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Denominal Verbs: Past Tense Allomorphy, Event Frames, and Zero-Categorizers

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Abstract

This study discusses ‘recategorized’ verbs that are derived from nouns, focusing on those that have no overt categorial morphology. On the basis of evidence from past tense inflection with privative locatum verbs, I argue that the event structure can select for nouns rather than roots, and that this is another potential source of obligatory recategorization beyond determination of meaning for the root. I also dispute the empirical generalizations of Borer (2013), whose theory disallows zero-derived recategorization altogether.

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1 Introduction

Denominal verbs lie at the crossroads of categorization, event structure, morphology, and the lexicon (Clark and Clark 1979; Kiparsky 1982, 1997; Pinker and Prince 1988; Hale and Keyser 2002; Arad 2003; Rimell 2012; McIntyre 2015, among many others). Descriptively speaking, denominal verbs have a nominal counterpart from which they appear to be derived.¹



Something like the difference in (1) exists in various theories, such as Lexical Phonology and Morphology (e.g., Kiparsky 1982), Lexicalist approaches (e.g., Lieber 2004; Bauer et al. 2013), Distributed Morphology (e.g., Arad 2003; Embick and Marantz 2008), Dual-Route models (e.g., Pinker and Prince 1988), and the Exoskeletal Model of Borer 2005, 2013. Most theories allow (1b) or something equivalent in cases of 'zero-derived' recategorization, where a change from noun to verb is not signaled by additional overt morphology.

This means for an apparently 'monomorphemic' verb, whose root is the only overtly realized morpheme, that there can be (at least) two structures, corresponding to (1a) and (1b):



If both structures are available, then the question arises as to what can dictate the use of the more complex (1b). In this paper, I discuss how and when past tense allomorphy reflects recategorization, and explore one potential explanation for why (1b) is invoked instead of (1a). In Section 2, I provide background on irregular past tense inflection and categorizers. In Section 3, I argue that the 'event frame' can also influence past tense allomorphy, offering evidence that *privative locatum* verbs necessarily bear regular inflection in the past tense. I account for this in terms of syntactic selection of *n* by the functional structure that composes the event frame. The analysis makes use of null categorizing heads to explain the obligatoriness of regular past tense inflection. In Section 4, I consider the challenges to zero-derived recategorization from Borer (2013), whose architecture rules it out altogether (2b). I point out particular flaws with the empirical basis for her arguments, concluding that zero-derived recategorization indeed exists. Section 5 concludes.

2 Past Tense Allomorphy and Categorizing

It has long been recognized that in English, a verb is not identified merely by its phonology for the purposes of determining whether it takes irregular inflection for past tense (e.g., Kiparsky 1982; Pinker and Prince 1988). Different 'senses' of the same verb form can diverge in past tense allomorphy (3), with one irregular and the other regular.

*I would like to thank several people whose insight was valuable during the course of this project, including Kajsa Djärv, Milena Šereikaitė, Ava Irani, and David Embick. None of these people are to blame for any errors or faults herein, which are all my own.

¹See Plag 2003 for intuitions about the direction of derivation between zero-related nouns and verbs.

- (3) a. Mary strung the guitar. b. John stringed the snap peas.

This is, however, not the norm. In general, different senses of the same verb fold together in their irregular inflection.

- (4) a. held/*holded the pencil
 b. held/*holded the table for the group
 c. held/*holded true
- (5) a. stood/*stood on top of the hill
 b. stood/*stood someone up
 c. stood/*stood the test of time

The latter pattern follows naturally from shared identity of a verbal root across its different senses. Past tense allomorphy is conditioned by the root $\sqrt{\text{HOLD}}$, but is blind to the sense in which the root is used. The same root $\sqrt{\text{HOLD}}$, irrespective of sense, requires irregular past tense inflection.

(3) and (4) tell ostensibly conflicting stories, and reconciling the two is a matter of theoretical significance. Why should there ever be allomorphic divergence (as in (3)) if past tense allomorphy is blind to the sense in which the verb is used?

The received view is that this kind of allomorphic divergence can be the result of recategorization of one of the senses, which prevents a root from influencing past tense allomorphy, yielding a default form of the past tense (e.g., Pinker and Prince 1988; Embick 2010). In Distributed Morphology (DM), this is enforced through locality. In Embick 2010, for example, category-defining heads like *n* and *v* are cyclic; a $\sqrt{\text{ROOT}}$ and tense node T will have their allomorphy determined in the same cycle if one cyclic head (*v*) is present, but not if two (*n* and *v*) are present. For a recategorized verb, the $\sqrt{\text{ROOT}}$ and T are not present in the same cycle, and therefore the $\sqrt{\text{ROOT}}$ is not visible to T. In the absence of conditioning factors within its cycle, T is realized with the default past tense exponent *-ed*. This theory thus prohibits recategorized verbs from taking a non-default allomorph, because the root and T[+past] are not local to each other past two categorizing heads.

Beyond recategorization, some researchers assume or argue that divergences with the same root (e.g., *shone/shined*, *burnt/burned*) are conditioned by other grammatical factors, such as transitivity (Kroch 1994) or *aktionsart* (Huang and Pinker 2010). These factors, however, differ from recategorization in that their effects on past tense allomorphy can be variable. For example, a non-categorical correlation between transitivity and the choice of past tense form is evident for *shined/shone* (Adamson 2017), which in COCA exhibits greater frequency of the irregular *shone* with the transitive than with the intransitive.²

Consider also *burnt/burned*, whose choice of past tense form, according to Huang and Pinker (2010), stems from the interaction between *aktionsart* and verbal sense. Participants in Huang and Pinker's experiment rated the 'prototypical sense' of *burn* (e.g. *to burn toast*) as fitting into the categories of 'moment' or 'action' change (essentially, as either an achievement or accomplishment) more appropriately than other extended senses (e.g. *the fire burnt*), which were rated as being more state-like. Correlated with this difference in *aktionsart* was the rating of irregular past tense (out of 1-7), which was perceived as being more acceptable for the prototypical than the extended sense.

- (6) Every week, I will burn my toast while watching TV and talking on the phone.
 a. Moment change (4.7) and action change (4.5) rated higher. State (1.5) rated lower.
 b. Irregular *burnt* (5.4) > regular *burned* (4.8).
- (7) Next winter, a fire will always burnt in the hearth to keep the house warm.
 a. Moment change (2.4) and action change (3.6) rated lower. State rated higher (3.5).
 b. Irregular *burnt* (2.7) < regular *burned* (6.0). (adapted from Huang and Pinker 2010).

More research is needed to determine the precise factors involved in these variable cases. What is clear, however, is that they are unlike the cases like *stringed/strung* examples, which are categorical. In DM, this can be reflected in the architecture: cyclicity categorically prohibits irregular past tense forms of recategorized verbs, but allomorphic sensitivity to other factors such as transitivity or *aktionsart* can be local and the choice between two forms can in principle be variably encoded.

²For example, the choice of regular *shined* over irregular *shone* is more frequent in COCA for the transitive expression 'SHINE * light' (44.25%) than the intransitive expression 'light SHINE' (8.95%) (Adamson 2017).

Returning to the topic of recategorization, many theories assume, sometimes implicitly, that categorization is linked to the determination of meaning for a root (e.g., Arad 2003). This is essentially true for all theories whereby zero-derived recategorization is possible: a verb is derived from a noun when the meaning of the verb depends on the meaning of the noun. This can give rise to divergence in past tense allomorphy, because a recategorized verb cannot bear irregular inflection (8a), even if there is a corresponding ‘underived’ verb that does (8b). That the allomorphy facts fall out from recategorization and not semantic relatedness receives some support from the experimental results of Kim et al. 1991 and Huang and Pinker 2010, who distinguish between the two potential factors.

- (8) a. Bob and Margaret were early, so I quickly boxed the plates and *sinked*/**sank* the glasses.
b. When I saw Bob and Margaret carrying six boxes, my hopes *sank*/**sinked* instantly.
(Kim et al. 1991:185)

The idea is that *sank* is not licit in (8a) because the verb is derived from the noun, and therefore it yields default past tense exponence. Huang and Pinker (2010) confirm that irregular past tense allomorphy is not blocked by semantic distance from a prototypical sense, but actually by categorial change, as exemplified in cases like (8). An implicit assumption is that this type of categorial derivation is necessary because the nominally-based semantics of the verb requires constructing the verb from the noun.

But should the verb in (8a) have to be derived from the noun if the nominal semantics can be available without a nominalizing head (as in 1a)?

There are several approaches that allow ‘noun-like’ meanings without recourse to recategorization; I identify three here. The first is that of Kiparsky (1982; 1997), who takes verbs not derived from nouns to be able to have ‘attenuated’ or ‘bleached’ nominal semantics, as in *to shelve a book on a windowsill* or *buttering a piece of toast with margarine*. The adjuncts in such examples show that the verb need not involve a literal use of the corresponding noun, as an event of shelving need not involve a literal shelf and an event of buttering need not involve literal butter. Kiparsky suggests that in true cases of recategorization, there is an entailed involvement of the corresponding noun.³ This distinction therefore allows noun-like meanings in the absence of anything labeled ‘noun,’ but suggests there is a contentfulness difference between recategorized and not in terms of ‘noun-like’ meanings. Kiparsky (1997) also identifies a correlation with morphology, suggesting that truly denominal (‘recategorized’) verbs ‘must show weak inflection.’

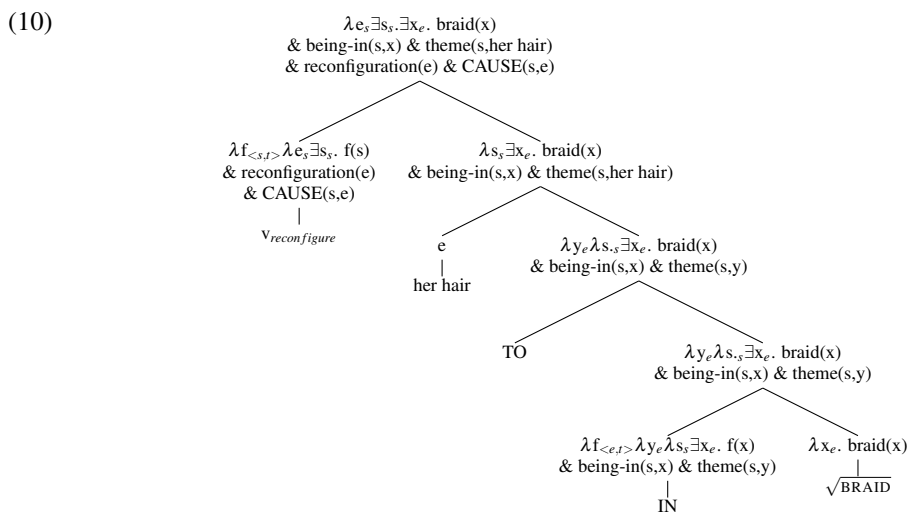
The second approach is that of Levinson (2007; 2010; 2014). This account endows roots with denotational semantics, allowing a root with an ‘entity’ type to be verbalized in a Hale and Keyser 2002-inspired fashion; the root originates in a prepositional phrase and incorporates into the verb (10). Levinson demonstrates that verbs in the ‘root creation’ class (e.g., *braid*, *tie*, *pile*, *chop*, *slice*, and *ground*) can be modified by what she calls ‘pseudo-resultatives,’ which are adjectives to the right of the object expressing something about the verbal root and not the object. For example, *to braid her hair tight* means that the caused state is one in which there are tight braids rather than tight hair. This modification of *braid* is permitted because the root, coming from the domain of individuals, can be modified by an adjective (also from the domain of individuals) via predicate modification.

Irregular past tense allomorphy is still available for root creation verbs in English; this suggests the verb is not nominalized prior to being verbalized, as this would necessarily yield default *-ed* morphology.

- (9) a. He *ground*/**grinded* the coffee fine. (Levinson 2007:107)
b. Mary *cut*/**cutted* the cake thin.

If we embrace Levinson’s proposal (10), we have to acknowledge that a nominalizing head *n* is not needed for the ‘nominal’ meanings of root creation verbs such as *braid*, *chop*, *cut*, *grind*, *pile*, *slice*, and *tie*.

³See Harley and Haugen 2007 and Dowd 2010 for critical discussion of Kiparsky’s tests.



The same logic applies to the third approach. Harley (2005) proposes that unergative verbs, such as those of bodily emission (*bleed*, *drool*, *sweat*), are built by incorporating a root from an object position into the verb.⁴ These verbs, too, can be irregular (*bled*, *sweat*), again suggesting the absence of *n*. If we take this incorporation analysis to imply that the root retains an entity meaning of ‘fluid’ then we are again acknowledging that this entity meaning is available independently of the head *n*.

If ‘nominal’ semantics are available without a nominalizing head for semantically complex ‘contentful’ things (such as *grinding* or *foaling*), we need a finer-grained account of what aspects of contentfulness correlate with categorization. The possibility explored in the next section is that it is not only contentfulness properties of the nominal that are relevant, but also properties of the event predicate.

3 Event Frame

Recategorization may or may not be obligatory for complex ‘nominal’ root semantics, which raises the question of what actually does trigger it. Here I explore the possibility that the ‘event frame’ (e.g., *locatum*, *location*, *privative*) matters for irregular past tense inflection. There are at least two possibilities. The first is that a particular event frame universally employs regular-inflected verbs, perhaps because the composition of the event structure necessitates recategorization from a noun. The second is that there is a canonical event frame for an irregular verb, and alternative frames lose irregular inflection. For reasons of space, I consider only the first, focusing on *privative locatum* verbs.

Privative verbs are used when one object is removed from another; for privative locatum verbs, the removed object is identified with the verbal root and the removed-from object is identified with the theme (*skin the rabbit*, *scale the fish*, *dust the shelf*; Clark and Clark 1979:770). Notice first that the list of ‘Pit Verbs’ from Levin 1993, which consists of privative locatum verbs, contains no examples of irregular-inflected verbs, even though a subset of the verbs (*gut*, *pit*, *dust*) have a phonological profile similar to other irregular verbs (bolding mine).⁵

- (11) Pit Verbs: bark, beard, bone, burl, core, gill, **gut**, head, hull, husk, **lint**, louse, milk, peel, pinion, pop, **pit**, pith, **pod**, poll, pulp, **rind**, scale, scalp, **seed**, shell, shuck, skin, snail, stalk, stem, stone, **string**, tail, tassel, top, vein, wind, worm, zest (Levin 1993:103).

Strikingly, privative verbs prefixed with *de-* (most of Levin’s ‘Debone Verbs’) cannot bear irregular inflection, either. A caveat is that *de-* has at least three different event frames with which

⁴Though see Rimell 2012 for arguments against this analysis.

⁵See, for example, Pinker and Prince’s (1988) list of TD verbs. Note that the privative use of *string* is regular while its other senses are irregular (3).

it is associated: ablative (*debus, deplane*), reversative (*demilitarize, desegregate*), and privative (*defrost, defat*) (Kastovsky 2002:102). Reversatives and privatives are sometimes difficult to tell apart, though there are clear cases in which a reversative meaning is available but a privative meaning is not, as in, for example, change of state predicates (*defreeze, deredden, desaturate*). For all clearly reversative cases with *de-* and *un-*, I have found no examples of regular inflection where irregular would be expected. In contrast, privative locatum verbs with *de-* are always regular without exception.

- (12) Reversative *(ir)regulars
- The toy was completely broken, but then Mary de-broke/*de-broke it.
 - The workers built the building, realized they had done it incorrectly, and subsequently de-built/*de-built it.
 - It was as if the plants grew, noticed that they were too tall, and then de-grew/*de-grew.
- (13) Privative locatum (*ir)regulars
- The paper had too many line breaks, so I de-broke/*de-broke it.
 - We hated the catches in both of the sinks, so we de-catched/*de-caught both and put in new ones.
 - John de-stringed/*de-strung the snap peas.

There is one putative counterexample: the verb *hamstring*, which has a privative sense meaning “to cut the hamstrings of,” though it is common to use it to mean to “cripple, destroy the activity or efficiency of” (OED). The OED lists both the irregular *hamstrung* and the regular *hamstringed* as forms for the past tense, but does not comment on any conditioning factors for preference between the two. In my consultants’ judgments (and in my own), the privative sense is only possible with the regular-inflected *hamstringed*, and is impossible with the irregular *hamstrung*. This is brought out further with *de-*prefixation, which gives a reversative meaning for the second sense (‘uncripple’) but reinforces privativity with the first sense (‘remove the hamstring’). As expected, the reversative preserves irregular inflection, and the privative stays regular. Thus *hamstring* does not constitute a real counterexample.

- (14) a. Mary de-hamstringed/*de-hamstrung the horse.
b. The bill de-hamstrung/*de-hamstringed the markets suffering from monopoly control.

This difference between reversatives and privatives with respect to irregular inflection intuitively reflects the role of the negative prefix *de-* in each. That is, reversatives are identified with ‘undoing’ events that are the opposites of their verbal counterparts, whereas privatives are identified with the removal of the entity identified by the verbal root (e.g., $\sqrt{\text{PIT}}$). This pattern follows from the nature of the base to which *de-* is prefixed: verbal for reversatives but nominal for privatives.

One last piece of evidence that privative locatum verbs must be regular comes from the the status of *stringed/strung*. Kiparsky (1982) notes that the locatum use of *string* has ‘bleached’ semantics (e.g., *string up with a rope*) and is irregular (*strung*), suggesting it is not derived from a noun. The irregular past tense form and the past participle are *not* limited to locatum/ornative uses, as seen in (15), however, the privative locatum use of *string* is necessarily regular. The irregular past tense and participle forms in fact occur in several different frames, yet the privative locatum use of *string* cannot take irregular inflection.

- (15) a. I strung him up with a rope. (Kiparsky 1982:9).
b. I strung the guitar.
c. ...ten thousand men, strung over a large extent of country.
The Great Boer War, Sir Arthur Conan Doyle.
d. ...as we strung along the narrow path in single file.
The Cruise of the Midge, Michael Scott.
- (16) a. Mary (de-)stringed/*strung the snap peas.
b. Mary de-stringed/*de-strung the cello.⁶

⁶A similar reversative is available for instruments, but in this case, prefixation with *un-* is preferred. As expected, with the *un-* form, it is well-formed as *unstrung* and not **unstringed*.

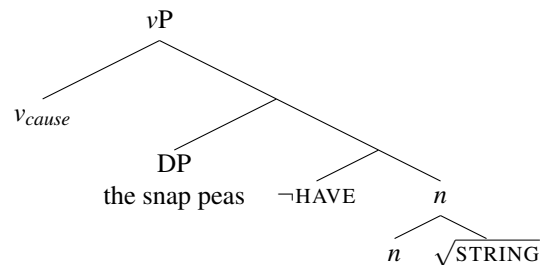
This pattern for the verb *string* extends to other irregular verbs with corresponding nouns, such as *bend*, *break*, *catch*, and *drink*. Unlike the reversatives in (12), the privatives take regular inflection. The privative reading can be highlighted if there is removal (of e.g., *bends*) without a corresponding reversative action. The sentence in (17) is thus not contradictory because an act of privation (with regular past tense) is not accomplished via reversal. Such examples are admittedly awkward, but not ill-formed.

- (17) Maria de-bended the pipe by cutting the bends out and replacing those segments, not by un-bending the segments.

The evidence suggests privative locatum verbs in English cannot take irregular past tense morphology. If we take incorporation analyses such as Levinson (2010)'s to be correct (10), incorporating prepositional material appears not to affect access to irregular inflection (e.g. *ground/*grinded the coffee*). I propose instead that this prohibition comes from a *recategorization* requirement for the verb, which forces a regular past tense form (see the discussion of Embick 2010 above).

I model this restriction for privative locatum verbs along the lines of Hale and Keyser 2002 and Levinson 2014, where the verb incorporates from elsewhere in the predicate. The proposed structure is in (18).

- (18) string the snap peas



Privative locatum verbs are best characterized as the set of causing events that result in a state of possession not obtaining between the direct object (possessor) and the entity associated with the verb (possessum). I take this to be parallel to the *possessive* analysis of locatum verbs (see McIntyre 2015 and references therein). I adopt a small clause analysis of possession as in Harley's (2008) treatment of ditransitives: a small clause complement is headed by a possessive head HAVE, whose specifier is the possessor and whose complement is the possessum. For privatives, negation will be built in to the HAVE head, and it will syntactically select an *n* complement (not a $\sqrt{\text{ROOT}}$).⁷ I assume head movement creates a complex verbal head that subsumes all of the material except the verbal object. For natural privation (involving part-whole relations; see Buck 1997), the head \neg HAVE can be realized as \emptyset - (e.g. \emptyset -scale the fish), but elsewhere it can be realized as *de*- (or *un*-).⁸

The $\sqrt{\text{ROOT}}$ and T will be separated by two categorial heads, *n* and *v*, which are cyclic heads (Embick 2010). Because the realization of the $\sqrt{\text{ROOT}}$ and T occurs in separate cyclic domains, the form of the past tense cannot be influenced by the $\sqrt{\text{ROOT}}$, and therefore must be regular.

Outside of privative locatum verbs, the role of event frame in recategorization is less clear. Consider the verb *house*. The 'refuge' meaning of *house* occurs with voiced /z/; however, the verb can have an ornative or locatum use that instead occurs with voiceless /s/ (Marantz 2013).

- (19) We housed as many refugees as we could. /z/

- (20) He took a bunch of plastic models and housed the room in revenge. /s/ (Marantz 2013:103).

This pattern of morphophonology follows if the 'refuge' meaning of the root is directly verbalized whereas the locatum use of *house* is recategorized from the noun (see Marantz 2013 for argumentation). However, looking at locatum verbs more generally, we see that they do not always pattern with the noun (e.g., *shelve*). Thus it is not obvious why the locatum use of *house*

⁷Further research will have to resolve why this selectional relation should hold; it may in fact not characterize privative locatum verbs cross-linguistically.

⁸I set aside the question of the locus of competition between these alternative forms, as well as the order of the morphemes. I also ignore the possibility that *de*- is itself the instantiation of a categorial head *v*.

should necessarily be recategorized while the other is not. One intuition is that the locatum use is more concrete in pertaining to an object ‘house,’ whereas the latter is ‘bleached’ in its semantics (cf Kiparsky 1997; Plag 2003). But this does not constitute a real explanation for why the locatum use cannot be directly verbalized and have ‘bleached’ semantics – why is there no locatum/ornative use of *house* that has the bleached semantics of ‘lodging,’ as in (21)?

(21) *The government housed the area with temporary wigwams after the disaster.⁹

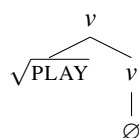
Crucially, it *is* possible to get a locatum/ornative verb with *house* (19), so we do not want to rule out *house* as a locatum verb altogether on the basis of canonicity or nameworthiness. But it is not possible to get a ‘bleached’ meaning of the verb here, as indicated by the incompatibility of ‘wigwams’ (cf. Kiparsky 1982). The example *house* thus suggests there may be an interaction of event frame with particular root identity. I leave the resolution of this issue to future research.

4 Zero-Categorizers and XSM

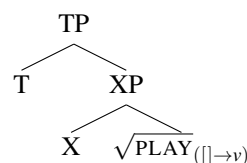
The analysis presented here for privative locatum verbs makes use of categorizing heads with null realization, yielding regular forms such as *stringed*. However, the existence of null categorizing heads has been challenged recently in Borer 2013, who argues that there are no English categorizing morphemes with null realization, meaning (2b) is never an option.

While both DM and Borer’s exoskeletal model (XSM) recognize $\sqrt{\text{ROOTS}}$ in their ontologies, DM posits silent categorizing heads for forms that appear to be monomorphemic, whereas XSM embraces, in the absence of overt categorizing morphology, contextual categorization from other functional material. To illustrate, the verb *play* has a derivation in DM that includes a root $\sqrt{\text{PLAY}}$ and a head *v* with null realization. In XSM, there is a root $\sqrt{\text{PLAY}}$ but no such *v* head; the root is instead indirectly categorized via functional context, such as T, which renders the root ‘V-equivalent.’

(22) a. DM



b. XSM



One apparent reason to favor XSM is that it captures locality restrictions on tense allomorphy by only referring to structure. According to Borer, overtly derived verbs (i.e. verbs derived with *-ize*, *-ify*, *-en*, *-ate*) all take default *-ed*. In contrast, putatively monomorphemic verbs may take irregular tense morphology (*-t*, \emptyset , etc.), because there is no category-defining head *v* that intervenes structurally between the root and T.

For the incarnation of DM represented in Embick 2010, in addition to the cyclic condition discussed above, linear adjacency is also necessary for two elements to interact for the purposes of allomorphy. An additional assumption is then needed to establish linear adjacency between a root and T. Because there is a categorizing head *v* that is not pronounced, it must be assumed either that unpronounced interveners do not disrupt locality relations,¹⁰ or that there is an additional ‘pruning’ operation that eliminates phonologically zero elements; Embick (2010) opts for the latter (for a variety of reasons). DM and XSM have in common that allomorphy can only be conditioned by an elements in local relations, but what defines locality differs between the two theories: *linearity* and *cyclicity* for Embick, but a distinct conception of *structural* adjacency for Borer.

An important prediction discussed by Borer (2013:282) distinguishes between her *structure-only* theory of past tense allomorphy and Embick’s (2010) DM theory involving linear adjacency and null categorizers. The relevant cases involve the verbal prefixes such as *be-*, *en-*, and *de-*. According

⁹Neither pronunciation of the verb, with /s/ or /z/, yields a licit interpretation of the verbal predicate.

¹⁰Note that this is actually inherent to XSM, which treats unpronounced elements such as Voice as non-interveners.

to Borer, past tense morphology is always default *-ed* for all overtly derived verbs, including prefixed derivatives; they never take irregular past tense suffixes or trigger morphophonological alternations.

This is consistent with her view that categorizing heads disrupt locality between a $\sqrt{\text{ROOT}}$ and T, but this is not captured in Embick's system. For prefixed verbs, a root and the T should still be local to each other because they are still in the same cyclic domain and there are no linear interveners, unlike with suffixal *v* (e.g. *-ize*), which intervenes between a root and T. Thus there is nothing in his system preventing prefix-derived verbs from conditioning past tense allomorphy.

However, Borer's generalization is incorrect. Consider the prefix *out-* (e.g. *outrun*, *outspend*). *Out-* prefixation applies to various bases liberally, including those that are canonically adjectival or nominal. Evident from the examples in (23), culled with care from internet searches, is *out-*'s ability to attach to an already categorized base, with *out-* prefixation yielding a verb. Prefixing *out-* to an already categorized base produces a recategorized verb, indicating *out-* either is itself a verbalizer or attaches to a null-verbalized base, the latter option not being available in XSM for an already overtly derived form.

- (23) a. "7 Times the [Westboro Baptist Church] Out-Crazied Fellow Antigay Kansans" (headline from The Advocate)
 b. "...New Zealand granted women full voting rights all the way back in 1893, which...means they out-democracied the USA by a handy 27 years."

Given this categorial or near-categorial status of *out-*, Borer predicts that all *out-*-prefixed cases should occur with default morphology, because, as far as I can tell, the categorizing structure should disrupt the structural adjacency between the root and T. This prediction is not borne out: if the unprefixed form bears irregular inflection in the past tense, so too does the *out-*-prefixed form.¹¹

- (24) a. *bid*, *drank*, *flew*, *grew*, *read*, *run*, *sang*
 b. *outbid*, *outdrank*, *outflew*, *outgrew*, *outread*, *outrun*, *outsang*
 c. **outbided*, **outdrinked*, **outfled*, **outgrewed*, **outreaded*, **outrunned*, **outsinged*

The retention of irregular allomorphy is not limited to the prefix *out-*. Recall from (12) that reversatives prefixed with *de-* retain the irregular past tense allomorphy of their base; this extends also to reversatives prefixed with *un-* (e.g. *unbent*, *untaught*). Unlike the DM-style analysis advanced here, XSM does not clearly distinguish for purposes of past tense allomorphy between reversatives and privative locatum verbs.

While *en-* does not readily apply in novel forms, there is also at least one example of *en-* which is capable of occurring with irregular tense allomorphy: the ornative use of *enstrung*. We have evidence then from multiple prefixes that Borer's generalization is not valid, and that it is not correct to say that "irregular" past tense marking in English is only available for morpho-phonologically mono-morphemic forms" (Borer 2013:343).¹²

Another argument from Borer 2013 against zero-categorizers comes from the absence of zero-derived recategorization from morphologically complex nominals into verbs (and vice versa).

- (25) a. **to salutation*, **to formation*, **to arrival*, **to partnership*, **to neighborhood*, **to writer*,
**to kindness*, **to ability* (Borer 2013:325).

According to Borer, all of the forms in (25a) exist as morphologically complex nouns, but cannot change category without additional overt morphology. This can be captured in XSM if roots are seen as 'equivalent' to a category only in the absence of overt categorizers; the property of N- or V-equivalence cannot be granted by functional material to something that is overtly categorized.

¹¹Borer's concept of structural adjacency is in fact less clear in that there is assumed to be unpronounced intervening structure between a root and T in a typical case, which should establish the V-equivalence of the root prior to the merging of T. None of this structure seems to count for assessing what constitutes structural adjacency.

¹²While Borer may argue that at least some putative prefixes are actually roots that together with the base form compounds (which as non-categorizers do not block allomorphy), this is not defensible for all of the prefixes mentioned here.

Thus T cannot recategorize *salutation* as a verb; it can only contextually categorize a root $\sqrt{\text{SALUTE}}$ (or make the root ‘V-equivalent’).

However, the claim that it is impossible in English to zero-derive a verb from a morphologically complex noun is empirically false. In fact, Bauer et al. (2013) describe “conversion of affixally derived bases” as being “quite normal” (504). Among their evidence is verbally inflected forms of words bearing nominal suffixes, such as *adventure*, *bandage*, *blinker*, *cashier*, *champion*, *commission*, *condition*, *disadvantage*, *function*, *package*, *pilgrimage*, *pressure*, *provision*, *sanction*, *scooter*, *section*, *signal*, *streamer*, *stopper*, *tenant*, *tension*, and *waitress* (504). They also point out that recategorizing morphologically complex forms is productive, as evident from verbally inflected forms in COCA such as *birdie*, *clipper*, *interface*, *junction*, *larder*, *option*, *racketeer*, *sleepers*, *zipper*, *filthy*, *lethal*, *premature*, *romantic*, and *skinny* (278). It is even possible to derive recategorized verbs that do not differ substantially in meaning from a simpler non-converted verb. Bauer et al. (2013) give two such examples: “we have drivered, I think, 40,000 tons of food” and “this influenza entered the human population after being passaged through pigs” (279).

While some examples may sound degraded, it is arguably not because they cannot be derived; rather, I would suggest that they either are too ‘semantically dense’ (in a way not to be defined here) or have similar meanings to derivationally simpler forms; along these lines, see the discussion of ‘synonymy blocking’ in Embick and Marantz 2008. Potential confirmation of this comes from *collectioning*; there is a meaning difference between *collecting a coin* and *collectioning a coin*. The former cannot mean that a coin is being added to a pre-existing (recreationally held) collection, but the latter has exactly that interpretation. This meaning difference makes the form more acceptable, though there is still some pressure against *collection* as a verb relative to less semantically dense, periphrastic forms (i.e. *adding a coin to a collection*). However, it is important not to mistake underivability with pressures against deriving certain forms (cf Embick and Marantz 2008, Embick 2008).

While XSM’s approach to overt derivation and contextual categorization has conceptual appeal, it turns out to be falsified by the English data presented here, which in fact resemble data that were supposed to favor XSM. Affixal zero-derived recategorization remains a theoretical possibility that we should recognize. Zero categorizers can then be complicit in the derivation of recategorized verbs and their regular past tense inflection.

5 Conclusion

Past tense inflection and categorial heads continue to be relevant issues in current theory. I have discussed the connection between the two, and have suggested through an examination of privative locatum verbs that properties of the verbal predicate can be relevant to (re-)categorization from nominals. I also challenged the findings of Borer 2013, reaffirming instead that \emptyset -pronounced categorial heads exist in English.

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