

THE INCOMPATIBILITY OF LEXICAL DERIVATION AND POST-LEXICAL ARGUMENTS*

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1. Introduction

Recent work in lexical semantics and argument mapping has attempted to distinguish the aspectual properties of syntactic arguments. A number of authors, including Grimshaw (1990), Pustejovsky (1988), Tenny (1987, 1991), and van Voorst (1988), have argued that aspectual information at least in part determines the mapping of syntactic arguments. For example, arguments that bear the aspectual role CAUSER are mapped to subject position and those that bear the aspectual role AFFECTED THEME are mapped to direct object position. Ritter and Rosen (1993, in press) have argued that aspectual roles are determined post-lexically, i.e., on the basis of the syntactic composition. In the present paper we demonstrate that the aspectual role CAUSER is syntactically assigned. This assumption allows a principled distinction between indirect causers and agents; it also accounts for restrictions on argument inheritance in lexical derivation, including the restriction against derivation of causativized verbs discussed in Pesetsky (1992), and the failure of *-er* nominalization of causativized verbs noted in Brousseau and Ritter (1991).

2. Distinguishing Causers and Agents

An agent is a direct causer that receives a thematic role from the verb as well as an aspectual role by virtue of its participation in the event. An indirect causer receives no thematic role from the verb; it merely launches an event, and thus receives only an aspectual role. Consequently, an indirect causer gets its interpretation aspectually, not thematically. It is possible to distinguish causer from agent on the basis of the role that each may play in the event referred to by the verb. The indirect causer does not directly engage in the action denoted by the lexical predicate, but rather triggers the action of the lexical predicate. In this respect, causers differ from lexically selected agents, which are direct participants in the action. The contrasting implicatures in (1) and (2) demonstrate that some external arguments perform the action named by the verb while others do not. In the sentences in (1) the subject is the thematic external argument of the verb, i.e. an agent, and as such it performs the action named by the verb. In the sentences in (2), on the other hand, the subject is an aspectual argument that is not licensed by the specific lexical semantic content of the verb. Consequently, its contribution to the event is not determined by the verb.

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- (1) Agents
- a. The editor wrote the article.
=> the editor was writing
 - b. The assassin killed the mayor.
=> the assassin was killing
 - c. The political activist painted slogans all over the walls.
=> the political activist was painting

- (2) Causers
- a. The lion-tamer jumped the lions through the flaming hoop.
=> the lion-tamer was not jumping
 - b. The tenant hung black velvet pictures of Elvis all over the walls.
=> the tenant was not hanging
 - c. The cook thickened the sauce.
=> the cook was not thickening

We contend that an argument that plays a role in the action named by the verb is a participant in the event by virtue of the fact that it is a thematic argument of the verb, and as such it must be a participant of the core event denoted by the predicate. In contrast, a participant that launches the event but does not perform the action named by the verb can only be involved in a subevent that is construed as causing the core event. Consequently, a participant in the causing subevent is analyzed as an argument because it plays a role in the organization of the event, and not because it is a thematic argument of the verb. If a causer is not a thematic argument of the verb, it is not lexically selected by the verb. In other words, indirect causers are not included in the lexical representation of the verb. In the remainder of this paper, we provide further evidence that aspectual roles such as causer are assigned post-lexically.

3. Process Nominals

Chomsky (1970) demonstrates that verb derived nominals inherit their arguments from the base verb (cf. also Grimshaw 1990, Levin and Rappaport 1988). However, there are restrictions on argument inheritance. For example, Pesetsky (1992), following work by Chomsky (1970), observes that causer arguments are not available to the derived nominal:

- (3)
- a. Tomatoes grow.
 - b. Bill grows tomatoes.
 - c. the growth of tomatoes
 - d. *Bill's growth of tomatoes
- (Chomsky 1972: 25 as cited in Pesetsky 1992: 69)
- (4)
- a. The shirt shrank.
 - b. Bill shrank the shirt.
 - c. the shrinkage of the shirt
 - d. *Bill's shrinkage of the shirt

Pesetsky (1992) notes that verbs that enter into the causative-inchoative alternation may be nominalized, but that the nominalization is never derived from the causative use of the verb, as illustrated in (3) and (4). He suggests that this restriction is due to the fact that the causative verb contains an abstract causative suffix (CAUS) which blocks further derivation. This constitutes a particular case of Myers' Generalization (Myers, 1984), which states that "zero-derived words do not permit the affixation of further derivational morphemes" (Pesetsky, 1992: 66).

We provide an alternative explanation of the nominalization data. Recall that causers, unlike agents, are not lexically licensed thematic arguments of the verb. Rather, they are purely aspectual arguments, and are added to the representation post-lexically. Consequently, causers will not be available to items that are lexically derived from the verb. We propose that nominalizations such as *growth* and *shrinkage* inherit only thematic arguments, i.e. arguments that are included in the verb's lexical representation. If causation is a post-lexical operation, then causative elements will be unavailable for lexical derivation.

The assumption that post-lexical operations are syntactic leads to the prediction that causers should be available for syntactically derived nominals. This prediction is borne out in gerunds, which have been analysed as syntactically derived (Abney, 1987; Cowper, 1993). The examples in (5) and (6) show that gerunds may be derived from the causative use of a verb. In this respect, gerunds differ from lexically derived process nominals.

- (5) a. Bill's growing of tomatoes
b. Bill's growing tomatoes
- (6) a. Bill's shrinking of the shirt
b. Bill's shrinking the shirt

4. Non-Event -er Nominals

Restrictions on non-event -er nominals provide further evidence for the hypothesis that the causer arguments are not present in the lexical semantic representation of the verb. As observed by Levin and Rappaport (1988), non-event -er nominals refer to the external argument of the verb they are derived from.¹ As pointed out by Brousseau and Ritter (1991), derived causative verbs of motion appear to disaffirm Levin and Rappaport's generalization. As shown in (7) and (8), -er nominals may be derived from these verbs, but they refer to the direct object, rather than to the subject.

¹ Following Levin and Rappaport (1988), we restrict the discussion to non-event -er nominals, which do not inherit the full argument structure of the base verb. As these authors point out, event -er nominals inherit the argument structure of the base verb, and presuppose that an event named by that verb has occurred. In contrast a non-event -er nominal refers to the base verb, but does not entail the occurrence of an event. In restricting the discussion to non-event -er nominals, we focus on a derivational process which must be lexical.

- (7) a. The lion-tamer jumped the lions through the hoop.
 b. The lions are good jumpers.
 c. *The lion-tamer is a good jumper.
- (8) a. The psychologist ran the rats through the maze.
 b. The rats are good runners.
 c. *The psychologist is a good runner.

The hypothesis that derived causation is a post-lexical operation provides a straightforward account of this data. Non-event *-er* nominals are derived in the lexicon, where only thematic arguments are represented. Consequently, they may only denote the external thematic argument of the verb. Because causers are not thematic arguments, they are not included in the lexical entry of the verb, and therefore they are not accessible to *-er* nominalization. For verbs of motion such as those in (7) and (8), the participant that moves is considered the thematic external argument.

5. Conclusion

We have discussed three pieces of evidence pointing to the conclusion that indirect causers are not represented in the lexical entry of a verb, but rather are added post-lexically. First, the action performed by a causer is not determined by the lexical semantics of the verb. Second, causers are not inherited in the derivation of lexical items because causers simply are not represented in the lexical entry of the base verb. Third, causers may be inherited in syntactic derivation, suggesting that arguments bearing only aspectual roles are like adjuncts in that they are generated in the course of the syntactic derivation.

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