

# On diagnosing complement-taking roots

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## 1 Introduction

Harley (2014) (henceforth H) presents an interesting and coherent account of roots in current grammatical theory. She argues compellingly that roots can be identified in syntax neither phonologically nor semantically. This does not mean, however, that they are completely featureless or radically underspecified (as proposed among others by Belder & Craenenbroeck (to appear)). Instead, roots are individuated throughout the syntactic derivation by means of an index (as originally proposed by Acquaviva (2008) and Pfau (2009)). In a sense, then, they behave like ordinary, run-of-the-mill terminal nodes. Accordingly, H argues that roots show default syntactic behavior in being able to project and take complements. In this short reply I focus on this last point, i.e. the ability of roots to take complements. I examine three arguments provided by H in support of this position and show that they do not always unequivocally point to the same conclusion, thus weakening the strength of the argumentation and leaving room for an alternative in which it is not the root but a (low) functional head that introduces the arguments.

## 2 Three arguments for roots taking complements

### 2.1 Introduction

In the following three subsections I introduce and illustrate three arguments presented by H in support of the claim that roots can take complements.<sup>1</sup> In so doing, I draw not only on H's paper itself, but also on two of the sources she uses (in particular Harley (2005) and Punske & Schildmier Stone (2014)), thus broadening the scope of the discussion somewhat. Moreover, in subsection 2.5 I discuss an alternative analysis of the relevant data considered—and rejected—by H herself (Harley, 2014, 22-23fn22).

### 2.2 Cross-categorial argument selection

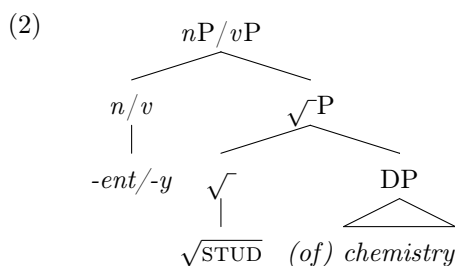
If roots are acategorial and if they can select arguments, then argument selection should be category-neutral. That, in a nutshell, is H's first argument. Consider in this respect the examples in (1).

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<sup>1</sup>One argument I will have nothing to say about here concerns the triggering environment for root suppletion in Hiaki (Harley, 2014, 25ff). For relevant discussion, see Alexiadou & Lohndal (2014)

- (1) a. John is a student of chemistry.  
 b. John studies chemistry.

Given that the semantic relation between the noun *student* and its complement *of chemistry* is identical to that between the verb *studies* and its direct object,<sup>2</sup> it seems likely there is only one instance of argument selection at stake here. In H’s own words: “If both verbal *study* and nominal *student* share the same root (realized as *stud-*), and if the semantic interpretive properties of that root are responsible for imposing selectional restrictions on its sister DP, the identical argument selection properties of the related noun and verb can be captured at the root level, below  $n^\circ$  or  $v^\circ$ ” (Harley, 2014, 21). The tree structure in (2) makes clear what H has in mind.



In short, cross-categorical argument selection—as in: the occurrence of the same arguments with the same basic meaning relations across different categories—is a first diagnostic for detecting the argument-selection properties of roots.

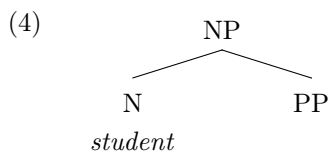
### 2.3 Pronominalization

The second argument is based on the traditional constituency test of pronominalization. H starts out from the well-known contrast in (3).

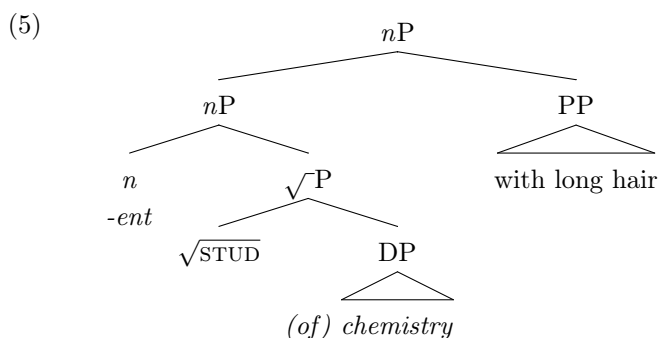
- (3) a. \*John is a student of chemistry and Mary is one of physics.  
 b. John is a student of chemistry with long hair and Mary  
 ... is one with short hair.  
 ... is one too.

While nominal complements such as *of physics* must be included in the structure that is being pronominalized by *one*, adjuncts such as *with short hair* can—but need not—remain stranded. Harley (2005) rightly points out that under a Bare Phrase Structure (BPS) approach, the difference in acceptability between these two examples is hard to account for. Given that in BPS there are no non-branching nodes, both *student of physics* and *student with short hair* would be abstractly represented as in (4), thus leaving little or no room for differentiating the two.

<sup>2</sup>This in itself is not uncontroversial: as Jonathan Bobaljik (p.c.) points out, one can study chemistry—as in: have an intellectual interest in it—without being a student of chemistry—i.e. without being enrolled in a specific university program.



The solution, H argues, lies in severing the root from its category-assigning head, and having that root directly select its arguments. This allows us to structurally differentiate arguments from adjuncts without the use of non-branching nodes:



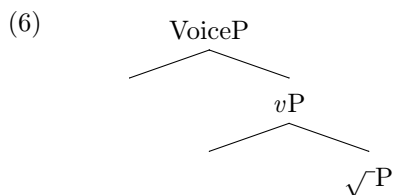
The form *one* can now be said to pronominalize  $nP$ .<sup>3</sup> As a result, the occurrence of this form leads to the obligatory absence of the argument *of chemistry* (which is necessarily included in  $nP$ ) and to the optional absence of the adjunct *with long hair* (which is included in the higher segment of  $nP$ , but not in the lower one). More generally, H takes the contrast in (3) to be an argument in support of the argument-taking nature of roots.

## 2.4 Idiomatization

The third argument dates back to familiar data contrasts from Marantz (1984) showing that while verb-object combinations frequently lead to idiomatic interpretations to the exclusion of the subject, the opposite pattern (subject-verb idioms that freely combine with any object) are excluded. Kratzer (1996) takes this to mean that the external argument should be structurally separated from the verb, in particular by having it be introduced by a specific functional head. This in turn leads H to conclude that internal arguments *do* directly compose with roots, i.e. that roots are able to directly take complements.

The argument receives some further nuance in Punske & Schildmier Stone (2014) (cited by Harley (2014, 22-23fn22)). They point out that idiomatic constructions (non-compositional constructions or NCCs in their parlance) can contain not just the  $\sqrt{P}$  (i.e. the root and its internal argument(s)), but also additional functional superstructure. Starting from the basic clause structure in (6), they identify three types of NCCs:  $\sqrt{P}$ s,  $vP$ s and VoicePs.

<sup>3</sup>Technically, Harley (2005) takes *one* to be the pronominalization of  $n^0$ , with the additional requirement that the rest of the  $nP$  be spelled out by null exponents. These technical details will not be relevant in the remainder of this paper.



These three types of NCCs can be distinguished based on their degree of modifiability:  $\sqrt{P}$ -NCCs (illustrated in (7)) can be both passivized and gerundized,  $vP$ -NCCs (cf. (8)) can be passivized but not gerundized, and VoiceP-NCCs are unmodifiable (see the examples in (9)).

- (7) a. The deck was stacked by Bill.  
 b. Mary regretted the stacking of the deck (by Bill).
- (8) a. A killing was made with inside information.  
 b. #The making of a killing (by the stock broker)...
- (9) a. #The bucket was kicked by John.  
 b. #Mary regretted the kicking of the bucket (by John).

This further subclassification of idiomatic expressions leads to a refinement of H’s original argument: it is not the case that any such expression can be used in support of the claim that roots can take arguments, only the modifiable ones do.

## 2.5 A possible alternative

As pointed out above, the second and third argument H uses find their origin in traditional constituency tests. This leaves room for a possible loophole in the argumentation: the mere fact that a root and its complement form a constituent does not warrant the conclusion that the two are sisters, i.e. that the root directly selects and is merged with its complement. H addresses this objection in fn22 and concludes that “the fact that selectional restrictions remain in force across the nominal/verbal divide (*study chemistry/student of chemistry*) suggests that whatever low category is sister to the internal argument is not specific to the nominal extended projection. The acategorial root meets this description perfectly.” (Harley, 2014, 22-23fn22)

In other words, it is the *combination* of the arguments that matters: on the one hand, constituency tests such as pronominalization and idiomatization show that roots and their (internal) arguments form a constituent, while on the other the facts pertaining to cross-categorial argument selection show that the constituent in question is the  $\sqrt{P}$  (rather than some functional projection above the root) and as a consequence that roots can take arguments. In the remainder of this paper it is precisely this connection between the first argument and the other two that I want to submit to some further scrutiny.

### 3 Mismatches between the arguments

#### 3.1 Introduction

In the next two subsections I examine discrepancies or mismatches between H's criteria for detecting argument-selecting roots. First (in subsection 3.2) I turn to cases where on the one hand we find the same noun-verb symmetry as in (1), but which nonetheless behave like (3-b) with respect to pronominalization. Then, in subsection 3.3, I focus on  $\sqrt{P}$ -idioms which nonetheless show no cross-categorial selection properties.

#### 3.2 Argument selection vs. pronominalization

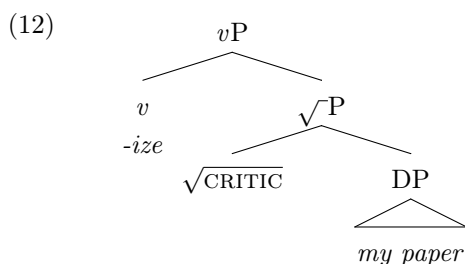
Recall from subsection 2.5 that cross-categorial argument selection plays a crucial role in H's argumentation. Consider in this respect the pair in (10).

- (10) a. Kyle criticized my paper.  
b. Kyle's criticism of my paper.

It seems clear that to the extent that we find a noun-verb symmetry in terms of argument selection in the examples in (1), that same symmetry can be found in (10). Put differently, the semantic relation between the verb *criticized* and its direct object is mirrored by the relation between the noun *criticism* and its PP-complement. Consider now the pronominalization example in (11).

- (11) Kyle criticized my paper and Rajesh did {the same/likewise} to my book.

In this example, which is inspired by Culicover & Jackendoff (2005, 124–135) and Mikkelsen et al. (2012), only the verb is being pronominalized, and the direct object remains unaffected.<sup>4</sup> Of particular interest to us here is the question what part of the structure is being pronominalized by *the same/likewise*. A structural representation of *criticize my paper* along the lines of (5) is given in (12).



Assuming that the agentive verb *did* in (11) pronominalizes *v*, that leaves only one option for *the same/likewise*, i.e. these forms directly pronominalize the root  $\sqrt{\text{CRITIC}}$ . Put differently, the difference between *one* and *the same/likewise* is that while the former is an *nP*-anaphor, the latter is a  $\sqrt{\text{P}}$ -anaphor. Plausible

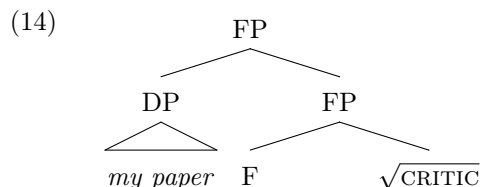
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<sup>4</sup>Save for the addition of the preposition *to*, which I will not address any further here. See the sources mentioned for discussion.

though it may seem at first sight, this account runs into problems in light of examples such as the following.

- (13) Kyle criticized my paper and Rajesh did {the same/likewise}.

Exactly the same pronominal forms can be used to replace not just the verb(al root), but the verb in combination with its internal argument. Put differently, the optional inclusion in the pronominalization site that we witnessed with adjuncts in examples like (3-b) is replicated here, but with arguments. In the case of *one*-pronominalization we took this optionality to mean that adjuncts should be ‘severed’ from the root along the lines of the structure in (5). Extending this line of reasoning to the present case would suggest that the internal argument too should be introduced by a functional head separate from the root. Pronominal forms like *the same* or *likewise* could then be said to pronominalize either the lower or the higher segment of this projection:



Now, one could of course object that the pronominalization strategies exemplified in (11) and (13) differ in some fundamental way from the cases of *one*-pronominalization discussed by H, in particular in that what looks like an argument in (11) in fact occupies an adjunct position (as is possibly also signaled by the obligatory presence of the preposition *to*, cf. fn 4). It is for this reason that I now turn to a different set of data, one which is much more similar to the English facts, but which nonetheless display the same pattern as the examples just reviewed. It concerns *one*-pronominalization in Frisian. First, let’s take a look at some baseline data: the examples in (15) parallel those in (1) and (10) in showing cross-categorial argument selection. In particular, the semantic selection relation between the verb *besprekt* and its direct object seems completely parallel to that between the noun *besprek* and its prepositional complement.<sup>5</sup>

- (15) a. *Jitske besprekt syn roman.*  
 Jitske reviews his novel  
 ‘Jitske reviews his novel.’  
 b. *in besprek fan syn roman*  
 a review of his novel  
 ‘a review of his novel’

Moreover, just like English, Frisian can use the numeral ‘one’ as a dummy noun in NP-ellipsis contexts:<sup>6</sup>

- (16) *Jan hie in witte auto en Geart in swarten ien.*  
 Jan has a white car and Geart a black one

<sup>5</sup>All Frisian data in this paper are either from Corver & Koppen (2011) or from Jarich Hoekstra p.c.

<sup>6</sup>This is not the only NP-ellipsis strategy in Frisian. See Corver & Koppen (2011) for detailed discussion.

‘Jan has a white car and Geart a black one.’

However, differently from English, arguments are optionally included in the pronominalization site in Frisian:

- (17) a. *Jitse wiisde him op in posityf besprek fan syn roman en*  
Jitse pointed him on a positive review of his novel and  
*Jitske op in negativen ien fan syn samle fersen.*  
Jitske on a negative one of his collected poems  
‘Jitse pointed out to him a positive review of his novel and Jitske  
pointed out a negative review of his collected poems.’
- b. *Jitse wiisde him op in posityf besprek fan syn roman en*  
Jitse pointed him on a positive review of his novel and  
*Jitske op in negativen ien.*  
Jitske on a negative one  
‘Jitse pointed out to him a positive review of his novel and Jitske  
pointed out a negative one.’

In (16) the nominal argument *fan syn samle fersen* ‘of his collected poems’ either is (in the b-example) or is not (in the a-example) included in the pronominalization site. In this respect, the example completely parallels the one in (3-b), where the adjunct *with long hair* shows the same optionality. From the perspective of the structure in (5), this would mean that Frisian *ien* pronominalizes either the root (a head) or the combination of the root and its internal argument (a phrase), not a very attractive solution. A more plausible way to approach the data in this and the preceding section in my view is to assume that—not unlike ellipsis—pronominalization can take place at different heights. If it targets the insertion site of adjuncts (like English *one*), then roots and arguments are obligatorily included in the ellipsis site, and adjuncts only optionally so. If it targets the insertion site of arguments (like Frisian *ien* and English *the same/likewise*), then only roots are obligatorily included in the ellipsis site and arguments optionally so. Regardless of the viability of this proposal, however, the important conclusion from this subsection in the context of this paper is that the link between cross-categorial argument selection and pronominalization is not as straightforward or direct as it appeared to be on the basis of H’s examples: a closer look at a broader range of relevant facts suggests that just like adjuncts, arguments should be ‘severed’ from the root as well.

### 3.3 Argument selection vs. idiomatization

In this subsection I combine H’s first and third argument. Recall that Punske & Schildmier Stone (2014) make a distinction between  $\sqrt{P}$ -idioms, *vP*-idioms and VoiceP-idioms. The last ones are unmodifiable, the middle ones can be passivized but not gerundized, and the first ones are fully modifiable. Moreover, if  $\sqrt{P}$ s are acategorial and if they contain not only the root but also its internal arguments, then we expect  $\sqrt{P}$ -idioms to be acategorial as well. Put differently, the idiomatic reading should be retained under nominalization. This is the prediction I focus on in this subsection.

The central data come from Dutch. First, let’s make sure the tripartite classification Punske & Schildmier Stone (2014) draw up for English is valid in Dutch as well. Consider in this respect the following examples.

- (18) a. *Ze geeft hem de bons.*  
 she gives him the knock  
 ‘She’s dumping him.’
- b. #*het geven van de bons (aan hem)*  
 the give.INF of the knock to him  
 INTENDED: ‘the dumping of him’
- c. #*De bons wordt hem door haar gegeven.*  
 the knock becomes him by her given  
 INTENDED: ‘He is being dumped by her.’
- (19) a. *Dat doet hem de das om.*  
 that puts him the tie on  
 ‘That is the end of him.’
- b. *Hem wordt de das omgedaan.*  
 him becomes the tie put.on  
 ‘It is the end of him.’
- c. #*het hem omdoen van de das*  
 the him on.put.INF of the tie  
 INTENDED: ‘the end of him’
- (20) a. *Hij begraaft de strijdbijl.*  
 he buries the hatchet  
 ‘He’s burying the hatchet.’
- b. *het begraven van de strijdbijl*  
 the bury.INF of the hatchet  
 ‘the burying of the hatchet’
- c. *De strijdbijl wordt begraven.*  
 the hatchet becomes buried  
 ‘The hatchet is being buried.’

The examples in (18) illustrate the (lack of) modifiability of the idiom *iemand de bons geven* ‘to dump someone’. As shown in the b- and c-example, this idiom can be neither passivized nor be used as a nominalized infinitive.<sup>7</sup> As such it qualifies as a VoiceP-idiom: the verbal projections *vP* and VoiceP are part and parcel of the idiomatic meaning and so cannot be freely modified. The idiom *iemand de das omdoen* ‘to be the end of someone’ illustrated in (19) is slightly more flexible: it can be passivized, but it cannot be turned into a nominalized infinitive. This suggests that VoiceP isn’t, but *vP* is part of the structure that constitutes the idiom. In other words, *iemand de das omdoen* is a *vP*-idiom. Finally, an idiom like *de strijdbijl begraven* ‘to bury the hatchet’ is fully flexible: it can be both passivized and turned into a nominalized infinitive. H, following Punske & Schildmier Stone (2014), would take this to mean that neither *vP* nor VoiceP form part of the idiom. More generally, the idiom *de strijdbijl begraven* contains no category-specific functional heads and consists solely of the  $\sqrt{P}$ , which is itself composed of the root and its internal argument. Given that this is the type of idiom that is of central interest to us here, let us consider another example:

- (21) a. *Hij breekt het ijs.*  
 he breaks the ice

<sup>7</sup>I am using the nominalized infinitive as the Dutch correlate of the English gerund here. See Ackema & Neeleman (2004, 173ff) for detailed discussion.



- ‘He breaks the ice.’
- b. *het breken van het ijs*  
 the break.INF of the ice  
 ‘the breaking of the ice’
- c. *Het ijs is gebroken.*  
 the ice is broken  
 ‘The ice is broken.’

Just like *de strijdbijl begraven* ‘to bury the hatchet’, *het ijs breken* ‘breaking the ice’ is fully modifiable as an idiom, suggesting that it too squarely falls in the category of  $\sqrt{P}$ -idioms. To the extent that this is on the right track, these data make a clear prediction in the context of H’s first argument as discussed above: if the idiomatic reading is not dependent upon any (potentially category-specific) functional material, but rests solely on the (acategorical) root and its internal argument, the idiomatic reading of (20)-(21) should be independent of whether this root is eventually realized as a verb or as a noun. As shown in the examples below, this prediction is not borne out: in the cases discussed, the idiomatic reading is lost when the root is spelled out as a noun, and only the literal reading remains.<sup>8</sup>

- (22) a. #*de begraving van de strijdbijl*  
 the bury.NOMINALIZER of the hatchet  
 INTENDED: ‘the burying of the hatchet’
- b. #*de breking van het ijs*  
 the break.NOMINALIZER of the ice  
 INTENDED: ‘the breaking of the ice’

Once again, then, we see H’s arguments not lining up as we would expect them to: on the one hand we have chosen our idioms such that they should not contain any category-specific functional material along the lines laid out by Harley (2014) and Punske & Schildmier Stone (2014), but on the other we do not see the expected accompanying cross-categorical selection effects.

## 4 Conclusion

The main topic of this short paper has been the question of whether roots can directly take arguments. I have introduced and examined three arguments put forward by Harley (2014) in support of this position and have argued that they do not always line up or correlate as we might expect them to. In particular, if cross-categorical argument selection is an argument for directly combining a root with its argument and if optional inclusion in a pronominalization site is an argument for severing the two, then we would not expect these two phenomena to co-occur, contrary to fact. Similarly, if a high degree of flexibility is a diagnostic for detecting  $\sqrt{P}$ -based idioms, then we would expect such non-canonical meanings to survive cross-categorially, again contrary to fact. The (modest) goal of this contribution has thus been to cast some doubt on the claim that all three of the criteria put forward by Harley (2014) diagnose exactly the same

<sup>8</sup>For completeness’ sake, it is worth pointing out that the VoiceP-idiom in (18) does not have a nominal counterpart either (as predicted by H’s analysis). For the *vP*-idiom in (19) this prediction cannot be tested because the verb *omdoen* has no corresponding noun.

phenomenon. Instead, as already anticipated in Harley (2014, 22-23fn22), there might be more functional structure in between a root and its internal argument than is currently dreamt of in our theory.

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