Abstract

The notion of criteriality in predicate descriptions introduced in an article by Kearns in 2003 is taken up in a recent article by Sæbø and formalized to explain the semantic processing of English \textit{by}-clauses. In the present paper I relate this notion to another notion of criteriality introduced in the linguistic literature a decade earlier, and apply the recent work to \textit{ing}-participial adjuncts.

1 The background

One central goal of my work in linguistics about a decade ago was to get closer to an understanding of the discourse relations that are inferred to hold between \textit{ING}-participial adjuncts and their matrix clauses, and to be able to explicate the procedures by which the individual discourse relations obtain. In this work event structure proved invaluable. The long established Vendlerian event classifications were used (Vendler 1967), and the causative event complex as modelled in Higginbotham (1994) and Kamp and Roßdeutscher (1994) allowed sub-events in the semantic representation. A causative discourse relation was seen to emerge if the adjunct expressed a causative event whose properties were such that the Causing sub-event was relatively void of content. This causing sub-event referent would thus look for its content in the matrix predicate, and the causative relation between matrix and adjunct would result from the causative relation in the complex adjunct event.

(1) Thomas ripped the screen door, breaking the latch.

(2) The branch fell over the beautifully laid table, breaking the glasses.

(3) Fortunately, he (Bernard the `pisciniste` who bites dentists) had found a dentist who fought back with anaesthetics, knocking Bernard out completely while the repair work was done.
Knock out, like break, is analyzed as a causative predicate whose causing event is underspecified. If Thomas breaks the latch we don’t know what activity he enters into which causes the breaking, neither do we know what a dentist does to achieve the result of knocking you out. The information about these activities is expressed in the matrix clauses.

The reverse relation was also seen to obtain in these structures: The underspecified causative predicate appears in the matrix, and the adjunct event properties saturate it, as in (4):

(4) They defaced the two poster girls, spray-painting a down-turned mouth on one, and adding a wrinkled brow to the other.

The spray-painting and the adding of a wrinkled brow are events that fill in the underspecified conditions in the causative matrix defacing-event description. The result is a relation of Specification or Elaboration between the clauses.

In order to explain how a discourse relation between an ing-participial adjunct and its matrix clause emerges, then, predicates must be seen as structured sets of entities, and there must be an element of under-specification in the complex structure to allow merging. The structure we define will also determine the relation that obtains with the merge.

The merge itself was at the time analyzed as a presupposition satisfaction, in that the non-finite structure introduced a floating event referent in the representation and the referent would consequently look for an event referent in the discourse universe to merge with. Merging, a prerequisite for the discourse relations Result and Elaboration, would only occur if an underspecified event referent was motivated in the representation.

While the analysis is successful in so far as it helps define certain constraints on different discourse relations, a growing uneasiness was felt during this time over the lack of more finely grained event structure descriptions. The causative complex seemed to be the only predicate structure which allowed a compositional treatment of the inference leading to the emergence of a discourse relation of the kind exemplified above. Yet the relation of Elaboration is also inferred in discourses without causatives, such as in (5) and (6):

(5) He kept a low profile, driving an unobtrusive car.

(6) The (German) campers had treated his (the peasant’s) elaborate defence system with contempt, rolling back boulders to make a gap in the barricade and stealing the notices that warned them of the presence of vipers.
The problem here was that there seemed to be no sound analysis of a temporary state/activity like “keep a low profile” or an activity of contemptuous treatment that would allow us to introduce an underspecified referent which we could then see filled with content by being supplied with the adjunct event properties in a merging operation. Intuitively there is something unspecified, rather abstract, even subjective in describing an activity as that of a contemptuous treatment or keeping a low profile, and the activities rendered in the ing-participial adjuncts do explicate, or specify, the criteria by which such descriptions are claimed to hold. So a merge must take place in the interpretation and we need a basis for structuring the matrix predicate to allow this to happen in the semantic processing of the utterance.

The Vendlerian classification of events has received a lot of attention, and has formed the basis for most of the linguistic literature on event structure. The classification has proved insightful with respect to the understanding of temporal relations and verbal aspect, but as (5) and (6) above demonstrate, the classifications do not help us structure eventualities to allow a compositional analysis of event merging in all its manifestations even within the limited syntactic configuration we are faced with here.

A major breakthrough in the direction of extending the compositional analysis to cover cases of intuitively similar event relations comes from Ryle’s discussion of predicate types (1949), revived and brought further by Kate Kearns in her article on durative achievements (2003). The major difference between Ryle’s discussions and Vendler’s classification, according to Kearns, is the focus on the temporal dimension of the predicates, and as becomes evident from Kearns’ article, the temporal dimension has in many ways been an obstacle to further refining the structure of the predicate types observed by Ryle. In our cases, there is reference to just one event, but there are two descriptions of it. The temporal relation is not the central factor in the representation of the structure, as there is no temporal relation to be identified. How can we account for such examples?

Kjell Johan Sæbø, my intellectually inspiring supervisor at the time, has recently taken Kearns’ article as an opportunity to further mining out the logical structure of criterion predicates and has come up with a most convincing and thorough solution to the problem (Sæbø, to appear). His work is impressive, presenting structured solutions to vague, yet explicated conceptualizations of the semantic processing involved.

2 The notion of criteriality has changed

In an article from 1995, I argue that a notion of criteriality is relevant for the understanding of how the relation of Elaboration emerges as the result of a merge between two event representations (Brynildsen 1995). Criteriality was
first introduced in an unpublished paper by Lars Hellan in 1994. The notion is understood as an argument role feature applying to the agents of certain events. One example is the notion of breaking, as in for example *Thomas broke the latch*. Although it must be possible to identify Thomas as responsible for the breaking, it was observed that “there is no particular pattern of behaviour which has to be displayed by him in order to qualify for this role in the description.” (Hellan 1994: 11). The subject argument is non-criterial. The latch, on the other hand, is criterial in this event – as there would be no breaking unless there was some entity that broke, i.e. some entity that was affected. Criterial participants in Hellan’s sense can be exemplified in *John ate the apple*, in which the apple as well as John are integrally involved in every bit of the eating. The exact behaviour of John is specified, and the apple is involved in every bit of it.

This intuitive notion of non/criteriality was applied to transition verbs generally in my 1995 paper, and a distinction was made on the basis of whether or not the verbs are lexically categorized for criterial properties on their subject arguments. The factor of criteriality was seen to distinguish between two types of achievements, such as in the criterial *the capsule split* and the non-criterial *he won*. A minimal pair would be for example *open* and *unzip*, the first non-criterial, the second specifying the behaviour of the subject participant. The distinction was formally represented by postulating an underspecified event referent causatively related to the result event in non-criterial achievements and accomplishments.

In my thesis of 1998 I dropped the notion of criteriality, but kept the analysis of causatives to include an underspecified Causing event. The notion of a non-criterial agent did not seem to be independently needed to introduce the sub-events I needed for the analysis. I did not at the time realize that a notion of criteriality could be spelled out to include examples like (5) and (6).

The notion of criteriality is differently stated in Kearns, and with Kjell Johan’s seminal analysis of the structure of such predicates, I can now see that criteriality is after all an important feature in the analysis of the relations that obtain between *ing*-participial adjuncts and their matrix clauses. Criteriality is a decisive feature for the distinction between Elaboration on the one hand, which does involve identifying two descriptions of one event, and a similar relation of Accompanying Circumstance which involves two events understood to form a unit, but not requiring full unification (see below). In the following I will present a simplified description of these predicates, based on Sæbø (forthcoming) and apply them to my cases.

Kearns defines criteriality as a property of predicates, as opposed to Hellan's definition of it as a property of the argument. A criterion predicate, according to Kearns, expresses an individual-level, characterizing property of the event, in Ryle’s description stated as “a state-of-affairs which obtains over and above that
which consists in the performance of the sub-servient task activity” (Ryle 1949: 143). The key notion of criteriality is that there is some conventional criterion an action must meet in order to qualify as being an event of the criterion-matching kind (Kearns 2004: 599). Thus the property Hellan attributed to the argument role is shifted to a property of the predicate. The predicates taking non-criterial arguments in Hellan’s description, would, according to Kearns, be defined as criterion predicates. Applied to example (3) above, criteriality is a property of the matrix event: a defacing event is criterial in the sense that for a proposition with such a predicate to be true, there must be an action out there that meets some conventional criteria that qualify as being of the defacing kind. The action of spray-painting a down-turned mouth on one of the poster girls would match such a criterion, and so would the action of adding a wrinkled brow on the other poster girl. The criterion-matching suggests that the criterial predicate is parasitic upon a host (Kearns 2004: 596), i.e. it qualifies as of a particular type only in virtue of the nature of its host event.

Criterion predicates in Kearns’ discussion are limited to achievements. As long as the predicates are of a nature that allows us to define them as complex causatives, my analysis of ing-participial adjuncts in terms of a saturation of underspecified event referents does not need much refinement. However, if we look at the examples in (5) and (6), we are faced with predicates which also seem to be of the criterion matching kind, even though they are not complex causatives. Kearns’ “cure the patient” is a causative with an implicit underspecified causing event, but “treat the patient” is an activity, and so is “treat the peasant’s defence system with contempt”, cf. (6), yet both are criterial in the sense that the activities described are indefinite and must match some conventional criterion for being adequately interpreted as a treatment. “Keep a low profile”, cf. (5) would also match Ryle’s description of a predicate denoting a state of affairs which obtains over-and-above the “sub-servient” performance of driving an unobtrusive car (in a manor setting).

Put in plain language, the description of criterial predicates is simple enough, and the identification of them is intuitively very satisfying for any analysis of the discourse relation Elaboration, which requires a merging of discourse referents. However, the minute we go one step further and try to model the procedure by which the two event descriptions merge into a complex description of one event, we run into problems, as Sæbø (forthcoming) convincingly argues. Events, according to him, cannot be ascribed individual level properties. Rather, it is the event type that can have such properties. What the German campers did to the French peasant’s defence system was of a contemptuous treatment kind. The outcome of this observation is that criterial predicates can be used to predicate over predicates, which means, in fact, that they must be analysed as second order entities. By this analysis the first order
predication over an underspecified agentive event is included in the criterial predicate. This is spelled out in detail in Kjell Johan’s article. The predicate *keep a low profile* would thus receive the following semantic representation:

\[
\left\langle \langle e, \lambda \rangle, \langle P, \text{indefinite} \rangle \right\rangle,
\left\langle f Q \begin{array}{c} P(e) \\ P \leq Q \\ \text{Low Profile}(Q(\text{pro}))(\text{Agent}(e))(f) \end{array} \right\rangle
\]

There are details in this representation that are of little relevance for my presentation here. The point is to demonstrate the second order predication: \(Q\) predicates over the predicate \(P\), which predicates over an underspecified agentive event \(e\).

The semantic difference between a causative and a criterial predicate becomes particularly clear in the representation. While the causatives (not represented semantically here) have a *Cause*-operator, resulting in a counterfactual analysis, the criterial predicates on the other hand, have an *Inclusion* operator \((\leq)\), by which the first order predication is included in or identical with the criterial predicate. This distinction is intuitively and logically very satisfying, as it explains how Elaboration can be inferred even though the “host” does not cause the proposition with the criterial predicate to be true, as exemplified in (5) and (6). This structured decomposition of criterial predicates yields a representation with an unsaturated agentive event which invites a merging operation given that an appropriate “host” is introduced in the adjunct phrase. The matrix proposition will then be true *in virtue of* its host being true.

While either predicate type in the matrix – causative or criterial – allows the predicate in the *ing*-clause to merge with an underspecified element, and thus gives rise to the Elaboration interpretation, the reverse case is different. A criterial predicate in the *ing*-adjunct can give rise to the relation of Abstraction, as in (8), while a causative predicate in this position yields the relation of Result or Consequence, as in (9):

\[
\begin{align*}
(8) & \quad \text{The siren sounded, indicating that the air raid was over.} \\
(9) & \quad \text{[The ability of DNA to replicate itself is a consequence of its unique structure. It is shaped like two intertwined helices.] During cell division these unzip, splitting the molecule along its length into two separate helices. (from D.Attenborough: *Life on Earth*)}
\end{align*}
\]

How wonderful that there are minds in our linguistic community that can cope with such problems and help us disentangle the complexity of these phenomena!
3 What happened to Hellan’s notion of criteriality?

Surprisingly, although criteriality in the sense of an argument role feature is spelled out in Hellan and Dimitrova-Vulchanova in a published paper from 2000, there is no reference to it in either Kearns’ or Sæbø’s work.

However, it seems that Sæbø’s analysis implicitly answers why the Agents in the criterial examples are understood to be what Hellan called “non-criterial”. In Sæbø’s analysis of criterial predicates it is the implicit “host” event (explicated in the by-phrase, or in my examples in the ing-participial phrase) that is assigned an Agent, not the “parasite”, cf. the Agent role on the event referent predicated over in the representation in (7) above. The formalization yields an interpretation in which the criterial event may in fact not be intended.

While the host predicate is normally concrete (cf. drive a car in (5) or sound in (8) above), relating an event that an agent is the source of and responsible for, (and when communicated, observable and testable by the interlocutor), the criterial predicate relates the speaker’s perspective on that event, in the sense that the speaker uses such predicates to classify the “host” event as an event of a certain type. Kearns appeals to “conventional criteria”, but they can clearly be relatively subjective. Although the agent of the “concrete” event appears as the subject of the criterial event description, it is “non-citerial” in Hellan’s sense with respect to the “parasite” predication. This makes sense if the Agent role is assigned to the host event in the semantic representation.

The identification and precise description of criterion predicates, then, also contributes to the task of recognizing subjectivity in text, and their successful formalization in DRT is an important contribution to implementing not only abstraction, but also subjectivity and author’s voice in this framework. What is still somewhat unclear to me is whether the formalization as stated in (7) actually entails a subjective stance on the parasite predication. This question requires further consideration that I will not enter into at this point.

4 A compositional analysis or a purely pragmatic inference?

The compositional analysis of the merge between the main clause predicate and the predicate in the modifying by-phrase is central in Sæbø’s article taken up here. The availability of an under-specified referent is secured by the structure of the main predicate, the merging operation is secured by the preposition by. ING-participial adjuncts of the kind I exemplify here, have no preposition to guide or trigger a merging operation, yet the non-finiteness of the structure creates a syntactic dependency which at least requires that its predicate hook on to the predicate in the matrix in some way. As opposed to by-phrase predicates, however, ing-participial adjuncts may be fully acceptable in cases where a full
merging operation would fail. The result is that a discourse relation other than Cause, Elaboration or Abstraction (as mentioned in Sæbø forthcoming: 19) emerges. This is the case in for example (10) below, where two “concrete” activity predicates appear in the matrix and adjunct respectively, and the relation of “Accompanying Circumstance” emerges.

(10) “I see,” she would say, nodding at some lengthy explanation of his.

The non-finite properties of the ing-participial adjunct invite a compositional analysis of the semantic updating procedures, but since the structure is acceptable for the implicit expression of a variety of relations, the ing-adjunct must have other binding conditions than the by-locution. Among other things, an updating procedure must be worked out for ing-participial adjuncts which allows for, but does not require a complete merge. The occasion of Kjell Johan’s anniversary cannot be an occasion for setting out to fully exploit the nature of these conditions, but the precise analysis of the by-locution within a new version of DRT, which includes binding conditions on referents, certainly sharpens questions related to it. I shall not go into these questions here, but mention that one of the things that lies ahead, is to define the relevant binding condition(s) on the adjuncts discussed here, in view of their not having an explicit marker of the sort of quantifier involved. Furthermore, the compositional analysis rests on the by-locution. This triggers questions related to the precise definition of other connecting expressions which link criterial, indefinite predicates to predications over their “sub-servient”, definite activities. English differs from for example German and Norwegian in allowing these ing-participial modifiers – whether preceded by a preposition or not. Parallels to the by-locution exist in Norwegian, and I presume the preposition ved + infinitives will receive the same analysis as the English by + V-ing. But when the predicate relation is reversed, as in for example (8) and (9) above, Norwegian parallels appear with connectives like dermed, which may introduce a sentence with a criterial predicate, as well as the complex conjunction slik at, which seems restricted to causatives (Behrens 1998, 2005). Further work on the precise nature of such parallels will certainly be inspired by what the structure of criterion predicates told me.

References


