like these, she claims that temporal persistence is not relevant for the interpretation of English bare plurals.

McNally's analysis of English bare plurals seems to me very attractive in that the availability of their existential readings is directly related to the theticity of sentences involving them. However, apart from the formal problems that I mentioned before with respect to Greenberg's employment of the generic operator, her proposed restriction based on the notion of 'location independence' is explanatorily too weak as it stands, since it only serves to isolate some of those cases where existential readings of bare plurals cannot be licensed. In other cases, where
existential readings of bare plurals cannot be banned by her theory alone, she says virtually nothing about them. Furthermore, as for (29b) above, it seems to me dubious that the eventuality in question should be location independent in her sense. On some reading, at least, this example may be understood to make a ‘general’ statement about the characteristic property of the locative situation itself—that is, the office was in a somewhat pleasant situation. This issue is, I believe, concerned with the topic-hood of statements.

6. Conclusion: Events in the Linguistic Theory

In this review article, I have taken up only several of the papers included in the volume. This does not mean that the other papers are of less significance. Just for reasons of space, papers in this volume which I could discuss at some length were limited in number. Within this restriction, I addressed myself with fundamental issues relating to the notion of ‘events.’ In conclusion, I would like to summarize my points concerning this notion.

First of all, as I pointed out in section 2, I have no intention of raising any objection to the usefulness of events as a descriptive tool for a variety of linguistic phenomena. In this article I concerned myself with the theoretical status of events in natural language semantics. In section 3, while discussing Carlson’s proposal on the conceptual significance of thematic roles, contrary to what he is assuming in the paper, I claimed that events are not just spatio-temporal portions of the world. In this connection, I also criticized Zucchi’s analysis of the progressive, which is basically assuming the Parsons-style extensional event semantics.

In the latter part of section 4, when I discussed Glasbey’s account of the progressive in the recent framework of channel theory, I raised a question about its information-theoretic perspective of meaning, as it is applied to natural language semantics. Though the matter has not been settled at all, I suggested that we must at least give a serious consideration to the partiality of information relating to our cognition (or perception) of events. Indeed, situations and events reside in quite different spheres. What matters in the case of events is not the reality-as-it-is, but the reality-as-approximation.

One might suppose that the above cognitively oriented view of events would not be consistent with the basic methodology of formal seman-
tics. It has often been pointed out by those who have been engaged in what they call 'cognitive semantics,' that formal semantics is concerned with only 'objective' aspects of meaning. But I do not think that this sort of criticism of formal semantics is correct. Due to their excessively restricted views of what model theory has to offer, they have misunderstood what mode-theoretic semantics should be. As Van der Does and Van Lambalgen (1998, 2000) have shown clearly, the model theory is, in itself, a rather flexible tool in the formalization of natural language semantics. They point out that "in principle, model-theoretic semantics is neutral between the semantic representations as aspects of the world and as elements of conceptual structure." (Van der Does and Van Lambalgen (1998: 10)) Hence it is not impossible at all to incorporate into the general scheme of model-theoretic semantics those facets of meaning that are not directly related to objective aspects of the world. The linguistic notion of events is one of the most important manifestations thereof, where our approximation of the reality, which is presumably based on our recognition of time, is crucially involved (see Shirai (1999) for details).

In section 5, I discussed the distinction of stage/individual level predicates, focusing on those problems which are pointed out by Greenberg and McNally. I completely agree with them in that what really matters in either of their analyses is not the lexical properties of predicates, but the complete eventualities described by the whole sentences. This will bring us to notice that we should pay more attention to the distinction between eventualities and events, the former being properties of the latter. We should also take notice that in any proper discussion of eventualities we are obliged to take into account the intentional, as well as intensional, aspects of utterances. This is the very reason, I suppose, that either of Greenberg's distinction on genericity or McNally's distinction on theticity may well be playing some significant role in our classification of eventualities. However, as I pointed out in the discussion of their papers, to give a full-fledged formulation of the Gen-operator, on which both of them are relying in their analyses, would be a very difficult task. Even from this simple fact, it should be obvious that there is much work left for our future research before we can make use of the notion of events as a really explanatory tool in the linguistic theory.

Finally, I would like to mention that the book under review is one of the most important collections of papers for all of those who are in-
interested in what has been going on in recent studies of the event-based theory, as well as the recent developments of formal semantics in general.

REFERENCES


Faculty of Liberal Arts
Chukyo University
Yagoto, Showa-ku
Nagoya 466–8666
e-mail: shirai@sccs.chukyo-u.ac.jp