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Language, Vol. 74, No. 4 (Dec., 1998), 695-727.

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EPISODIC *-ee* IN ENGLISH: A THEMATIC ROLE CONSTRAINT ON NEW WORD FORMATION

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This article offers a detailed analysis of the English suffix *-ee* (*employee*, *escapee*, *refugee*, etc.) based on fifteen hundred naturally occurring tokens of some five hundred word types. The data suggest that formation of nouns in *-ee* is moderately but genuinely productive, and that analyses based on the syntactic argument structure of the stem verb are unsatisfactory. Instead, formation of *-ee* nouns systematically adheres to three essentially semantic constraints: first, the referent of an *-ee* noun must be sentient; second, the denotation of an *-ee* noun must be episodically linked (as defined below) to the denotation of its stem; and third, a use of an *-ee* noun entails a relative lack of volitional control on the part of its referent. I argue that these semantic constraints taken together amount to a special-purpose thematic role that actively constrains productive use of derivational morphology.*

1. THE PROBLEM. The main descriptive problem addressed here is characterizing the range of possible meanings for newly formed nouns in *-ee*. For instance, consider an event in which someone presents something to someone else. There are three entities prominently involved in such an event: the person doing the presenting, the entity presented, and the person to whom that entity is presented. What determines which of these three entities can be referred to using the *-ee* noun *presentee*? A purely syntactic approach would claim that the possible meanings of *presentee* depend in some way on the syntactic argument structure of its stem verb *present*. In brief, the set of verbal argument positions that correspond to *-ee* noun meanings simply does not seem to be a natural class from a syntactic point of view. I will argue that a better explanation can be constructed on the assumption that *-ee* noun meanings are constrained primarily by semantic properties associated with the meaning of the stem verb.

Further, I will argue that these semantic properties amount to a thematic role. Many people think of thematic roles as essentially or partly syntactic in nature, but I follow Dowty (1989, 1991) and others in viewing thematic roles as essentially semantic (see §7 below). Thus even if I am right that the constraints on *-ee* noun formation constitute a thematic role, the analysis proposed here explains the behavior of *-ee* noun formation in purely semantic terms without recourse to any syntactic devices whatsoever.

1.1. NOMINAL VERSUS VERBAL THEMATIC ROLES. This study is part of a broader investigation into the thematic roles of nouns and nominal expressions. At least since Chomsky 1970 the default assumption—usually implicit—has been that the argument structure for deverbal nouns is a relatively simple function of the argument structure of the verb from which the noun is derived. In the past several years, more highly articulated linking theories have emerged (e.g. Grimshaw 1990:5, Jackendoff 1990), in which nominal argument structures are based on a representation called a lexical conceptual

* I gratefully acknowledge comments and suggestions and help from Farrell Ackerman, Mark Aronoff, Greg Carlson, David Dowty, Svetlana Godjevac, Gregory Grefenstette, Richard Larson, Peter Lasersohn, Beth Levin, David Perlmutter, Pauline Welby, and two anonymous referees. Many people contributed sightings of *-ee* nouns in the wild, including Eleanor Olds Batchelder, Ken Beesley, Belinda Bicknell, Greg Carlson, David Dowty, Jane Edwards, Udo Fries, Svetlana Godjevac, Hartmut Haberland, Bob Hoberman, Larry Horn, Andrew Kehler, Beth Levin, Lynn Messing, Monica Macaulay, Louise McNally, Philip Miller, Geoffrey S. Nathan, Jeff Pelletier, David Perlmutter, Michael Picone, Dennis Preston, Jeffrey Runner, Steve Seegmiller, Beverly Spejewski, Bill Spruiell, and Allan C. Wechsler.

structure, and are not derived from the syntactic argument structure of the morphologically related verb. Yet even in these theories, the possibilities for nominal thematic roles are taken from the vocabulary for verbal predicates, so that if the verb *destroy* in the sentence *The Romans destroyed the city* has an agent and a patient role, then the noun *destruction* in the noun phrase *the Romans' destruction of the city* is said to have an Agent and Patient role as well (see, e.g. Grimshaw 1990:108).¹

However striking the resemblance in behavior between deverbal nouns and their verbal counterparts, it is quite possible a priori that nominal expressions in general have their own characteristic thematic role system that is ultimately independent of the verbal one. The obvious strategy is to look first at nouns that are not derived from verbs. Barker and Dowty (1993) propose that argument selection in underived nouns motivates postulating a set of thematic roles that is parallel to but distinct from the verbal system. Without going into detail, they propose two thematic proto-roles (in the style of Dowty 1991) named **WHOLE** and **PART** to explain systematic patterns of argument selection in a wide range of non-deverbal relational nouns.

But even if there are essentially nominal thematic (proto-) roles that are not part of the verbal system, it is still possible that the thematic role system for deverbal nouns is parasitic on the verbal system. I argue against this possibility by considering one type of deverbal noun, namely, nouns in *-ee*. If the analysis of *-ee* defended here is correct, then the argument structure for a deverbal noun does not necessarily depend on the syntactic argument structure of its verbal stem at all, but can refer directly to the meaning of the stem (as elaborated in detail below). This suggests that in general, each derivational morpheme can potentially contribute its own idiosyncratic thematic role requirements that ignore the syntactic argument structure and thematic roles associated with the verbal stem. If so, then we have one more reason to believe that the nominal thematic role system is independent of the verbal one, even for some types of nouns productively derived from verbs.

1.2. THEMATIC ROLES IN DERIVATIONAL MORPHOLOGY. The notion that thematic roles may be involved in derivational morphology is hardly a new one, since it is present whenever someone analyzes a morpheme as an agent suffix or as a patient suffix, but a number of researchers have argued at length that the behavior of such morphemes can be explained at least as well by appealing to purely syntactic aspects of argument structure. Relevant studies include Fabb 1984:189ff., Keyser & Roeper 1984, Levin & Rappaport 1986, 1988, and Rappaport Hovav & Levin 1992.

Rappaport Hovav and Levin for instance, give detailed arguments that ‘the interpretation associated with the referent of an *-er* nominal can be identified in purely syntactic terms with respect to a representation of argument structure in which notions such as “internal,” “external,” “direct,” and “indirect” arguments are defined’ (1992:128). More specifically, they suggest that *-er* nominals refer to entities denoted by the external argument of their verbal stems. As an example of one of several arguments that they develop in detail, they build on Burzio’s observation (1981, 1986) that *-er* formation

¹ One notable exception to the claim that nominals never get separate treatment with respect to thematic relations is the special theta role *R* (= referential) proposed by Williams (1981) that licenses the prenominal possessor position (i.e., the noun’s so-called external argument). This theta role is motivated by theory-internal syntactic concerns, and has no semantic content of its own apart from its role as a placeholder in Williams’s syntactic and logical calculi. Nevertheless, Williams is quite clear that *R* ‘has no counterpart in the verbal system’ (1981:86), and therefore is a step in the direction of postulating essentially nominal thematic roles. See also Higginbotham 1983, 1985.

avoids unaccusative stems: Burzio (1986:161) cites *killer*, *walker*, but **arriver*. Rappaport Hovav and Levin show that this asymmetry follows from the assumption that -er nominals refer to the external argument of the stem verb, in combination with the assumption that unaccusatives have no external argument. (A similar argument is made in Keyser & Roeper 1984:389, 395.) Thus even though it might be possible to defend a thematic-role-based analysis of -er, a syntactic analysis along the lines of the proposal in Rappaport Hovav & Levin 1992 seems to be at least as plausible; see further discussion in §3.

The situation is quite different for -ee however: -ee provides a much stronger case for preferring a semantic account of thematic roles over a syntactic argument structure account. In addition to cases like *employee* and *addressee*, we also have (in parallel with Burzio's examples) *attendee*, *escapee*, and *standee* (not to mention an attested use of *arrivee*). If the semantic explanation developed below does turn out to be more satisfying than any syntactic explanation, then -ee constitutes a counterexample to Rappaport Hovav and Levin's general hypothesis that 'productive deverbal morphological processes do not make reference to θ-role labels' (1992:129): in at least one case, a productive morphological process ignores syntactic argument structure and refers to a thematic role.

1.3. DENOMINAL VERBS AND SPARSE SEMANTICS. Clark & Clark 1979 and its critique in Aronoff 1980 examine derivational morphology in the opposite direction: verbs derived from nouns. There are striking parallels between Clark and Clark's work and the analysis of -ee given here, both in methodology and specific results. Like this study, Clark and Clark base their analysis on a rich corpus of naturally occurring data; furthermore, they concentrate (as I will here) on productive formation (e.g. *bottled* in 1976 *We were stoned and bottled by the spectators as we walked down the street*). I will briefly point out two respects in which Clark and Clark's observations support specific claims made here, as well as the main respect in which the present study comes to quite different conclusions.

Clark and Clark assert that a use of an innovative denominal verb must denote a situation type in which 'the parent noun denotes [sic] one role in the situation, and the remaining surface arguments of the denominal verb denote other roles in the situation' (787). That is, the situation described by the sentence *I was bottled by the spectators* must include as participants the speaker, the spectators, and crucially, at least one bottle. This semantic constraint is almost the exact inverse of the notion of episodic linking developed below in §5. The fact that episodic linking seems to be a factor in noun/verb derivational morphology in the noun-to-verb direction increases the plausibility that it is also an essential part of the story for deverbal nouns in -ee.

Since Clark and Clark concentrate (769) on nominal stems with concrete senses (rather than, say, nouns that denote sets of events or processes) there is little question of the derived verb inheriting its full argument structure or its thematic roles from the nominal stem. For instance, categorizing an object as a bottle does not rely on identifying any entity as an agent or as a patient, so wherever the agent and patient roles of the zero-derived verb *bottle* come from, it's presumably not from the argument structure of the stem noun *bottle*. Nevertheless, under the guise of describing the variability in the interpretation of novel denominal verbs, Clark and Clark catalog a dramatically wide range of putative thematic roles (what they call 'case roles', following Fillmore 1968) corresponding to the stem noun participant. Taking the Clarks's terminology at face value (and setting aside the question of how to tell when a verb has been zero-

derived from a noun, which they do not address) we have the participant corresponding to the stem noun serving as locatum (*Jane blanketed the bed*), location (*Kenneth kennelled the dog*), duration (*Julia summered in Paris*), agent (*butcher the cow*), experiencer (*witness the accident*), goal (*Edward powdered the aspirin*), source (*piece the quilt together*), instrument (*John bicycled into town*), and a miscellaneous class (*His ball lipped the cup* [failed to go in, in golf]). In other words, there is no immediately discernible restriction on the thematic role of the denominal participant. This is very much like the way in which the referent of an -ee noun is claimed here to depend only on the semantically entailed participants in a situation, without the mediation of the thematic roles associated with the argument positions of the stem verb; see especially §§3.4 and 5.2 below.

Clark and Clark suggest that the interpretation of denominal verbs is partly semantic but mostly pragmatic. As Aronoff (1980) puts it, denominal verbs have a SPARSE SEMANTICS: there are semantic conditions that constrain the interpretation of a novel denominal verb (i.e. the episodic linking condition mentioned above), but these semantics do not uniquely determine the meaning of a novel verb. As Clark and Clark show, the interpretation of a novel denominal verb on any specific occasion depends strongly on context. Aronoff argues further that the pragmatic constraints involved are general Gricean principles for cooperative communication that govern a number of other morphological and syntactic constructions.

The semantics proposed here for nouns in -ee is sparse in Aronoff's sense, and I also will emphasize the degree to which the interpretation of a novel -ee noun depends strongly on context (see especially §6). The semantics of -ee, however, is not quite so minimally sparse as for denominal verbs. In fact, the main burden of this article will be to show that there are significant additional semantic constraints besides episodic linking on formation of nouns in -ee, namely, entailments of sentience and lack of volitional control. It is only these additional conditions that allow the conclusion that new word formation in -ee may involve a special-purpose thematic role.

1.4. WHERE IN THE GRAMMAR DO THEMATIC ROLES BELONG? The analysis of -ee given here also bears on the nature of thematic roles and their place in linguistic theories. Dowty (1989, 1991) contemplates the possibility that thematic roles are not actively used in producing or comprehending sentences. Rather, on his view, much or all of what needs to be explained can be expressed as generalizations over sets of lexical items. Dowty's (1991) theory attempts to predict for any particular lexical item which of its semantic arguments will be expressed as subject versus direct object, etc.: but once the lexical item has been described, there is no need for the subject argument to be labelled agent over and above the semantic entailments associated with the relevant argument position.

In contrast, many other researchers prefer to think of thematic roles as an active part of the syntax, even some people who favor specific details of Dowty's (1991) proto-role hypothesis of verbal argument selection. Others agree that thematic roles are not part of syntax or any other exclusively linguistic system, but still think of them as actively involved in language use; for Jackendoff 'thematic roles are part of the level of conceptual structure, not part of syntax' (1990:46).

The analysis proposed here lies somewhere in between the static and the dynamic view of thematic roles. At the very least, it provides a new kind of argument that thematic roles are a part of a speaker's active knowledge of their language. If the

semantic constraints on formation of new words in *-ee* do indeed amount to a kind of thematic role (see §7), this shows that (unconscious) awareness of thematic role properties constrains the active process of new word formation for the speaker, and also guides interpretation of those never-before encountered words for the listener. The analysis here can be construed as consistent with the static view that thematic roles are generalizations over the structure of lexical items, and are not necessarily part of syntactic combination. It does show, however, that these lexical generalization can be actively extended by a speaker to new formations.

Technically, the detailed description of the semantics of *-ee* below will crucially depend on reference to events (actually, eventualities) and participants in those events. This establishes a (limited) resemblance to Davidsonian and neo-Davidsonian theories of thematic roles, as discussed in §§5 and 7. Section 2 assesses the degree to which *-ee* noun formation is productive; §3 argues against a number of possible syntactic analyses, while in §§4, 5, and 6 I propose three main semantic constraints on *-ee* noun formation: sentience, episodic linking, and lack of volition on the part of the *-ee* noun referent. Finally, §7 comments on the status of these results with respect to general theories of thematic roles.²

2. PRODUCTIVITY. The suffix *-ee* first came into common use under the influence of French in legal parlance during the sixteenth century. The suffix is a naturalized version of the feminine form of the French past participle suffix (-é masculine and -ée feminine).³ In French, the past participle can also be used as a substantive to refer to the direct object participant of the stem verb: thus AF. *apelé(e)* can be used as a noun parallel to English *appellee* (first attested use in English given in the OED as 1531). From the first, however, the English suffix had its own distinctive properties; most notably, unlike its French source, the English suffix could be used to refer to indirect object participants. Jespersen (1905:111) cites *vendee* (1547) ‘the person to whom a thing is sold; the purchaser’, which in French would be *l’homme à qui on a vendu quelquechose*, and certainly not **le vendu*.⁴

Words in *-ee* are still a distinctive feature of legal diction, but most *-ee* word types are not legal in origin, including some of the most common forms such as *employee*, *refugee*, and *nominee*. A few representative nonlegal examples will give an impression of how the suffix is used in natural texts.

² A note on the data. Following the lead of Clark and Clark (1979), I have not included detailed bibliographic information for every naturally occurring token of *-ee*, though I do indicate the date of use, thus: 1997 *I refrained from jogging the seven blocks home to 113th Street, reminding myself that I was a recuperating head-bonkee*. Most of the quotations come from the OED, Bauer 1979, 1983, 1987, 1993, Foster 1968, Jespersen 1942, Koziol 1972, Kruisinga 1932, McAtee 1945, Mencken 1967, Morris & Morris 1985, Pyles 1952, Stein 1973, or Urdang et al. 1982. For complete details, see <http://ling.ucsd.edu/~baker>.

³ One of the hallmarks of episodic *-ee* is that the resulting noun almost always has final stress. One notable exception is *committee*, which has medial stress. This word, however, has also undergone semantic drift, and is no longer perceived as containing an instance of the suffix (see n. 17). Also, *employee* has a variant pronunciation with medial stress.

⁴ A morphological detail: the suffix is etymologically related to Latin *-at-*, which corresponds to English *-ate*. As a result, *-ate* is often deleted before *-ee*, as in *nominate/nominee*, *evacuate/evacuee*, *congratulate/congratulee*, *designate/designee*, and so on, though variants exist for some (*donee/donatee*, *eliminee/eliminatee*, *opereel/operatee*), and there are some never-truncated forms as well, such as *dedicatee*, *narratee*, *mandatee*, and *separatee*. See Aronoff 1976:88–9 and Bauer 1983, 1987:317 for formal treatments of *-ate* truncation with *-ee*. See also Barnes 1928 and Onions 1943 for the influence of French on use of *-ee* in English.

- (1) 1593 They could witness the behaviour of the electees to be sincere.
- (2) 1841 The family . . . are too nearly connected with the biographee.
- (3) 1871 For the baptist to touch the head of the baptisee with the water.
- (4) 1890 A second trial is made to test the length of time during which the experimentee can maintain his previous grip.
- (5) 1894 The United States Senate yesterday returned the Tariff Bill to the Conference Committee without giving the Senate conferees any instructions.
- (6) 1918 It is being considered . . . whether the dilutee should be discharged to provide for the re-entry of the skilled worker who has been to the war.
- (7) 1939 Mrs. Miniver . . . will cope in a wonderful manner with refractory billettees.
- (8) 1939 The Milesian deportees were settled at the mouth of the River Tigris.
- (9) 1946 A highly organized and regimented society . . . is felt by the planners, and even . . . by the plannees to be more ‘scientific’ . . .
- (10) 1952 He was feeling more than half tempted to take the letter over to the main hall and post it on the faculty bulletin board, before the arrival of the eleven-o’clock tutee.
- (11) 1963 Widow of two of Stalin’s purges, Grigori Sokolnikov and L. P. Serebriakov, Serebriakova herself spent a decade in prison.
- (12) 1965 The government can no longer prevent the restrictees from receiving visitors at will and today there is a constant stream on the trains.
- (13) 1967 The neo-Nazi NPD party has probably rendered a service in drawing off the hard-core expellees.
- (14) 1971 Elsewhere in the motel—we learn later—the rival corporation, Penta, has chosen a more ingenious method: they tell their mergees that it seems important only that the change be comfortable for everyone.
- (15) 1973 the only resignee that Mr Nixon chose to criticize
- (16) 1983 The number of potential enrollees with background in both [linguistics and computer science] was very small.
- (17) 1987 Now I must edit myself. Actually it has been many years since I considered my prose inviolable, and even as an editee I now consider editing a good and necessary thing.
- (18) 1989 ‘The “battered woman” syndrome applies also to other types of violence or abuse within a household,’ Cleary says. The thread, he says, is physical and/or mental domination ‘in which the abusee develops almost a total dependence on the abusor.’
- (19) 1989 We explain to the arrestee that we intend to use a come-along hold that will cause pressure and probable pain if there is resistance . . .
- (20) 1989 It is so very important to understand the difference between an immigrant, an asylee, a refugee and an illegal immigrant.
- (21) 1989 Among the nine or so leech compounds under study are . . . a local anesthetic (which prevents the bitee from knowing the leech is there) . . .

Rappaport Hovav and Levin (1992:145) recognize that *-ee* noun formation would be potentially relevant to the issue of thematic roles in derivational morphology, but assert that ‘the formation of such nominals does not really appear to be productive’. Many other authors, though, are of the opposite opinion, including Jespersen (1905:111),

Onions (1943:6), Person (1958), Marchand (1969:268), Barnhart et al. (1990:152), Bauer (1983:244, 1987:315, 1993), and Baayen (1992:124, 1993:193). Furthermore, *-ee* is categorically productive by any quantitative measure I am aware of. By the count of Bengtsson (1927, rear matter) supplemented by my own collection of naturally occurring examples culled from primary and secondary sources, the progressively increasing number of new uses counted per century are given in Table 1.

| Century endpoint | 1500 | 1600 | 1700 | 1800 | 1900 | 1997 | |
|------------------|------|------|------|------|------|------|--------------|
| Number of types | 11 | 21 | 26 | 30 | 100 | 196 | 470+ (total) |

TABLE 1. Newly attested *-ee* word types.

Though persuasive and worth considering, counts of attested uses are not necessarily sound indications of productivity. For one thing, the number of attested uses depends strongly on the size of the corpus surveyed; as suggested by Onions (1943) (with *-ee* specifically in mind), the longer you look, the more you find. Thus it is possible that much of the apparent increase in recent times is due to increasingly broad and accurate reporting of uses. Because of this concern, we should also consider more sophisticated quantitative measures of productivity.

Aronoff (1976, 1983) proposes that the productivity of a suffix should be indexed by the ratio of attested forms to potential forms. To illustrate, taking note of the roughly five hundred attested *-ee* noun word types, if we arbitrarily assume that there are twenty thousand potential verbal stems in English, we arrive at a ballpark estimate of 1:40, give or take half an order of magnitude. Despite the naturalness of this notion, it gives rise to difficulties both theoretically and empirically. For instance, since verbs constitute an open word class, in principle the set of potential *-ee* words is infinite. Nevertheless, Baayen (1992) describes a statistical technique for estimating the inverse \mathcal{I} of the desired ratio based on observations from a finite corpus. The validity of this estimate, however, depends on questionable assumptions concerning the applicability of various extended versions of Ziff's law (as pointed out in Baayen 1992:119–22). Furthermore, Baayen criticizes interpreting \mathcal{I} as an indication of productivity on the grounds that it confounds basic morphological productivity with conceptual and pragmatic constraints. Illustrating Baayen's concern, *-ee* noun referents, in general, must be sentient (see §4); this semantic restriction constrains the occasions on which *-ee* noun formation is possible, which will in turn depress the number of actual words in *-ee* observed in any finite corpus relative to the number of formations if there had been no such interfering semantic constraint.

Because of these theoretical and practical difficulties, I will concentrate here on two closely related but more concrete and tractable measures proposed by Baayen (1992, 1993) and deployed by Baayen and Lieber (1991) and Baayen and Renouf (1996). The first measure, \mathcal{P} , is calculated relative to a fixed corpus by counting hapax legomena, i.e. word types for which there is exactly one instance in the corpus. \mathcal{P} is the ratio of hapax legomena to the total number of tokens formed from the affix in question. Baayen (1992) calls this number the GROWTH RATE for a vocabulary restricted to a specific morphological process. Baayen interprets this number as an estimate of the probability that the next instance of the affix in question will be a hapax legomenon. This in turn is supposed to approximate the likelihood of encountering a novel formation, which of course speaks to the essence of productivity. Note that \mathcal{P} is not subject to the criticism of \mathcal{I} mentioned above: because we compare the number of hapax

legomena only with the total number of tokens instantiating the same morphological process, \mathcal{P} depends only on cases in which all semantic or pragmatic conditions have already been met.

Based on a mixed corpus of 18 million words, Baayen and Lieber report that out of 1213 tokens of *-ee* words, 2 were hapax legomena, giving a productivity index of 0.0016. Of the affixes they investigated, only four had comparable or higher productivity indices: *-ness* as in *kindness*, 0.0044; *-ish* as in *mannish*, 0.0034; *-ian* as in *civilian*, 0.0040, and *de-* as in *delouse*, 0.0016. All of the other 26 affixes they considered had indices less than half as great, including *-able*, *-ity*, *-ation*, *-ous*, *-ment*, *un-*, *in-*, etc. In particular, although *-er* (which they describe as ‘the agentive/instrumental suffix’) has a much higher number of hapaxes (40, exceeded only by *-action* and *-ness*), it also has a much higher total number of tokens (57,683), resulting in a productivity index of 0.0007, roughly half that of *-ee*. In other words, when measured by the productivity index \mathcal{P} , *-ee* is highly productive indeed.

Baayen and Lieber’s values of \mathcal{P} for *-ee* depends on only two hapax legomena, not a large number. Therefore I have calculated \mathcal{P} for a corpus of roughly five hundred megabytes of text from recent *Wall Street Journal* and Associated Press articles. This corpus yielded 25,483 instances of 79 word types, of which 24 (fully 30% of the word types) were hapax legomena, giving a productivity index of 0.00094. Since the productivity index depends on the size of the corpus used, and since the size of this corpus is significantly larger than the corpus used by Baayen and Lieber, direct comparison is not valid, as discussed by Baayen and Lieber (1991:811–12). Nevertheless, the fact that this estimate is at least in the same ballpark does justify some degree of confidence in the index calculated by Baayen and Lieber.

The value of \mathcal{P} calculated here depends on a significantly larger set of hapax legomena, twenty instead of two. Furthermore, these forms are by and large not at all well-established, and thus provide a reasonable approximation of productive use of *-ee*. Here is a complete list of the hapax legomena; a bullet (•) marks each word type for which there is no other attested use, suggesting that the marked item is especially likely to constitute a productive use: *abusee*, •*acquiree*, *advisee*, *arrivee*, *assignee*, *bailee*, *beatee*, •*bitee*, *dedicatee*, •*ejectee*, •*financee*, •*firee* [‘person fired from a job’], *insuree*, *invitee*, *mergee*, *murderee*, *offeree* [‘person to whom an offer is made’], •*optionee* [‘buyer’], •*politico-politicee*, and *retrainee*.

2.1. COMPARISON WITH *-er*. The suffix *-er* is present in the same legal diction that introduced *-ee* into the language, and the suffixes *-ee* and *-er* often occur as a matched pair (see also discussion in §3.5).

- (22) 1818 There is something about the Doctor that all at once converts the trotter into the trottee. [Here *trot* = to present someone for amusement, as in a salon.]
- (23) 1860 You are the beater, I am only the beatee.
- (24) 1990 At Glasgow, training programmes for both appraisers and those being appraised have been initiated with training being mandatory for appraisers but optional for appraisees.

Nevertheless, the origin (and, as we will see, the behavior) of *-er* is distinct in several ways from *-ee*. The suffix *-er* corresponds to an older Germanic suffix (perhaps influenced by Latin *-arius*) for forming profession names from substantives in Middle English:

hatter, slater, tinner, lawyer. As in other Germanic languages, the professional suffix was extended to general classifiers of people (*cottager, villager, northerner, foreigner, Londoner*). In addition, there is a suffix in Old English and Middle English for forming what the OED2 calls ‘agent-nouns’, historically spelled *-er* rather than *-or*, though any spelling distinction is now hopelessly muddled (*inspector, projector, respecter, rejecter*). In current usage, *-er* attaches to almost any verb to form a noun.⁵ Attachment to nonverbs, including nouns (*carpetbagger, revenuers, pinstriper*) and measure phrases (*three-alarmer* ‘three-alarm fire’, *25-yarder, double-decker, five-leafer*), is more sporadic (though see Bauer 1979).

The *-er* suffix is clearly significantly more productive than *-ee* in some pretheoretic intuitive sense. However, Baayen’s productivity index \mathcal{P} gives a higher index for *-ee* than for *-er*. For comparison on the larger corpus, searching for words in *-er* in the *Wall Street Journal* corpus used above produced 1,337,146 tokens of 3350 word types, 878 (26%) of which were hapax legomena, yielding a productivity index of 0.00066.⁶ (The hapax legomena included *grip-squeezers, gurgler, log skidders, octopus heavers, slogger, and waker-upper.*) This \mathcal{P} is in line with the index calculated by Baayen and Lieber, and interestingly is once again lower than the index for *-ee* relative to the same corpus. (See also Bauer’s 1979 analysis of the productivity of *-er* based on the list of neologisms in Barnhart et al. 1973.)

Van Marle (1992) criticizes \mathcal{P} as a measure of productivity precisely because it sometimes produces such counterintuitive results. Baayen (1993) responds by suggesting a separate measure, \mathcal{P}^* , which is the ratio of the number of hapax legomena restricted to the morphological process in question to the total number of hapax legomena (of any morphological structure) in the corpus. Considering the newspaper corpus studied here, since *-ee* gave rise to 24 hapax legomena, and *-er* gives rise to 878, \mathcal{P}^* will be 36 times smaller for *-ee* than for *-er*. Because \mathcal{P}^* includes frequency information involving all morphological processes, it is sensitive to semantic and pragmatic factors as described above for \mathcal{J} . For this reason, Baayen considers \mathcal{P}^* to measure the GLOBAL PRODUCTIVITY of a morphological process. As Baayen (1993:194) points out, in Baayen & Lieber 1991 *-ee* is ranked among the most productive suffixes of English when productivity is measured with \mathcal{P} , but it ranks at the bottom of the same set of affixes when productivity is measured with \mathcal{P}^* . Baayen suggests that ‘ \mathcal{P} and \mathcal{P}^* are complementary measures, the primary use of \mathcal{P} being to distinguish between unproductive and productive processes as such, \mathcal{P}^* being especially suited to ranking productive affixes’ (for similar remarks, see Baayen & Renouf 1996:94). If we accept Baayen’s proposal, then *-ee* considered in isolation is a highly productive affix, and when considered globally, despite being productive, it is nevertheless significantly less productive than *-er*.

To summarize, the evidence given in this section shows that *-ee* is reliably and genuinely productive: there has been a steady stream of naturally occurring new forma-

⁵ One qualification: presumably the reason we don’t have **correspondor* is because of the presence of *correspondent*, so suffixation in *-er* is subject to blocking.

⁶ Unlike the counts for *-ee* nouns, these numbers are estimates, since the large number of tokens made it necessary to make simplifying assumptions. For instance, words with initial capitals were not counted in order to avoid counting proper names (e.g. *Greer*), and the count includes a small number of false positives, e.g. *wallpaper*. A more accurate, rigorous count on a smaller corpus (50 MB) produced 86,429 instances of 997 word types, 222 (22%) of which were hapax legomena, for an index of 0.0026.

tions, many of which have become established.⁷ It is less than fully productive—indeed, native speakers often report that an unfamiliar word in *-ee* seems weird or nonstandard in a way that a never-before-encountered word in *-er* does not. Therefore I will consider *-ee* to be ROBUSTLY SEMIPRODUCTIVE: only semiproductive, because there is a marked difference between the productivity of *-ee* and the effortless productivity of *-er*; and robust, since there is no clear evidence that the degree to which *-ee* is productive has changed in any qualitative way over the past two hundred years.

3. AGAINST A PURELY SYNTACTIC EXPLANATION. A syntactic solution to the argument selection problem for *-er* is not obviously wrong.

- (25) When *-er* attaches to a verb, the resulting noun has in its extension entities that can serve as the referent of the subject of that verb: workers work, buzzers buzz, haters hate, and printers print.

This is a particularly naive version of a syntactic approach, but since the correct analysis for *-er* is not under dispute here, it will do for the purposes of discussion; for a much more sophisticated treatment within a particular framework of assumptions see Levin & Rappaport 1988 and Rappaport Hovav & Levin 1992. Basically, 25 seeks to explain the behavior of *-er* by referring directly to the syntactic argument structure associated with the stem verb (specifically, to the verb's syntactic subject, or, as Rappaport Hovav and Levin have it, its external argument). From the point of view of thematic roles, this hypothesis predicts that nouns in *-er* will show the same range of thematic roles that subjects in English do, and this seems to be true. For instance, *-er* nouns can be agents (*taker, walker*), instruments (*cooker, printer*), experiencers (*liker, wanter*), stimuli (*pleaser, scarer*) and so on.

Though initially plausible, a syntactic explanation for nouns in *-er* is not inevitable; in fact, to the extent that subject position can be characterized by means of thematic roles (e.g. as in Dowty 1991), noun formation in *-er* might be given an account in terms of thematic roles.⁸ In any case, a semantic approach to *-er* faces an uphill battle compared to the simplicity and directness of the syntactic approach. But this situation is reversed for *-ee*: for *-ee*, as the reader will see, it is the semantic analysis that is simple and direct, and the syntactic analysis is faced with the need to unify a disparate set of cases.

Somewhat arbitrarily, and partly for expository purposes, I will divide *-ee* noun types into six partly overlapping main categories based on the syntactic properties of the stem as follows: (1) uses in which the *-ee* noun refers to the direct object participant of the stem verb (e.g. *employee* refers to entities who can serve as the referent of the direct object argument of the verb *employ*); (2) uses in which the derived noun refers to the indirect object of the stem verb (*addressee, lessee*); (3) uses referring to the

⁷ How to decide that a word is established is another tricky question. For an upper bound, the OED2 describes at least 270 *-ee* noun word types; as a lower bound, the third edition of the American Heritage Dictionary lists 70. If we agree that any *-ee* noun word type that occurs 10 or more times in the space of 500 megabytes of diverse text is likely to count as established, there are 30 such *-ee* nouns in the Wall Street Journal corpus described in the text, of which 9 have first attested uses in the OED2 later than 1900 (in descending order of token frequency: *retiree, franchisee, detainee, attendee, enrollee, returnee, amputee, parolee, and honoree*).

⁸ There is a small but potentially coherent number of exceptions, such as *keeper* ‘something worthy of keeping’ or *looker*, as in 1947 *She was a looker too—fine well-filled legs with rounded thighs*. Bauer’s (1979) argument that *-er* productively attaches to nouns as well as verbs would require some extensions to a syntactic argument structure account. In addition, Aronoff (1980) argues that any syntactic account of *-er* would have to at least be supplemented by an appeal to semantic or pragmatic principles.

object of a governed preposition (*experimentee, laughee*); (4) uses referring to subject participants, whether the stem verb is transitive (*attendee*), (putatively) unaccusative (*ascendee*), or unergative (*escapee*); (5) uses in which there is no corresponding argument position in the argument structure of the stem verb (*amputee*); and (6) -ee nouns formed from nonverbal stems (*biographhee*). The first five categories will be discussed in turn throughout the remainder of §3, but a discussion of the last type (-ee nouns formed from nonverbal stems) will be delayed until §5.4.

The majority of -ee noun types refer to direct object participants, and it would be fair to say that direct object uses are prototypical or basic in some sense (though Marchand (1969) considers the indirect object and object of preposition uses to be the original and core use). But direct object uses account for just over half of the attested word types. Here is a summary of the first four classes of -ee noun types (the four for which the -ee noun referent corresponds to some syntactic argument of the stem verb), including a few representative example word types:

- (26) Direct object: 224 word types (53%)

The city employed the employee.

adoptee, advisee, callee, consultee, detainee, draftee, kickee, trainee

- (27) Indirect object: 69 word types (16%)

She addressed the letter to the addressee.

debtee, lessee, presentee, explainee, narratee, payee, readee, sendee

- (28) Object of a governed preposition: 29 word types (7%)

The psychologist experimented on the experimentee.

callee, conferee, consultee, drawee, gazee, jokee, laughee

- (29) Subject: 32 word types (7%)

- a. Subjects of intransitive verbs: The retiree retired.

escapee, standee, resignee, dinee, enlistee, returnee, advancee, arrivee, ascendeer, deferee, embarkee, relaxee, sittee, waitee

- b. Subjects of transitive verbs: The attendee attended the concert.

deferree, forgettee, offendee ‘convicted criminal’, pledgee ‘person who pledges funds to a charity’, representee ‘a (parliamentary) representative’, signee ‘one who has signed a contract or register’, withstandee

As these lists suggest, the main difficulty for syntactic theories is that from a syntactic point of view, the set of possible referents for -ee nouns just does not seem to be a natural class.

Previous analyses characterize -ee variously as ‘passive’ (most notably Bengtsson 1927), as unaccusative (Horn 1980), as absolute (commonly heard, but rarely seen in print; see for instance Bernard Comrie’s tentative suggestion as quoted in Bauer 1983:250), or as multiply ambiguous (Marchand 1969:268, Bauer 1983:244, 1987, 1993). These syntactically oriented treatments, discussed in turn below, are all either descriptively inadequate or severely disjunctive.

3.1. PASSIVIZABILITY. A hypothesis first developed by Bengtsson (1927) and mentioned by others (e.g. Bauer 1983:246–47) unifies several -ee noun type classes.

- (30) The passivizability hypothesis: -ee nouns can refer to entities that can serve as the referent of the subject of a passive (or pseudopassive) version of the verbal stem.

- (31) a. The nominee was nominated (by the committee).

b. The sendee was sent the package (by the clerk).

c. The experimentee was experimented on (by the psychologist).

This rule can cover most (if not all) of the direct object uses as in 31a, many of the indirect object uses (as shown in 31b, the logical indirect object can appear as the subject of a passive sentence), and many of the examples corresponding to the object of a governed preposition (as shown in 31c, so-called pseudopassive allows passivization of the object of some prepositions).

Unfortunately, there are a number of attested counterexamples to the claim, mostly among the uses corresponding to indirect object arguments.

- (32) a. *John was narrated a story (to). (cf. *narratee*)
- b. *John was borrowed a book (from). (cf. *borrowee*)
- c. *John was explained something (to). (cf. *explainee*)
- d. *John was addressed a letter (to). (cf. *addressee*)

Other attested counterexamples involving what seem to be indirect object participants include *abandonee* 'person to whom anything is formally or legally abandoned', *confirmee*, *consecratee* 'one to whom something is consecrated', *consignee*, *dedicathee*, *depositee*, *describee*, *disposee*, *distributee*, *pawnee*, *reservee*, *sayee*, and *vendee*.

The most direct way to account for these exceptions would be to modify 30 to deal in grammatical relations rather than in individual lexical items. Then, since some indirect objects can occur as the subject of a passive sentence, therefore every indirect object participant can potentially be expected to end up as the referent of a corresponding -*ee* noun. Thus the failure of individual verbs to allow indirect objects to passivize would not be relevant. But even this generous interpretation of the passivizability hypothesis will not explain -*ee* nouns that correspond to verbal subjects (§3.3), -*ee* nouns that correspond to no verbal argument at all (§3.4), and -*ee* nouns formed from nonverbal stems (§5.4).

According to the semantic hypothesis proposed here, the explanation for the correlation between -*ee* noun formation and passivizability is that lack of volition is one of the essential components of new word formation in -*ee* (§6). Lack of volition is typical of the referents of direct objects and other passivizable grammatical relations (explaining the correlation), but is not limited to those relations (explaining the exceptions to the passivizability hypothesis).

3.2. -ee AS AN ABSOLUTIVE MARKER. As far as I know, the idea that -*ee* is (or is becoming) an absolute marker has never been defended in detail. It has been tentatively proposed a number of times: Bauer (1983:250) cites a personal communication from Bernard Comrie; William Safire (1982:62–63) quotes a letter from Jonathan Seely; and David Dowty has proposed it to me as a hypothesis worth considering. The idea is that -*ee* refers either to the object (i.e. a nonsubject argument) of a transitive verb or to the subject of an intransitive verb, roughly analogously to absolute case marking in ergative languages. The advantage of this hypothesis is that it avoids disjunction, that is, it proposes that the possible referents of -*ee* nouns correspond to a syntactically well-motivated natural class.⁹

One difficulty with an absolute hypothesis is that absolutes must be construed

⁹ Although ergative/absolutive distinctions are not commonly found in English, neither are they unheard of. For instance, in a discussion related to -*ee*, Seely (quoted in Safire 1982:62–63) suggests that noun-verb compounding might follow an absolute pattern: *pickpocket*, *chewing gum*, *skyscraper*, and *blowgun*, for instance, are formed from an transitive verb and a noun which characterizes the verbal direct object, while *crybaby*, *glowworm*, *blowfish*, *workman*, and *go-cart* are formed from an intransitive verb and a noun characterizing the subject.

as encompassing not only the direct object of a transitive verb (i.e. the argument which typically receives absolutive case marking in an ergative language), but indirect objects and other types of verbal complements as well, as seen above in 27 and 28 (e.g. *experimentee* ‘person experimented on’). Once these uses are included, the absolutive hypothesis must be weakened considerably, to the point where it essentially makes a single prediction, namely, that the only participant that an -ee noun CANNOT refer to is the subject of a transitive verb. Thus the hypothesis is consistent with any -ee noun formed from a verb that can be used intransitively. Counterexamples include two relatively common well-established forms, namely *attendee* ‘one who (merely) attends a meeting, conference, etc.’ and *deferree* ‘person who is not drafted into the army.’ Other potential counterexamples include *charteree* ‘a person who charters a yacht’, *forgettee*, *offendee* [‘convicted criminal; offender’], *pledgee* ‘a person who pledges funds to a charity’, *representee* ‘a (parliamentary) representative’, *signee* ‘one who has signed a contract or register’, and *withstandee*. In addition to these counterexamples, just like the passivizability hypothesis, the absolutive hypothesis has no explanation for -ee nouns that refer to participants which are not verbal arguments and -ee nouns formed from nonverbal stems.

3.3. UNACCUSATIVITY AND -ee NOUNS REFERRING TO VERBAL SUBJECTS. Working within an early version of relational grammar, Horn (1980) suggests that -ee will attach only to verbs which take an initial 2. Roughly, this means that the verb must have a direct object in deep structure. As Horn notes, this correctly allows for -ee nouns referring to indirect objects, since if the stem verb allows an indirect object it will naturally also take a direct object as well. This does not, however, account for -ee nouns that refer to the prepositional object of a verb which presumably does not have a direct object at any level of analysis. That is, I am assuming that *She gazed at him*, *He experimented on her*, and so on, should not be analyzed as involving an initial 2. It might be possible to further weaken the hypothesis to include verbs which take a 2 at any level (rather than just the initial stratum), but Horn (p. 142) explicitly rejects this idea.

Difficulties with nonsubject cases aside, the unaccusative hypothesis is supposed to provide especially good predictions for intransitive verbs: -ee should attach to unaccusatives (surface subject is an initial 2) but not unergatives (surface subject is an initial 1—there is no initial 2). The success of this claim, however, depends on analyzing the stem verbs of *escapee*, *standee*, *retiree*, *resignee*, *dinee*, *enlistee*, *returnee*, *advancee*, *arrivee*, *ascendee*, *deferee*, *embarkee*, *relaxee*, *sitere*, and *waitee* etc. as unaccusatives. (Note that Horn explicitly lists *refugee*, *absentee*, and *returnee* as ‘intransitive-based’ (141).) Thus Horn remarks (141) that ‘a standee is one forced to stand as on a bus or subway—the subject is acting involuntarily as a patient, not an agent, and is thus an initial 2 of *stand*.’ (Horn includes *escapee* in his list of -ee forms derived from unaccusative intransitives, but does not comment on it.)

Horn was exploring an early and particularly strong version of the unaccusative hypothesis (see, e.g. Perlmutter 1978) on which unaccusativity is determined crosslinguistically entirely by semantic criteria. Later work, Rosen 1984 for example, showed that this claim is probably too strong; although there does seem to be a high degree of semantic coherence crosslinguistically to the set of unaccusative predicates, there are many individual predicates whose behavior is idiosyncratic (or in any case, nonsemantic). To the extent that Horn’s conception of unaccusativity is essentially semantic in nature, it has much in common with what I will propose as part of the semantic content of the suffix -ee, as elaborated below in §5. As for any remaining syntactic component

of the notion of unaccusativity, unless some independent syntactic test can be found which classifies predicates such as *escape* or *resign* as syntactically unaccusative in English (which seems unlikely), the predictions of Horn's hypothesis with respect to nouns whose stem verbs are intransitive reduce to a special case of the semantic treatment developed below.

3.4. -ee NOUNS FOR WHICH THERE IS NO CORRESPONDING VERBAL ARGUMENT. One striking shortcoming of all purely syntactic analyses is that they fail to account for the significant number of -ee nouns which refer to participants for which there is no syntactic argument position at all. The most familiar example is *amputee*; as noted by Horn (1980), the noun *amputee* does not refer to any argument of the verb, but rather to the possessor of the verbal direct object. That is, if a doctor amputates John's leg, the amputee is John, and not the leg.

Amputee is by no means unique. In fact, there are a number of other cases which, like *amputee*, refer specifically to the possessor of the direct object participant.

- (33) 1831 'It might be safe to pluck it up.' Safe to whom? To the plucker or the pluckee?
- (34) 1861 The precise effect which it is designed to produce on the mind of the advertisee by an advertisement.
- (35) 1890 The story of that day's strife would be a long one were it written at length . . . how one man did brutally twist the knee of another for a good ten minutes, and how the twistee groaned . . .
- (36) 1981 [Used in a science fiction story:] An erasee [someone whose mind has been erased] was allowed six months at the institute.
- (37) 1986 The party gang . . . had been gung ho for slitting a few throats as long as the slittees were sound asleep.
- (38) 1997 Meanwhile, the Kidney Foundation, which has battled this myth for years, is asking any certifiable snatchees to step forward.

Note that the first known occurrences of *twistee* and *pluckee* are older than that for *amputee* (first attested use 1910). Other candidates for membership in this class include *advertisee*, *alienee*, *appraisee*, *assessee*, *complainee*, *conjuree*, *contestee*, *convenee* (it is a group that convenes, not the individual members), *destinee*, *dilutee* 'an unskilled or semi-skilled worker who takes a place hitherto occupied by a skilled worker', *discontinuee*, *drainee* [person involved in 'brain drain'], *dumpee*, *expiree* 'one whose term of punishment has expired; an ex-convict', *invadee* (it is a country which is invaded, not an individual), *jestee*, *jokee*, *lunchee*, *plannee*, *politicee*, *puntee*, ['person conveyed in a punt'], *revisee*, and *wishee*.

These nonargument cases are of particular interest for the hypothesis proposed here, since they are not problematic at all on a theory in which the reference of -ee nouns disregards the syntactic argument structure and depends instead directly on the semantics of the stem verb. Exactly how my hypothesis accounts for the nonargument uses will be explained in detail in §5.2.

3.5. -ee AS CORRELATIVE TO -er. One clear factor in new word formation in -ee is its role as counterpart to -er. That is, it is possible to entertain the hypothesis that the conditions for use of -ee are defined negatively, in contrast to those for -er: -er picks out subject participants, and -ee covers everything else. Certainly examination of corpora suggests that -er and -ee are often used contrastively together (see, for example, 22–24). Though it is clear that the presence of -er serves as a cue making use of an -ee form

more likely, *-ee* is not simply the dual of *-er*. One big problem with such a hypothesis is that, as we have already seen, a considerable number of *-ee* nouns refer to subject participants. In addition, there are a number of cases in which a single verb has given rise to both an *-ee* form and an *-er* form that are essentially synonymous—i.e. have the same set of individuals in their extension—including *escapee/escaper*, *absentee/absenter*, *arrivee/arriver*, *dinee/diner*, *deferee/deferrer*, *infiltree/infiltrator*, *mergee/merger*, *sequestree/sequestrator*. Which of the two became established in the language depends on historical accident, and for some pairs, both members seem to be in use simultaneously.¹⁰ Furthermore, there are cases in which the dates of entry into the language suggest that it was the *-ee* form that preceded the *-er* form, and not the other way around (*committor/committee*, *guarantor/guarantee*, *indemnitior/indemnitee*). Therefore although there is an undeniable family resemblance between *-ee* and *-er*, neither one is the mirror image of the other, and their behavior requires independent characterization.

3.6. SUMMARY. How compelling are these arguments against a syntactic treatment? The answer depends in part on what we take to be the data that need to be accounted for. I assume that the discussion in §2 establishes that *-ee* noun formation in general is sufficiently productive to deserve a generative explanation. However, the individual arguments against a syntactic treatment go through only to the extent that the various subclasses of *-ee* noun types are sufficiently productive; that is, it might be possible for someone committed to a uniformly syntactic account of derivational morphology to argue that even if *-ee* noun formation in general is productive, some of the more exotic and problematic *-ee* noun types are not.

Although the examples in §3.4 may be highly suggestive, they are sufficiently few in number that they do not establish beyond a reasonable doubt that *-ee* suffixation productively forms nouns referring to participants for which the stem verb provides no corresponding syntactic argument. (Never mind that we would expect such uses to be relatively rare in proportion to the scarcity of verbs like *amputate* that have prominently entailed participants for which there is no syntactic argument.) If there is a qualitative difference in productivity between different types of *-ee* nouns, then perhaps we can hope for a syntactic generalization that covers the most productive uses, and we can ignore or discount the remaining uses.

I will not attempt to provide a more fine-grained quantitative analysis of the productivity of subclasses of *-ee* noun types, but I do assume that at the very least the direct object, indirect object, and subject uses are productive, and these three classes alone are enough to make a unified syntactic analysis difficult. The data given below in §6.1 are especially persuasive that once the appropriate semantic conditions have been met, subject uses are indeed productive. In any case, the fact that the semantic approach automatically accommodates without adjustment the more exotic *-ee* noun types (governed preposition uses, uses for which there is no corresponding verbal argument, and uses with nonverbal stems) certainly counts in its favor. But let's assume for the sake of argument that a syntactic explanation can be successfully defended. Would this be fatal for the main argument? No. My main goal here is to establish that there are

¹⁰ There are numerous uses of both *mergee* and *merger*. In addition to the common *escapee*, *escaper* is the name of a model of recreational vehicle; independently, *escaper* is also used as a derogatory epithet for players on the internet go server who deliberately pretend to lose their net connection in order to avoid losing a game of go.

semantic constraints on *-ee* noun formation that collectively amount to a thematic role and that cannot be explained as a side-effect of syntactic argument structure. Certainly the case in favor of a thematic analysis is strengthened to the extent that a syntactic analysis is unattractive, since then the semantic analysis would be the leading alternative. But even if it turns out that formation of *-ee* nouns is determined or guided or influenced by properties of the syntactic argument structure of the stem, the semantic constraints argued for below would remain to be accounted for.

Thus even if *-ee* noun formation is subject to syntactic constraints, I will show in the next three sections that it must have in addition the semantic constraints of sentience, episodic linking, and lack of volitional control on the part of the *-ee* noun referent. These semantic requirements are present in virtually all uses, and they are especially prominent in productive uses (see §6). Since, as we will see, these semantic requirements cannot be derived from the syntactic argument structure of the stem, they must be independently associated with the suffix *-ee*. Furthermore, since they do not correspond to any traditional verbal thematic role (patient, undergoer, etc.—see §7), they constitute a thematic role independent of the verbal system.

4. SENTIENCE. The clearest semantic requirement that must be satisfied by an *-ee* noun is that its referent must be sentient. This contrasts with the behavior of the original French suffix, as can be illustrated by two borrowings from the French, *puree* and *repartee*, each of which has nonanimate entities in its extension. The sentience requirement contrasts as well with *-er*, since most instrumental uses of *-er* can easily refer to an inanimate object; a pager, for instance, can be either a person who pages someone or the electronic device that delivers the page.

There are two mutually related systematic sets of exceptions to the sentience restriction on *-ee*. As observed by Horn (1980) and Bauer (1983, 1987, 1993), there are a large number of recent technical terms used by formal linguists that can be thought of as referring to sentient entities at best only in a figurative sense (see also Levi 1978:170, n. 3). Examples include *raisee*, *ascendee*, *controllee*, and *governee*. Bauer attributes the onset of these uses to the early days of Relational Grammar. The second class of exceptions is subtly different: rather than referring to grammatical phrase markers that undergo grammatical operations, these uses describe the referents of grammatical argument positions, that is, they are metalinguistic. Bengtsson (1927:51) discusses and uses *actee* ‘object of the action, object acted upon’, which she traces back to 1908. Other common linguistic terms that belong to this metalinguistic category are *causee* and *possessee*: it is not the grammatical phrase that is caused to do something or that is possessed, but rather the entity described by that phrase, and in general causees and possessees need not be sentient.

Therefore at least the metalinguistic uses, and probably also the linguistic uses, must count as exceptions to the sentience requirement. These exceptional uses, though, are very clearly domain-specific: linguists who use this specialized terminology still have clear intuitions that unfamiliar nonlinguistic *-ee* nouns must refer to animate entities. For instance, although attested uses of *squeezee* show that it can refer to the recipient of a hug or some other squeezing event (1987 *Now they're about to do some squeezing of their own, and the NFL is the squeezee*), it cannot refer to a citrus rind, so that the following discourse is impossible for all speakers, including linguists who practice Relational Grammar: **After making himself a glass of grapefruit juice, John threw the squeezees away.*

Setting aside these sharply circumscribed linguistic and metalinguistic uses, the sentience requirement is quite robust.¹¹ This is all the more remarkable in view of the fact that the sentience requirement is not a requirement on what types of verbs -ee can attach to. That is, there is no entailment that the referent of the direct object of *kick* be sentient, since kickers can kick animate or inanimate entities as they please. Yet there are numerous attested uses of *kickee*, and they all refer only to sentient beings. At the very least this shows that -ee is more than just a way of picking out a specific argument associated with the verbal stem; -ee clearly has its own characteristic semantic contribution over and above the entailments due to the semantics of the stem for the participant described for the -ee noun.

Establishing the sentience requirement is especially important given the arguments in §6: I claim there that a use of this suffix entails a lack of volitional control on the part of the referent, and it only makes sense to consider volitional control if the referent is capable of volition in the first place.

5. THE EPISODIC NATURE OF -ee. This section describes a second semantic constraint on -ee nouns, namely, that the denotation of an -ee noun must be episodically linked to the denotation of its stem. The intuition behind episodic linking is very simple: the referent of a noun phrase headed by an -ee noun must have participated in an event of the type corresponding to the stem verb. For example, in order to qualify as a *gazee* it is necessary to participate in a certain role in a gazing event. This requirement is a crucial part of explaining how the meaning of an -ee noun can depend on the meaning of its stem without depending on the syntactic argument structure associated with the stem.¹²

5.1. QUALIFYING EVENTS AND THE NOTION ‘EPISODICALLY LINKED’. In order to be more explicit about episodic linking we must talk about events and event participants. It will be convenient to divide the calculation of an -ee noun’s extension into two steps. For now we will be concerned with identifying a set of stages of individuals we will call a STAGE SET. In the second step, discussed in §5.3, the reader will see how to reduce the stage set to a simple set of individuals (given a particular evaluation time index).

Carlson (1977) proposes a semantic distinction between individual-level predicates and stage-level predicates. Individual-level predicates such as *intelligent* are true of individuals, and someone is intelligent or not once and for all. Stage-level predicates such as *drunk*, however, can be true of an individual at one point in time, and false of the same individual at another point in time. Stage-level predicates therefore apply not

¹¹ There are only a few isolated exceptions. Onions (1943) defines *catapultee* as ‘a catapulted aeroplane’, though this form is not established. The only (relatively) established counterexample I know of is *razee*, ‘a war-ship or other vessel reduced in height by the removal of her upper deck or decks’, which certainly refers to inanimate objects. But even so it is interesting to note that ships are traditionally referred to as grammatically animate (as demonstrated by the use of the pronoun *her* in the OED definition).

¹² In their discussion of -er nominals, Levin and Rappaport (1988:1069) use the term ‘event nominal’ for what seems to be the same phenomenon. Thus *destroyer of the city* is an event nominal because it ‘can only refer to someone who has actually participated in the event of destroying the city’. I have used a different term (episodically linked) rather than adopting their terminology for a number of reasons, the main one being that Levin and Rappaport Hovav explicitly intend their event versus nonevent distinction to be primarily syntactic in nature. For instance, in Rappaport Hovav and Levin (1992:128), they propose that ‘the distinction between event and nonevent nominals can be characterized by appeal to the event position in argument structure, and the event interpretation always accompanies inheritance of [syntactic] argument structure.’ In contrast, the notion of episodically linked developed here is entirely semantic, and crucially must be independent of the syntactic argument structure of the stem. The earliest observation I’m aware of that derivational morphology may sometimes involve episodic linking is Clark & Clark 1979, as discussed above in §1.3.

to individuals, but to stages of individuals (roughly, time slices of individuals). Stages will be modeled here as an ordered pair consisting of an individual and an eventuality. More formally, the domain of discourse D will be based on a set of individuals I and a set of eventualities E : D will be a set of stages, where a stage is an ordered pair $\langle x, e \rangle$ such that x is an individual in I and e is an eventuality in E . A temporal trace function τ maps stages onto (possibly punctual) intervals of the real number line. Note that recognizing a set of stages in the model implicitly defines a notion of participation in an event: an individual x PARTICIPATES in an event e just in case $\langle x, e \rangle$ is a stage in D . I assume that every verb characterizes a set of events (or eventualities), either directly as in neo-Davidsonian theories (in which the denotation of a verb is little more than a set of events), or implicitly in other semantic theories that recognize events. Obviously this notion of stage, as well as the characterization of participant, is strongly reminiscent of Davidsonian and neo-Davidsonian approaches to thematic roles; this connection is discussed in §7.

We are now in a position to define what it means to be episodically linked. First, we must assume that at least some nouns—in particular, all nouns in *-ee*—have meanings that uniquely determine a characteristic set of stages, what I call the stage set of that noun. Which stages can potentially be included in the stage set of an *-ee* noun is not arbitrary, but is subject to certain restrictions including 39.

- (39) A derived noun N is EPISODICALLY LINKED to its stem S iff for every stage $\langle x, e \rangle$ in the stage set of N , e is a member of the set of events that characterizes S .

The proposed hypothesis, then, is that every *-ee* noun must be episodically linked to its stem. For the noun *lessee* and the stem *lease*, for example, the stage of John given by $\langle j, e \rangle$ qualifies as a lessee only if e is a leasing event. If so, then we can say that e is a QUALIFYING EVENT for John (with respect to the predicate *lessee*); in order for John to qualify as a lessee it is necessary for there to be a qualifying event of the appropriate event type in which John participates in the appropriate manner. Thus every leasing qualifies some individual as a lessee, and for every lessee, there must be a leasing event which qualifies them as a lessee.¹³

Although some deverbal nouns which are not *-ee* nouns do seem to be episodic, such as the concrete senses of *purchase* ‘the thing purchased’ or *creation* ‘the thing created’, deverbal nouns usually are not episodically linked to their stem verbs. Consider the noun *dump* in its core sense of ‘a place for dumping something (as refuse)’. The following discourse is not possible: *When I dumped my pencil sharpener [into the wastebasket], the dump overflowed onto the floor*. That is, the mere fact that the wastebasket has participated in a dumping event does not immediately qualify it as a dump.

¹³ The discussion in this section contemplates the idea that in general a noun has in its extension stages of individuals rather than individuals. This is neither standardly done nor is it unheard of, and any complete account of the semantics of nominals will have to take stage-level nouns into account. Carlson (1982:171) notes that a pitcher can strike out twenty-six batters even if there are only nine members on the opposing team, and he suggests that *batter* has stages in its extension, not individuals. Similarly, an airline can serve many more passengers than there are people who fly in a given year. (See also Gupta 1980 and Krifka 1990 for relevant discussion.) From the point of view of this article, it is interesting to note that the only productive way to form new stage-level nouns (as far as I know) is suffixation with *-ee* or *-er*, though there are some nouns not formed from *-ee* or *-er* that are arguably stage-level, such as *guest* and *host*: one and the same person can be a guest one day and a host the next, and remains a guest only for the duration of the entertaining event. Section 5.3 shows how to reduce the denotation of an *-ee* noun from a stage set to a standard set of individuals.

Similarly, a single instance of consorting does not qualify someone as a consort; rather, a person is a consort only by profession, habit, or disposition. By the same token, not every item that is presented qualifies as a present, and not every subject of the verb *transport* qualifies as being in the extension of the noun *transport*.¹⁴

In fact, apart from the zero-derived denominal verbs discussed in §1.3, the only suffix other than -ee (that I am aware of) that is capable of productively forming episodically linked nouns—certainly not coincidentally—is -er. Levin & Rappaport 1988 and Rappaport Hovav & Levin 1992 hypothesize that an -er nominal will be episodically linked only if it (1) receives an agentive interpretation (rather than, say, an instrumental interpretation), and (2) the nominal inherits detailed argument structure from its stem.¹⁵ A *fighter for freedom* can only refer to a sentient entity who participated as an agent in a particular fighting event. In contrast, the unmodified nominal *fighter* (in addition to an agentive interpretation, of course) can also refer to an inanimate warplane, in which case it cannot take a *for*-phrase argument.

There are two differences with respect to episodic linking between -er nominals (as characterized by Rappaport Hovav and Levin) and -ee nominals that are particularly important for present purposes. First, unlike -er nominals, -ee nouns must always be episodically linked, and have no alternative interpretation. Second, -ee nominals are never capable of inheriting idiosyncratic argument structure from their stems: we don't have **the advisee of the danger*, **the evictee from her apartment*, or **the invitee to Bill's party*. What these facts show is that even if Levin and Rappaport Hovav are correct about the correlation between episodic linking for -er nominals and the inheritance of syntactic argument structure from the stem, the parallel correlation does not hold for -ee nouns: episodic linking in -ee nouns is uniform, and does not depend on the syntactic argument structure of the stem.

5.2. SYNTACTIC BLINDNESS. The proposed constraint governing the connection between the -ee noun and its stem is exclusively semantic, and makes no reference to any syntactic properties associated with the stem. This syntactic blindness makes some good predictions. Since *adoptee* refers to a direct object participant (*John adopted the child*), and *payee* refers to an indirect object participant (*John paid the money to Mary*), and *gazee* refers to an argument marked with a governed preposition (*John gazed at Mary*), a syntactic account must postulate at least three distinct uses of -ee. On the semantic account, the referents of these -ee nouns are all alike in being entailed participants in the relevant events, and are all on an equal footing semantically. Thus the perplexing variety of -ee nouns when looked at from a syntactic point of view is not a problem for the semantic account.

Syntactic blindness also solves the puzzle posed by -ee nouns for which there is no corresponding syntactic argument (see §3.4). Since syntactic argument structure is irrelevant for the semantic analysis, nothing in the semantic analysis prevents an -ee noun from selecting as its referent an entailed participant for which the stem verb provides no corresponding syntactic argument. Therefore it is in the favor of the seman-

¹⁴ These two examples are chosen because the phonological stress retraction (the verbs *consort* and *transport* have stress on the second syllable, the nouns *consort* and *transport* have stress on the first) show that the noun is derived from the verb.

¹⁵ I know of one counterexample: 1987 *Giant pass receivers glommed on to Simms's sailors (Manuel's catch of the 25-yarder was a beauty)*, while *Skins receivers had more drops than the Smith brothers*. A football (inanimate, nonagentive) is a *sailor* by virtue of participating in a particular (metaphorical) sailing event, i.e. seeming to float high above the field.

tic analysis that it explains such uses automatically without any need for further modification.

To see how the semantic explanation works for these cases in more detail, consider the syntactic arguments of the verb *amputate*. The subject specifies the agent participant in the amputation event, and the direct object describes a body part of some individual that is to be cut off or separated from that individual. Crucially, there is no syntactic position that specifies the identity of the individual whose limb is to be amputated. That is, it is not possible to say **The doctor amputated John* or even *?The doctor amputated a leg from John*. Nevertheless, when we consider the set of amputation events, it seems quite natural that a reasonable theory of events should recognize the person who is undergoing the amputation as an entailed participant in the amputation event. That is, the meaning of the verb *amputate* guarantees the existence of a person undergoing amputation, even though there is no syntactic argument that corresponds to this participant.

From the viewpoint of the definition of episodic linking in 39, the fact that the person undergoing amputation is a participant of every amputation event is sufficient to enable a set of amputation events to characterize the *-ee* noun *amputee*: for each amputation event *e*, there exists an individual *x* which is a participant in *e* such that *x* is (becomes) an amputee. Thus *amputee* is episodically linked to the meaning of *amputate* despite the fact that there is no corresponding syntactic argument position. Similar remarks apply to the other *-ee* nouns mentioned in §3.4.

5.3. ASPECTUAL ISSUES. If the denotations of *-ee* nouns do in fact depend more or less directly on a set of events, this naturally raises the question of whether traditional verbal issues of aspect or *aktsortarten* are relevant for the semantics of *-ee* nouns. In the verbal domain, these factors contribute to constraints on morphological tense, constraints on possible adverbial modifiers (*in an hour* versus *for an hour*), and so on. In this subsection I argue that semantic aspectual properties of verb denotations do directly affect the behavior of *-ee* nouns. More specifically, whether the events associated with the stem verb are punctual determines the extent of the time during which an individual remains in the extension of an *-ee* noun. This correspondence explains why it is that an adoptee remains an adoptee for the rest of his or her life, but an individual is an employee only for the duration of employment. The relevance of this correspondence is that it provides an argument in support of the hypothesis that *-ee* nouns are episodically linked to the meanings of their stems. In addition, this discussion will provide an opportunity to explain how to reduce stage sets to standard extensional sets of individuals.

An event *e* is punctual just in case the temporal trace function τ maps *e* onto a point (an interval of length 0). We can say that an *-ee* noun is punctual, antipunctual, or neither depending on whether its stage set contains only stages built from punctual events, only from nonpunctual events, or a mixture. Factors that help predict whether a particular *-ee* noun will be punctual or antipunctual will be discussed shortly, but first let's see how classifying *-ee* nouns into punctual and antipunctual corresponds to how they behave semantically.

So far I have discussed the denotation of *-ee* nouns as sets of stages. Since stages have a natural association with a particular interval of time (namely, the temporal trace of its component event), we have thus far not needed to consider imposing any temporal structure on our denotations. Recall that on a standard compositional intensional semantics (e.g. Montague 1970), the sense of a noun is a function from possible worlds and

times to a set of individuals. This set of individuals is the extension of the noun in the given world at the given time. What we need at this point is a way to calculate the extension of an -ee noun based on its stage set. For simplicity, I will consider only a time index and ignore variation across possible worlds.

- (40) An individual x will be in the extension of an -ee noun N when evaluated at time t just in case there is a stage $\langle x, e \rangle$ in the stage-set of N and either (1) e is punctual and $\tau(e) \leq t$ or (2) e is nonpunctual and $t \subseteq \tau(e)$.

That is, if the qualifying event for x is punctual, x is in the extension of the -ee noun in question from the moment at which the qualifying event occurs onwards; but if the qualifying event is nonpunctual, then x is in the extension of the -ee noun only for the duration of the qualifying event. For instance, drafting someone into the military is a punctual event, so *draftee* is a punctual -ee noun: from the point of view of the use of the -ee noun, undergoing a drafting event constitutes a permanent change of state. Therefore Mary qualifies as a draftee from the moment she is drafted onward, and she can be felicitously described as a draftee until the description is no longer relevant or informative.¹⁶ Some -ee nouns in which the permanence of the change of state is particularly salient include *adoptee*, *amputee*, *divorcee*, *inductee*, *patentee*, *retardee*, and *retiree*. In contrast, employment events have a nonpunctual duration, so *employee* is antipunctual. Therefore John qualifies as an employee only for as long as he is employed. Note that if John has been employed as a baker for several years but is suddenly fired, he is still a baker (*John is an unemployed baker*), but he is no longer an employee (**John is an (unemployed) employee*).

What determines whether an -ee noun will be punctual or antipunctual? The basic generalization seems to be that punctuality of the denotation of an -ee noun follows automatically from the semantics of the stem verb under the assumption that -ee nouns must be episodically linked to their stems. Some verbs characterize events that are naturally punctual. For instance, the action described by the verb *dedicate* (in the sense of dedicating a book) is essentially punctual: it is not possible to dedicate a particular book over the course of several months. We can therefore assume that all of the qualifying events available to form members of the denotation of *dedictee* ‘person to whom a book is dedicated’ are punctual. As a consequence, given 40 we correctly predict that a person is in the extension of the *dedictee* from the moment at which the dedication occurs on. Other -ee nouns whose stem verb seems to be naturally punctual include

¹⁶ It will only be cooperative to use a punctual -ee noun to describe an individual for as long as the qualifying event continues to be sufficiently salient and relevant, and only so long as there is no other description that is more appropriate. Thus a person will be described as a *hittee* only if the speaker can assume that the listener is aware of the relevant hitting event. Similarly, a person will be described as an *adoptee* only in a context in which their status as an adoptee has a significant impact on their life: 1989 *Ten states use a system that allows an adult adoptee to request a search for his or her mother and then meet her if she consents*. In this (and many other similar attested uses) an adult adoptee is not someone who was adopted after reaching adulthood, but rather someone who participated in an adoption event as a young child and who has since grown to adult age.

Once a particular qualifying event is superseded by some other more relevant or more salient event, the use of the -ee noun justified by the first event becomes less useful. Thus a person will be described as a *nominee* only until the nomination has been confirmed, at which point it would be uncooperative to refer to that person as a nominee rather than using the newly confirmed title (e.g. Secretary of State). If, on the other hand, the nomination does not go through, in many situations there will not be any more cooperative way to indicate which person is meant other than evoking the nomination event, and the -ee noun remains appropriate. But for either outcome, the individual continues to qualify as a nominee; in any case, he or she certainly does not become a former nominee or an ex-nominee.

appellee, delegatee, photographee, selectee, surrenderee, and many of the violent series such as *hittee, kickee, murderee*, and so forth.

Other verbs characterize events that are naturally nonpunctual: just as for the noun *employee* (discussed above), the action described by the verb *borrow* necessarily occurs over some nonpunctual interval of time. This observation leads to the prediction that someone ceases to be a borrowee after the borrowed item has been returned. Similarly, a person is in the extension of *trainee* only during their training. Additional examples include *standee, secondee, sitee, relaxee, tutee, waitee*, and so on. Legal *-ee* nouns are also typically antipunctual, with the temporal trace of the relevant qualifying events coinciding with the interval that the entailed legal obligation is in force. A person qualifies as a lessee, for example, only during the term of the rental contract. The same is true for *pawnee, bailee, pledgee, creditee, vouchee, loanee*, and so on.

The brief comments here are by no means a complete account of the mapping of aspect and *aktionsarten* from verbs to *-ee* nouns. The syntax and semantics of verbal constructions are sensitive to other differences in *aktionsarten* besides punctual versus nonpunctual, of course (other grammaticalized categories include achievements and accomplishments), and these distinctions may very well also give rise to corresponding patterns of behavior in *-ee* nouns. All that this section is intended to do is establish the following three points: (1) some *-ee* nouns have an individual in their extension from some moment onward (punctual *-ee* nouns), and some *-ee* nouns have particular individuals in their extension only for limited periods of time (antipunctual *-ee* nouns); (2) whether an *-ee* noun will be punctual or antipunctual is systematically related to semantic properties of the stem verb; and (3) the hypothesis that *-ee* nouns are episodically linked to their stem verbs provides an explanation for how the punctuality of an *-ee* noun depends on the semantics of its stem verb.

5.4. *-ee* NOUNS WITH NONVERBAL STEMS. A significant number of *-ee* nouns have nonverbal stems (see Marchand 1969:268 and Bauer 1983:248). The largest subclass of these have what seem to be nominal stems, and the meaning is often ‘person who receives X’ where X is something in the extension of the stem. Examples which could plausibly be analyzed this way include *asylee* [‘person granted political asylum’], *chargee* ‘holder of a charge upon property’, *cognizee* ‘... he to whom cognizance was made’, *custodee, debtee, galee* ‘one to whom a gale [a license to mine minerals] has been granted ...’, *giftee, handshakee, letteree* [‘patentee’], *optionee, patentee* ‘one to whom letters patent have been granted ...’, *preceptee, refugee, and warrantee* [‘person holding a warrant’]. Other *-ee* nouns with nonverbal stems include *aggressee, benefactee, biographee, blind datee, donee* (note that *donee* entered common use in the sixteenth century, long before the first attested use of the verb *donate* 1845), *executionee, festschriftee, inquisithee, malefactee, mentee, missionee, moneylendee, pickpockete, philanthropee, politicee, redundantee, return addressee, sharkee, tutee, venerealee, and wardee*.

Some of these examples may be back formations from established forms involving affixes which typically attach to verbs, especially instances of episodic *-er*: *biographer/biographee, benefactor/benefactee, inquisitor/inquisithee, aggressor/aggressee, mentor* ‘to serve as a mentor to someone’/*mentee, moneylender/moneylendee* (see §3.5). For some examples, the meaning suggests that *-ee* is suffixed to a compound noun. For instance, note that a *blind datee* is someone who participates in a blind date, and not someone on a date who is blind. Other examples are *return addressee* and *moneylendee*. Note that in these cases the *-ee* is attached morphologically to a verb—just like a

phrasal clitic, it is as if -ee can attach to a nonverbal form as long as the rightmost subform is a verb (though *pickpocketee* does not conform to this pattern). (See Levi 1978:168–84 *passim* for relevant discussion of ‘patient nominalizations’ such as *presidential appointees*.)

Although these examples make it difficult to claim that from a morphological view -ee simply attaches only to verbal stems, they are not a problem for the hypothesis that -ee nouns are always episodically linked semantically. In fact, these -ee nouns are just as strongly episodic as deverbal -ee nouns. A giftee is necessarily a participant in a gift-giving event, a blind datee is a participant in a blind date event, and a festschriftee is a participant in a festschrift dedication event. All that is required to satisfy the definition of episodic linking given in 39 is that the stem be associated with a set of eventualities that can serve as qualifying events, and the attested uses of nominal stem -ee nouns satisfy this requirement.

In contrast, the existence of -ee nouns whose stems are not independent verbs is highly problematic for a syntactic theory of -ee noun formation. A theory that associated -ee nouns with syntactic arguments would presumably have to posit an abstract level of syntactic argument structure. On such a syntactic analysis, *biographee* would have to refer to entities in the extension of what would have been the direct object position of the verb *biograph*, if there were such a verb.

6. LACK OF VOLITIONAL CONTROL. This section takes seriously the commonplace intuition that the meaning of -ee has a component that is very much like a thematic role. As a starting point, a common impression is that -ee nouns typically refer to people who have had something bad happen to them: words like *amputee*, *hittee*, and *refugee* all describe people who would presumably have been better off not participating in the event that qualifies them as -ee noun referents. A large number of -ee nouns, though, are more neutral as to the desirability of their applicability (*addressee*, *franchisee*, *lessee*, *pollee*), and a significant number of -ee nouns whose referents can be supposed to be quite happy to undergo their qualifying events (*honoree*, *nominee*, *lovee*, etc.).

Perhaps it would be better to use Bolinger’s (1941) terminology; he suggests that -ee denotes not a ‘passive’ meaning (a syntactic orientation), but ‘passivity’ (a semantic notion). Along the same lines, many authors (e.g. Baayen & Lieber 1991:820) describe episodic -ee as a ‘patient’ suffix, and Horn asserts (without further elaboration) that ‘the animate -ee nominal is presented as helpless or relatively powerless’ (1980:142). The specific form of the insight embodied in these observations that will be defended here is as follows:

- (41) The use of an -ee noun entails a lack of volitional control on the part of its referent either over the occurrence or the duration of the qualifying event itself or (given a punctual qualifying event) over its immediate direct consequences.

(Some similar constraints in other languages will briefly be discussed in §7.) The best way to make the intention of this claim clear will be through discussion of a number of examples.

This constraint is most clear for the maleficative uses, of course, since a murderee clearly lacks volitional control over the relevant murdering event. In the neutral uses, note that no consent is required in order to become an addressee, either for someone who is addressed verbally by another and especially for the common use in which the addressee is the person that a letter or a package is addressed to. Similarly, franchisees,

honorees, lessees, nominees, lovees, and pollees, however eager they may be to participate in their respective qualifying events, must first be selected and approved by someone else before that event will come to pass.

All of the larger semantically coherent subgroups of *-ee* nouns clearly fall within the domain of compulsion and obligation. The largest such subclass consists of legal terminology, and the essential element of the legal uses, of course, is obligation under the law. Some examples include *appellee*, *debtee*, *divorcee*, *donee*, *evictee*, *feoffee*, *garnishee*, *lessee*, *obligee*, *pledgee*, *trustee*, and *warrantee*. There are 74 attested word types that clearly entail that the *-ee* participant has specific legal obligations as a result of participating in the qualifying event.

Clusters of *-ee* noun uses occur in other domains in which compulsion or obligation is highly prominent. Many *-ee* relate to personal violence; by my count, there are 33 word types, including *beatee*, *fuckee*, *hittee*, *kickee*, *knockee*, *punchee*, *slittee*, *sockee*, *torturee*, *twistee*, and *viviseetee*; crime and police work: 17 examples, including *abductee*, *arrestee*, *blackmailee*, *cheatee*, *followee*, *muggee*, *murderee*, and *tailee*; prisons and punishment: 12 examples, including *escapee*, *expiree*, *floggee*, *offendee*, *pardonee*, *parolee*, and *releasee*; military and war: 17 examples, including *bombee*, *deferree*, *draftee*, *enlistee*, *invadee*, *pillagee*, *selectee*, *shavee*, and *surrenderee*; humor: 10 examples, viz. *amusee*, *banteree*, *gaggee*, *geggee*, *hoaxee*, *jestee*, *jokee*, *laughee*, *roastee*, and *teasee*; business: 28 examples, including *acquiree*, *bargainee*, *contractee*, *employee*, *firee*, *franchisee*, *optionee*, *sweathee*, and *tenderee*; politics, government and bureaucracy: 20 examples, including *asylee*, *electee*, *evacuee*, *persecutee*, *pollee*, *refugee*, *restrictee*, and *returnee*; social norms: 30 examples, including *affrontee*, *boree*, *cursee*, *cuttee*, *handshakee*, *introducee*, *socializee*, *toastee*, and *visitee*; education: 17 examples, including *advisee*, *crammee*, *enrollee*, *examinee*, *exchangee*, *ment(or)ee*, *passee*, *pledgee*, *rushee*, *testee*, *tryoutee*, and *tuttee*; publishing: 9 examples, viz. *biographee*, *citee*, *dedicatee*, *editee*, *festschriftee*, *publishee*, *quotee*, *revisee*, and *writee*; communication: 25 examples, including *addressee*, *communic(at)ee*, *describee*, *explainee*, *gazee*, *leakee*, *narratee*, *readee*, *talkee*, *writee*, and *yellee*.

Last but not least, there are the technical linguistics terms (see §3), which uniformly appeal to figurative compulsion and manipulation of grammatical objects: 20 examples, viz. *actee*, *advancee*, *ascendee*, *benefactee*, *causee*, *cliticee*, *controllee*, *deletee*, *determinee*, *dislocatee*, *draggee*, *eliminatee*, *erasee*, *extractee*, *forcee*, *governee*, *malefactee*, *piedpipee*, *possessee*, and *reorderee*.

6.1. -ee NOUNS THAT REFER TO STEM VERB SUBJECTS. What about *-ee* nouns referring to entities that are typically specified by the subject of the stem verb? Since this class of *-ee* nouns is one of the most problematic for syntactic hypothesis, it is especially important to see how well the semantic hypothesis accounts for them. These uses might seem at first glance to pose an equally difficult problem for the semantic approach as well, since subjects are typically highly agentive and therefore are usually in volitional control of the verbal event.

The semantic explanation offered here has two parts: in some cases, although the qualifying event itself is indeed under the control of the *-ee* participant (as befitting a verbal subject), there is a clear lack of control over the direct consequences of the event, and the use of the *-ee* form emphasizes this lack of control; and in other cases, there may be strong entailments showing that even though the *-ee* participant is an active participant, their actions are nevertheless compelled or constrained by external forces independently of any entailments that are part of the meaning of the stem. We will consider these two types of cases in turn.

Usually the -ee participant lacks control over the occurrence of the qualifying event itself. For instance, a toastee will be the recipient of a toast whether she wants to be or not. Similarly, a deferree will be able to succeed at deferring military service only with the cooperation of the draft board. But it is also possible for a lack of control to occur subsequent to the onset of the qualifying event. In such cases the -ee participant may control whether, or at least when, the qualifying event will occur, but as a result of the event itself becomes subject to substantial constraints on his or her actions, which are no longer under volitional control. Certainly the most famous example of this type is *escapee*. An escapee typically is volitionally, actively, and deliberately involved in bringing about the escaping event. Once the escape has been effected, however, the escapee undergoes a significant and relevant change of state: he or she is subject to consequences that are quite certainly not in their control and in fact are quite strongly negative, including pursuit, recapture, and punishment for escaping. Thus *escapee* has come to be nearly synonymous with *fugitive*.

Note that in the cases of entering into a legal contract, the subsequent lack of control on the part of the -ee participant occurs entirely during the qualifying event. But as shown by *escapee*, when the qualifying event is punctual, it is possible that the qualifying event merely serves as the beginning point (both temporally and causally) of the period of lack of control (see n. 8). Other noun types worth considering here include *resignee*, *retiree*, *attendee*, *enlistee*, *enrollee*, and *returnee*. Another cogent possibility is that the relevant period of lack of control occurs before the event, in the circumstances which led the person to escape, to resign, to retire, etc. However plausible these explanations for *escapee* and other subject uses may be, they are less than fully compelling. But note that relative lack of volition is not an absolute property, but rather one that applies only up to a certain degree. This is in contrast to the crisply defined categories of sentience or episodic linking. We should therefore expect different -ee nouns to conform to 41 to greater or lesser degrees.

Recall that the main goal of this investigation is to explore constraints on productive use of -ee. Even if lack of volition is a legitimate constraint on productive formation of nouns in -ee, we would naturally expect some discrepancy between the constraint and the observed meanings of well-established uses such as *escapee* due to semantic drift. That is, because the degree to which uses of a particular -ee noun type conforms to 41 can differ little by little, we should expect some established -ee nouns to lose some part of the entailment of lack of volition through a gradual shift in meaning. It would be comparatively less likely for an established -ee noun to come to apply to inanimate objects, or to lose its episodic linking, since that would require a discontinuous change in meaning.¹⁷

If this line of reasoning is on the right track, we would expect that the volitionality constraint should emerge more clearly for novel or nonce uses, and this expectation is borne out by the data. In fact, the most convincing evidence that 41 is indeed a component in native speakers' active knowledge concerning the meaning of the suffix -ee is

¹⁷ Nevertheless, such changes have occurred. The original meaning of *committee* was 'a person to whom some charge, trust, or function is committed', but the main modern sense of *committee* does not depend in a recognizable way on committing events. Similarly, although *referee* originally meant 'one to whom any matter or question in dispute is referred for decision', the most common modern sense is roughly equivalent to *umpire*, and does not seem to be episodically linked to the verb *refer*. Not coincidentally, native speakers fail to recognize these words as -ee nouns, and in fact *committee* has also undergone morphological phonological regularization with respect to stress (main stress is on the penultimate syllable, rather than on the final syllable as is characteristic for nouns in -ee).

that lack of volition is so clearly discernible—and present to such a high degree—in productive uses. In order to demonstrate this, I list in exx. 42–59 every -ee noun type that refers to the stem verb subject and for which there is only one attested occurrence. (As discussed in §2, I am assuming that the rarest word types provide a reasonable approximation of productive uses.) In virtually every case the context of use emphasizes the relative lack of volitional control on the part of the -ee noun referent.

- (42) 1617 Touching these submitties while they were in rebellion, he did spoile waste and kill many of them.
- (43) 1935 'I was a fool to marry a man like you', she continued, her eyes averted, 'I ought to have known better. Oh, it's a tribute to you and not a reproach . . . There are some women who are mergers and others who aren't. I'm like you—a mergee.'
- (44) 1945 Keys for Forgettees [sign over a desk in the reception section of the Pentagon, Washington, D.C.]
- (45) 1957 There was the Asian influenza casualty . . . who was replaced gallantly by an influenza recoveree, Mr Robert Harben.
- (46) 1968 A weightless embarkee would reel before a sudden gust, fall, and be blown about the quay.
- (47) 1970 Some meetings should be . . . mercifully brief. A good way to handle the latter is to hold the meetings with everybody standing up. The meetees won't believe you at first. Then they get very uncomfortable and can hardly wait to get the meeting over with.
- (48) 1971 [experiment involving shining lights into subject's eyes] The adaptee then cannot tell the difference between yellow and white, i.e. is yellow-blind.
- (49) 1977 The NP . . . that is moved by an ascension rule we will refer to as the 'ascendee'.
- (50) 1978 We didn't have any way of accurately estimating how many standees and sitees [sic] we had.
- (51) 1980 [in a doctor's waiting room:] Sketch your fellow waitees.
- (52) 1987 These young musicians were chosen from over 200 auditionees.
- (53) 1988 Life after a merger tends to be less pleasant when you're the 'mergee,' or weaker party.
- (54) 1989 In Mamet's equally brief one-acter, the devil—called the interrogator—harasses a new arrivee named Bobby Gould.
- (55) 1993 Another device DeKoven uses is the Meetings Meter, a piece of software that functions like a taxi meter, displaying a continuing tally on how much the meeting is costing. The inspiration for the device came at a meeting with his attorney when DeKoven realized he wasted \$11 telling a long joke to the \$300-an-hour laughee.
- (56) 1993 The ground rules were simple: to find ways to relax that required absolutely no effort on the part of the relaxee.
- (57) 1994 The detective on the case is John Becker, a former FBI agent and a returnee from two previous novels by the same author.
- (58) 1994 The paella didn't turn out very well, but fortunately my dinees were quite understanding.
- (59) 1994 [A radio announcer discusses a device which] would go off if the offendee left the house.

In each case the context of use establishes special circumstances that add or emphasize

a lack of volitional control or a relinquishing of control on the part of the otherwise highly agentive referents. In 48, for instance, although adapting is in general usually a highly intentional process, here adapting to a bright light is an involuntary reflex of the human eye (i.e. involuntary on the part of the referent of the -ee noun). Similarly, in 54, although arriving is usually the intended goal of an agent, the quoted use emphasizes the lack of control of the arrivee over the consequences of arriving, since arriving subjects him to the torments of the devil. In 55, a laugher can be described as a laughee when he has been forced or induced or expected to laugh. And finally, in 58, although diners are almost always highly active, agentive, and in control, there are times when agreeing to dine at someone's house commits the diner to experiencing a meal which they might have preferred to avoid (the use of the possessive construction further emphasizes that the diners have relinquished control to their host).

These examples pose a particularly difficult problem for a purely syntactic theory, unless the syntactic properties of verbs are allowed to vary from one use to another depending on semantic factors present in the context. In sum, lack of volitional control is a strong element in virtually all established uses, and, more important for the main purposes of this paper, seems to actively constrain productive uses of the suffix.

7. VIEWING THE SEMANTICS OF -ee AS A THEMATIC ROLE. Do the semantic constraints argued for above amount to a thematic role? Many of the issues addressed in this article do not depend on the answer to this question. Whether the answer is yes or no, -ee stands as a reasonably clear case in which semantic factors constrain productive derivational morphology, against the expectations of theories of derivational morphology that depend on syntactic argument structure. Nevertheless, the question of whether the semantics of -ee constitutes a thematic role is important enough and interesting enough to be worth considering in some detail.

A clear answer would be possible only if the notion thematic role itself were clear, which it isn't. As a starting point, I will assume that if proposed thematic roles such as agent, patient, and experiencer do in fact exist and are relevant for linguistic analysis, then they are essentially semantic notions that happen to be relevant for explaining syntactic or morphological phenomena. Dowty (1989:77) expresses this assumption more generally and more precisely as follows: a THEMATIC ROLE minimally is a nontrivial set of semantic entailments that partly characterizes a natural class of argument positions.¹⁸

Does -ee qualify according to this definition? Certainly the combination of sentience, episodic linking, and lack of volitional control add up to a nontrivial set of semantic entailments. All that remains, then, is to identify a natural class of argument positions characterized by these entailments. Care is needed here: in §3 I argued at length that -ee noun referents do not correspond to any syntactic natural class of verbal argument positions. But verbal argument structure is not relevant here. What matters for the purposes of Dowty's definition is whether the set of -ee noun argument positions themselves constitute a natural class. Clearly they do, for the simple reason that they are in one-to-one correspondence with a specific productive morphological process, namely, suffixation by -ee. That is, the natural class of argument positions we are considering is the set of all and only the main argument positions of nouns bearing the suffix -ee. This set includes the main argument of the predicate *employee*, the main argument of

¹⁸ Here and throughout this paper I follow general practice in saying 'thematic role' in referring to what Dowty (1989) more accurately calls a 'thematic role type'.

the predicate *attendee*, the main argument of the predicate *escapee*, and so on. Since this set is a natural class of argument positions, the semantics of *-ee* qualifies as a thematic role, at least according to Dowty's proposed definition.¹⁹

The claim that the semantics of *-ee* nouns qualifies as a thematic role in this way is neither trivial nor expected. For comparison, consider the passive participle suffix *-ed*, as in *believed*, *recognized*, *built*, and *hallucinated*, which I take to be a clear case in which the referent of the main argument position of the derived passive verb depends on the syntactic argument structure of the stem verb. Just as for the main argument positions of *-ee* nouns, the subjects of these predicates constitute a morphosyntactically defined natural class of argument positions. However, they fail to give rise to any thematic role, for the simple reason that the sets of lexical entailments associated with these arguments positions do not share any nontrivial semantic properties between them: neither are the referents of the subjects of these predicates all concrete, nor abstract, nor affected; they are not all sources or goals; nor does any other property implicated in thematic roles apply systematically throughout the natural class of argument positions. This shows that the semantic coherence of the *-ee* noun arguments clearly is not an automatic byproduct of the fact that *-ee* predicates all contain a particular derivational morpheme.

The semantics of *-ee* has other hallmarks of traditional thematic roles beyond Dowty's baseline criterion. For instance, traditional verbal thematic roles such as agent, patient, or goal are crucially connected to events; that is, they specify the manner in which the entity they are associated with (more precisely, the referent of the argument which bears the thematic role) participates in a particular event. Because *-ee* nouns are episodically linked to their stem verbs, the semantic constraints on *-ee* are also event-related in the same way: they (partially) specify the manner in which the referent of an *-ee* noun participates in its qualifying event.

To develop this point, recall from §5 that I characterized the extension of an *-ee* noun by means of a set of stages of individuals, where a stage $\langle x, e \rangle$ is an individual x participating in an eventuality e . In Davidsonian (e.g. Davidson 1967) or neo-Davidsonian (e.g. Parsons 1990) theories, thematic roles also are modeled as relations over pairs containing individuals and events. Parsons (1990:72) provides the sentence *Brutus stabs Caesar* with the logical representation $\exists e [Stabbing(e) \& Cul(e) \& Agent(e, B) \& Theme(e, C)]$.²⁰ Thus for Parsons, the agent thematic role is nothing more than a set of stages, the set of all stages $\langle x, e \rangle$ in which x participates in event e in a way that is consistent with whatever the semantic requirements for agenthood turn out to be. This is precisely what we have for *-ee* nouns: a stage will be in the stage set of an *-ee* noun only if the individual in question participates in its qualifying event in a manner consistent with a nontrivial set of semantic conditions. Therefore not only do the semantics of *-ee* satisfy Dowty's definition of a thematic role, they are also formally exactly parallel semantically with Parsons's conception of agent or theme or instrument.

Despite these points of comparison with verbal thematic roles, we cannot reduce the semantic components of *-ee* noun meanings to any specific independently motivated

¹⁹ By MAIN ARGUMENT POSITION, I mean the argument position corresponding to the entity described by the noun; thus the main argument position of *employee* always corresponds to a wage-earner. See Higginbotham 1985:560 or chapter 2 of Barker 1995.

²⁰ Note that the convention for (neo-) Davidsons is to write the event (rather than the individual) as the first element of the ordered pair, which is the opposite of the convention in this paper, but this difference is immaterial.

verbal thematic role (at least, no verbal role motivated for English—see below). The closest potential match is to thematic roles such as theme or patient or undergoer. However, none of these thematic roles are restricted to sentient entities; as noted above, the direct object of *kick* is a theme, but can easily be inanimate. Thus the semantics of -ee is its own special-purpose thematic role: just like a verbal thematic role, but not otherwise a part of the verbal system. This conclusion provides support for the claim discussed in §1.1 that in general, nominal expressions have their own system of thematic roles, parallel to the verbal system but distinct from it.

I certainly do not mean to suggest that the alleged thematic role governing -ee nouns is on a par in importance with notions like agent and patient, which pervade language (or at least, pervade linguistic description). For one thing, as far as we know, this putative thematic role is specifically associated only with a single morpheme. This apparent limitation is somewhat deceptive, however; bear in mind that the semantic constraints in question govern the behavior of a large class of heterogenous predicates (*escapee*, *attendee*, *resignee*, etc.). Furthermore, if the claim that -ee suffixation is productive is correct, we are dealing with an unbounded class of argument positions. Even limiting our attention to the roughly five hundred attested word types, this number easily compares with the number of distinct predicate types associated with such traditional thematic roles as experiencer or stimulus.

Are there any grammatical phenomena besides -ee suffixation that refer to this putative thematic role? This is an empirical question, and it is certainly possible that the answer is yes. If we factor out sentience, Horn (1980) offers a few candidates for related phenomena, even one from English (namely, suffixation in -able). Another place to look in English (suggested to me by Mark Aronoff) is the *get* passive, as in *He got promoted*, where there is certainly an implication of lack of volitional control. Once again, however, there is no sentience entailment, since it is perfectly possible to say *My car got smashed*.

It is not difficult at all to find descriptions of languages in which volitional control with or without sentience is implicated in phenomena usually assumed to be governed by thematic relations. I will mention just three of the more promising cases here. First, Butt (1995:108) asserts that in Urdu, ‘the light verb *daal* ‘put’ contributes a reading of conscious choice to an action and assigns the ergative case to the subject of the complex predicate’. Despite the presence of a sentience entailment, we do not have quite the same thing as proposed here for -ee, since what is relevant for this productive verb compounding process in Urdu is volitional control rather than lack of volitional control.

Second, in Central Pomo (a Californian language), case marking depends on whether the referent of the NP in question has a sufficient degree of control over the event named by the verb. It is not clear that the relevant semantic property is volitional control rather than just volitional involvement, but Mithun (1991:520) points out that the Central Pomo predicate meaning ‘win in gambling’ occurs with its subject in what she calls the patient case despite the (presumed) volitional involvement of the subject participant, suggesting that the crucial factor is indeed control rather than volition alone. Third, Athabaskan languages typically make a distinction in their verbal system between what are called controlled versus noncontrolled event types. According to Rice (1989:784), this distinction is pervasive throughout the Slave verbal system: ‘With the controlled set [of predicates], the agent has control over an entire action, while in the noncontrolled set, the agent initiates the action but is not necessarily in control through the duration of the action.’ This semantic characterization is strikingly similar to the proposal above

in 41 governing the meaning of *-ee* nouns, which also distinguishes between control over the inception of an event versus control of the duration or the consequences of an event.

These examples show that it is at least possible that a detailed, persuasive case could be made that other grammatical phenomena depend on essentially the same semantic constraints proposed here for *-ee*. As interesting as this would be, however, I don't see the success of such a project as crucial to deciding the status of these constraints as constituting a valid thematic role. Quite the contrary: one reason why it is potentially interesting to decide that *-ee* does refer to a thematic role is precisely because it may be thematically unique.

The rationale for this view is functional. Of all possible semantic property clusters, which ones become grammaticized as thematic roles? Obviously, they will tend to be those concepts that are most relevant for daily human interaction. Thus the concepts of agent, patient, experiencer, etc., are so useful that they are likely to be grammaticized in many different ways, both within a single grammar and crosslinguistically. Inevitably, however, some thematic roles will be less useful than others. One way to see this is to note that theories of thematic roles differ according to how many thematic roles they consider to be genuinely grammaticized (see Dowty 1991 for discussion). It stands to reason that there may be marginal thematic roles: semantic property clusters that are useful enough to be grammaticized, but not useful enough that they are likely to be multiply grammaticized.

As we have seen, the semantic constraint set on *-ee* meets all of the technical criteria for thematic rolehood. If this semantic notion differs from traditional thematic roles, then, perhaps it is only in the degree to which it has been multiply grammaticized. Identifying other cases similar to *-ee* will involve (1) identifying a natural class of argument positions, whether associated with a specific morpheme or a specific syntactic phenomenon, (2) identifying a set of nontrivial semantic properties that predict some aspect of the behavior of that class of argument positions, (3) demonstrating that the behavior in question cannot be explained equally well morphologically or syntactically, and (4) demonstrating that the semantic properties cannot be reduced to any independently motivated thematic role. We should expect such thematic role isolates to be rare for the functional reasons just given, and finding in addition a situation in which a strong case can be made on all four of these points will be rarer still. Will *-ee* turn out to be the only one? That is, is the special nature of *-ee* unique in the world's languages? This seems unlikely, although any way you look at it, *-ee* is a relatively unlikely morpheme.

Since *-ee* is productive, if the semantic entailments in question are indeed tantamount to a thematic role, then thematic roles are crucially involved in constraining productive use of at least one derivational morpheme. This, in turn, provides a new kind of argument that thematic roles—or at the very least something very much like thematic roles—must be part of a native speaker's active, productive knowledge of their language.

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[Received 25 June 1997;
accepted 5 December 1997]