On the Implicitness of Arguments in Event Passives[*]

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1. Introduction

In theories and analyses of voice phenomena, it is a popular claim seemingly beyond dispute that verbal passives always include an implicit argument semantically, leaving only the syntactic status of the implicit argument open to debate (cf. e.g. Bhatt and Pancheva 2006). Consider the following example:

(1)   Yesterday, my house was destroyed.

In (1), where no *by* phrase is present, it is argued that we still interpret the sentence in such a way that someone or something is responsible for the destruction, whether it be a person or an explosion. In addition to this semantic intuition, there are a number of phenomena which may be seen as empirical evidence that an argument must be semantically present. These include binding and the combinability with subject-oriented adverbials such as *deliberately* or with purpose clauses (for a critical discussion of some of the evidence see for instance Kaiser and Vihman 2006, Marelj 2004, Solstad 2007b). However, the most prominent piece of evidence is the simple observation that a *by* phrase may be inserted in (1) and that the complement of such a *by* phrase may surface as the subject of an active clause corresponding to the passive, cf. (2):

(2)   a.   Yesterday, my house was destroyed by $\left\{ \begin{array}{l} \text{my insane neighbour} \\ \text{a terrible explosion} \end{array} \right\}$.

    b.   Yesterday, $\left\{ \begin{array}{l} \text{my insane neighbour} \\ \text{a terrible explosion} \end{array} \right\}$ destroyed my house.

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Contrary to the view outlined above, I contend that if one reviews examples such as in (1) from a more detailed semantic perspective, it is neither attractive nor very reasonable to assume an implicit semantic argument for all kinds of verbal passives. Assuming external arguments to be realised in a (functional) Voice projection, I argue that it does make a significant difference for semantic composition beyond mere variable or predicate underspecification whether someone or something, i.e. my neighbour or the explosion, is assumed to be implicit. More specifically, I claim that a proper semantic analysis leaves the Voice projection superfluous for the class of event passives, which consists of passives constructed from causative predicates allowing eventive nouns to occupy the external argument position in active sentences as in example (2b) with *a terrible explosion* as subject.

The paper is organised as follows: In Section 2, I provide an informal introduction to event passives. A general discussion of the semantics of Voice in Section 3 is followed by a more detailed analysis of some interesting event passive data from German in section 4. Section 5 concludes the paper with a short general discussion of the interface between syntax and semantics.

2.   Some Informal Characteristics of Event Passives

Event passives are verbal passives which involve only a causing event and no agent, where the notion of agent should be interpreted narrowly to involve only individuals capable of volitional action. Put differently, in event passives, no causing individual is assumed to be implicitly present semantically.[1]

In order to explicate these properties somewhat, I have included simplified representations of the semantic contribution of a causative predicate (e_2 is the caused event and e_1 the causing event) and the agent relation (being a relation between an individual x and an event e) in (3a) and (3b), respectively:

(3)   a. $\lambda e_2 \lambda e_1.\text{CAUSE}(e_2)(e_1)$
        b. $\lambda x \lambda e.\text{AGENT}(x)(e)$

Only causative predicates allow event passives. Thus, all event passives will include in their representation an expression such as the one in (3a). However, non-event passives may be constructed from causative predicates, too. Thus, the minimal difference between an event passive and a non-event passive involving a causative predicate will consist in the latter including an agent relation such as the one in (3b). Causative predicates may be divided into three groups with respect to the possibility of constructing event passives from them, as illustrated in (4):

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[1]It should be noted that not all languages have event passives. Doron (2003) argues that Hebrew lacks them.

(4)   a.   Earlier this morning, a bomb was dismantled in Varna. [inherently agentive]
           b.   A large whale was washed ashore on the east end of the island. [non-agentive]
           c.   The spacecraft was destroyed yesterday. [agentivity-neutral]

An **inherently agentive** predicate such as *dismantle* describes an event which necessarily has to be performed volitionally by a human being (other similar predicates include *execute* and *insert*). Thus, no event passives can be constructed from such a predicate. Even if the agent is left unpronounced as in (4a), it has to be identified in context or inferred from world knowledge (for a discussion of some of the factors governing the identification of the agent in such cases, see Givón 1990, p. 567-568). Thus, semantically, the agent relation in (3b) has to be present in the representation of sentences such as (4a), but the individual variable *x* may be existentially bound.

On the other hand, **non-agentive** predicates such as the directional *wash ashore* allow no agent in the narrower sense described above. I will assume that such predicates cannot be combined with the representation in (3b). Only a limited subset of natural forces, which I take to be events, are acceptable as causes of events described by *wash ashore*.

Finally, with **agentivity-neutral** predicates such as *destroy* or *melt*, it is left open whether an agent was involved or not if no *by* phrase is present. In (4c), the cause of the destruction of the spacecraft could have been initiated by some individual or not. Thus, for the semantic representation of these predicates, a combination with (3b) is merely optional.

In terms of the representations in (3), I claim that the semantic representation of event passives may involve only an expression such as in (3a), put very broadly. In this sense, there is no need to assume an implicit argument for event passives, as all necessary information is contributed by the predicate itself. An important question which then has to be asked is the following: if an eventive *by* phrase such as *by an explosion* occurs with an event passive, what should its representation be? Should it be something along the lines of the representation of the agent relation in (3b), or should it be something completely different? I will claim that there is a fundamental difference between eventive *by* phrases and agentive *by* phrases in that there is nothing argument-like about the former one from a semantic point of view. It is simply a modifier. After discussing the semantics of external arguments in general in the next section, I will go on to show what the consequences of this view could be for assumptions concerning syntactic structure and the integration of event arguments.

3.   The Semantics of Voice: Agents vs. Causers

Before studying the semantics of event passives and discussing the implicitness of arguments in some more detail, it is necessary to have a closer look at how external arguments in general are introduced semantically. For reasons of space, I can only provide a brief overview of some of the important factors.

The discussion below presupposes that external arguments are no part of the semantics associated with the level of VP (typically situated in [Spec,VP]). Concretely, they are assumed to be introduced via a functional Voice projection (cf. Kratzer 1996, von Stechow 1996, Sternefeld 1995). Following von Stechow (1996) and Sternefeld (1995) (the analyses of whom do not overlap perfectly), I will assume that active subjects are located in [Spec,VoiceP], whereas agentive *by* phrases are adjoined to the level of VoiceP. As to the semantics of the voice phrase, a Kratzer-style representation (Kratzer 1996) is often assumed for combination with non-stative predicates, cf. (5):[2]

(5)   VoiceP $\rightsquigarrow \lambda x \lambda P \lambda e [P(e) \wedge \text{AGENT}(x)(e)]$

In the discussion of event passives, two aspects of (5) are especially relevant: the notion of **agent** itself and the status of the **variable x**.

Concerning the notion of agent, the semantics of Voice alone is not sufficient to differentiate between various kind of passive *by* phrases and active subjects. The reason for this is that if the variable x is taken to range over all kinds of individuals, entities such as cars will also have to be counted as agents, cf. (6):

(6)   The owl was killed by a car a couple of months after being released.

However, this will leave the notion of *agent* rather vacuous. It will also make the Voice hypothesis less attractive from a semantic point of view since reference to the kind of agents with which a predicate may occur will have to be made at another level of representation, cf. the difference between *execute* and *kill*. Only volitionally acting individuals may be agents of events of executing.

What is worse, in cases involving a causing event it can be argued that the event does not even match the individual variable x sortally, cf. (7):

(7)   a.   A juror's home was damaged **by Sunday night's explosion**.
        b.   One person was killed **by an earthquake-induced landslide along Highway 97**.

I choose to analyse both *explosion* and *landslide* as event nouns. Under this assumption, the referent of these nouns cannot bind the variable x in the representation in (5) if it is defined as ranging over individuals proper.

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[2]Kratzer argues that there are two kinds of Voice projections, one for agentive and one for non-agentive external arguments, as for instance arguments associated with the semantic role of *holder* which is found with stative predicates such as *own*. Kratzer assumes that the choice between the two projections is determined via Aktionsart properties. The referential argument of predicates combining with the agent role is an event, whereas the referential argument of predicates combining with the holder role is a state. Additionally, Voice heads come in (at least) both active and passives variants, to allow the proper handling of case absorption in passives and other properties distinguishing the two voices.

There are two obvious ways to avoid the above objections. They either involve allowing for a wide range of binding possibilities for the variable x in (5) or introduce further semantic relations to allow for differentiations between various kinds of external arguments.

Considering first the alternative of widening the range of binding possibilities for the variable x, one might say that at an abstract level events belong to the sort of entities and that, even though the differentiation between variables for events $(e_1, e_2, \ldots)$ and individuals $(x, y, \ldots)$ seems to suggest otherwise, *any* argument introduced in the Voice projection may bind the variable x. However, assuming such a wide range for x, there is no straightforward way to predict which predicates allow event arguments and which ones do not. Again, the inherently agentive predicate *execute* may serve the purpose of illustrating this fact. As it presumes the presence of an volitionally acting agent, it also disallows events to be introduced in the *by* phrase in passives (8a) as well as in the form of active subjects (8b):

(8)   a.   The prisoner was executed by $\left\{ \begin{array}{l} \text{soldiers} \\ \text{*shots} \end{array} \right\}$

        b. $\left\{ \begin{array}{l} \text{Soldiers} \\ \text{*Shots} \end{array} \right\}$ executed the prisoner.

Thus, such a step will only make the notion of agent even more vacuous than by allowing any kind of individual to bind the variable x.

As to the addition of further semantic roles apart from the one of agent, one might say that for independent reasons, we need to assume further roles than the one of agent anyway, such as *experiencer*. One might for instance assume a specific semantic role *causer* to alternate with agents in the case of causing events (for a recent approach see Alexiadou and Schäfer 2006). However, this is not very attractive from a semantic point of view. The causer role arguably only occurs with predicates involving a causal relation in the first place. It has – as opposed to the agent role – no semantic contribution apart from specifying the causing event in the causal relation. The relation it is assumed to introduce is introduced independently by the causative predicate. Semantically, causers only modify the variable e_1 of the causing event in the causal relation between events, CAUSE$(e_2)(e_1)$ (see above). This sets the causer semantics apart from the one of the voice projection, making an analysis in terms of underspecification less attractive.

From the above, two different views emerge depending on whether a syntactic or semantic perspective is taken. From a syntactic perspective one should treat agents and causing events in a parallel fashion, as they may both be introduced as subjects in active sentences and in *by* phrases in passives. From a semantic point of view, however, agents and causing events should be kept apart. According to the voice hypothesis, agents involve a semantic relation between an individual and an event. This relation introduces a variable which is not present in the semantic representation of the VP. In contrast, causing events introduced by subjects or *by* phrases modify the event already present in the causal relation.

In conclusion, I contend that the difference between argument introduction (in the case of agents) and event specification (of causers) has not been accounted for satisfyingly in the literature on passives. In the following I will treat them as fundamentally different. In the next section, I propose a semantic analysis for the specification of causing events and discuss what the syntactic implications of a semantic take on event passives are in a case study from German.

4.   A Closer View on Event Passives: German Event Passives Modified by *durch* Phrases

The German causal preposition *durch* ('through', 'by', 'by means of') specifies the causing event in a causal relation CAUSE between two events as describe above, cf. (3a) (for details see Solstad 2007a). Thus, in the passive in (9) the *durch* phrase specifies the causing event in the causal relation introduced by the predicate *töten* ('kill') as being a shooting event.

(9)   Der Verbrecher wurde durch   einen Schuss getötet.
        the criminal   was   through a   shot   killed
        'The criminal was killed by/by means of a shot'.

Importantly, when a *durch* phrase occurs in a passive sentence where there is no explicit agent as in (9), the sentence is compatible with two different scenarios (Solstad 2007b), as indicated in the translation in (9).

In one situation, an implicit agent (intentionally) fired the shot. In (9), it is still possible to additionally introduce an agent in a *von* phrase, such as *von Unbekannten* ('by unknown persons') in (10), corresponding to a *by* phrase in English. In this case, *durch* is more appropriately translated by *by means of* in English:

(10)   Der Verbrecher wurde von Unbekannten   durch   einen Schuss getötet.
         the criminal   was   by unknown persons through a   shot   killed
         'The criminal was killed by unknown persons with a shot'.

However, (9) may also be uttered in a situation where the shot went off accidentally without any influence from an agent, e.g. as the result of a gun falling to the floor.

Interestingly, these two interpretations of the verbal passive in (9) correspond to two different active sentences, cf. (11), where (11a) refers to a situation involving an agent and (11b) is an event passive with no agent present:[3]

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[3]In examples like such as (11b) an agent may be introduced semantically by means of a prenominal modifier such as *gezielt* ('accurate'):

(i)   Ein gezielter Schuss tötete den Verbrecher.
        a accurate shot killed the criminal
        'An accurate shot killed the criminal'.

(11) a. Unbekannte   töteten den Verbrecher durch   einen Schuss.
          Unknown persons killed   the criminal   through a   shot
          'Unknown persons killed the criminal with a shot'.
      b. Ein Schuss tötete den Verbrecher.
          a   shot   killed the criminal
          'A shot killed the criminal'.

Crucially, the contribution of the *durch* phrase in (9), (10) and (11a) is identical to the one of the subject in (11b). In all cases, these constitutents specify the causing event in a causal relation between events. Thus, all *durch* phrases as well as the active subject in the above examples may be associated with the semantics in (12a), resulting in the simplified common representation in (12b):[4]

(12) a. $\lambda Q \lambda e_1 \lambda P \lambda e [P(e) \wedge Q(e_1) \wedge e_1 = e]$
      b. $\exists e_2 \exists e_1 \exists e_3 \exists y [\text{BECOME}(dead(y))(e_2) \wedge \text{CAUSE}(e_2)(e_1) \wedge \text{SHOT}(e_3) \wedge e_1 = e_3]$

The semantic representation proposed in (12a) implies that a *durch* phrase merely introduces an event and identifies this event with an event already introduced by a predicate. It does not introduce a semantic relation as we assume it for agent phrases in the narrower sense.

However, the semantic uniformity in (12a) is not paralleled in syntax. In (11b), the semantic representation in (12a) is associated with a full DP argument, whereas it is associated with an adverbial PP modifier in (11a). In the case of the passive (9) there is no way to tell which syntactic entity the *durch* phrase corresponds to in the active, i.e. an argument or a modifier.

The simplified syntactic tree structures in the figures in 0.1 and 0.2 illustrate the possibilities given above. For active sentences it may be shown on independent grounds that the *durch* phrase is adjoined to the level of VP, below any possible agents (Solstad 2007a, Sec. 6.2.).

In the active structure in Figure 0.1A., both an agent, *Unbekannte* ('unknown persons'), and a specification of the cause in the form of an adverbial *durch* phrase are present. For the active in 0.1A., it seems relatively unproblematic to assume a corresponding passive structure as indicated in Figure 0.2C., given the structural assumptions discussed in the previous sections. The difficult task from a semantic perspective is how to construct the event passive mirroring the active structure in Figure 0.1B., where a causer subject is present, *ein Schuss* ('a shot'). Focusing solely on the syntactic parallels between the two

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In (i), it is clear that an agent intentionally fired the shot. However, the referent introduced this way does not have the same status as arguments introduced by full NPs, as witnessed by the fact that pronouns in subsequent sentences may not refer to the agent of the shot (cf. Kamp and Roßdeutscher 1994).

[4]Pylkkänen (2002, p. 85) proposes a similar solution. However, she assumes an identity relation between a variable of individual type and one of event type. I refer to the above discussion for arguments against taking this option.

A.

Voice$_{active}$

    Unbek.   Voice'

               VP

    durch e. Schuss   VP

        ein Verbrecher   V'

              töt-

B.

Voice$_{active}$

    ein Schuss   Voice'

               VP

    ein Verbrecher   V'
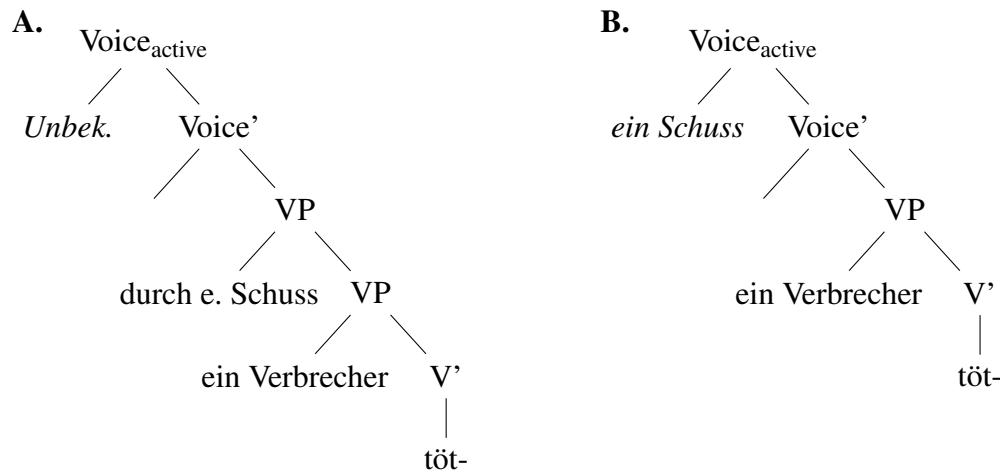
              töt-

Figure 0.1: Actives with (A.) an adjunct specifying a causing event; (B.) an eventive subject

active structures in Figure 0.1, a structure parallel to Figure 0.2C. seems reasonable, as indicated in Figure 0.2D. However, given the the uniform semantic contribution of the two *durch* phrases in the active and passive in combination with their syntactic modifier status, it is not very appealing to have to assume two different positions for them, being adjoined to VP in one case and to VoiceP in the other (compare the *durch* phrases in the structures C. and D. in Figure 0.2). What is more, if the *durch* phrase occupies the position of the *von* ('by') phrase (Figure 0.2D.), it is questionable if the structure in Figure 0.2D. could be applied in the case of sentence (10), where both a *durch* phrase and an agent phrase occur.

I thus propose to analyse all the above *durch* phrases as VP adjuncts. Thus, *by* phrases in English and *durch* phrases in German should behave as indicated in the structure in 0.2C. This makes the Voice phrase superfluous in event passives. If we keep it, it should be for reasons of case absorption. Semantically, it would involve a general identity function on events, simply handing the causing event of the causative predicate on to the higher functional projection of Aspect without modification.

In order to maintain some parallelism with the active, I seem forced to assume that the causer subject is a modifier and no real argument. Obviously, this is somewhat unfortunate as it requires adjusting case theory, demanding assignment of nominative case to a non-argument position. Thus, while we have gained some uniformity for the behaviour of modifiers of causing events in event passives, the above analysis leads us into conclusions which are not consistent with commonly held views on syntax. I have no solution to this latter problem. Comparing the gains and losses on the syntactic and semantic sides of the analyses discussed here is no easy task, but the discussion may at least be seen as showing that event passives constitute a challenging task for the mapping of syntax and semantics.
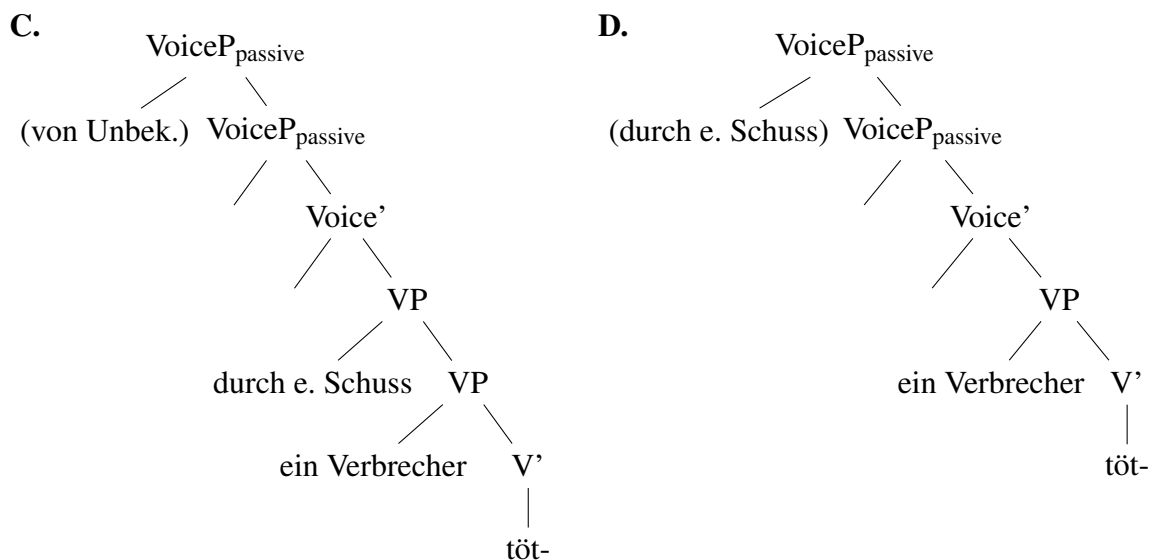
C.

```
                    VoiceP_passive
                   /            \
      (von Unbek.)    VoiceP_passive
                        /        \
                           Voice'
                          /      \
                             VP
                           /    \
                 durch e. Schuss    VP
                                  /    \
                       ein Verbrecher    V'
                                          |
                                         töt-
```

D.

```
                    VoiceP_passive
                   /            \
    (durch e. Schuss)    VoiceP_passive
                           /        \
                              Voice'
                             /      \
                                VP
                              /    \
                    ein Verbrecher    V'
                                       |
                                      töt-
```

Figure 0.2: Two possible passive structures corresponding to the actives in 0.1

5.   Conclusion and general observations

In this paper, I presented an analysis of event passives in German, which are built from causative predicates and involve only a causing event and no causing individual. I argued that event passives constitute a challenge for theories assuming external arguments to be introduced in a Voice projection, in as far as we seem to be forced to make inconsistent semantic assumptions for modifiers of the causing event. On the other hand, I also discussed some problems concerning the suggested analysis, where the focusing on the semantic side of event passives seems to lead us into conflict with case theory.

I believe there is a methodological point concerning the syntax-semantics interface to be made on the basis of the debate outlined in this paper. Studying phenomena with such obvious strong interface characteristics such as the passive, whether we approach the problem from a semantic or a syntactic point of view will have a great impact on the other domain (i.e. syntax or semantics, respectively). I argued that if one starts from obvious syntactic correlations between passives and actives such as the possibility for active subjects to occur as complements of prepositional phrase adjuncts in passives, current syntactic theories force us to make awkward semantic compromises, where one and the same adjunct is treated differently in syntax although its semantic contribution is identical (as illustrated for the German data in Section 4). On the other hand, if obvious semantic similarities are taken as a starting point with the aim of simplifying the semantic analysis, the syntactic side of the analysis suffers, since what is most plausibly treated as arguments from the point of view of syntax (full NP subjects in active sentences), carries the hallmarks of being a modifier from the semantic point of view. Thus, we cannot be sure that we meet in the middle and that syntax or semantics will eventually match up, independently of where we started from.

Torgrim Solstad

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