A re-evaluation of Arad's argument for roots*

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1. Background

The overarching question we are concerned with in this paper is whether there are *category-neutral roots* in the syntax. In other words, whether there exist bona fide syntactic objects, which **(i)** correspond to the notion of 'root' familiar from morphology; and **(ii)** lack a syntactic category.

This paper will not deliver a decisive answer to this question. Our goal here is a more modest one: to re-evaluate the arguments in favor of an affirmative answer to this question advanced in Arad (2003, 2005). We believe it is worth revisiting this particular body of work because it has been extremely influential, is widely cited, and has played a crucial role in debates about locality restrictions on semantic and phonological interpretation (Borer 2009, Harley 2014a,b, Marantz 2013, among many others). It is for this reason that we consider such a re-evaluation valuable, even close to two decades after the publication of the original work. And we will argue that the claims in this work do not, ultimately, stand up to scrutiny.
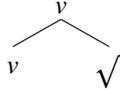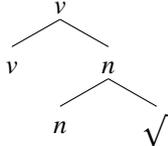
The conclusion will therefore be that if there are indeed category-neutral roots in the syntax, this has to be argued for on a different basis.

2. An overview of the argument in Arad (2003, 2005)

The central claim in Arad (2003, 2005), building on a proposal by Marantz (2000), is the following:

(1) CLAIM: There are *semantic* and *phonological* asymmetries between:
    a.   what can happen up to the first categorization of a root; and
    b.   what can happen higher up in the structure

To see this in more detail, let us consider (abstractly) the case of a root-derived (henceforth, *de-root*) verb on the one hand, versus the case of a de-nominal verb, on the other:

(2)   a.   De-root: b.   De-nominal:

$$\begin{array}{ccc} & v & \\ \diagup & & \diagdown \\ v & & \sqrt{} \end{array} \qquad\qquad \begin{array}{ccc} & v & \\ \diagup & & \diagdown \\ v & & n \\ & & \diagup\ \diagdown \\ & n & \sqrt{} \end{array}$$

Semantically, it is claimed that a root can acquire multiple idiosyncratic interpretations up to the first categorizing head (in this case, *v*), but that re-categorizing an already categorized stem (as in (2b)) will have a predictable interpretation. Specifically, the interpretation will have to be one that is directly based on the fixed interpretation of the already categorized stem.

Phonologically, it is claimed that a root may undergo idiosyncratic/non-productive phonological changes up to the first categorization, but that re-categorizing an already categorized stem (as in (2b)) will only result in predictable/fully-productive phonological changes (see also Marvin 2013).

As Arad notes, these claims, if true, can then be captured in terms of phase theory. In particular, if all categorizing heads are phase heads, and roots are bona fide syntactic objects whose first categorization

must take place in syntax (and not in any other component of grammar), then the semantic and phonological claims above follow from Chomsky's (2000, 2001) *Phase Impenetrability Condition* (PIC). That is because the semantics and phonology of the lowest categorized domain (*n*P, in the case of (2b)) cannot be altered after that phase has been spelled out.[1]

In what follows, we argue that the empirical claims reviewed here are incorrect. Specifically, we re-examine the kind of data in Hebrew and in English discussed in Arad (2003, 2005), and show that the predicted correlation between *attachment height* on the one hand, and semantic or phonological *predictability* on the other, does not pan out.

3. Hebrew

3.1. The semantic claim for Hebrew

According to Arad, the de-root and de-nominal morphology presented in the previous section correspond to two modes of word formation in Hebrew. We review them briefly before turning to Arad's semantic claim (the phonological claim will be discussed after the semantic claim, in Section 3.3).

The first mode of word formation is the so-called root-and-pattern morphology found more generally in Semitic languages, where a consonantal root is combined with a template to form a word. Arad's example in (3) shows the Hebrew root $\sqrt{sgr}$ in a variety of verbal and nominal environments. In (3a), this root is combined with the template CaCaC (where capital C stands for a consonantal slot), giving the verb *sagar*, which means 'close'.[2] In (3b), the template is hiCCiC and the verb is *hisgir*, which means 'extradite'. The remaining examples are of other words with the same three consonants.

(3) $\sqrt{sgr}$
      a.   CaCaC (v)   *sagar*   v, 'close'
      b.   hiCCiC (v)   *hisgir*   v, 'extradite'
      c.   hitCaCCeC (v) *histager* v, 'cocoon oneself'
      d.   CeCeC (N)   *seger*   N, 'closure'
      e.   CoCCayim (N) *sograyim* N, 'parentheses'

Arad analyzes root-and-pattern morphology as de-root morphology, where the root combines with a categorizing head that introduces the template. The proposed structures for the examples in (3) are given in (4), using a verbal *v* head that forms a verb and nominal *n* head that forms a noun.[3]

(4)   a.   De-root verb: b.   De-root noun:

On Arad's theory, these structures allow the root to acquire idiosyncratic interpretations. This is indeed the case in (3), as it is difficult to identify a core meaning for the root from which all the different meanings can be predictably derived.

The second way to create words discussed by Arad involves the creation of verbs (or other categories) from a noun rather than a root. Example (5) shows the noun *misgeret* 'frame' which seems to be de-root as in the previous examples, and the verb *misger* 'frame'.

(5) $\sqrt{sgr}$
      a.   miCCeCet (N) *misgeret* N, 'frame'
      b.   CiCCeC (v)   *misger*   v, 'frame'

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[1] Because the next categorizer is also, by hypothesis, a phase head, it does not matter in this regard whether we adopt the so-called "strong" or "weak" versions of the PIC.

[2] All Hebrew verbs in this paper are given in their unmarked inflectional form – the third person singular masculine in past tense. This will not be reflected in our glosses.

[3] We will ignore the question of how this derivation might proceed in the phonology. See Kastner (2019) for a possible implementation.

In this case, Arad claims that the verb is derived from the noun rather than from a combination of a root and a template. This claim is based on the observation that the templatic [*m*] of the noun *misgeret* carries over to the verb. There is no independent verbal template in Hebrew that begins with an [*m*] in which the root $\sqrt{sgr}$ can be placed to form the verb, so the noun can be the only source for the initial [*m*] of the verb.

On Arad's theory, this and other similar verbs are analyzed as de-nominal. The root first combines with a categorizing *n* head to form a noun, and then the resulting noun is combined with a *v* head to form a verb, giving the structure in (6).

(6)   De-nominal verb
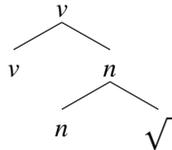
Since the verb *misger* is de-nominal, Arad's theory predicts that its semantics should be predictable from the meaning of the noun. This indeed seems to be the case, since 'frame' roughly means 'put in a frame', which is a possible general verbalization of the noun 'frame'.

Arad's empirical semantic claim for Hebrew, stated in (7), is that the correlation between attachment height and semantic predictability holds in Hebrew in general. This means that morphology that can be identified as root-and-pattern can have unpredictable interpretations, whereas other morphology must have predictable interpretations. In the specific case of de-nominal verbs, this means that the interpretation of the verb must be predictable from the meaning of the noun. We will now argue that upon a closer look at the Hebrew data, this claim does not hold.

(7)   CLAIM:
    a.   Root-and-pattern morphology can have an unpredictable interpretation.
    b.   Other morphology must have a predictable interpretation.

3.2. Problems with the semantic claim

We will argue that there are two kinds of problems with the main examples that Arad uses to support the empirical claim in (7). First, there is no support for the de-nominal status of some verbs with predictable semantics that are provided. They might also be de-root. The de-root status of verbs with predictable semantics does not contradict Arad's claim, because de-root verbs are allowed to have predictable semantics. Rather, it weakens Arad's claim, because it reduces the number of positive examples of de-nominal verbs with predictable semantics, and these are the verbs that support the asymmetry between de-root and de-nominal verbs.

The second type of problem is more serious. We provide examples where de-nominal verbs and adjectives in Hebrew, including ones discussed by Arad, have a meaning that is not predictable from the meaning of the noun. This directly contradicts the semantic claim, and challenges the theory that excludes idiosyncratic meanings above the first categorizing head.

3.2.1. First problem: no evidence that reported semantically predictable de-nominal verbs are de-nominal

For an example of the first kind of problem, consider the root $\sqrt{xzq}$ – one of Arad's leading examples – which can appear in a variety of adjectival, verbal, and nominal templates, as shown in (8). The resulting words have diverse meanings such as 'strong', 'hold', and 'maintenance'.

(8) √*xzq*

a.	CaCaC (A)	*xazaq*	A 'strong'	d.	CiCCa (N)	*xezqa*	N, 'power (*math*)'
b.	CiCCeC (V)	*xizeq*	V, 'strengthen'	f.	CoCeC (N)	*xozeq*	N, 'strengthen'
c.	hiCCiC (V)	*hixziq*	V, 'hold'	g.	taCCuCa (N)	*taxzuqa*	N, 'maintenance'

Consider now the noun *taxzuqa* 'maintenance' and the verb *tixzeq* 'maintain', given side by side in (9).

(9) √*xzq*

a.	taCCuCa (N)	*taxzuqa*	N, 'maintenance'
b.	CiCCeC (V)	*tixzeq*	V, 'maintain'

Arad claims that the verb is a semantically predictable de-nominal verb deriving from the noun. The reasoning is similar to the case of the verb *misger* 'frame', which we saw in Section 3.1, in the sense that the [*t*] of the verb *tixzeq* may be the templatic [*t*] from the noun *taxzuqa* that carries over to the verb. In addition, the meaning of the verb 'maintain' is close to the meaning of the noun 'maintenance'.

The problem with using verbs in the template tiCCeC as examples of de-nominal verbs is that this template exists independently, even when there is no corresponding noun with a templatic [*t*]. In (10), there are examples of words with the root √*ʃʔl*. As indicated in (10d), the verb *tiʃʔel* 'interrogate' has no corresponding noun in the language from which the [*t*] can carry over (e.g., there is no noun like *taʃʔula*, derived from the template taCCuCa and the root √*ʃʔl*).

(10) √*ʃʔl*

a.	CaCaC (V)	*ʃaʔal*	V 'ask'
b.	CCaCa (N)	*ʃeʔela*	N, 'question'
c.	tiCCeC (V)	*tiʃʔel*	V, 'interrogate'
d.	taCCuCa (N)	—	N, —

We conclude that verbs of the form tiCCeC are ambiguous between de-root and de-nominal morphology and therefore do not constitute positive examples supporting the correlation between attachment height and semantic predictability.

3.2.2. Second problem: de-nominal verbs and adjectives with unpredictable meanings

The second, more serious problem can be exemplified with the root √*xzr*, which occurs in the list of words in (11) (among other words).

(11) √*xzr*

a.	CaCaC (V)	*xazar*	V, 'return'
b.	CiCCer (V)	*xizer*	V, 'court'
c.	CCaCa (N)	*xazara*	N, 'rehearsal'
d.	maCCoC (N)	*maxzor*	N, 'cycle'
e.	CiCCeC (V)	*mixzer*	V, 'recycle'

The verb *mixzer* 'recycle' is given by Arad as an example of a semantically predictable de-nominal verb derived from the noun *maxzor* 'cycle'. Here the claim that this is a de-nominal verb is sound for the same reason that the verb *misger* 'frame' we discussed in Section 3.1 was de-nominal: there is no other source for the initial [*m*] other than the corresponding noun. But here the semantic claim does not go through, since the meaning of the verb 'recycle' is not predictable from the meaning of the noun. Like its English counterpart, *mixzer* can be used when talking about the conversion of waste to reusable material, or about reuse more generally (e.g., reuse of a text), but its use is limited to the particular concept of 'reuse'. In contrast, the noun *maxzor* 'cycle' can be used in variety of contexts, listed in (12), but none of them has to do with reuse.

(12)   Meanings of the noun *maxzor*[4]

     1.cycle

     2.session (summer camp, cycled program)

     3.year (of students)

     4.series

     5.menstrual cycle, period

     6.(Jewish ritual) festival prayer book

     7.circulation (currency)

     8.volume (of trade)

     9.(mathematics) infinite repeating decimal

     10.(business) turnover

A possible response to this argument is that speakers infer the narrow meaning 'recycle' from context, given a *v* head that has the general semantic contribution 'X' $\mapsto$ 'put Y in X' when combined with the noun 'cycle'. On this view, *mixzer* means 'put Y in a cycle', and from 'put a paper in a cycle', when uttered in the right context, speakers infer the narrow meaning 'recycle'. This account incorrectly predicts that *mixzer* can have other, comparably specific meanings when these are made salient. For example, *mixzer sefer* 'recycle a book', which on this account would mean 'put a book in a cycle', would be predicted to permit the meaning 'he returned a book to the library' when uttered in a context that makes the library checkout-and-return cycle salient. But this is not so: the phrase only has the same narrow meaning as the English phrase 'recycle a book'. We conclude from this example that de-nominal verbs can have unpredictable semantics, a conclusion that directly contradicts the main semantic claim.

    Another example that poses a similar problem is the adjective *yalduti* 'childish' from the root $\sqrt{yld}$, given by Arad as an example of a semantically predictable de-nominal adjective. This root occurs in a variety of templates, as shown in (13).

(13) $\sqrt{yld}$

a.	CiCoC (N)	yilod	N, 'newborn'
b.	CCuCa (N)	yeluda	N, 'birth rate'
c.	CCeCa (N)	leda	N, 'childbirth' (initial *y* drops)
d.	CaCiC (N)	yalid	N, 'a native'
e.	CeCeC (N)	yeled	N, 'child'

While Hebrew morphology is mostly non-concatenative, there are some suffixes that follow the stem linearly. Arad illustrates with the noun *yeled* 'child' and some of its derivatives in (14).

(14)   *yeled*[5]

a.	$\sqrt{yld}$ + CeCeC (N)	yeled	N, 'child, boy'
b.	yeled + ut	yaldut	N, 'childhood'
c.	yeled + ut + i	yalduti	A, 'childish, pertaining to childhood'
d.	yeled + ut + i + ut	yaldutiyut	N, 'childishness'

The adjective *yalduti* 'childish' seems to be derived from the noun *yaldut* 'childhood' through the addition of the productive adjectivalizing suffix *-i*. According to Arad, its meaning, 'childish', can be paraphrased as 'pertaining to childhood', and therefore can be said to be semantically predictable from the meaning of the noun *yaldut* 'childhood'. However, like in English, the Hebrew word for 'childish' has a subtly narrower meaning than 'pertaining to childhood'. For example, referring to a disease common during the period of childhood as a childish disease (#*maxala yaldutit*) is not possible in Hebrew, but it is incorrectly

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[4] The list of meanings is taken from the online Hebrew-English dictionary Morfix (https://www.morfix.co.il).

[5] On the traditional account of the noun *yeled*, its underlying representation is /*yald*/, which remains unchanged under suffixation. Here we follow Arad's presentation and ignore the phonology responsible for the alternation between *yald-* and *yeled*. As far as we can tell, this does not affect our main claim.

predicted to be possible if *yalduti* means 'petaining to childhood'. This suggests that 'childish' is semantically derived from 'child' rather than from 'childhood', and therefore that the meaning of the de-nominal adjective *yalduti* is not predictable from the meaning of the noun it is derived from, in direct contradiction with the semantic claim.

3.2.3. Hebrew: interim conclusion

We have seen two types of problems with the semantic claim, basing our discussion on examples provided by Arad. First, some reported de-nominal verbs (specifically, in the template tiCCeC) are ambiguous between de-root and de-nominal morphology and therefore cannot provide positive support for the claim even when their meaning is predictable from the meaning of the noun. Second, there are direct counterexamples to the claim, in the form of de-nominal verbs and adjectives with a meaning that cannot be derived from the meaning of the noun.

These problems go beyond the examples discussed in this paper. The challenge of templates that are ambiguous between de-root and de-nominal morphology is more general and also holds for templates of the form ʔiCCeC and ʃiCCeC, which are ambiguous in the same way that tiCCeC is. Another set of verbs with predictable semantics provided by Arad are loanwords like *ibstrect* 'make abstract' (from the noun *abstract* 'abstract'), which have been argued by Bat-El (1994) to be de-nominal on phonological grounds. As recent borrowings, loanwords might not have had enough time to acquire idiosyncratic meanings, so we believe that they do not provide strong support for the claim. This state of affairs makes it difficult to argue for the semantic claim in Hebrew more generally.

3.3. The phonological claim for Hebrew

To support the phonological claim, Arad argues that phonological processes like *n*-deletion in Hebrew idiosyncratically apply in de-root but not in de-nominal verbs. She discusses contrasts as in (15), where pre-plosive *n*-deletion applies in the verb *hicil* 'save', which is argued to be de-root, but not in the verb *hinciax* 'make eternal', which is argued to be a de-nominal verb deriving from the noun *necax* 'eternity'.

(15)		Root/Base		Pattern	Verb	
	a.	$\sqrt{ncl}$	-	hiCCiC	*hicil*	v, 'save'
	b.	*necax* (N)	'eternity'	hiCCiC	*hinciax*	v, 'make eternal'

This supposed correlation between attachment height and the idiosyncratic application of a phonological process faces two problem. First, the verb *hinciax*, which should be de-nominal for the correlation to hold, has a narrow meaning that cannot be predicted from the meaning of the noun *necax*, as it specifically refers to the concept of 'commemoration'. If I ask you, say, to "eternalize a disaster" (like an earthquake) using the analytic form *laasot nicxi*, 'make eternal', my request is that you find a way to make the disaster last forever. If I ask you to eternalize a disaster (like an earthquake) using *hinciax*, my request is that you make sure that the disaster is remembered forever, perhaps by performing a yearly ceremony. The second problem has to do with the assumption that the verb *hicil* 'save' is derived from the root $\sqrt{ncl}$. This assumption is confounded by the existence of the Hebrew noun *nicol* 'survivor', whose meaning is close to the meaning of the verb. We are not aware of evidence suggesting that the verb is derived from the root rather than that noun.

To summarize our response to the phonological claim regarding the correlation between *n*-deletion and attachment height presented by the contrast in (15), there is no good evidence for the assumption that the verb *hicil*, in which deletion applies, is indeed de-root. As for the verb *hinciax*, if it is de-root, then it does not support the correlation because deletion does not apply to it. If, alternatively, *hinciax* is de-nominal, then while supporting the phonological claim its unpredictable semantics would contradict the semantic claim. Our conclusion is that the facts of *n*-deletion do not support the phonological claim in the language. As before, we believe that the challenge goes beyond the examples discussed here and points at a general problem in arguing for a correlation between attachment height and predictability in Hebrew.

4. English

Arad's arguments from English mirror those from Hebrew, but once again, we argue that the actual patterns of data do not support the hypotheses as claimed. These arguments focus on verb-noun pairs that are homophonous, a common and productive phenomenon in English. Once again, these pairs are claimed to fall into two classes that differ in both semantic and phonological behavior:

(16)   a. some homophonous V~N pairs result from distinct categorizations of a category-neutral root (*de-root verbs, de-root nouns*)
b. others result from application of a null categorizing morpheme to a pre-categorized base (*de-nominal verbs, de-verbal nouns*).

We discuss the semantic claim first. Arad notes that in certain cases, the semantics of the verb and noun deviate unpredictably. Specifically, she follows Kiparsky (1982a,b) in noting the existence of homophonous pairs in which the N alternant names an object, but the V alternant is not limited to describing a situation involving that object — claimed to be a sign that both alternants are independently derived by categorizing a category-neutral root as a noun or verb.

(17)   CLAIM: De-root → N meaning not necessarily contained in V meaning (*building on Kiparsky 1982a,b*)
a.   I paddled the canoe with a copy of *The New York Times*.
b.   String him up with a rope!
c.   She anchored the ship with a rock.
d.   He hammered the nail with a rock.

By contrast, still building on Kiparsky (1982a,b), another class of homophonous N~V pairs are claimed to lack this semantic freedom. Instead, the semantics of the N alternant must be a subconstituent of the semantics of the homophonous V — claimed to be a sign that the verb in such pairs is derived from an already categorized noun:

(18)   CLAIM: De-nominal → N meaning contained in V meaning (*still building on Kiparsky 1982a,b*)
a.   *She taped the picture to the wall with pushpins.
b.   *They chained the prisoner with a rope.
c.   *Jim buttoned up his pants with a zipper.
d.   *Screw the fixture to the wall with nails!

The semantic contrast between these two classes of alternations is claimed to correlate with a phonological contrast, in a now-familiar fashion. Those N~V pairs claimed to be de-root because they tolerate semantic discrepancies also tolerate a phonological discrepancy in the form of a stress difference. By contrast, those pairs claimed to involve derivation of the V from an already categorized N show no stress difference; the verb inherits its stress from the corresponding noun:

(19)   CLAIM: De-root → stress difference

	V	N		V	N
a.	combíne	cómbine	e.	projéct	próject
b.	deféct	défect	f.	rebél	rébel
c.	subjéct	súbject	g.	condúct	cónduct
d.	recórd	récord	h.	prodúce	próduce

(20)   CLAIM: De-nominal → stress inheritance
díscipline, cóntact, dócument, expériment, bálance, cómment, hérald…(V & N)

We believe, however, that both the semantic and phonological sides of this argument should be understood differently, leaving no argument from these facts for the de-root vs. de-nominal distinction proposed by Arad. Once again, we begin with the semantic side of the argument. Though the contrast between (17) and (18) is real, it has a different source. Though scotch tape need not be used in order for an event to

be described as the *taping* of one object to another, *stickiness* must be relevant. Likewise, an event of *chaining* need not require a manufactured object called a *chain*, but there must be catenative structure to the fetter. To qualify as an act of *buttoning*, there must be a buttonoid linker between two flattish items, even if the linker was not created in a *button factory*. Finally, one is not *screwing* one object to another unless rotation is a crucial part of the attachment process, even if one is improvising by not using an item called a *screw* purchased in a hardware store. When these criteria are met, it is not required that the item conventionally named by the homophonous noun actually be a participant in the event invoked by the verb, as the contrast between (18) and (21) below shows. See Harley & Haugen (2007) for very similar observations (discussed also by Bleotu & Bloem 2020).

(21) a. She taped the picture to the wall with sticky yucca leaves.
      b. They chained the prisoners together with a vine.
      c. Jim buttoned up his shirt with paper clips.
      d. Screw the fixture to the wall with this bonsai pinecone!

Crucially, very similar requirements hold of the allegedly de-root verbs in (17):

(22) a. *I paddled the boat with an outboard motor mounted on the stern.
      b. *String him up with a thumbtack!
      c. *She anchored the boat by rowing against the current.
      d. *He hammered on the door with a strand of cooked spaghetti.

It is, of course, a fascinating and important task to understand what attribute of the object denoted by the noun is also crucial to the meaning of the verb in homophonous N~V pairs. Our much more modest goal here is simply to observe that there is no evidence that the mystery is any different in nature for *tape/chain/button/screw* than it is for *paddle/string/anchor/hammer*. We see no evidence for distinct classes of N~V pairs in the data discussed by Arad.

We believe that the phonological side of the proposal faces difficulties of comparable severity. Though there is indeed a contrast between stress-shifting N~V pairs and those with identical stress in both forms, initial stress is also observed in nouns clearly derived from end-stressed forms that are already categorized as verbs.

The forms in question are verb-particle combinations, which also have segmentally homophonous nominal counterparts. Crucially, these pairs show (what appears to be) the same stress shift as the alleged de-root pairs in (19) above:

(23) Verb-particle V~N pairs

	V	N			V	N
a.	screw úp	scréw-up	e.	sit ín	sít-in
b.	try óut	trý-out	f.	tear dówn	téar-down
c.	send óff	sénd-off	g.	show óff	shów-off
d.	run awáy	rúnaway	h.	throw úp	thrów-up (child speech)

The semantics of these pairs is also often unpredictable in a manner reminiscent of Arad's claim concerning de-root derivation. While the verbs in the pairs below have compositional (as well as some other) meanings, the nouns are more or less limited to the meanings indicated (which in some cases, such as *push-over* are entirely unavailable to the verb).

(24) Verb-particle V~N pairs: semantic idiosyncracies

	V	N	
a.	push óver	púsh-over	'someone who is easily coerced'
b.	read óut	réad–out	'data acquired from a visual display'
c.	come dówn	cóme-down	'loss of status'
d.	send óff	sénd-off	'sentiments communicated on the occasion of a departure'
e.	drive ín	dríve-in	'restaurant or cinema where customers stay in their cars'
f.	run awáy	rún-away	'someone who left their family or institution without permission'

By Arad's criteria, this N-particle~V-particle alternation must represent independent de-root nominaliza-

tion and verbalization, since we see distinct phonology and unpredictable semantics across the alternation. As far as we can tell, however, the non-nominal member of the pair (virtually) always has a use in English as a verb-particle combination. There is a noun *rámp-up* because there is a verb-particle combination *to ramp úp*. There is no **lámp-up* because there is no verb *to lamp úp*.[6] Likewise there is the noun *páy-off* and a corresponding verbal form *to pay óff*, but no noun **dáy-off* because there is no verb **to day óff*. Likewise, given the absence of corresponding (particle-stressed) verbs:[7]

(25)   a.   *That's a real éar-off.
       b.   *He's quite a flúte-away.
       c.   *It was a terrible gláss-up.
       d.   *Let's go to the cár-out.

This suggests that the claim of a correlation in English between de-root status, stress-shift, and semantic unpredictability among homophonous N~V pairs is incorrect — and that despite the stress shift and semantic unpredictability, this alternation involves *nouns zero-derived from fully categorized verbs*.

Furthermore, and crucially, the very verbs claimed to be crucially de-nominal and *not* de-root can themselves be combined with a particle and nominalized with a stress shift and sometimes unpredictable semantics — an ordering paradox if stress shift and unpredictable semantics diagnose de-root N~V alternations. The following are examples from the web.[8]

(26)   Stress-shift with claimed de-nominal verbs

       a.   *30 Tape Up Haircuts for a Provocative Fresh Look:* The countless hours of research we spent looking at photos of what people on the internet call a "**tape up**".
       b.   *2018-2019 Chain Up Information - Len Dubois Trucking:* How to avoid getting stuck in the middle of a **chain up** warning. The Mountain States all have potentially dangerous winter driving conditions…
       c.   *Men's Button Down Shirts — Target:* Target has the **Button Downs** you're looking for at incredible prices.
       d.   *Customer Questions Answers - Amazon.com* How is this motor coupler installed? Is this a **screw-in** that requires access to motor?

Once again, it seems that there is no actual correlation between stress shift and idiosyncratic semantics in English homophonous N~V pairs, eliminating the argument for de-root derivation contrasted with de-nominal and de-verbal derivation.[9]

This raises anew, of course, the question of why some pairs show a stress shift, while others like the examples in (20) do not.[10] Kiparsky (1982a,b) proposed that when stress shift is observed in examples like

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[6] Indeed, it is our subjective judgment that if the context creates a nonce form such as a verb *to lamp up* (meaning, perhaps, to fill a room with lamps), the corresponding noun (with initial stress) would be acceptable as well.

[7] We are aware of only a very few counterexamples. One is the British *bálls-ùp*, defined as "a bungled or badly carried out task or action; a mess", which has no corresponding verb+particle alternant, and in fact has a nominal plural as its first component. Another is *chín-ùp*, as the name of an exercise, perhaps coined on the model of *púsh-up* and *púll-up*, also exercises, but not counterexamples to the claim that noun+particle combinations have verbal counterparts.

[8] Of course stress was not marked in the web occurrences of these examples, but we are quite sure that the relevant forms are pronounced *tápe-up, cháin-up, bútton-down* and *scréw-in*.

[9] It is important to distinguish noun+particle combinations from collocations in which a noun is modified by a single-word directional adverbial: *the wày oút, our jòurney hóme, my dày óff* in the sense 'my non-workday'. Neil Myler (personal communication) also notes the possibility of non-reduplicative *-able* adjectives with stranded prepositions, which show initial stress, but once more should be distinguished from verb+particle constructions: e.g. *the house is líveable ìn*.

[10] Karlos Arregi and Donca Steriade (personal communications), as well as a WCCFL reviewer have suggested that the *nóun-particle* stress pattern might result from an entirely different process than whatever yields the alternations in (19) — namely, the English compound stress rule. This rule also yields initial stress in two-word compounds (*dóg leash*). If noun+particle were generated independently from verb+particle combinations, it is possible that the stress pattern of the nouns in (24) and (26) might result from the compound rule instead. Our observation that noun+particle combinations almost always have verbal counterparts already militates against independent generation, of course — as does the observation that the semantics of the nominal alternant almost always builds on the semantic idiosyncracies of the verbal variant, despite the measure of unpredictability discussed in the text. Also probably relevant is the fact that

those in (19), the verb is basic, and the noun derived from it, while when no stress shift is observed as in (20), the noun is basic, and the verb is derived from the noun. Like Arad, he posits a derivational distinction between these processes, with V→N derivation applying at "Level 1" of a level-ordered morphology, and N→V derivation at "Level 2". One might imagine updating such a proposal with "Level 1" processes preceding and "Level 2" processes following a phase boundary, and then searching for new reasons why the phonology might be sensitive to this architecture. Our goal in this section has been more modest: to establish merely that this boundary is not the locus of part-of-speech categorization, since verbs are verbs both below and above this boundary.

5. Conclusion

We have shown that the empirical claims in Arad (2003, 2005) are not convincingly supported by the data. In particular, the claimed correlation between idiosyncratic and unpredictable semantics and phonology on the one hand, and root-derived ("de-root") status on the other, does not seem to be borne out, both because of confounds in examples that were given as positive support for the correlation, and because of counterexamples that directly contradict it. We therefore conclude that these arguments, at least, fail to support the existence of category-neutral roots in the syntax.

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to the extent that overt nominalizing morphemes are possible in particle constructions (with the well-known puzzle of affix reduplication), they preserve the verbal stress pattern: *pìcker-úpper, pùtter-dówner, pìssed-óffedness*. This suggests some property specific to zero derivation is at stake in the stress shift under discussion, not the compound stress rule.