English Language and Linguistics 7.1: 129–159. © Cambridge University Press 2003
DOI: 10.1017/S1360674303211059 Printed in the United Kingdom

Derived nominalizations in *-ee*: a Role and Reference Grammar based semantic analysis

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(Received 10 February 2002; revised 21 November 2002)

The main aim of this article is to provide an explanation accounting for the production of English derived nouns in *-ee*. In line with Barker (1998), I will argue that analyses based on the syntactic argument structure of the verbal base are unsatisfactory, and that the conditions for this derivational process must be searched for within semantics. My intention is to explore the semantic factors that might be taken to be pre-eminent in the different sets of verbs taking the suffix using the Role and Reference Grammar (RRG) framework. It will be shown that a semantic analysis based on a theory of lexical representation like RRG is relevant to account for the formation of derived nouns in *-ee* in English.[1]

1 Deverbal nominalizations: a brief overview

Derived nouns in *-ee* are one case of English deverbal nominalizations. Two types of these are distinguished: first-order nominalizations and higher-order nominalizations.[2]

First-order nominalizations denote a first-order entity, corresponding to one of the arguments of the verb. The simplest examples are agent nominalizations, which realize the *x* argument in the logical structure of the verbal base (activity verbs)[3] (e.g. *writ-er*). However, there are further cases of first-order nominalizations: derived nominalizations in *-ee* realize the *y* argument in the logical structure of the verbal base (e.g. *appoint-ee*),[4] though this is not the only possible reference, as will be shown in the following pages.[5]

Higher-order nominalizations denote a state of affairs (or a proposition). The nouns *destruction*, in 'the *destruction* of the city', and *baking*, in 'the *baking* of the cake', are examples of this type.

[1] I gratefully acknowledge comments and suggestions from Robert Van Valin, Lachlan Mackenzie, and two anonymous readers of a previous version of this paper.

[2] I have taken up these labels from Mackenzie (1990), who is inspired by Lyons's classification of nouns (Lyons, 1977).

[3] Other scholars use the terms 'nomina agentis' and 'subject names'. Both labels appear to be inadequate: for one thing, Agent is not the unique semantic role denoted by these nouns; secondly, reference to these nouns as 'subject names' implies the use of syntactic terms for a word-formation process, which meets the opposition of some scholars, like Mackenzie (1990), who refers to these nouns as 'first argument nominalizations'.

[4] The lower productivity of this type of nominalizations, as opposed to agent nominalizations, explains the lack of a well-established general term. By contrast with agent/subject(ive) nouns, they are sometimes referred to as 'passive'/'object(ive)' nominalizations or 'second argument nominals'. However, none of these terms seems to be an appropriate label, for reasons that will be made clear in the present article.

[5] Van Valin & LaPolla (1997: 188) mention a somewhat extreme case of argument nominalization: Tepehua verb *ca'a:-* 'wash' has eight derived nominal forms, which illustrate that it is possible for a range of arguments in the logical structure of a verb to be realized as nominalizations.

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Deverbal nominalizations in *-ee* are one type of first-order nominalizations. Bauer (1983: 245) provides the following lexical entry for this suffix:

(i) Segmental form: /i/ Suprasegmental form: stress on suffix (or equal stress on base and suffix) (that is, general stress rules apply to the whole derivative)
(ii) Suffix forming [+Human] nouns
(iii) 'One who is Ved/ Ved prep','One who Vs'
(iv) Whimsical in contexts where not (quasi-) legal
(v) Base must be a verb

2 The problem of productivity

One of the problems concerning *-ee* nominalizations is the apparently limited productivity of the process. Bauer (1983: 250) points out that while some types are not very productive, at least one type seems to be increasingly productive. However, as soon as one starts to look for evidence of the alleged productivity one gets thwarted, for the primary source to find new cases is dictionaries, where not many examples of nouns in *-ee* are attested.

Bauer warns against this usual procedure in derivational morphology, where the 'existence' or 'nonexistence' of words is accounted for in terms of their listing in or their exclusion from dictionaries. Such a procedure is unreliable since dictionaries have unnecessary inclusions as well as reproachable exclusions. As Bauer points out, many words listed in dictionaries are included at random or by mistake; besides, not all the potential words of any language can be attested, just as not all the potential sentences of any language can be attested. However, the task of morphology is the enumeration of the class of possible words of a language, which means that we need an overgenerating morphology, that is, one that generates not only words that are familiar to any particular individual, but also unfamiliar ones, and not only words that are to be found in any particular reference book (Allen, 1978; Aronoff, 1976: 17–18).

Nevertheless, no matter how limited the use of this suffix may be, it is precisely the restriction on its use which makes it particularly interesting. On the one hand, frozen (i.e. unproductive) suffixes like *-id*, *-ment*, *-th* can be accounted for by listing the words containing them in the lexicon, raising little theoretical interest in discussions of productivity; on the other hand, the most productive suffixes like *-er* illustrate general derivational processes applying more or less across the board, which can be explained by positing 'rules'. Researchers are left with the grey area in between occupied by semiproductive suffixes like *-ee*.

3 Syntactic explanation

A number of scholars have argued that the behaviour of derivational morphemes can be explained by appealing to purely syntactic aspects of argument structure (Fabb, 1984: 189 ff.; Keyser & Roeper, 1984; Levin & Rappaport, 1986, 1988; Rappaport & Levin, 1992).

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As regards derived nouns in *-ee*, Bauer (1983: 243 ff.) points out that apart from the syntactic requirement that the base must be a verb, there are additional limitations or refinements concerning the syntax of the input verb, so that different types can be distinguished depending on this factor. He draws a distinction based on the different syntax of verbal bases taking the suffix.

Firstly, a number of the verbs taking the suffix are monotransitive verbs, such that the person denoted by the complex form corresponds to the object of the verb. For example, the referent of *examinee* is 'the person who is examined', that is, the object of *examine*.

A second group includes ditransitive verbs. The person denoted by the derived word in *-ee* corresponds to the indirect object of the verbal base. Thus, a *promisee* is 'the person to whom something is promised', that is, the indirect object of *promise*.

The third group is formed by verbs taking a prepositional object. The referent of *experimentee* is 'the person who is being experimented on', that is, an entity corresponding to the verb's prepositional object.

Finally, there is one group constituted by intransitive verbs, illustrated by cases like *escapee*, denoting the entity corresponding to the subject of the verb.

The different classes can be summarized as follows:

(1) 'One who is Ved' → $\left[\begin{array}{l}+\text{V}\\ +\text{Transitive}\\ +\left[\begin{array}{l}+\text{Noun}\\ +\text{Hum}\end{array}\right]_{\text{O}_\text{D}}\end{array}\right]$

e.g. *examinee*

(2) 'One to whom something is Ved' → $\left[\begin{array}{l}+\text{V}\\ +\text{Di-transitive}\\ +\left[\begin{array}{l}+\text{Noun}\\ +\text{Hum}\end{array}\right]_{\text{O}_\text{I}}\end{array}\right]$

e.g. *promisee*

(3) 'One who is Ved prep' → $\left[\begin{array}{l}+\text{V}\\ +\left[\begin{array}{l}+\text{Noun}\\ +\text{Hum}\end{array}\right]_{\text{Prep}_\text{O}}\end{array}\right]$

e.g. *experimentee*

(4) 'One who Vs' → $\left[\begin{array}{l}+\text{V}\\ +\left[\begin{array}{l}+\text{Noun}\\ +\text{Hum}\end{array}\right]_{\text{S}}\end{array}\right]$

e.g. *escapee*

Although Bauer's classification would appear to be partly semantic, since the meaning of the complex forms and the limitations on the bases are entwined, it is primarily syntactic. This syntactic nature explains its failure to account for all the different cases

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in a satisfactory way. Sometimes, the pattern a word follows is not clear, or there might not be a pattern for it. Take the words *signal(l)ee* and *amputee*: if a *signallee* is 'one to whom a signal is made', then does it belong to the Oi type or to the PrepO one? And again, how should we classify cases like *amputee*? This word does not appear to fit into any of the above classes as the referred entity occupies no position in the argument structure of the verbal base, for it refers to the possessor of the participant to which direct object function is assigned, i.e. 'the person whose body part is amputated'.[6] In addition, we come across examples which are formed from nonverbal bases, like *biographee* (Bauer, 1983: 248; Marchand, 1969: 268).

It seems that discriminating further semantic features in the bases is necessary if one wants to arrive at a more refined characterization of the verbs which are able to undergo this process of derivation.

A syntactic explanation is plausible for nouns in *-er* since all the different semantic groups are neutralized by the syntactic function of subject, which simplifies the explanation.[7] However, even in this case, we run into difficulties if we use particular theoretical frameworks by having to resort to syntactic labels within the word-formation component.[8]

4 Semantic explanation

4.1 Introduction

To my knowledge, the most complete semantically based explanation of *-ee* formation is provided by Barker (1998). He explains the constraints on the formation of *-ee* nouns in terms of semantic properties associated with the meaning of the verbal base, e.g. the properties of the referent being sentient and showing a relative lack of volitional control, as well as what he calls episodic linking, which refers to the fact that the referent of a noun phrase headed by an *-ee* noun must have participated in an event of the type corresponding to the base verb.

Yet his characterization is not fully convincing. For one thing, his assumption regarding the episodic nature of *-ee* is commonplace, for the arguments a verb takes always refer to participants in the situation denoted by that verb in the extralinguistic world, so that nouns created from verbal bases are very likely to denote one of the participants involved in the event denoted by the verbal base.[9]

[6] Although Bauer (1983) regards *amputee* as a case of semantic lexicalization, this is not the unique example encountered: Barker (1998: 708) cites a number of other cases which refer to the possessor of the direct object participant.

[7] An apparent exception to this might be the group of so called 'cooking *er*-nouns': *broiler, roaster, frier*.

[8] Mackenzie (1990) suggests the label 'first argument nominalization' for *-er* nouns so as 'to avoid the embarrassment of using syntactic functions when dealing with predicate formation rules': in the 1989/97 version of the Functional Grammar model, predicate formation rules operate on predicate frames, which are contained in the Fund, from which syntactic functions are absolutely absent.

[9] Notice that the process also works in the opposite direction, when a verb is created from a noun (e.g. *to carpet*), where the nominal base is interpreted as an argument of the derived verb.

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Secondly, as regards the sentient referent requirement, his claim that this is not a requirement on what type of verbs *-ee* can attach to is questionable (see section 4.3.4).

Finally, although lack of volitional control is a criterial feature easily agreed upon in many of the cases, lack of volition is typical of the referents of direct objects, as Barker points out. Would this mean that any transitive verb can take on the suffix? This would be an undesirable conclusion. In section 4.3.4 it will be shown that, though relevant, lack of volition is not a sufficient or necessary condition for the process of *-ee* suffixation.

However sound Barker's account may be, it appears to be unable to delimit in a systematic way the different sets of verbs which are more likely candidates for the process of *-ee* nominalization. We suspect there might be a combination of triggering factors, like semantic domain and the semantic roles denoted by the argument corresponding to the referent of the noun, or the interaction of both. In our view, the analysis of *-ee* nominalizations is best dealt with in the Role and Reference Grammar (RRG) framework.[10]

4.2 Lexical domain distribution of -ee

However diverse the verbs undergoing the process of *-ee* nominalization might seem, they appear to belong to a limited number of specific lexical domains.[11] Although some unclear cases are found, most of them can be included under any of the following:[12]

(i) Verbs of transfer of possession: *bail*, *borrow*, *charge*, *deposit*, *devise*, *distribute*, *donate*, *finance*, *garnish*, *loan*, *lend*, *mug*, *pay*, *pillage*, *pledge*, *present*, *(en)trust*,[13] *vend*.

[10] My adoption of the RRG framework should not be taken to imply that this is the only existing framework able to account for the process of *-ee* nominalizations. My main intention is to provide a theoretically based semantic explanation of it, a goal for which RRG appears to be adequate. The main insights of the analysis can probably be formulated within other existing frameworks.

[11] Barker (1998: 718) mentions a number of different domains, among which compulsion and obligation are highly prominent, to which *-ee* nouns usually belong, e.g. the domains of law, personal violence, crime and police work, prisons and punishment, military and war, humour, business, politics, government and bureaucracy, social norms, education, publishing, communication, and technical linguistic terms. However, this looks rather like a classification based on extralinguistic situations and is not linguistically significant. Notice, for example, that though many of the words belong to specific (i.e. technical) domains, for example, the legal or the linguistic domains, those verbs belong to different lexical domains, which also include nonlegal or nonlinguistic nouns. Thus, *possessee*, *causee*, *addressee*, and *advancee* are all linguistic terms belonging to the lexical domains of possession, affecting, speech act and motion, respectively; similarly, the legal verbs *allottee*, *deportee*, *pardonee* belong to possession, motion, and affecting respectively.

[12] The main source for the examples in this article is Barker (1998), who takes his data from a number of different sources (see Barker, 1998: n.2).

[13] The parentheses indicate that the derived noun in this case is not **entrustee* but *trustee*, though the verb from which it is derived is *entrust.* For this reason, Bauer (1983: 248) considers this case as morphologically lexicalized.

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Note that while most verbs within this set denote the transference of some entity to a Recipient, there are a few examples, like *borrow*, *charge*, *mug* and *pillage*, which denote the loss of a possession.

(ii) Speech act verbs: *address*, *advise*, *appoint*, *appraise*, *audition*, *call*, *consult*, *communicate*, *complain*, *confirm*, *contact*, *dedicate*, *describe*, *explain*, *honor*, *interrogate*, *leak*, *narrate*, *read*, *talk*, *write.*

This group covers all those verbs denoting any kind of speech act, by which we mean not only acts of speaking but any other communicative act or, in general, any act involving social interaction between a Speaker and an Addressee (which includes requests for information, invitations, offers, and so on). Pinker (1989: 112) calls these verbs 'illocutionary verbs of communication'. He observes that they all involve a particular kind of communicated content specified by the verb, which is defined with respect to the speaker's intentions concerning how the hearer is to interpret it, that is, verbs like *tell*, *ask*, and *write* differ by virtue of specifying messages with a different intended effect on the hearer, i.e. a different illocutionary force. Thus, the goal of the message is that the hearer comes to know it (e.g. *tell*), learn it (e.g. *teach*), answer it (e.g. *ask*, *pose*), read it (e.g. *write*), see it (e.g. *show*), hear or comprehend it (e.g. *read*).

Half-way between speech act verbs and verbs of transfer of possession we find verbs like *offer*, *promise*, *bequeath*, *credit*, *refer*, *allocate*, *guarantee*, *allot*, *assign*, *advance*, *award*, *reserve*, *grant*, where some person *x* makes a commitment that *y* will have or can have *z* in the future. These verbs have been called 'verbs of future having' (Green, 1974). What they denote is not a change of possession but a proactive commitment of some sort guaranteeing the change of possession. Since these verbs are closely related to speech act verbs, they will be considered within this group.

(iii) Verbs of motion: *advance*, *ascend*, *attend*, *arrive*, *deport*, *dislocate*, *drag*, *drain*, *embark*, *enlist*, *enrol*, *escape*, *evacuate*, *expel*, *extract*, *intern*, *invade*, *reorder*, *retire*, *return*, *send.*[14]

This set is characterized by the denotation of the change of position of an entity. Many of these nouns are technical terms used in linguistics, though they might be taken to denote some kind of motion as well.

(iv) Verbs of position: *stand*, *sit.*

Levin (1993: 112) regards these verbs as members of the class of 'verbs of putting in a spatial configuration'. They refer to putting an entity at some location, and are set apart from other verbs of putting in that they specify the particular spatial configuration that the placed entity ends up in respect to the location. This set is not productive.

[14] It should be borne in mind that an accurate lexicographic description is not intended here, so that the inclusion of some verbs within certain sets is motivated by a general common meaning they share. Thus, the verbs *intern*, *enlist*, and *enrol* can be regarded as motion verbs in the sense that they all denote a kind of situation in which an entity becomes a member of a place. *Retire* (the sense from which *retiree* is derived) expresses motion metaphorically.

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(v) Verbs of affecting. This group is formed by verbs denoting different modalities of an entity being affected, that is, they denote actions in which an actor does something that brings about an effect on a second entity. This effect can be physical, as in verbs of damage to the body (e.g. *bite*, *shoot*, *snatch*, *torture*, *vaccinate*), verbs of contact by impact (e.g. *beat*, *kick*, *knock*), or verbs of killing (e.g. *kill*, *murder*, *slaughter*), or it can be a more abstract kind of effect, with verbs denoting a negative change of state, like becoming not-free (e.g. *arrest*, *control*, *detain*, *force*, *govern*, *sequestrate*) or some other kind of negative effect (e.g. *abandon*, *abuse*, *adopt*, *blackmail*, *experiment*, *indict*, *induct*, *offend*, *use*). This group also includes verbs denoting a positive change of state, like becoming free (e.g. *divorce*, *release*, *rescue*) or other effect (e.g. *protect*, *relax*, *baptise*, *pardon*). For the sake of simplicity, and because all these different sets denote some way of affecting an entity, they will be considered under the common label of 'verbs of affecting'.

An analysis of the lexical domains where the input verbs belong can give us some hints about the eligibility of a verb for the process of *-ee* nominalization. Yet it is not sufficient to determine which verbs will be happy with the suffix. We suspect there might be a combination of factors affecting the eligibility of a verb for the suffix, and that the lexical domain *per se* is not criterial.

In the following section we offer a proposal for the semantic analysis of derived nouns in *-ee* using the theory of lexical representation of Role and Reference Grammar (Van Valin & Foley, 1980; Van Valin & LaPolla, 1997).

4.3 An RRG-based semantic explanation

4.3.1 A synopsis of the Role and Reference Grammar theory of lexical representation[15]

The system of semantic representation proposed in Role and Reference Grammar (henceforth RRG) (Van Valin & LaPolla, 1997) goes back to Vendler's (1967) original classification of verbs in terms of different *Aktionsarts*. Each verb is given a formal representation called its Logical Structure (henceforth LS),[16] which is presented in table 1.

Achievement and accomplishment verbs are composed of a state or activity predicate plus a symbol for change. Therefore, states and activities are the building blocks for all other classes, being the most basic classes semantically.

These four classes can be defined in terms of three features, [±static], [±punctual] and [±telic]:

a. State	[+static], [−telic], [−punctual]
b. Activity	[−static], [−telic], [−punctual]
c. Accomplishment	[−static], [+telic], [−punctual]
d. Achievement	[−static], [+telic], [+punctual]

[15] For a more detailed explanation of the RRG framework, see Van Valin & Foley (1980), Van Valin (1993), and Van Valin & LaPolla (1997).

[16] The term 'logical structure' is taken from Dowty (1979), who proposes a different interpretation of the Vendler categories and a different decomposition system from the one presented in Van Valin & LaPolla (1997), although this system has many features in common with Dowty's proposal.

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Table 1. *Lexical representation for the basic* Aktionsart *classes*[17]

Verb class	*Logical structure*
State	**predicate**' (x) or (x,y)
Activity	**do'** (x, [**predicate'** (x) or (x,y)])
Achievement	INGR **predicate'** (x) or (x,y)
Accomplishment	BECOME **predicate'** (x) or (x,y)

A number of tests are used to determine which class a verb belongs to,[18] as shown in table 2.

Table 2. *Tests for determining* Aktionsart *type*

Criterion	*States*	*Achievements*	*Accomplishments*	*Activities*
1 Occurs with progressive	No	No	Yes	Yes
2 Occurs with adverbs like *vigorously*, *actively*, *etc.*	No	No	No	Yes
3 Occurs with adverbs like *quickly*, *slowly*, *etc.*	No	No*[19]	Yes	Yes
4 Occurs with *X for an hour*, *spend an hour Xing*	Yes*[20]	No	Irrelevant	Yes
5 Occurs with *X in an hour*	No	No*[21]	Yes	No

Test 1 is useful only in languages which have a progressive aspect; it may be interpreted as an indicator of nonstatic, nonpunctual, since it can occur with activity and accomplishment verbs, but not with states or achievements.

Test 2 involves the ability to co-occur with adverbs that code dynamic action. This test shows that activities are [+dynamic], while achievements and accomplishments are not. This feature does not apply to states since they are [+static].

[17] For the sake of clarity we offer here a simplified version of RRG's typology of LSs. In the 1997 (revised) version, there are some additions. For example, a new class of Active accomplishments, represented as **do**' (x, [**predicate$_1$'** (x, (y))]) & BECOME **predicate$_2$'** (z, x) or (y) is introduced for accomplishment uses of activity verbs (i.e. cases like *John walked to the park, John wrote a poem, John drank a beer*). Besides, a causative version of each of the different classes is distinguished, formally represented as α CAUSE β, where α,β are LSs of any type. For example, *Chris scared the boy*, *Chris broke the window*, *Chris popped the balloon*, and *Chris bounced the ball* are causative versions of a State, Accomplishment, Achievement, and Activity, respectively.

[18] Some of the tests are taken from Dowty (1979), in which additional tests are proposed.

[19] The asterisk on the 'No' indicates that pace adverbs indicating very short temporal intervals are marginally acceptable with these verbs: e.g. *The bomb exploded instantly*.

[20] The asterisk on the 'Yes' indicates that this test is problematic for some state predicates, in particular those encoding inherent properties, like **Sandy was tall for an hour*.

[21] The asterisk indicates that achievements are sometimes compatible with *in*-phrases, when these refer to an exceedingly short period of time.

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Test 3 applies only to [−static] verbs and distinguishes [−punctual] from [+punctual] verbs.

Tests 4 and 5 distinguish telic from nontelic verbs, that is, verbs with an inherent terminal point from those which have no inherent terminal point.

Examples of English verbs of the different types and their LSs are given below:

a. STATES:	
The book is heavy	**be'** (book, [**heavy'**])
The watch is broken	**broken'** (watch)
Chris is at the table	**be-at'** (table, Chris)
Chris has a car	**have'** (Chris, car)
b. ACTIVITIES:	
The children shouted	**do'** (children, [**shout'** (children)])
Chris ran	**do'** (Chris, [**run'** (Chris)])
Chris ate fish	**do'** (Chris, [**eat'** (Chris, fish)])
c. ACHIEVEMENTS:	
The watch broke	INGR **broken'** (watch)
Chris arrived at the house	INGR **be-at'** (house, Chris)
Chris glimpsed the picture	INGR **see'** (Chris, picture)
d. ACCOMPLISHMENTS:	
The snow melted	BECOME **melted'** (snow)
The sky reddened	BECOME **red'** (sky)
Mary learned French	BECOME **know'** (Mary, French)

States of affairs may be either spontaneous or induced and for each spontaneous type there is a corresponding induced type. This means that for each of the basic *Aktionsart* classes there is a corresponding causative class, which corresponds to the induced state of affairs:

a. State	*The boy is afraid.*
a'. Causative state	*The dog frightens/scares the boy.*
b. Achievement	*The balloon popped.*
b'. Causative achievement	*The cat popped the balloon.*
c. Accomplishment	*The ice melted.*
c'. Causative accomplishment	*The hot water melted the ice.*
d. Activity	*The ball bounced around the room.*
d'. Causative activity	*The girl bounced the ball around the room.*

LSs like those in a–d above are the core of the lexical entry for a verb, and these representations are the basis for the RRG theory of semantic roles, which postulates two tiers of semantic roles, one corresponding to the thematic relations of other theories and another which has no exact analogue in other theories. Following Jackendoff (1976), thematic relations are defined in terms of argument positions in decomposed predicate representations. Some of these definitions are provided in table 3.

The table shows the way thematic relations are derived from the argument positions in the decomposed LS representations. Thus, for example, the single argument of a single-argument verb of state or condition is a Patient, the second argument of

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Table 3. *Thematic relations*

I. STATE VERBS		
A. Single argument		
1. State or condition	**broken'** (x)	x=PATIENT
2. Existence	**exist'** (x)	x=ENTITY
B. Two argument		
1. Pure location	**be-LOC'** (x,y)	x=LOCATION, y=THEME
2. Perception	**see'** (x,y)	x=PERCEIVER, y=STIMULUS
3. Cognition	**know'** (x,y)	x=COGNIZER, y=CONTENT
4. Desire	**want'** (x,y)	x=WANTER, y=DESIRE
5. Propositional Attitude	**consider'** (x,y)	x=JUDGER, y=JUDGEMENT
6. Possession	**have'** (x,y)	x=POSSESSOR, y=POSSESSED
7. Internal Experience	**feel'** (x,y)	x=EXPERIENCER, y=SENSATION
8. Emotion	**love'** (x,y)	x=EMOTER, y=TARGET
9. Attrib/Identificational	**be'** (x,y)	x=ATTRIBUTANT, y=ATTRIBUTE
II. ACTIVITY VERBS		
A. Single argument		
1. Unspecified action	**do'**(x, ∅)	x=EFFECTOR
2. Motion	**do'** (x, [**walk'** (x)]	x=MOVER
3. Static motion	**do'** (x, [**spin'** (x)]	x=ST-MOVER
4. Light emission	**do'** (x, [**shine'** (x)]	x=L-EMITTER
5. Sound emission	**do'** (x, [**gurgle'** (x)]	x=S-EMITTER
B. One or two arguments		
1. Performance	**do'** (x, [**sing'** (x, (y))])	x=PERFORMER, y=PERFORMANCE
2. Consumption	**do'** (x, [**eat'** (x, (y))])	x=CONSUMER, y=CONSUMED
3. Creation	**do'** (x, [**write'** (x, (y))])	x=CREATOR, y=CREATION
4. Repetitive action	**do'** (x, [**tap'** (x, (y))])	x=EFFECTOR, y=LOCUS
5. Directed perception	**do'** (x, [**see'** (x, (y))])	x=OBSERVER, y=STIMULUS
6. Use	**do'** (x, [**use'** (x, (y))])	x=USER, y=IMPLEMENT

two-place stative verbs of pure location is a Theme, and the first argument of a motion activity verb is a Mover. Van Valin, nevertheless, emphasizes that in the system of lexical representation he presents thematic relations play no direct role, so that the different labels he uses (Patient, Theme, Agent, Cognizer, etc.) are only mnemonics for argument positions in the logical structure of predicates of a certain type and that they have no independent status.

The derivation of thematic relations from argument positions in LSs provides the assignment of thematic relations to the arguments of verbs in RRG with independent motivation, since a verb's thematic relations are to a large extent attributable to its LS (that is, its class) and the class of a verb is determined by using syntactic and semantic criteria. As Van Valin & LaPolla put it (1997: 116):

> If it is the case that the thematic relations which a verb takes are a function of the argument positions in its logical structure, and there is a system of lexical representation in which there are independent criteria for assigning logical structures to verbs, then there are

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Arg of DO	1st arg of **do' (x, ...)**	1st arg of **pred'** (x,y)	2nd arg of **pred'** (x,y)	Arg of state **pred'** (x)
AGENT	EFFECTOR	LOCATIVE	THEME	PATIENT
	MOVER	PERCEIVER	STIMULUS	ENTITY
	ST-MOVER	COGNIZER	CONTENT	
	L-EMITTER	WANTER	DESIRE	
	S-EMITTER	JUDGER	JUDGEMENT	
	PERFORMER	POSSESSOR	POSSESSED	
	CONSUMER	EXPERIENCER	SENSATION	
	CREATOR	EMOTER	TARGET	
	SPEAKER	ATTRIBUTANT	ATTRIBUTE	
	OBSERVER		PERFORMANCE	
	USER		CONSUMED	
			CREATION	
			LOCUS	
			IMPLEMENT	

Figure 1. Continuum of thematic relations

> independent criteria for assigning thematic relations to verbs. This is the case because the thematic relations are a function of the logical structure of a verb, and there are independent criteria for attributing a logical structure to a verb. Thematic relations cannot be assigned on an arbitrary basis, because logical structures cannot be assigned arbitrarily; rather, thematic relations are determined on the basis of the test [in table 2 above].

Now, thematic relations are regarded as forming a semantic continuum, whose anchor points are Agent (the wilful, volitional, instigating participant), at one end, and Patient (the nonwilful, noninstigating, maximally affected participant) at the other. In between the endpoints, there is a continuum of thematic relations of more agent-like or more patient-like roles: themes are not affected in the same way and to the same degree as Patients are, but they are also entities which undergo something, since they get moved around; therefore, they are at the right-hand end of the continuum. This continuum may be represented as in figure 1.

The second tier of semantic roles is formed by 'semantic macroroles'. Macroroles are generalizations across the argument types found with particular verbs which have significant grammatical consequences. These groupings of arguments constitute another, higher-level type of semantic relation, half-way between thematic relations and grammar. Each captures a grouping of semantic arguments which are treated alike in the grammar. More specifically, the second tier of semantic roles consists of the two macroroles ACTOR and UNDERGOER.[22] These are the two primary arguments of a transitive

[22] The notion of 'semantic macroroles' was originally proposed in Van Valin (1977) and further elaborated in Van Valin & Foley (1980) and Foley & Van Valin (1984). Dowty (1991) proposed a different version of macroroles, which he called 'protoroles'. They differ from the notions of actor and undergoer in RRG in that protoroles are not discrete but rather gradient categories with fuzzy boundaries. Besides, while both macroroles and protoroles are more general than the specific thematic relations of agent and patient, Dowty claims that they are the only semantic roles and that there are no thematic relations in the sense assumed by RRG and most theories. The relations of particular protoroles to particular verbs is left unexplained. Hence their role in grammar is different

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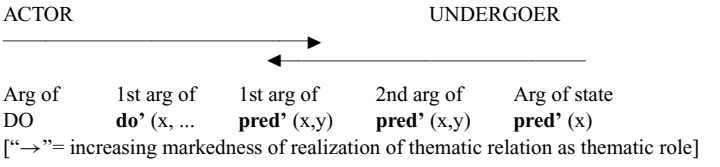


Figure 2. Actor-Undergoer Hierarchy

predication, and either one of them may be the single argument of an intransitive verb. The prototypical Actor is an Agent and the prototypical Undergoer is a Patient, but Effectors can also be Actors with verbs of cognition, and Locatives and Themes can also be Undergoers with verbs of position and motion. The specific semantic content of the macrorole with a particular verb is supplied by the thematic relation the argument bears in the LS. Therefore, it can be seen that macroroles take this name because each subsumes a number of specific thematic relations. The relation between the two tiers is captured in the Actor–Undergoer Hierarchy in figure 2.

This double hierarchy says that given the LS of a verb, the argument bearing the thematic relation that appears leftmost on the cline will be the Actor and that the argument bearing the semantic relation that appears rightmost on it will be the Undergoer. This is the default situation. Marked assignments to undergoerhood are possible, as in the dative shift alternation, in which the Recipient, not the Theme, is the Undergoer.

The number of macroroles that a verb takes can also normally be predicted from its LS. The macrorole assignment principles are summarized below:

GENERAL MACROROLE ASSIGNMENT PRINCIPLES

a. Number: the number of macroroles a verb takes is less than or equal to the number of arguments in its LS.
   1. If a verb has two or more arguments in its LS, it will have two macroroles.
   2. If a verb has one argument in its LS, it will take one macrorole.

b. Nature: for verbs which take one macrorole,
   1. If the verb has an activity predicate in its LS, the macrorole is Actor.
   2. If the verb has no activity predicate in its LS, the macrorole is Undergoer.

Universal exceptions to the default generalization regarding macrorole number and relevant to the present discussion are the following points (Van Valin & LaPolla, 1997: 153):

(1) Multiple-argument activity verbs take no more than one macrorole, regardless of how many arguments they have (the only exceptions are activity verbs of directed perception and use like *watch* and *use*), so that they normally behave like intransitive

from that of macroroles. Jackendoff (1987, 1990) proposed an 'action tier' containing the notions of 'agent' and 'patient' in his system of semantic representation, and Van Valin has pointed out that they are similar in some respects to actor and undergoer.

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verbs.[23] Besides, they never have an Undergoer macrorole (as predicted by b.1), for the following reason: in order for a class of verbs to have Actor or Undergoer macroroles, at least some of the members of the class must take either Agent or Patient arguments. Activity verbs readily take Agent arguments, but since they code inherently unbounded dynamic states of affairs, they cannot code a state or condition, and since a Patient can be defined as the participant in a state or condition, it follows that activities cannot by definition have a Patient argument, so that they can have only Actor macroroles, never Undergoer roles.

(2) Verbs of location and change of location are normally M-intransitive (that is, they have only one macrorole) in many languages, despite having two arguments (the moving entity and the location) in their LS.

4.3.2 The Logical Structure of the verbal bases of -ee *nouns*

A first look at the semantics of the bases taking *-ee* should begin by analysing the different LSs of these verbs.

Transfer of possession. We begin our analysis with the group of verbs denoting transfer of possession, since the original pattern of this formation is that of nouns referring to an entity corresponding to the verb's indirect object (Marchand, 1969): the suffix is a result of ME loans from French which belonged to legal terminology. New *-ee* formations were coined or borrowed as counterparts of *-or* formations and denoted roles in legal procedures, specifically, the 'receiver of a transaction' (vs. 'source or agent of the transaction', for which *-or* was used). Transfer of possession verbs might be taken to be represented by *present*, whose LS can be formalized as follows

present: [**do'** (x, θ)] CAUSE [BECOME **have'** (y, z)][24]

A few examples like *mug* denote transfer of possession in the opposite direction, i.e. the loss of possession. They could be represented by adding the negative operator NOT to the representation:

mug: [**do'** (x, θ)] CAUSE [BECOME NOT **have'** (y, z)]

Speech act. The problem that verbs of saying raise for decomposition is that the second argument varies rather dramatically in its interpretation. With *talk*, for example, it is the Addressee, whereas with *discuss* it is the Topic of the conversation. In RRG the standard lexical representation for verbs of saying is:

[23] Van Valin & LaPolla (1997: 153, n7) mention a number of facts supporting the claim that transitive activity verbs are quite exceptional. Thus, they point out that many verbs of directed perception take an oblique core argument for their optional second object in English (e.g. *I'm looking* vs. *I'm looking at it*, *I'm listening* vs. *I'm listening to the radio*), and in Latin activity verbs of use and enjoyment behave intransitively rather than transitively and mark their second argument with the ablative rather than the accusative case.

[24] The symbol θ is used when the nature of the action involved is left unspecified.

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do' (x, [**express**(α).**to**.(β).**in.language**.(γ)' (x, y)])[25]

The *x* argument defines the Speaker thematic relation for all verbs of saying. The elements α, β, and γ refer to the Content of the utterance (α), the Addressee (β), and the Language used (γ). Each of these internal variables can be expressed as the *y* argument along with the Speaker, as in: *Sandy spoke but a few words*, where $y = \alpha$, *Sandy spoke to Kim*, where $y = \beta$, and *Sandy spoke Telugu*, where $y = \gamma$.

Nouns within this group appear to be derived from verbs realizing a particular aspect of the basic representation shown above. In particular, they seem to be verbs like *tell*, which realize β as *y*. Van Valin & LaPolla (1997: 118) point out that these verbs differ from other verbs of saying by virtue of their telicity and that they appear to be inherently causative, as the following paraphrase of *Sandy told Kim that Robin would arrive soon* reveals: 'Sandy's speaking made Kim become aware that Robin would arrive soon.' Accordingly, they propose the following LS for verbs like *tell*:

[**do'** (x, [**express**(α).**to**.(β).**in.language**.(γ)' (x,y)]) & CAUSE [BECOME **aware.of'** (y, z)]

This group of verbs might be seen as denoting a transfer of some kind as well, though the entity which is transferred is not physical, but a message, so that they can be given a thematic reanalysis whereby the speaker is treated as an agent of a change of possessional state of the addressee, that is, *x* causes *y* to know *z*.[26] Cases like *present* and *communicate*, that is, verbs of transfer of possession and speech act verbs, would only differ in the kind of activity *x* does to cause *y* to have *z*.

Affecting. The base from which the set of nouns in this group is derived might be represented by *murder*:

murder: [**do'** (x, θ)] CAUSE [BECOME **pred'** (y)]

Since this set covers a wide range of verbs denoting different ways of affecting an entity (*y*), the nature of the action causing *y* to be in a particular state is left unspecified.

Motion. A number of the nouns are derived from motion verbs, which may be represented by the verb *deport*:

deport: **do'** (x, [**move** (x, y)]) CAUSE [BECOME **be-LOC'** (y, z)]

A different set is derived from intransitive bases. In this case the derived word refers to an entity that can be seen as the underlying subject of the intransitive verbal base. The verb *arrive* might be taken to represent this group:

[25] Note that in this case the symbol θ, used to represent unspecified actions, has been replaced by the specific action expressed by speech act verbs.

[26] Pinker (1989) regards verbs of communication as a subfield of possession involving the communication of ideas.

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arrive: **do'** (x, [**move** (x)]) & BECOME **be-LOC'** (y, x)[27]

As in the case of verbs denoting transfer of possession, the change of position can take place in the opposite direction too, a fact that can be represented by introducing the negative constant NOT:

evacuate: **do'** (x, [**move** (x, y]) CAUSE [BECOME NOT **be-LOC'** (y, z)]
escape: **do'** (x, [**move** (x)]) & BECOME NOT **be-LOC'** (y, x)

Position. Alongside motion verbs, we also find nouns derived from verbs denoting position, like *stand* and *sit*. How should we regard the verbs from which these nouns are derived? If we consider them to be state verbs denoting pure location, their LS would be

stand: **be-LOC'** (x, y)

As we have seen, for Levin (1993: 112–13), verbs like *stand* and *sit* are classified as 'verbs of putting in a spatial configuration'. She points out that most of these verbs have intransitive uses as verbs of spatial configuration so that they participate in the following alternation:

Cheryl stood the books on the table
The books stood on the table

Levin goes on to say that this alternation is not the same as the causative/inchoative alternation since the intransitive use does not have the change of state or change of location interpretation that is associated with the intransitive variant of prototypical verbs showing the causative/ inchoative alternation (e.g. *break*).

A derived noun like *standee* would be derived from the transitive use of the predicate, so that the LS of the verb would be:

stand: [**do'** (x, θ)] CAUSE [**be-LOC'** (y, z)]

The fact that the constant BECOME is not included in the representation accounts for the lack of change of state in this case, since *stand* is a state predicate.

To summarize, the LSs of the different bases are represented in table 4.

Bold type is used to highlight the property that differentiates each set from the others. In this way, the relations between the different sets are made more evident. If we extract these specific parts from all the different representations, we are probably left with the general meaning of the process. Verbs denoting transfer of possession are related to speech act verbs in that they bot h imply the transference of an entity to a different

[27] *Arrive* is a punctual verb and, therefore, it denotes an achievement, represented in RRG as INGR predicate'. However, since the distinction between accomplishments and achievements does not appear relevant here, it has been represented as an accomplishment.

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Table 4. *The logical structure of the* -ee *nouns' bases*

Lexical domain	Lexico-semantic representation	Examples
Transfer of possession	[do' (x, θ)] CAUSE [BECOME **have'** (y, z)]	*present*
	[do' (x, θ)] CAUSE [BECOME **NOT have'** (y, z)]	*mug*
Speech act	[**do'** (x, [**express**(α).**to**.(β).**in.language**.(γ)' (x, y)]) & CAUSE [BECOME **aware.of'** (y, z)]	*communicate*
Affecting	[do' (x, θ)] CAUSE [BECOME **pred'** (y)]	*murder*
Motion	[do' (x, [**move** (x, y)])] CAUSE [BECOME **be-LOC'** (y, z)]	*deport*
	[do' (x, [**move** (x, y)])] CAUSE [BECOME **NOT be-LOC'** (y, z)]	*evacuate*
	[do' (x, [**move** (x)])] & BECOME **be-LOC'** (y, x)	*attend*
	[do' (x, [**move** (x)])] & BECOME NOT **be-LOC'** (y, x)	*escape*
Position	[do' (x, θ)] CAUSE [**be-LOC'** (y, z)]	*stand*

entity. Likewise, verbs denoting the affecting of an entity and (transitive) motion verbs are closely related because they all imply some kind of change: a change of place in the case of motion verbs, or a change of state in the case of affecting verbs.

Most of the sets (with the exception of verbs of position) seem to share the constant BECOME.

Most of the groups also have a common element CAUSE within their LSs. However, CAUSE is not a semantic property of the verbal base in all the groups. Intransitive bases (motion verbs) do not contain CAUSE in their LS since single argument verbs, i.e. verbs that have one argument in their basis form, cannot be causative. Thus, 'John causes John/himself to escape' is not a possible paraphrase of 'John escapes'. On the other hand, 'The government caused the immigrants to go away' could be a paraphrase of 'The government expelled the immigrants', since *expel* is a transitive verb. Therefore, intransitive bases pose a problem to the general semantics of the process of *-ee* nominalization because nouns in *-ee* appear to include this semantic property in most cases. We will come back to this later (see sections 4.3.3 and 4.3.5).

The common LS representation for the bases undergoing the process of *-ee* suffixation might look something like this:

[do' (x, θ)] CAUSE [BECOME (NOT) **State** (y, z) or (y, x)][28]

[28] This is very similar to a Logical Conceptual Structure (LCS) of the kind postulated within Lexical Conceptual Semantics (Jackendoff, 1990). See Plag (1999) for an analysis of the different meanings of derived verbs in *-ize* using LCSs.

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This means that the general LS of the bases for *-ee* suffixation would be a Causative Accomplishment[29] (or a Causative State, though these cases are only marginal), where 'state' can be a place (represented as **be-LOC**), or the possession of the transferred entity (represented as **have'** in the case of verbs denoting transfer of possession or **be.aware'**, when the entity transferred is a message), or a state different from the initial one (represented as **pre'**).

The crucial concern so far has been to show that analysing the LS of the relevant verbs allows a preliminary prediction of the classes of verbs likely to undergo the *-ee* nominalization process. Activities appear to be excluded for the following reason: activity verbs code inherently unbounded dynamic states of affairs, so that they cannot code a state or condition, which is a necessary property of the base. Thus, we would not expect verbs like *sneeze* or *bark* to take on the suffix (**sneezee*, **barkee*).

4.3.3 Thematic relations and the Undergoer macrorole

Once we analyse the logical structure of verbs representative of each of the lexical domains outlined above, it is also necessary to look at the different thematic relations of the arguments. Derived nouns in *-ee* may refer to a number of semantically different entities participating in the states of affairs which are prototypically associated with the lexical domains mentioned above. These entities roughly correspond to the thematic role of one of the verbal arguments. Thematic relations are derived from the argument positions in the decomposed LS representations, so that the interpretation of an argument is a function of its position in the LS.

Transfer of possession. Looking at the argument structure of these verbs, we see that they take three arguments. Each of these argument positions defines a thematic relation: Effector (x), Recipient (y), and Theme (z). The *-ee* noun refers to the Recipient. For Van Valin & LaPolla (1997: 127), there is no need to create a new thematic relation for Recipients since the semantic distinction between a Possessor and a Recipient is represented by the LS as a whole. Thus, the LS for *have* is a plain stative, while *give* uses 'BECOME have'. Therefore, it is BECOME which distinguishes pure Possessor from Recipient. It is the overall structure of the LS that gives the meaning of the argument. The definition of Recipient is as shown below:

RECIPIENT: first argument in LS configuration '. . .BECOME/INGR have' (y, z)'

Therefore, Recipients are participants in more complex LSs than Possessors, for Possessors are participants in LSs characterized as stative, which are basic. The distinction is important for our present concern because the referent of *-ee* nouns derived from verbs of transfer of possession is not only a Possessor but one in the Logical Structure 'BECOME/INGR have' (y, z)'.

[29] In principle, there is no reason why it could not be an achievement as well, the only difference between accomplishments and achievements being that the latter are punctual states of affairs, represented as INGR **predicate'** (x) or (x, y).

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Speech act. If we have a look at the set of nouns denoting some kind of speech act, it is the Addressee which is referred to by the nouns (e.g. *advisee*, *auditionee*, *communic(at)ee*, *complainee*, *explainee*, *inquisitee*, *interrogee*, *narratee*, *promisee*, *readee*, *sayee*, *talkee*). Therefore, it appears that verbs that are candidates for the process of nominalization are those where the Addressee is realized in syntax, i.e. those where it is expressed as the *y* argument along with the Speaker.

Affecting. The entity which the *-ee* noun denotes in cases like *murderee* is clearly a Patient.

Motion. The entity denoted by nouns derived from transitive verbs denoting motion (like *deportee*) would be a Theme. The entity denoted by nouns derived from intransitive verbs of motion is seemingly a Mover.

Position. Within the definitions of thematic relations in terms of LS argument positions provided by Van Valin & LaPolla (1997: 115), the first argument of verbs of location is a Location, and the second argument is a Theme. Therefore the entity to which the derived noun *standee* refers is a Theme.

Thus, derived nouns in *-ee* may refer to a number of semantically different entities, which include Recipients, Addressees, Patients, Themes, and Movers. However, a disjunctive list of thematic relations like the former does not satisfy the degree of generalization required for the formulation of a 'rule' accounting for this derivational process. We should therefore try to provide a unified account so that the relations between the different sets are shown. In what follows, we will consider whether there is a special semantic condition in all these cases which triggers the acceptance of the suffix.

A commonly held assumption about derived nouns in *-ee* is their passive meaning,[30] which has been put forward under different disguises: Barker speaks of 'lack of volitional control', while Bolinger (1941) suggests that *-ee* denotes 'passivity' (a semantic notion, as opposed to 'passive' meaning, which implies a syntactic orientation); Baayen & Lieber (1991: 820) describe *-ee* as a 'passive suffix', and for Horn (1980: 142) 'the animate *-ee* nominal is presented as helpless or relatively powerless' (he even speaks of a 'Patient-as-victim role').[31]

We will try to formulate this in a more precise way by using a theoretical framework specifically dealing with thematic relations. This is made possible in a theory like RRG, where two generalized semantic roles are posited, corresponding to the semantic roles of Agent and Patient, namely the Actor and Undergoer macroroles (see section 4.3.1).

[30] Notice that although some cases are found where the suffix *-er* appears to refer to a Patient, like *broiler*, *frier*, *best-seller*, those entities are not actually affected entities, as is suggested by their definitions: they are entities 'suitable for broiling, frying' or 'able to be sold well' (see Ryder, 1991, 1999).

[31] Note, however, that the referent of *-ee* nouns is not always a *negatively* affected entity, because there are many cases in which these nouns refer to Recipients of some possession. The relevant factor seems to be high 'affectedness', which is usually associated with negative situations.

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Actor and Undergoer are generalizations across classes of specific argument positions in LS, which are distinct from grammatical relations since either the Actor or the Undergoer may be the subject in English. Thus, in a sentence like *y was killed by x*, the Undergoer is the subject, whereas in *x killed y* the Actor is the subject.

If we are looking for a generalization about the semantics of *-ee* nouns, the Undergoer macrorole seems an appropriate notion in principle. As the name implies, the Undergoer is the participant that the speaker is presenting as being most affected by the action. Sometimes a speaker can choose which argument he/she wants to focus on as being the one being primarily affected, and can therefore code such an argument in different ways. Thus, given certain actions with two nonactor arguments, it is possible to look at either argument as being the primary affected participant. For instance, if one says *load the hay onto the truck*, one can look at *the hay* as being affected. Or one can say *load the truck with the hay*, in which case it is *the truck* which is being filled up.

In what follows we will analyse the possibilities for Undergoer assignment that the relevant arguments of the verbal bases for *-ee* suffixation enjoy (see figure 2).

The clearest cases are the sets of affecting verbs (e.g. *kill*) and transitive motion verbs (e.g. *deport*), which take a second argument characterized as a Patient (affecting verbs), the entity to which the Undergoer macrorole is prototypically assigned, or as a Theme (motion verbs), which occupies a high position on the scale of 'undergoerhood' (see figure 1). However, the Undergoer status is probably not so clear in other cases (with verbs of transfer of possession, speech act verbs and intransitive verbs of motion), as will be shown in what follows.

Verbs denoting transfer of possession and speech acts allow two possibilities, illustrating the so-called dative alternation:

John sent the book to Mary
John sent Mary the book

Within the RRG framework, this difference is explained in terms of macrorole assignment, that is, which thematic role is assigned the Undergoer macrorole: while in the first sentence the entity which is seen as primarily affected is the Theme, in the second it is the Recipient.

Nouns created from transfer of possession (and speech) verbs refer to the argument to which the Undergoer macrorole is assigned in only the second of these constructions. That is, a noun like *presentee* refers to the second participant in *John presented Mary with a bouquet*. However, these nouns pose some problems for the 'undergoerhood hypothesis', as Barker observes, since we find nouns like *addressee*, *narratee*, *explainee*, *donee*, etc., derived from verbs that do not allow the dative shift alternation (e.g. **I explained him the story*, **He donated the poor children the money*), so that the participant occupying second argument position and, hence, that to which the Undergoer macrorole is assigned appears to be not the human participant but the message communicated (in verbs of speech) or the Theme (in verbs denoting transfer of possession).

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A reason for this situation might be that the process of *-ee* noun formation is blind to the morphological constraints of some of the bases: many of the bases not allowing the dative alternation are Latinate, which has been suggested as a factor blocking the possibility of the alternation (Pinker, 1989: 119–23). Seemingly, the process of *-ee* suffixation is not sensitive to the morphological constraint concerning the native/Latinate nature of the base. We should bear in mind that the original set of *-ee* nouns are those referring to an entity corresponding to the verb's indirect object (Marchand, 1969). Typically, these older examples refer to a participant highly relevant in acts denoting transfer of possession, 'future having', or some kind of communication. The specific semantic properties of those cases, in which the noun typically refers to a second human participant highly relevant in the event denoted, have been taken over for other cases in English in which there is a salient human participant who is not an Actor. Therefore, what is relevant for the process of nominalization is the semantic properties of the verb, which requires the presence of a participant characterized as Recipient, and in this property the nonalternating verbs are like those allowing dative shift.[32]

A second group of nouns that appear to contradict the hypothesis of undergoerhood are nouns derived from intransitive verbs of motion, because the first argument of the intransitive verbs taking the suffix (i.e. the entity denoted by nouns like *retiree*) is semantically a Mover, which are regarded as Actors (other than Agents).

Van Valin & LaPolla (1997: 151–3) address this issue regarding active accomplishment predications like *run to the store*. The first participant of this predication is an Effector but also a Theme, so that it might be an Actor or an Undergoer. The conclusion they draw is

> The single macrorole with an intransitive verb is Actor if the verb has an activity predicate in its logical structure; otherwise it is Undergoer.

They give the following examples: *run*, *fly*, *dance*, *rotate*, *bounce* and *cry* all take Effector-type arguments. Hence, they would be Actor arguments, which explains why nouns like *runnee* or *dancee* are not possible. Predicates like *be dead*, *be broken*, *be dry* take Patient for their single argument, and their arguments are therefore Undergoers.

Now, if we look at the LS of verbs like *escape*, they would appear to take Effector arguments and this runs counter to our expectations. However, it is not clear that the entities referred to by the nouns derived from these verbs are Actors.[33]

[32] The same applies to those nouns denoting an entity corresponding to the verb's prepositional object, like *experimentee* or *flirtee*, since the prepositional object is halfway between an argument and an adjunct and would not be assigned a macrorole.

[33] Van Valin (pc) has pointed out to me that the same ideas may apply here as in Nunes's (1993) discussion of deverbal nominals, like *entrance*. According to Nunes's Direct-Core-Argument Linking Hierarchy, with deverbal nouns related to state, achievement or accomplishment verbs that take two macroroles, the argument which may be linked to the direct core argument position in the NP is the argument associated with the Undergoer. Therefore, the Undergoer occupies the direct core argument position in the NP in the following examples: *The knowledge of French/*of Sara*, *The death of Sam*, *The inheritance of the ring/*of Joe*, *The destruction of the city/*of the enemy*. There are, nevertheless, examples that appear to run counter to our

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An interesting suggestion is raised by the (apparently) increasing productivity of the suffix with intransitive bases denoting motion. An *escapee* is 'one who escapes' in the same way as a *deserter* is 'one who deserts'. The question is why wasn't a word **escaper* created instead? [34] Why is it that *-ee* has won over the far more productive *-er*? It seems there must be a reason that makes the suffix *-ee* more appropriate. Otherwise, *-er* would have been used. The answer may well be that verbs like *escape* are unaccusative verbs, i.e. verbs in which an underlying logical object becomes the surface subject.[35]

Levin & Rappaport (1992: 254) distinguish three classes of intransitive motion verbs drawing on the different behaviour of these verbs with respect to several unaccusative diagnostics:

a. *arrive* class: *arrive*, *come*, *go*, *depart*, *fall*, *return*, *descend* . . .
b. *roll* class: *roll*, *slide*, *move*, *swing*, *spin*, *rotate* . . .
c. *run* class: *run*, *walk*, *gallop*, *jump*, *hop*, *skip*, *swim* . . .

They regard Direction as the component of meaning distinguishing class a from the other two classes since the verbs in class a. necessarily encode inherent direction. As regards classes b and c, these verbs share the semantic component of manner of motion, but they are distinguished in that verbs in class b denote an action directly caused by some external force.

The authors posit a number of generalizations regarding intransitive motion verbs to identify unaccusative verbs, one of which states that

> if the meaning of the verb implies a direct external cause, then the verb is found in the unaccusative syntactic configuration. (1992: 254)

expectations, like *The entrance of the toreador* (Actor?) into the arena, where there appears to be an Actor being linked to the direct core argument position in an accomplishment verb. However, what is linked to the direct core argument position is not an Actor. The linking of *the toreador* to the direct core argument position can be explained by the fact that *toreador* is Effector and Theme. In the NP priority is given to the lower end of the A-U hierarchy in the linking of arguments to the privileged syntactic position. Thus, in constructions headed by a N capable of taking both macroroles, it is the argument bearing the lowest-ranking thematic relation which is treated as the U (in this case, the Theme).

[34] Barker (1998: 709) mentions the pair *escapee/escaper*, where *escaper* means: 1. the name of a model of recreational vehicle, 2. 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'. However, this is a more specialized meaning, not the general agentive meaning resulting from the addition of the suffix *-er* to a verbal base.

[35] The Unaccusative Hypothesis was initially proposed in Relational Grammar (RelG) in Perlmutter (1978), and it was adapted into Government–Binding theory (GB) in Burzio's work on Italian (1981, 1983, 1986). According to the UH there are two types of intransitive verbs: unergative and unaccusative ('ergative' in Burzio's terminology). In both theories the differences between them are characterized in purely syntactic terms: in unergative verbs the surface subject is also the underlying subject, whereas in unaccusative verbs the surface subject is the underlying direct object. This is expressed differently in the two theories: in RelG, unaccusative verbs are analysed as having an initial '2' (direct object) but no '1' (subject), while unergative verbs have an initial '1' (subject) but no '2'; in GB, unaccusative verbs occur in the D-structure as $[_S[_{NP}e]$ $[_{VP}$ V NP]], while other intransitive verbs appear as $[_S$NP $[_{VP}$ V]]. Van Valin (1990) maintains that the phenomena which the UH strives to explain in syntactic terms are better explained in semantic terms, more specifically, by using Role and Reference Grammar.

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If Levin & Rappaport make the right predictions, verbs like *escape* might be regarded as unaccusative, and the entity denoted by the nouns derived from these verbs would be an Undergoer, which likens them to the set of nouns derived from transitive verbs.[36] In fact, the suggestion that the process of *-ee* nominalization could be related to unaccusative phenomena has been put forward by some scholars (Bauer, 1983; Horn, 1980). Bauer (following a suggestion by B. Comrie) declares that

> the suffix *-ee* shows a trace of ergative-absolutive patterning in English, since it is coming to be used to mark the object of a transitive verb and the subject of an intransitive verb, like the absolute case in ergative languages. (1983: 250)[37]

Supporting evidence is provided by *arrivee* (Barker, 1998). Although Barker explains this occurrence in terms of contextual conditions, we do not need to resort to a contextual explanation to account for the verb's acceptance of the suffix, since *arrive*, like other similar verbs, displays unaccusative behaviour. When analysing motion verbs, Levin & Rappaport point out that

> verbs whose meaning includes a specification of inherent direction are found in the unaccusative syntactic configuration. (1992: 253)[38]

Therefore, if the authors are right, verbs like *arrive* or *attend* could be also regarded as unaccusative, that is, verbs with an underlying patient realized as a subject.

As regards verbs denoting position, within the definitions of thematic relations in terms of LS argument positions provided by Van Valin & LaPolla (1997: 115), the first argument of verbs of location is a Location and the second argument is a Theme. Therefore, the entity to which the derived noun *standee* refers is a Theme. In spite of having two arguments in their LS (the location and the entity located at this place), verbs of location and change of location are normally 'M-intransitive'[39] in many languages, that is, only one of those arguments (the Theme) is assigned macrorole status, more specifically the Undergoer macrorole (see universal exceptions to general macrorole assignment principles in section 4.3.1).

[36] The external force in cases like *escape* can be seen as existing before the event, i.e. in the circumstances that force the person to do the action denoted by the verb, as Barker suggests (1998: 719).

[37] Although ergative/absolutive constructions are not common in English, various examples have been suggested as such. For example, Dik (1989: 246) offers the following: *What irritated you?It was the laughing of John (Ag)/It was the killing of the dog (Go) by John (Ag)*, where the preposition *of* marks the agent (typical role of a subject) and the goal (semantic role associated with objects), respectively. Barker mentions Seely's suggestion (quoted in Safire, 1982: 62–3) that noun–verb compounding might follow an absolutive patterning: *pickpocket* is formed from a transitive verb and a noun characterizing the verbal direct object, while *crybaby* is formed from an intransitive verb and a noun characterizing the subject.

[38] Evidence for the unaccusative behaviour of verbs like *arrive* and *roll*, that is, verbs encoding inherent direction or implying a direct external cause, comes from locative inversion (Bresnan, 1990; Bresnan & Kanerva, 1989; Coopmans, 1989; Hoekstra & Mulder, 1990; Levin, 1985): . . .out of the house *came* a tiny old lady.

[39] In Role and Reference Grammar, a distinction is drawn between 'S-transitivity', i.e. the number of syntactic arguments a verb takes (its syntactic valence), and 'M-transitivity', i.e. the number of macroroles.

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In conclusion, if a number of linguistic phenomena have been shown to depend on the UH,[40] we might be in a position to suggest that a new phenomenon be added to the list of processes for which the UH is, at least, relevant.[41] In RRG terms, this generalization could be formulated by stating that

> Derived nouns in *-ee* correspond to the argument to which the Undergoer macrorole is assigned, the Undergoer being the participant that the speaker is presenting as being more affected by the action.

The different thematic roles of the entities denoted by the derived noun which depend on the different lexical domains (e.g. Patient, Theme, Recipient) are neutralized by this property (i.e. Undergoer). This reveals the relevance not only of a semantic analysis as opposed to a syntactic one, but of a semantic analysis within a model which posits two tiers of semantic roles. Since the Undergoer macrorole is a semantic notion that can correspond to arguments syntactically realized as subjects as well as objects, this role is able to account for the use of the suffix with intransitive bases, where the derived noun in *-ee* corresponds to the subject of the verbal base.

Furthermore, this generalization allows the formulation of a prediction about the types of verbs which will or will not readily take the suffix, which is in accord with (and corroborates) the prediction based on the verb's LS (see section 4.3.2):

> Since achievement and accomplishment verbs include a Patient among their thematic relations, it follows that verbs expressing achievements and accomplishments will be likely candidates to take on the *-ee* suffix.
>
> Since activity verbs cannot, by definition, have a Patient argument, so that they can have only Actor macroroles, never the Undergoer roles, it follows that activity verbs will not be likely inputs for the formation of *-ee* nouns.

*4.3.4 -*ee *nouns and selection restrictions*

In section 4.3.2, it has been shown that the process forming *-ee* nouns is sensitive to the verb's LS, which provides preliminary grounds for discarding unlikely bases, and in section 4.3.3 we suggested that the entity to which these nouns refer might correspond to the participant to which the Undergoer macrorole is assigned. However, neither LS nor macrorole status are sufficient to predict the totality of the likely bases. In this section we will deal with further, more specific, properties that are considered to be

[40] Van Valin (1990) resorts to UH to account for the selection of auxiliary verb and *ne*-cliticization in Italian. Sadock and Levi (1977) refer to the ergativity of prepositional phrases following relational nominals, which are marked the same (with *of*) when they correspond to the object of cognate transitive verbs and the subject of cognate intransitive verbs.

[41] In addition to these facts about English, it is interesting to note that in a language like Spanish, which uses participle forms (*-ado*, *-ido*) to form derived nouns incorporating the object of the verbal base with a passive meaning, sometimes the same forms are used to denote entities corresponding to the subject of the verbal base: *caído*, *evadido*, *leído*, *atrevido*, *desprendido*, *entrometido*, *esforzado*, *obstinado*. These forms block the creation of derived nouns in *-dor*, *-nte*, which are the suffixes normally used for such purposes in Spanish. In a large number of those cases, the derived forms have reflexive verbal bases: *caerse*, *evadirse*, *atreverse*, *desprenderse*, *entrometerse*, *esforzarse*, *obstinarse* (Laca, 1993: 193).

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relevant in the process of nominalization, namely the properties of humanness and lack of volitional control.[42]

Humanness. When considering verbs denoting transfer of possession, it was shown that for verbs like *send* both the Theme and the Recipient can be assigned the Undergoer macrorole. However, the entity to which the derived noun in *-ee* refers is the participant occupying the second argument position only in the double object construction, where this second argument is a human participant. Thus, we expect a noun like *sendee* to refer to the human Recipient of whatever entity is sent, not to the Theme. Therefore, it appears that not any kind of participant to which the Undergoer macrorole can be assigned should be regarded as the referent of the noun, but only human participants. We now consider whether the property of humanness is always a semantic restriction on one of the arguments of the verb.

Barker (1998) regards this requirement as one of the key properties characterizing the process of nominalization. He states that 'the sentient requirement is not a requirement on what types of verbs *-ee* can attach to'. He illustrates this point with the verb *kick*, which takes a second argument that does not necessarily refer to a human entity, and is nevertheless a possible base, as the numerous attested uses of *kickee* show. Likewise, the verbal bases of the nouns *bitee*, *beatee*, *photographee*, *snatchee* do not necessarily imply a human second argument. Since the suffix can be attached to verbs taking animate or inanimate entities as objects, he concludes that the sentient feature is imposed on the interpretation of the object of verbs which are unspecified as regards this property. Therefore, it seems that the requirement of humanness is independent from the entailments specified in a verb's LS. Although in a number of cases the sentient feature would appear to be relevant for the likelihood of the base (for example, with Motion verbs, the attested examples are generally nouns derived from verbs taking human participants, such as *deportee*), the existence of other cases like *putee* shows that the process is being extended to bases which do not require a human participant.[43] By contrast, lack of humanness would explain why examples like **drinkee* or **bakee* are not predicted by the general meaning of the nominalization process since the verbs *drink* and *bake* do not ever take human second arguments (under normal circumstances), that is, they have arguments specified as nonhuman.

Thus, Barker anticipates the direction the process of *-ee* nominalizations is taking: although it originally operated on verbs requiring a human participant, this initial condition is now being relaxed and the property of humanness can be supplied by context. Therefore, the meaning of the verb need not include the feature <+human>, but it must at least be compatible with the requirement of humanness, so that humanness cannot be regarded as a contribution of the suffix only, and it is probably worth paying attention to the way this feature interacts with verbs belonging to different semantic

[42] These properties are already considered by Barker (1998) under the labels of 'sentient property' and 'lack of volition'.

[43] For example, when *put* is used in a context in which the theme is animate: *[This procedure] Transfers all pixels of the putee to the current picture using the putpixel method* (example provided by an anonymous referee). This is in the context of explaining how a computer program works; computer programs often conceive of objects as if they were alive. Notice that this case is similar to the use of linguistics terms like *raisee*, *causee*, etc.

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domains. Hence, it works with verbs entailing a second participant characterized as a Patient, a Theme, a Recipient, an Addressee, even a Target or a Stimulus, provided they are human (for example, *please* takes a Target second participant which is typically human; *gaze* takes a Stimulus second participant, which can be human), but not with verbs implying a second participant characterized as a Consumed entity (**drinkee*) or a Creation (**bakee*), since Consumed and Creation entities are typically nonhuman.

The above allows us to refine the properties of the arguments which derived nouns in *-ee* might be taken to refer to, which must be *human* entities. In RRG this fact might be formulated as follows:

> Derived nouns in *-ee* correspond to the human/animate argument to which the Undergoer macrorole is assigned, the Undergoer being the participant that the speaker is presenting as being most affected by the action.

Note that the requirement of including the property <+human> or of being compatible with it (i.e. neutral with respect to it) cannot be taken in isolation, for bases denoting bodily state, perception or emotion seem to be excluded in spite of having prototypical human arguments. This is because the first argument of these verbs is an Experiencer, Perceiver, or the like, which are closer to the Actor pole of the Actor–Undergoer hierarchy (see section 4.3.1). Therefore, we see how two different, though related, semantic aspects (undergoerhood and humanness) interact and cannot be considered independently from each other.

Lack of control. Barker regards lack of volitional control as the third property characterizing the process of nominalization (see section 4.1). However, lack of volition is not a sufficient condition: there are verbs which typically entail noncontrolling arguments which are not likely bases. For example, verbs of perception, cognition or emotion like *see*, *know* or *love*. In fact, many of the two-argument state predicates distinguished within RRG's theory of lexical representation are verbs implying a human participant lacking control. The different types of stative predicates that are recognized within RRG (1997) are repeated below for convenience:

I. STATE VERBS		
A. Single argument		
1. State or condition	**broken'** (x)	x=PATIENT
2. Existence	**exist'** (x)	x=ENTITY
B. Two argument		
1. Pure location	**be-LOC'** (x,y)	x=LOCATION, y=THEME
2. Perception	**see'** (x,y)	x=PERCEIVER, y=STIMULUS
3. Cognition	**know'** (x,y)	x=COGNIZER, y=CONTENT
4. Desire	**want'** (x,y)	x=WANTER, y=DESIRE
5. Propositional Attitude	**consider'** (x,y)	x=JUDGER, y=JUDGEMENT
6. Possession	**have'** (x,y)	x=POSSESSOR, y=POSSESSED
7. Internal Experience	**feel'** (x,y)	x=EXPERIENCER, y=SENSATION
8. Emotion	**love'** (x,y)	x=EMOTER, y=TARGET
9. Attrib/Identificational	**be'** (x,y)	x=ATTRIBUTANT, y=ATTRIBUTE

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Verbs denoting perception, cognition, desire, propositional attitude, internal experience or emotion are unlikely bases for *-ee* suffixation, because the referent of the derived noun would be the participant occupying second argument position, a nonhuman entity in most cases. When this second argument is human there is a chance for the verb to undergo *-ee* suffixation. Thus, the second argument of Emotion verbs is typically (though not necessarily) a human entity, so that in pairs like *fear/scare*, *like/please* we might expect *scaree* or *pleasee*, referring to the human nonvolitional second argument of the bases (an Undergoer), but not **fearee* or **likee*, where the human nonvolitional participant is the first argument and therefore not an Undergoer.

Many of the two-argument predicates also have an intransitive use. In this case, the single argument of those verbs may be a Perceiver, a Cognizer, a Wanter, a Judger, or an Experiencer. All these thematic relations are placed at a lower position on the undergoerhood scale than Themes, and occupy a position closer to Actors. Thus, it is not lack of volition in isolation, but lack of volition together with undergoerhood status that seems to be relevant.

We conclude that lack of control or, to use Barker's words, 'lack of volition' cannot be regarded as a sufficient property to account for the verbs that can be input to the nominalization process. Lack of volition must be combined with the possibility of being an Undergoer.

What's more, lack of volition is not a necessary condition either since there are verbs implying controlling participants among the possible bases. For example, although it is a very limited group, stative verbs which allow *-ee* suffixation seem to be examples of the few cases of state verbs with agentive arguments: verbs like *stand* or *sit*. Likewise, within the set of motion verbs *escape*, *attend*, *resign*, *retire*, *enlist*, *enrol*, *return*, etc, which are likely bases, are also volitional verbs. This fact is noted by Barker (1998: 719), who suggests that we might consider the lack of volition as existing before the event, i.e. in the period or circumstances that force the person to escape, retire, attend, etc.

Summing up, a causative accomplishment/achievement (or state, though these cases are very limited) LS in combination with the Undergoer status of one of the participants are necessary conditions for the process of *-ee* nominalization. Further semantic properties like humanness and lack of volition are also relevant in the selection of the possible bases, though they should be considered in combination with the specific semantic class where the verb belongs.

It seems, therefore, that we need an enhanced semantic component which goes beyond the present scope of LSs. In addition to the set of lexical classes based on the aspectual classification of predicates, RRG explicitly mentions specific semantic classes of predicates, e.g. cognition, perception, speech act verbs, etc., though nothing is said of how these classes have been obtained. Van Valin & LaPolla (1997: 114) point out that the interpretation of an argument is a function of (1) the class or subclass of a predicate and (2) its position in the LS. Nevertheless, they emphasize that role labels like 'Effector', 'Cognizer', 'Theme', 'Performer' are merely mnemonics for argument positions in LS, and that they are only useful in designating the subclass of

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the predicate. However, in spite of the little significance granted to the subclasses, they seem relevant in the identification of possible bases for *-ee* nouns since the specific properties of the participants entailed by the verbs depend on the subclass in which the verb belongs.

4.3.5 General characterization of the process of -ee *nominalization*

We are now in a position to offer a general description of the process of *-ee* noun formation. Derived nouns in *-ee* were originally used to refer to human participants with the role of Recipients in legal acts of transaction and, therefore, highly salient participants in the event. The suffix then extended its scope by being attached to verbs other than legal words, forming nouns referring to entities other than Recipients, but still sharing the general semantic property of being the most salient human entity, a participant role typically associated with Patients. The first requirement for a verb to be able to take *-ee* is that it denotes a kind of situation with a participant of the type required by the process. In other words, the meaning of the verb must be compatible with, or able to adjust to, the general meaning of the process.

The meaning of the verb includes its LS as well as the semantic properties (including thematic roles and selectional restrictions) of the arguments, which are derived from their position in the LS, as well as from the specific semantic subclass of the verb. Therefore, LSs in combination with information derived from a specific semantic domain are relevant to exclude impossible bases. Thus, the following cases are not predicted to be possible inputs for *-ee* nominalization.

Firstly, by analysing the LS of the verb we may discard verbs whose LS is characterized as an activity, since activities code inherently unbounded states of affairs and cannot code a state, a basic requirement for *-ee* nouns.

Further, if we consider the likelihood of a verb's participants from the point of view of Undergoer assignment, we see that the lack of this possibility blocks the process of *-ee* nominalization. Thus, it turns out that one-place state verbs are excluded because the human participant they take is not an Undergoer. Thus, intransitive uses of two-argument verbs denoting cognition or perception (e.g. *know*, *hear*) and verbs denoting bodily/emotional states (e.g. *bother*, *be afraid*, *suffer*) are not possible bases.

Among verbs that do take a possible Undergoer, we still have to consider finer features to exclude some cases. Thus, state verbs whose Undergoer is not a human participant (e.g. *storm* in *He feared the storm*) do not take the suffix. In addition to state verbs, accomplishment verbs like *bake* or *drink* are not likely bases either, for these verbs take a second argument which is necessarily (under normal circumstances) a non-human participant.

Once the conditions of compatibility with LS, Undergoerhood and selectional restrictions have been met, the only condition the noun must fulfil is that it must be interpreted as an appropriate argument in an LS like the following:

[do' (x, θ)] CAUSE [BECOME (NOT) **state'** (y, z <human>) or (y, x <human>)]

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Where the verb lacks one of the properties of the meaning of the suffix, the missing properties are inherited from the suffix. For example, when there is no CAUSE element of meaning (in intransitive verbs, like *escape* or *return*), this property will be transferred from the suffix and added to the meaning of the complex word. This might be represented as follows:

CAUSE [do' (x, θ)] & BECOME (NOT) be-LOC' (y,x <human>)

Here the initial position of CAUSE indicates that the cause triggers the action leading to a change of position. Note that not every predicate lacking the causative component in its meaning is able to inherit this property from the suffix. Thus, while an external cause may force one to escape, no external cause can cause one to see, for example. The property 'External cause' characterizes a specific set of intransitive motion verbs regarded as unaccusative. These verbs take a Theme Undergoer. Hence, the possibility of obtaining a causative interpretation is determined by the class of the verb.

Likewise, when the meaning of the verb does not imply a human participant, this property is also transferred from the suffix to the verb, although again not any verb is likely to inherit this property, only verbs taking an argument which is neutral as regards humanness (i.e. not specified as <−human>). Thus, although the second argument of *kick* is not necessarily human, it *can* be human. Therefore, *kickee* is a possible word referring to a human entity.

In the case of state predicates like *stand*, BECOME is not part of the meaning of the verb. However, there exists only a very limited number of examples of this type, so that they can be regarded as exceptional.

We conclude that the meaning of *-ee* nouns is the result of an interaction between the meaning of the process (i.e. the suffix) and the meaning of the base.

4.4 Final remarks

Not all the different groups of *-ee* nouns in existence have been covered by the preceding discussion. There are further patterns which pose some problems both for a syntactic explanation and for a semantic explanation dealing with thematic relations: (i) nouns denoting an entity which occupies no position in the verb's argument structure, like *amputee*, and (ii) nouns derived from nonverbal bases, like *biographee*.

The case of *amputee* is problematic because its reference is extralinguistic: if the doctor amputates John's leg, it is not the leg itself that can be referred to as *amputee*, but only the possessor of the leg. In RRG, a distinction is drawn between *participant roles*, which are properties of states of affairs *in the world*, and *thematic relations*, which are *linguistic* entities referring to the semantic relations between a predicate and its arguments. These express the participant roles in the states of affairs denoted by the verb. The referent of *amputee* is a participant role, not a thematic relation. Likewise, *biographee* denotes a participant role, since there is no verbal predicate from which the noun is derived in whose LS it might be said to occupy a position.

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These two groups are interesting because of the theoretical implications resulting from their existence: the entity referred to by *amputee* is an inherent participant of the event, because the amputated entity is an inalienable property of that entity (although it ceases to be if the amputation is performed!), so that this entity is always presupposed. Besides, the speaker's knowledge of the world can make him see the possessor of the amputated limb as the entity primarily affected in the act of amputation.

All this means we will need to allow lexical rules to have access to conceptual information, or to a cognitive component. This implies the requirement of a level of lexical representation different from thematic relations, a Lexical Conceptual Structure containing information about participants which do not show up in syntax, as well as information about syntactically realized participants. A possible way out of the problem posed by these nominals might be the use of *Qualia structure* (Pustejovsky, 1991, 1995), a level of representation different from argument structure, constituted by four different roles: (i) the Constitutive role, which handles the relation between an object and its constituents, or proper parts; (ii) the Formal role, which distinguishes the object within a larger domain; (iii) the Telic role, which handles the purpose and function of the object; and (iv) the Agentive role, which deals with factors involved in the origin or 'bringing about' of an object.

The LS of nouns like *amputee* would include reference to an entity which is not present in the argument structure of the verb, because the possessor of the entity occupies the second argument position in the LS of the verbal base. Inalienable possession is related to the constitutive role of the nominal qualia:

John's leg **have.as.part** (John, leg)
amputate: [do' (x, θ)] CAUSE [BECOME amputated' ([have.as.part (y, z)])]

While only the entity occupying argument position *z*, an inalienable possession, would be syntactically realized, the possessor (i.e. the referent of *amputee*) would still form part of the lexical representation, occupying the *y* argument position.

Further development of a proposal for the formal representation of cases using Qualia structure is, regrettably, beyond the scope of this article.

5 Conclusion

Throughout this article we hope to have shown that the process of *-ee* noun formation in English is semantically motivated and that a model of lexical representation like RRG, which uses semantic decomposition and two tiers of semantic roles, can satisfactorily account for most of the different cases. In particular, the LS of the verb and the semantic notion of Undergoer have been shown to be relevant to explain the formation of *-ee* nouns. In addition, some further specific semantic features related to the specific semantic subclass of the verb are also significant for the process, although these

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properties cannot be considered in isolation but should be regarded in interaction with the other semantic factors (i.e. LS and macrorole status).

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https://doi.org/10.1017/S1360674303211059 Published online by Cambridge University Press