Being exacting about exapting

An exaptation omnibus*

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For historical linguists, exaptation is an attractive notion, offering an overt link with biological evolution. Nonetheless, one can ask whether it represents something substantive about linguistic change or is merely an appealing metaphor. I critically assess exaptation, using case studies suggesting that speakers in crafting new 'grammar' simply make use of material on hand. Whether it is 'junk' (Lass 1990) or not is immaterial to the speaker; what matters is a model's availability, often a very 'localised' one. Through these examples, I argue that 'exaptation' reduces to regular and well-understood processes of diachronic morphology, particularly analogy, not limited to any component of grammar. The material forming the model for innovation can be highly restricted and can itself be an irregular bit of the grammar. Similarly, any parallels with 'grammaticalization' derive from these developments all being ways that speakers creatively make connections among elements in their language and act on them.

1. Introduction

Exaptation – the repurposing of linguistic 'junk', in one common characterization – is clearly an interesting and thought-provoking topic. The editors of this volume show their recognition of this fact through the rather ambitious goal they have set for themselves, and thereby also for all contributors, in the form of a number of stimulating and penetrating issues about exaptation that they present and discuss (see Van de Velde & Norde, this volume). In this contribution, I plan to address a few of those concerns directly by discussing four examples from two languages, Sanskrit and English, that are aimed at testing claims implicit in their discussion; these examples have been chosen because in each instance they start

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with well-instantiated elements of grammar found in restricted and marginal sub-parts – thus 'junk-like' – yet they nonetheless manage to show extensions in interesting ways that are highly relevant to a consideration of exaptation.

My strategy might seem a bit unconventional, in that I do not address head on putative cases of exaptation considered in the literature. Rather, to tip my hand somewhat, let me state for the record that I see exaptation as best viewed as just a label for a particular outcome of grammatical change in which the changed and repurposed – essentially reanalyzed – elements at best played minor roles, being for instance minor patterns or irregularities, in the grammar to start with; however, I do not see it as a fundamentally different kind of grammatical change from what might be thought of as more 'garden-variety' sorts of change by reanalysis and/or analogical extension. The examples discussed here reflect this viewpoint.

The starting point for this discussion must be the characterization of 'exaptation' that Lass (1990: 80–82) popularized among historical linguists, namely the 're-deployment' of once systematic but no longer clearly functional linguistic material – 'junk' in his perhaps unfortunate descriptor – "for something else, perhaps just as systematic". This is a notion which Lass himself "exapted" (so to speak) from the biological use of the term referring to the "co-optation of a feature whose origin is unrelated or only marginally related to its later use. In other words (loosely), a 'conceptual novelty'".[1] Lass builds his discussion largely on two case-studies from Germanic – strong verb preterite patterns that come to differentiate singular from plural stems and the reuse of adjectival *-e* in Afrikaans – but rather than offer a critique of these particular cases, I choose instead to focus here on some examples from Sanskrit and English that share key characteristics with claimed instances of exaptation. In particular, they involve minority patterns or restricted material that can be considered marginal, though certainly present, in the language, and which change in such a way as to lead to novelty. That is, the cases I examine are ones where one might be tempted to talk in terms of 'exaptation' in that they admit of consideration as marginalia within their respective grammars that are thus unsystematic in a certain sense, even if functioning as part of the grammar; and yet they provide a basis for grammatical innovation and novelty.

Moreover, the vagueness built into Lass's treatment – how one might define 'systematic' or 'no longer clearly functional', for instance, or 'novelty' for that mat-

1. As a biological example of the exaptative reuse of a feature in a new function, Lass (p. 80) gives the emergence of feathers as a flight aid in birds, as their original function seems to have been "to serve as a thermoregulatory device for warm-blooded proto-birds living in high latitudes". See Van de Velde and Norde, this volume, for more detailed discussion of this stock example so prevalent in the linguistic literature.

ter – licenses my decision to examine cases other than oft-cited putative exaptations. Lass (p. 99) gives umlaut in noun plurals in English (*mouse*/*mice*, *goose*/*geese*, etc.) as a clear case of a peripheral element in the grammar, noting that "no new ones have been added" to the language, yet he points out that it "has in a sense been exapted as a minor joke-strategy, as in *meese* for pl *moose*". The examples I discuss here show similar evidence of marginality and in some instances restrictedness and irregularity, and yet they can be put to use in novel ways. Thus I argue ultimately that what matters is that there be available material – marginal or dysfunctional or otherwise – with which speakers can achieve results, i.e. create or extend new forms and serve new communicative uses. Using a label like 'exaptation' alone often does not really do justice to the diachronic developments involved.

I couch my discussion in terms of some of the issues raised by the editors as they lay out a framework for the consideration of exaptation, but do so by asking some general questions, namely those in (1), and then in (2) identifying some specific questions that amplify on aspects of the questions in (1):[2]

(1) Some general issues regarding exaptation
   a. Do we need exaptation in diachrony?
   b. If so, how is it constrained?
      i. How do we demarcate the concept?
      ii. How is exaptation determined by the linguistic context?
   c. What is the relation between exaptation and other processes of grammatical change, such as (de)grammaticalization or constructionalization?
   d. Can exaptation be recurrent within and across languages?

(2) Some specific questions regarding exaptation
   a. Do we need exaptation in diachronic morphology, or does it reduce to more traditional mechanisms such as reanalysis and analogy, as e.g. De Cuypere (2005) argues?
   b. Does exaptation only apply to morphology (Heine 2003: 173), or is it relevant to syntactic change as well, as Brinton & Stein (1995) have argued?
   c. Does exaptation presuppose irregularity and unpredictability? If so, does this entail that exaptation is language-specific (as argued by Heine 2003: 173), and that cross-linguistic generalizations are not possible? See, however, Narrog (2007) for evidence to the contrary.

2. These questions draw on the ones prepared for participants in the ICHL20 (2011) workshop on exaptation that the editors organized.

d. How should we define the concept of 'novelty', and is it a useful criterion for a change to qualify as exaptation? Currently, there seem to be different views in the literature on what is exactly understood by a 'new' function. Does this mean (i) an entirely new category in the grammar, (ii) a function unrelated to the morpheme's old function, or (iii) a different though perhaps not totally unrelated function from the old function?
e. Regarding exaptation and grammaticalization, do they refer to fundamentally different kinds of changes (Vincent 1995), is exaptation a final stage of grammaticalization (Greenberg 1991; Traugott 2004), or are exaptation and grammaticalization just two different labels for the same type of change? After all, both processes involve reanalysis (Narrog 2007), and both processes can come about through pragmatic strengthening (see Croft 2000: 126–130). Furthermore, if the old and new functions of the exaptatum co-exist (see above) and if the new function is related to the old one, then exaptation involves 'layering' and 'persistence', respectively (see Van de Velde 2006: 61–62), which are also key features of grammaticalization (see Hopper 1991).

These questions, both general and specific, have some connections that link certain ones of them. The examples I present here address some of these questions as inter-related issues and some as independent issues. The inter-related ones are those in Table 1.

Table 1. Related general and specific questions addressed here

(1a) Exaptation in diachrony?	↔	(2a) Exaptation in diachronic morphology, or just reanalysis and analogy?
(1c) Relation between exaptation and other processes of grammatical change?	↔	(2e) Are exaptation and grammaticalization fundamentally different kinds of changes, … or just different labels for the same change?

The independently addressed specific question is (2d), regarding novelty, an issue already noted above. The other questions provide a suitable backdrop for the overall discussion. In the conclusion, §5, I return to these questions.

As already signaled, the examples are ones where some characteristics of 'exaptation' are present, so that one might well think of this notion in connection with them, but I suggest that such a label does not capture the full scope of the changes under consideration. Moreover, I argue that when putative examples of exaptation are viewed from a speaker's point of view, as opposed to a linguist's point of view, the whole notion breaks down. In taking this approach, I realize that exaptation is, for most historical linguists, an attractive notion, especially insofar as it offers an overt link with biological evolution. Even so, one can wonder

whether it represents something substantive about linguistic change or instead (as is often the case with notions taken from other disciplines) is merely an appealing metaphor.

Part of my critique thus hinges on issues that others have talked about, for instance whether the characterization 'junk' is really warranted and even necessary for thinking about exaptation, or what the notion of 'functionality' means. To that end, I offer here some case studies that together suggest that speakers in crafting new 'grammar', whether morphology, syntax or even phraseology, and especially when that new grammar involves the extension of uses of some existing piece, make use of material the language has on hand, in any form. Whether it is 'junk' (as in Lass's original characterization) or not, I argue, is immaterial to the speaker; all that matters is for there to be some motivation, i.e. the availability of a model – often a very localized one – upon which an analogical change can be based or a basis for a reinterpretation or the like. Moreover, whether it represents a wholly new function or just some other sort of innovation, is likewise deemed here to be immaterial; what matters is the demonstration that speakers can employ existing restricted material in novel ways.

2. Sanskrit reduplication

The first two examples come from the realm of reduplication in Sanskrit.[3] Reduplication is of course alive and well in Sanskrit as a grammatical process, but it is far from uniform and in fact has become fragmented into numerous subpatterns of limited scope (see Janda & Joseph 1985). Both involve elements that have a reduplicative origin with a very limited number of roots – four roots in one case and two roots in the other – that nonetheless come to fill the role of reduplication with other roots. What makes them unusual is that there is no 'duplication' in the strict sense with those other roots. The facts in both cases are well known but are worth rehearsing here, as both involve the repurposing of an originally reduplicative means of forming a perfect tense stem as a nonreduplicative type, a type that is contrary to the usual reduplication pattern; as such, it admittedly is not a wholesale functional redeployment of the sort that Lass's examples represent, but it is a grammatical novelty, and thus something new in the grammar that therefore has some exaptative character.

The most typical stem for the perfect tense in Sanskrit has reduplication, of varying shapes but still with some obvious phonological relation, though not

3. See Whitney (1889: 220 et passim) for general information on reduplication in Sanskrit, material that forms the basis for the presentation here.

always identity, between the reduplicative syllable and (part of) the root (signaled by a radical sign, √):

(3) Reduplication in the Sanskrit Perfect

√pat- "fly"	=> perfect stem *pa-pat-*
√tsar- "approach stealthily"	=> perfect stem *ta-tsar-*
√bhid- "split"	=> perfect stem *bi-bhid-*
√sphur- "jerk"	=> perfect stem *pa-sphur-*
√kram- "stride"	=> perfect stem *ca-kram-*

But there are deviations from this typical case, in ways that are significant for present concerns.

The first case in question is the extension within Sanskrit of *ān-* to mark the perfect tense for roots beginning with the syllabic resonant *ṛ-*. Roots that begin with syllabics appear to pose a problem for the typical pattern in (3) in that they do not have a consonant that can be reduplicated. For Sanskrit speakers, this apparent problem was not really an issue, since the vowel and a 'ghost' initial consonant (a zero (Ø)) could be reduplicated, giving a long vowel, as with the roots in (4):

(4) Sanskrit Perfect Reduplication with Vowel-initial Roots

√av- "favor"	=> perfect stem *āv-* (= a-av- (= Øa-Øav-))
√as- "be"	=> perfect stem *ās-* (= a-as- (= Øa-Øas-))
√idh- "kindle"	=> perfect stem *īdh-* (= i-idh- (= Øi-Øidh-))
√ud- "wet"	=> perfect stem *ūd-* (= u-ud- (= Øu-Øud-))

But there was one vowel-initial root type that did pose a problem, and that was roots with the syllabic resonant *ṛ*, because there was no long syllabic *ṝ* available at that stage of the language;[4] that is, as shown in (5), for a root like √*ṛdh-* "thrive", a reduplication *ṝ́dh-* would not work:

(5) Problematic Reduplication with *ṛ-*initial roots
√ṛdh- "thrive" =/=> reduplication *ṝ́dh-** (as if *ṛ- ṛdh-*, but * as *ṝ́* does not otherwise occur)[5]

4. The qualification "at that stage of the language" is needed because later on in Sanskrit, largely due to a morphological lengthening process (e.g., that lengthened a stem vowel in accusative plural forms of vowel-stem nouns), long syllabic *ṝ* comes into the language; thus the stem *pitṛ* came to have an accusative plural form *pitṝ́n* (*-n* as the accusative plural ending plus concomitant lengthening).

5. It is not even clear that *ṛ* in a root would reduplicate as such; admittedly, when the reduplication vowel is not morphologically determined, *a* in a root usually reduplicates as *a*, *i* as *i*, and

Thus speakers were faced with a challenge as to what to do with such roots. They found the solution in an unexpected type of perfect stem. Early on in the history of Sanskrit, roots with the phonological shape of short *a* followed by a nasal, e.g. √aṃś- "attain", had a reduplicative perfect stem derived by somewhat anomalously reduplicating in this case the initial vowel plus consonant (*ṃ* being the form that *n* takes before a sibilant), and lengthening the reduplicative vowel; the four such roots and their perfect stems are shown in (6):

(6) VC- Perfect Stem Reduplication in Roots with *a* + Nasal
√aṃś- "attain" => reduplicative perfect stem *ān-aṃś-*
√añj- "anoint" => perfect stem *ān-añj-*
√añc- "bend" => perfect stem *ān-añc-*
√aŋg- "move" => perfect stem *ān-aŋg-*

Speakers of Sanskrit took the mildly anomalous *ān-* of these roots with initial *a-* plus nasal and extended it to *ṛ-*initial roots, to solve the problem the latter posed for reduplication; the relevant forms are given in (7):

(7) *ān-* Reduplication in Roots with Initial *ṛ-*
√ṛc- "shine" => perfect stem *ān-ṛc-*
√ṛch- "send" => perfect stem *ān-ṛch-*
√ṛj- "direct" => perfect stem *ān-ṛj-*
√ṛd- "stir" => perfect stem *ān-ṛd-*
√ṛdh- "thrive" => perfect stem *ān-ṛdh-*
√ṛṣ- "rush" => perfect stem *ān-ṛṣ-*
√ṛh- "deserve" => perfect stem *ān-ṛh-*

This move was analogical in the sense that perfect-stem formation with one type of vowel-initial root was the basis for another type of vowel-initial root. And, this analogical move 'solved' the *ṝ*-issue. Moreover, it also was a comfortable way of resolving what might be viewed as a potentially difficult alternative reduplicative sequence of *rV-r…* or *Vr-ṛ…*, since Sanskrit did not like sequences of *r*'s; *al-ar-*, for instance, occurs as the intensive (reduplicated) stem of √ṛ- "go", for expected *ar-ar-. Still, this analogical solution resolves matters only by using as a model material that was highly restricted and which occurred in just a small class of roots to which the *ṛ-*roots did not even belong. As a model it was not a prototypical instance of reduplication and thus was peripheral; being somewhat marginal in the overall grammar of reduplication in Sanskrit, it was like material such as umlaut in English noun plurals, a minor pattern to be sure. Nonetheless, it was

u as *u*, but there are instances where *a* appears to be the default reduplication, as the perfect stem *ba-bhū-* of √bhū- "be" suggests.

highly functional and even regular in the one context of #aNC- roots. Thus, we are not dealing with total 'junk' here but neither are we dealing with grammatical material, a perfect formative, that is fully integrated into the system of Sanskrit grammar.

Nonetheless, this less-than-fully integrated element *ān-* takes on a new life, a new function, in the way it offers a solution to the problems posed by roots like √ṛdh-. Repurposing is not restricted to moribund and fully peripheral material, so trying to measure this development in terms of exaptation misses something either about it or about the motivation for it. What matters is the resolving of a grammatical problem, and as long as there was some material on hand that could be used toward a resolution, the result is a satisfying one for the speakers facing the problem. Moreover, this example shows us that the process by which the repurposing takes place, by which a new function arises – whether a totally novel function or an extension of an existing function – can be analogical in nature.

The second instance involving Sanskrit perfect tense reduplication has to do with certain roots that had a suitable reduplicative pattern available to them but which became subject to a different, nonreduplicative pattern emanating from a reinterpretation, and thus ultimately a repurposing, of the perfect of two roots. By completely regular sound changes operating on the reduplicative stems of √sad- "sit" and √yam- "reach", respectively *sa-sd- and *ya-ym-, the perfect stems *sed-* and *yem-* arose.[6]

From the *a* ~ *e* pattern of root √sad- to weak perfect stem *sed-* and √yam- to *yem-*, other roots came to do likewise, in particular those with, as Whitney (1889: 285) puts it, "medial *a* before a single final consonant, and beginning also with a single consonant that is repeated unchanged in the reduplication – that is, not an aspirate, a guttural mute, or *h*".[7] Such roots include √pat- "fly", with weak perfect stem *pet-*, √pac- "cook" ~ *pec-*, √tan- "stretch" ~ *ten*, √man- "think" ~ *men-*, √nabh- "burst" ~ *nebh-*, √rabh- "take hold" ~ *rebh-*, etc. Here a marginal, thus 'junk-like', originally reduplicative pattern, even though regularly formed for some roots, was reinterpreted as having a different basis, more along the lines of a vocalic ablaut (i.e., substitute *e* for *a*). It then spread analogically to other roots with a similar phonological make-up, thus becoming a marker of a phonologically defined class of root, as Whitney describes. It was thus repurposed but, as

6. Via *sa-sd- > *sa-zd- > *sayd- > *sed-* and *ya-ym- > *yem-*, these last steps via the coalescence of *[ay] to [e]; these are the so-called 'weak' stems, those used in nonactive and nonsingular forms.

7. This last restriction refers to the fact that aspirated consonants reduplicate with a corresponding nonaspirate and velars (Whitney's "gutturals") and *h* reduplicate with corresponding palatals, as illustrated in (3) with √bhid-, √sphur-, and √kram-.

it happens, without great functionality, since this root 'class' did not figure in any other generalization in the grammar at all.

Thus marginal material was redeployed but not necessarily in a way that served some greater good, so to speak. Yet, spread it did, suggesting that speakers saw some value or significance to this new pattern even if it did not serve a particular grammatical end. Calling this exaptation mischaracterizes what speakers were doing; their repurposing was more on the order of exploratory steps in search of a generalization, analogically induced movement in the direction of a new rationale for the appearance of a nonreduplicative stem with *-e-*vocalism. It is probably significant here that some roots showed variation, e.g. *papat-* occurs alongside *pet-*, and *rarabh-* alongside *rebh-*, and that some roots with this *-e-* stem have initial clusters, e,g. √tras- "be terrified" with weak stem *tres-* (as well as *tatras-*), in violation of the seemingly emergent generalization, suggesting the sort of imperfect or contrasting rationale often associated with analogical developments.

In both instances of change emanating from minor patterns within Sanskrit perfect tense reduplication, something more than merely putting the pattern to a new use took place; speakers were actively working with material available in the language, trying to make sense of it and interpreting it in terms of the larger system into which it fit. The patterns were minor and marginal but available and, we can say, systemic, even if not fully systematic. And, in each case, the mechanism for the change is reanalysis and analogical extension; simply labeling the change as 'exaptation' based on a repurposing of a marginal part of the grammar does nothing to enhance understanding of the developments as they unfolded.

3. An English temporal neologism

Another set of examples comes from two constructions in English that utilize the preposition *of* in certain ways. Of course, *of* is a robust part of English grammar, but each of the particular constructions in question are minor patterns in the language and the role that *of* plays comes to be quite different in the changed form.

The first such case is English temporal adverbial phrases with *as of*, meaning "up to TIME X and beyond", i.e. instances such as the following:

(8) English *as of X* "up to TIME X and beyond"
as of noon
as of 12:00
as of yesterday
as of March 2011
as of now

and so on. These define a pattern consisting of *as of* plus a more or less concrete time expression.

There is also another temporal expression with *as*, namely *as yet*, with a meaning of "up to now" that is parallel to that in the expressions in (8); in *as yet*, though, the complement of *as* is the temporal adverb *yet*. Interestingly, as an apparent neologistic usage, there also occurs in present-day American English a variant *as of yet*, with the same meaning;[8] moreover, this new variant appears, impressionistically speaking, to be gaining ground on *as yet* now in spoken American English.[9]

This innovation is actually somewhat anomalous, both semantically and syntactically. In terms of semantics, *as of yet* is anomalous since the element that occurs after *as of* is not a concrete time expression. *yet* is not a time in the way that an element like *noon*, or *12:00*, or *yesterday*, or *March 2011*, is. Rather, it is an adverb, and while it is possible for the adverb *now* to occur in this construction, *now*, even though vague as to its time reference, nonetheless specifies a certain period; *yet*, however, does not – it is possible, for instance, to say *The time is now* but not **The time is yet*. Moreover, the syntax of the innovative expression is a bit odd, since is not usual for a preposition to have an adverb like *yet* as its complement;[10] the object of a preposition is typically a nominal. Admittedly, *now* is used in this construction but as noted above, *now* has substantive-like properties that *yet* does not, being able to be used as a predicate. Nonetheless, despite these anomalies, *as of yet* is perfectly fine for many, if not most speakers of at least American English now.

It is clear what went into the birth of this neologism. *as of yet* shows the analogical extension of the preposition *of* into *as yet*, bringing it in line with the other temporal phrases with *as* (cf. (8)), and the form with the adverbial object

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8. I have not been able to determine how old a usage *as of yet* is or its dialectal distribution, but the point is still valid whatever its age and whatever dialects it occurs in. Given the odd syntax of this phrase, as discussed below, it has the feel of a neologism, though that is also a detail that could stand more research, as could its dialect distribution.

9. A search done (6 June 2015) on COCA (Corpus of Contemporary American English, http://corpus.byu.edu/coca/) reveals that while *as yet* is more frequent overall than *as of yet*, even in spoken English, there are genre differences in frequency. In particular, *as of yet* is three times more common in spoken English than in academic English (76 tokens to 25 tokens), whereas *as yet* is far less frequent in spoken English than in academic English, two and half times less (259 tokens to 631 tokens). Thus it seems that *as of yet* is expanding in spoken usage at the expense of *as yet*.

10. An astute reviewer noted that the syntax of *as yet* is itself somewhat anomalous; I am not in a position to consider this in detail, and to some extent, it is not entirely relevant here. It does mean that *as of yet* regularizes the time expression somewhat but does so at the expense of an irregularity with *of*, the main point here.

as of now was the likely immediate model. This is a straightforward and rather unexceptional sort of analogical change, other than the fact of the semantic and perhaps also syntactic anomalies that it introduces into this set of temporal expressions; but analogy often introduces regularities only on a very localized basis, with irregularities evident when the analogically created entity is assessed against the grammar as a whole.[11]

From the point of view of a reconsideration of exaptation, it should be noted that this English neologism uses well-entrenched material (*of*) in a seemingly nonfunctional way, in the sense that actually introduces dysfunction in the form of the semantico-syntactic anomalies. One might counter by saying that this is not a case of exaptation and so it is irrelevant to the discussion, but what is like exaptation here is the fact that a small unassuming bit of something, namely the *of* in *as of*, in what it a minor pattern, a small corner of the grammar, so to speak, takes on a significance and power that one might not otherwise attribute to or expect of it. Note that as a preposition, *of* in principle should combine with noun phrase objects, but its use with *now* in *as of now* shows that it has undergone some extension; in a sense, it is not quite the preposition *of* anymore but rather is just a piece of the larger temporal marker *as of*. Yet, it can be used innovatively and anomalously to alter the established form *as yet*.

Also, as with the Sanskrit cases, this case shows that analogy and grammatical creation/extension begin with a localized model – in this case, most likely *as of now* – and that having available material is what matters, not the status of the material. Moreover, this shows that functionality is always to be judged relative to the particular models involved and innovations created.

4. Another relevant English neologism

As a final example, the well-known developments with English *kind of* and *sort of* can be considered, as they make a similar point.[12] These expressions, along with their reduced forms *kinda* and *sorta*, which, incidentally, have the same functions and essentially the same distribution as the fuller forms *kind of* and *sort of*, surely started life as what their literal and compositional sense would imply: as noun phrases *a kind/sort of* that took a noun phrase as complement with *of* and served as a way of qualifying in a somewhat mitigating way that noun phrase complement. Of course, what is found now with *kind/sort of* and *kinda/sorta* is that they

11. Sanskrit reduplication, as discussed in Section 2, is a case in point. See also Joseph and Janda (1988) on analogy as 'local generalization'.

12. See Joseph (2014) for further discussion of *kinda* and *sorta*.

can occur with a wide range of types of syntactic categories as their complements, including categories like verbs, adjectives, and adverbs that typically do not occur as the complement of a preposition like *of*; some examples are given in (9):

(9) Extended Uses *of kind of* / *sort of* ~ *kinda* / *sorta* as Mitigating Qualifiers
   a. Robin kinda/kind of likes her / Robin sorta/sort of likes her.
   b. Her car is kinda/kind of yellowish / Her car is sorta/sort of yellowish.
   c. Serious mistakes kinda/kind of always happen / Serious mistakes sorta/sort of always happen.

In this way these expressions function in a similar way to other mitigators/qualifiers, such as *somewhat* or *almost*, as suggested by the examples in (10):

(10) Other Mitigators/Qualifiers
   a. Robin somewhat/almost likes her.
   b. Her car is somewhat yellowish.
   c. Serious mistakes almost always happen.

Presumably, then, what *kind*/*sort of* and *kinda*/*sorta* show are the results of a reanalysis of the qualifier/mitigator as a unit that functions simply as a qualifying/mitigating adverb, and this seems especially well motivated for the reduced forms *kinda*/*sorta* where the *-a#* does not readily lend itself to any sort of identification with another morpheme. But for the fuller forms, *kind of* / *sort of*, which, it must be emphasized, have the same function and distribution as the reduced form, *of* is rather obviously involved. Thus, one has to reckon here with an extension of what can be a complement for *of* to include, rather anomalously as far as prepositions are concerned, adjectives, verbs, and adverbs.

The reanalysis is well motivated from a semantic point of view, both for the reduced form and the fuller form, and other qualifying/mitigating adverbs like *somewhat* or *almost* may have provided a model for the reanalysis. Moreover, to the extent that *kind of* and *sort of* – and for that matter *as of yet* – show that new functions/uses are being attached to an element, *of*, that one might argue is buried in *sort of* / *kind of* (and *as of*), and thus marginalized in the grammar as a whole, one might well think of exaptation here. However, it is really just the reduced form that has some 'leftover' material that is not obviously functional and which therefore might be suspected to be a possible victim of exaptation; nonetheless, the reanalysis extends to both the forms with *-a#* and the forms with *of*, even though it renders *of* somewhat dysfunctional as a preposition in this construction, taking as it now does a wide range of complement types, thus acting unlike any other preposition in the language.

But it has to be admitted that *of* is still a robust piece of English grammatical material in general, and is hardly the grammatical flotsam and jetsam that seems

to be associated with discussions of exaptation. But the point is clear that new functions can indeed arise, and they arise from existing robust material as well as existing less robust material.

5. Towards a conclusion – Some salient observations

The lesson to be taken from the foregoing examples and discussion is that singling out one particular 'pathway', in Lass's case what might be called buried, functionless, grammatical dross – the extra baggage of grammar, so to speak – and giving it a name and elevating it to the status of a special process or mechanism or even phenomenon is perhaps misguided. It does show that interesting and even curious things can happen in language change, but in a sense that was already well known to historical linguists.

Now it may be that perhaps all Lass was doing with his identification of 'exaptation' was exactly that: taxonomizing and labeling. After all, linguists love to taxonomize, and taxonomy is often a necessary first step towards understanding. He might have had a secondary motivation of drawing a parallel with biology but that is less relevant here in this reassessment of 'exaptation'.

But I would argue that to make something out of exaptation that goes beyond taxonomy and labeling of a particular set of developments seems to be missing the point of the historical linguist's quest to understand language change. Three parallels that should help to clarify this objection.

The first is the phenomenon labeled in the historical linguistic and language contact literature as *reborrowing*, namely the case of a word being borrowed into one language and then being borrowed back again into the original source language. There are numerous examples one could cite, but those in (11) make the point:[13]

(11) Reborrowing ($Word_x^{LgA}$ => $Word_{x'}^{LgB}$ => $Word_{x''}^{LgA}$)

French:	*tenez* "hold!"	→	English:	*tennis*	→	French:	*tennis* (the sport)
Spanish:	*tronada* ("thunderstorm")	→	English:	*tornado*	→	Spanish:	*tornado*
Medieval Greek:	*afθendis* ("master")	→	Turkish:	*efendi* ("master")	→	Modern Greek:	*afendis* ("master")
Modern Greek:	*sisami* "sesame"	→	Turkish:	*susam* ("sesame")	→	Modern Greek:	*susami* ("sesame")

13. Wikipedia, for instance, lists a dozen, at http://en.wikipedia.org/wiki/Reborrowing (accessed 22 June 2011).

Reborrowings are interesting, to be sure, but to be honest, they are just accidents of history – the borrowers of a word at one stage do not look back to see what the history of that word is, after all. Thus they are like linguistic curiosities, so that it would really seem that reborrowing belongs to the realm of linguistic *Trivial Pursuit*. Yet, the phenomenon is given a label by historical linguists, suggesting that it has a special character that sets it off from other lexical borrowings. I would suggest that just like pulling out one particular kind of establishment of a new grammatical function via creation or extension and calling it 'exaptation', labeling one kind of borrowing as 'reborrowing' does not really advance our understanding of language change much at all.

As a second example, there is grammaticalization.[14] As I see it, *grammaticalization* is nothing more than one particular type of grammatical change, namely that in which there is movement from less grammatical to more grammatical; yet it has been elevated to a particularly special status in the eyes of many linguists, even though the opposite development, of more grammatical to less grammatical, what has been called *degrammaticalization*, occurs (as even some of the most ardent advocates of grammaticalization admit, even if reluctantly – see Haspelmath 2004).[15] Furthermore, as discussed in Joseph (2006) and Joseph (2011), there are many grammatical changes that occur that are not even in the maelstrom of controversy over grammaticalization versus degrammaticalization, e.g. with derivation/inflexion:[16]

(12) Possible Developments Involving Derivation and Inflection:
  a. derivational morphology => inflectional morphology
  b. derivational morphology => derivational morphology
  c. inflectional morphology => inflectional morphology
  d. inflectional morphology => derivational morphology

These are indeed grammatical changes of one sort or another but not all of them are 'classical' grammaticalization. In fact, under the assumption that inflection is more grammatical (in the relevant sense) than derivation, only (12a) is a classic case of grammaticalization, in that it shows movement from less grammatical to

14. In various papers, including Joseph (2004, 2006, and 2011), I expound upon the view of grammaticalization I espouse here.

15. See Norde (2009) for more discussion concerning degrammaticalization and other examples.

16. For examples, see Joseph (2011).

more grammatical;[17] (12b) and (12c) would involve an element staying put on the cline of grammaticalization ('lateral movement' in the terminology of Joseph 2006), and would be movement counter to 'usual/typical' directionality, from more grammatical to less grammatical.

Joseph (2011) characterizes the special labeling of and intense interest in the (12a) type of development as the 'privileging' of one path of change over a myriad of others. However, by focusing on grammaticalization to the exclusion of other kinds of grammatical change – the interplay of derivation and inflection being just one out of dozens and dozens of changes in grammar one might refer to here – and by debating whether a particular development should or should not be labeled as a case of grammaticalization, I would argue that we are really missing our goal of understanding language change, in general, not just understanding one type of language change.

And finally, as a third case where overtaxonomizing leads to obfuscation rather than clarity, one can consider the case of analogy.[18] In particular, it is common in historical linguistics textbooks especially to talk about analogy but to then distinguish paradigm leveling analogy from form class (external) analogy from contamination analogy from folk etymology analogy and so on. It seems that only Anttila (1972, 1989) makes the point that these are really all the same thing, namely all reflections of the influence of one form over another. By insisting on so many different labels, we confuse rather than enlighten.

So too, I would say, with insisting on exaptation as some sort of special historical development instead of recognizing that it is simply grammatical change that happens to start with one kind of material rather than another kind. Based on all that is presented here, it seems that speakers do not care what the status of the material is; they care more about the outcome of their novel use of that material, and the mechanisms remain ones we have known about for decades or longer: reanalysis and analogy.

17. That is, inflection is usually considered to be part of grammar proper, representing morphology that is responsive to the syntax, while derivation is somewhat lexical in nature; note though that if the element becomes part of the root, as opposed to becoming a stem-deriving marker, then it has been desemanticized in a 'phonogenetic' way (Hopper 1994), supposedly a hallmark of grammaticalization.

18. Since I am a big advocate and fan of analogy (see Joseph 1998, for instance), I hope to show here that I can be fair; that is, just as grammaticalization has been my public whipping boy for many years, I can dish it out to my personal favorites too.

6. Conclusion – Reexamining the key questions

The key questions mentioned at the outset in Section 1, and especially the more specific ones in (2), can now be revisited and answers provided, based on the examples and discussion offered in the preceding sections. I repeat each question here, and follow each with an answer and some words of explanation.

(13) (= (2a)) Do we need exaptation in diachronic morphology, or does it reduce to more traditional mechanisms such as reanalysis and analogy?

The answers here are, respectively, no and yes. That is, no, exaptation is not needed, because it is not its own 'process' or 'mechanism' since yes, it does reduce to more traditional mechanisms. At least in the cases explored here, from which one can generalize, what might be termed 'exaptation' seems instead to be simply analogy (with some reanalysis involved).

(14) (= (2b)) Does exaptation only apply to morphology, or is it relevant to syntactic change as well?

The answer here is that the examples presented above involve syntax, lexis, and morphology; thus the developments that one might call 'exaptation' (but which, per (13), are just analogical developments) can presumably be found at all levels of linguistic analysis.

(15) (= (2c)) Does exaptation presuppose irregularity and unpredictability?

The answer here is that in 'exaptation'-like developments of the sort discussed here, irregularity is encountered in two ways. First, the relevant models involve highly restricted material; this would be the case presumably in any instance one might be tempted to label as 'exaptation' since nonfunctional 'junk' is supposedly always involved. Second, the 'exaptative' developments, if actually motivated by local generalizations, i.e. analogy, can create material that stands out as anomalous in the terms of how it fits into the grammar as a whole, not just when its small localized niche is viewed. That is, any irregularity depends on where the material fits into the larger system and does not derive from the model itself.

(16) (= (2e)) What is the relation between exaptation and grammaticalization?

Here the answer is that developments called 'exaptation' and those called 'grammaticalization' are both labels that have been applied to instances of grammatical change. They are thus connected in that both represent ways in which speakers make creative connections among elements in their language and act on those

connections. Moreover, there is a meta-relationship connecting them, in that both reveal ways in which linguists have needlessly singled out and given prominence to one out of many types of grammatical development.

Finally, there is the question in (17):

(17) (= (2d)) How should we define the concept of 'novelty', and is it a useful criterion for a change to be qualified as exaptation?

For this question, the answer is that 'novelty' is in the eye of the linguist – it is important to realize that any innovation involves stretching the limits of what is possible, creating something that was not previously there or using an expression or structure in a new and different way; labeling some such uses as 'exaptation' may characterize them but it hardly explains them. In a real sense, the speaker in such situations is simply aiming to accomplish something with his or her linguistic material.

By way of closing, I would advocate that perhaps historical linguists should do something novel with the term 'exaptation', namely – at the risk of appearing prescriptive – eliminate it and banish it from general usage. Without wanting to seem Whorfian, we might say that perhaps the absence of the term will then allow for a refocusing on what is really important in the study of grammatical change, that is, not labeling and taxonomizing but rather understanding the limits of change in this domain of language.

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