

Two types of light categories, One type of Roots: Consequences for the verb/noun distinction and Phase Theory

1. BACKGROUND AND GOAL: Much recent work on lexical semantics, distributed morphology, and syntax tacitly assumes a distinction between light categories ([15,16]'s v , a , n) and Roots (a non-functional lexical item whose category is contextually determined) –roughly, the f-morpheme / l-morpheme cut of the Distributed Morphology framework (see [10,12]). Such a distinction was already present in [2]'s analysis of nominalizations, but it has now been revamped and much exploited in order to account for different properties of lexical items (e.g. productivity, stem allomorphy, idiom creation).

One such property concerns the categorial status of a lexical item, which follows from the type of light category that is merged with a Root, as indicated in (1) (following [15,16]'s notation).

An interesting trait of this approach to categorization is that can be used to account for the fact that *destroy* and *destruction* have the same argument structure, as can be seen in (2) below. Notice that, from this perspective, both nouns and verbs can (potentially) take an internal argument –whose Case properties (accusative or genitive) are decided at a later derivational stage, at the point when v or n is merged, as can be seen in (2).

However appealing (and uniformly elegant), this contention has been called into question by [9], [14], and [17], who –invoking different arguments– have argued that nouns cannot take complements. In this paper we would like to argue, just like [8,13,16], that nouns (all kinds of nouns, not only result nominals; see [8]) do not take complements; however, unlike them, we would like to argue that the non-argument-taking property of nouns derives from a purely formal fact –namely the lack of uninterpretable morphology (in [3,4,5]'s terms, a φ -Probe) in the little n head.

2. PREVIOUS ACCOUNTS: Before going into the details of our proposal, let us briefly consider the arguments put forward by [19,14,17] to claim that nouns cannot take arguments. The starting point is [9]'s proposal that the configurations in (3) exhaust the structure types of argument structure. The interesting case is (3b), which, according to [9,14,17], cannot take complements or specifiers, and whose typical categorial realization is N(oun). Notice, crucially, that what [9,14,17] take to be an N can be treated as a Root. Largely building on [9], [17] argues that there is a fundamental distinction of lexical items, which can be either 'relational' (typically, V, P, and A; 3a, 3b, 3c above) or 'non-relational' (typically, N; 3d). [17] (like [9]) then advocates for a system where N/Root correspond to an open-ended class with syntactically irrelevant conceptual/encyclopedic content (what for some authors is purest manifestation of *concepts*). If this were correct, then Roots could not take complements, which is problematic, for at least two reasons: first, the conceptual argument provided is weak (if lexical items have the *edge feature* of [5], then there should be no merge-based restriction), and second, empirically we still want to treat $\sqrt{\text{DESTROY}}$ as a complement-taking Root in cases like 1b).

More recently, [14] tries to derive [9]'s claim by following [7]'s proposal that lexical items can merge with themselves (self-Merge), yielding singletons. This, as [14] emphasizes, provides an asymmetry (a solution) for the very first step of every derivation, where two (symmetrical) lexical items undergo Merge: if self-Merge is allowed, then we do not have (4a), but (4b), and then y can asymmetrically c-command (and be ordered before) x . [14] pushes this analysis to derive the noun-verb distinction. His reasoning is based on the assumption that the elements that undergo self-Merge cannot have uninterpretable features: deletion of these features must take place as soon as they enter the derivation ([3,4]), and Merge is not a feature-deletion operation. Essentially, then, the restriction on complement taking that [9, 14] propose is here derived by taking nouns to undergo self-Merge – this, clearly, eliminates the complement position of an x (a noun), which is occupied by the noun itself.

3. THE PROPOSAL: In this paper we would like to derive [9]'s verb / noun distinction (alternatively, [17]'s 'relational' / 'non-relational' cut) by capitalizing on contextual properties of so-called Roots, much like [4,5] and [15,16]. It is fairly standard to entertain the hypothesis that Roots become nouns or verbs if they merge with v^* or n : however, notice that this in and of itself does not say why the former take complements, while the later do not (in fact, different proposals argue that there is no such distinction, verbs such as *destroy* and nouns such as *destruction* having the same argument structure; [15,16]). With [9,14,17], we want to argue that nouns do not take complements, but we propose that this depends on whether the light verb that merges with the Root contains a

φ -Probe or not, as shown in (5). According to (5), the key syntactic distinction between nouns and verbs is not related to stipulating their being 'relational' or 'non-relational' (*as per* [17]), nor to their having a referential index ([1]), but to the fact that the φ -features of a verb are uninterpretable (they are a 'Probe'), and must find a 'matching Goal' for valuation purposes; φ -features of nouns, on the other hand, are interpretable, so they do not require valuation. If correct, this proposal derives an alleged semantic property (argument-taking processes) to a purely formal fact (having or not uninterpretable φ -features). This in turn solves the well-known (but nonetheless odd) claim that the appearance of nominal arguments is optional –under (5), it is not, since nominals cannot take arguments.

4. CONSEQUENCES: If the analysis just sketched is on track, then it follows that all kinds of nouns do not take arguments, while verbs must. Different data may follow from this. To begin with, we can explain why the alleged arguments of nouns can be absent, as in (6). The answer, under this account, is that the PPs in (6) are not arguments, but adjuncts, which in turn raises the question of how to account for contrasts like the one in (7). In (7) we have a minimal pair that shows the distinct behavior of prepositions: some allow subextraction (behaving as true adjuncts), whereas other do not (behaving, it would appear, as complements). In order to tackle this problem, and support our analysis that all PPs are adjuncts, we follow [18] in that some P do not project a PP, behaving more like a prefix: if (7a) contains no PP, then the relevant Agree dependency is not blocked, and subextraction can go through, as expected. In sum, the asymmetry in (7) does not follow from the possibility that some PPs are arguments, whereas others are adjuncts: instead, it follows from the projecting/non-projecting nature of Ps.

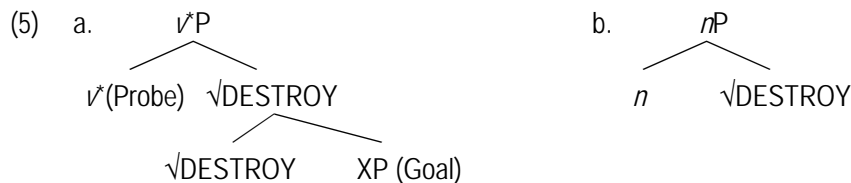
This may provide an answer to the data in (7), from [9]. [9] attribute the unacceptable status of these examples to the the semantically defective status of *make* and *do*: "we propose that their inability to take nonovert objects follows from the fact that they are "light verbs" -in other words, verbs without any semantic component that could enter into a classificatory binding relation capable of licensing an empty complement." However, if we are correct, the effect in (6) is due to the fact that the φ -features of these verbs cannot be valued (there is no Goal), causing a crash.

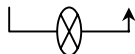
5. CONCLUSIONS: This paper argues that one specific property of so-called Roots (see [15,16]), namely their necessity to take complements, can be accounted for in a straightforward fashion by adopting [4,5]'s Probe-Goal framework: if merged with *n*, $\sqrt{\text{Roots}}$ become nouns ($\sqrt{\text{DESTROY}} \rightarrow \text{destruction}$), and do not require to take an internal argument (e.g. *destruction (of the city)*); if merged with *v*, Roots become verbs ($\sqrt{\text{DESTROY}} \rightarrow \text{destroy}$, ($\sqrt{\text{SING}} \rightarrow \text{sing}$), which do require to take an internal argument (be it incorporated or not: e.g. *destroy *(the city)* vs. *sing*). We have claimed that such a distinction follows from the featural endowment of phase heads, *v* and *n*, which contain a bundle of agreement features (see [4,5]): crucially, though, only *v*'s will seek for a Goal. Given that the φ -bundle of *v* enters the syntactic component in an unvalued fashion, a matching Goal is required.

If this is correct, then there is no need to argue that Roots are 'non-relational' elements (as [17] claims): if all lexical items (including Roots) are endowed with [4,5] *edge feature*, then they are all relational. There is, however, reason to argue that light categories ([15,16]'s little *x*s) are different. To be precise, if our account is on track, it is only *v* that forces the process of φ -feature advocated for by [5], *n* and *a* behaving as merely category-assigning units, which do not force transfer –in other words, *n* and *a* are not phases. This is a welcome conclusion, in fact: as (9) shows, if DPs were phases (here we assume [4]'s analysis of DPs), then their φ -features should be downloaded from *n* (the phase head) to some DP-internal nonphase head (D itself, or N), for the reasons given by [4,5]. However, if φ -feature inheritance takes place within the DP, as just indicated, then, in the next cycle, the *v* head will fail to find a matching Goal to delete its (uninterpretable) φ -features. In a nutshell, if DPs were phases, and cyclic transfer occurred in the way [4,5] argues, then we would be predicting massive crash at the *v**P phase level –this can be seen in (10).

Synthesizing, the proposal just sketched tries to derive one allegedly semantic property of lexical items (i.e. argument taking) to the specifics of well-known formal dependencies. The approach accounts for the noun / verb cut in a rather customary fashion –by taking little categories to induce morphological properties–, the new twist coming from the possibility to treat the behavior of nouns (which do not need to take arguments; an analysis that should also be extended to so-called 'light nouns' and other covert elements with a classifier-like nature such as *time*, *place*, etc.; see [6,13]) to the specifics of Probe-Goal dynamics. Overall, if correct, our analysis not only reinforces the thesis that semantic processes are (ancillary) consequences of syntactic dependencies, but it also supports [4,5]'s framework of phases.

- (1) a. Merge (n , $\sqrt{\text{DESTROY}}$) = destruction
 b. Merge (v , $\sqrt{\text{DESTROY}}$) = destroy
- (2) a. The conquerors destroyed the ships.
 b. The destruction of the ships by the conquerors.
- (3) a. [X [Y]] b. [Z [X [Y]]] c. [Z [X* [Y]]] d. X
- (4) a. Merge (y , x)
 b. Merge (y , $\{x\}$)



- (6) The investigation (of the evidence) (by John) was inconclusive.
- (7) a. [_{CP} Who_i C do you like [a picture of t_i]]?
 b. *_{CP} Which table_i C did you like [a book [on t_i]]]?
- (8) a. *He made. (cf. He made trouble/fishtraps/mistakes)
 b. *She did. (cf. She did a jig/pirouettes/the MCATs)
- (9) a. [n ϕ [_{DP} D NP]]
 b. [n [_{DP} D ϕ NP]] n -to-D ϕ -feature inheritance
- (10) [v [_{VP} V ϕ [~~n [_{DP} D ϕ NP]~~]]] strikethrough = transferred material


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