EXAPTATION AND GRAMMATICALIZATION

Elizabeth Closs Traugott
Stanford University

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1. The problem[1]

In recent years the term "exaptation" has come to be used fairly widely, most especially in work on evolution of language (e.g. Hurford, Studdert-Kennedy and Knight 1998), and in historical morphosyntax (e.g. Lass 1990, 1997, Vincent 1995, Norde 2002). Several other terms have also been used with reference to somewhat similar phenomena, "regrammaticalization" (Greenberg 1991), "functional renewal" (Brinton and Stein 1995), "degrammaticalization" (Norde 2002, Heine 2003), and "hypoanalysis" (Croft 2000). All concern reanalysis, and the use of relatively marginal grammatical material as more productive morphology with a different function. The purpose of the present paper is to review some of the work on exaptation and its (partial) synonyms in historical morphosyntax, and on the relationship of the phenomena in question with grammaticalization, especially in so far as they serve as counterexamples to the latter. I will show that although some (e.g. Greenberg 1991, Giacalone Ramat 1998) have argued that grammaticalization and exaptation are conflicting types of change, it is better to view them as essentially similar, but with different outcomes (cf. Norde 2002).

Section 2 very briefly mentions some of the work on exaptation in evolution, Section 3 discusses some works in which exaptation and its congeners have been viewed as alternatives to grammaticalization, and Section 4 turns to works in which they have been construed as counterexamples to grammaticalization. Section 5 serves as a conclusion.

2. Exaptation and evolution of language

The term exaptation was apparently first used in evolutionary biology by Gould and Vrba (1982) in contrast to adaptation:

> We wish to restrict the term *adaptation* only to those structures that evolved for their current utility; those useful structures that arose for other reasons, or for no conventional reasons at all, and were fortuitously available for other changes, we call exaptations.
>
> (Gould 1983: 171, cited in Lass 1990: 80)

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In biology standard examples are the redeployment of reptiles' feathers that served thermoregulatory purposes for flight, or the redeployment of vertebrates' respiratory and digestive devices for sound production.

There has been a very active debate about exaptation in the context of discussions about the evolution of language (see various papers in Hurford, Studdert-Kennedy, and Knight 1998, Kirby 1999: Chapter 5). One position is that the language capacity derives accidentally from expansion of brain plasticity in an essentially "catastrophic" step. This suggestion has recently been refined by Hauser, Chomsky and Fitch, who propose that the faculty of language, narrowly defined as an abstract linguistic computational system may be exapted rather than adapted from the "core computational mechanisms of recursion" (Hauser, Chomsky and Fitch 2002: 1573). A second position is that language evolved by Darwinian natural selection in plausible incremental steps (adaptation) (cf. Pinker and Bloom 1990). Yet a third position seeks a compromise between the two by suggesting that exaptation was followed by adaptation. Two recent proposals of this third type, both assuming phrase structures of the type [NP VP], are as follows:

i) Phrase structure is an exaptation of thematic role structure: primates developed an altruistic ("I'll do for you so you do for me") social calculus involving Agent, Theme, Goal. Proto-language involved lexical (one word at a time), not syntactic production. Syntactic phrase structure developed into syntactic human language only after expansion of brain size, which enabled signal structure maintenance. The social calculus was mapped onto signal merges, i.e. phrase structures (Bickerton 1998, Calvin and Bickerton 2000),

ii) Phrase structure is an exaptation of syllable structure, which arose as vocabulary size increased. Vocabulary size in turn is an exaptation "resulting from larynx lowering in a creature that avoids synonymy" (Carstairs-McCarthy 1999, as cited in Uriagereka 2001: 370). An example is the putative exaptation of the syllable structure of [kæt] and mapping of this syllable structure onto *Mary saw John*, as in (2):

(2) $[k_{onset}\ [æ_{nucleus}\ t_{coda}\ ]_{rhyme}\ ]_{syllable}$
$[Mary_{NP\text{-}subject}\ [see_{verb}\ John_{NP}\ ]_{VP}]_{sentence}$

In the present paper I will not be concerned with issues of evolution, but rather with changes in textually attested languages that have been interpreted as exaptations in language change, most specifically the development of new morphological function for an old morpheme.[2]

[2] Contrast "phonogenesis", in which an old morpheme becomes part of a lexical stem, e.g. Middle High German *be* 'around' + *liben* 'live' > Gm. *bleiben* 'remain' (Hopper 1994). Contrast also such changes as the attribution of a grammatical value to an originally phonologically motivated element such as the *–n* of *mine* (compare *my*/*mine* to *a*/*an*) as a possessive as in *his, hern, yourn, theirn*. Jespersen (1922) called this "secretion" (cited in Lindström 2003, who suggests that secretion has similarities to exaptation, although the reanalysis in question (from phonemes > morpheme) is very different from what is typically treated as exapation (marginal morpheme with old function > more central morpheme with new function)).

3. Exaptation as an alternative to grammaticalization

Lass (1990) was the first to suggest that the concept of "exaptation" could be used metaphorically to account for changes on the margins of the linguistic system of attested languages. He did not, however, insist on invoking a biological model for language change, arguing that such a model is inappropriate because language is a cultural and social, not physical system. There is no direct genetic transmission of linguistic traits from one generation to another (see also McMahon 1994: 336).[3] In Lass's view, as expressed in his first discussion of exaptation:

> Exaptation ... is the opportunistic co-optation of a feature whose origin is unrelated or only marginally related to its later use. In other words (loosely) a 'conceptual novelty' or 'invention'. (Lass 1990: 80)

Change is not deterministic or teleological:

> Historical junk ... may be one of the significant back doors through which structural change gets into systems, by the re-employment for new purposes of idle material. (Lass 1990: 98)

Human cultural evolution, including language change:

> is based at least partly on *bricolage*, cobbling, jerry-building; … pieces of such systems are always falling off and if not lost are recycled, often in amazingly original and clever ways. (Lass 1997: 316)

When a form loses its function, or is only marginal within a system, three possibilities arise (based on Lass 1990: 82):

a) it can be lost
b) it can be kept as marginal garbage (e.g. suppletion)
c) it can be reused for something else (= exaptation)

Key to Lass's original conception of exaptation was the observation that some forms lose their function because of phonological or other changes, leaving them "idle", junk ready to be reused; this is in fact better construed as a hypothesis since morphological material is very rarely functionless. Indeed, in Lass (1997) he observes that fully functional material that is nevertheless "sitting on the margins" (p. 319) may be reused as well, for example, in Finnish various (quasi-)derivational formatives were used to construct the Finnish case system.

Lass gives several examples of which only three will be cited here. One is the reanalysis of a part of Dutch adjective morphology (number/gender agreement with nouns) as marking on morphologically complex attributive adjectives in Afrikaans (Lass

[3] To what extent studies of the "KE family" which appears to have a variety of genetic characteristics, including certain linguistic traits (see e.g. Enard et al. 2002), may prove to counter this claim remains to be seen.

1990, 1997). Specifically, in the seventeenth century *-e* signaled nominative or accusative case depending on the gender of the noun. In Afrikaans gender was lost, leaving *–e* without a motivating factor (i.e. as "junk" or "residue"). It could have been lost, or retained randomly, but instead it was redeployed as a marker of a new categorically inflecting category of adjectives. These are morphologically complex (cf. *ge-heim-e recepte* 'secret recipes') and *–e* is an inflection that signals contrast with non-inflecting, largely monomorphemic adjectives. The change is said to be an exaptation of *-e* after loss of gender as a marker of the lexical subclass of adjectives. "Globally, one could say that the inflectional locus has shifted from syntax to lexicon" (Lass 1990: 95).

A second example is the reanalysis of the Indo-European aspectual system as the Germanic tense system. In particular, the perfect vs. aorist distinction (expressed by Proto-IE *oi ~ i*) was reanalyzed as the Germanic singular vs. plural past, i.e. aspectual marking was redeployed for number, as in (3) (Lass 1997: 317):

(3) IE root */bhVid/ 'bite', perfect */bhoid-/ > OE root *bit-*, past sg. *bat*,
IE aorist */bhid-/ > OE past pl. *biton*

The hypothesis is that in later Indo-European the perfect vs. aorist distinction merged as the preterite. Rather than being lost, the original vowel alternation was exapted as number in past tense.[4]

A third example is the development of the progressive in English. As Lass (1997: 318-9) notes, a present participle construction of the type in (4):

(4) thæt scip wæs … irnende
that ship was … running

is occasionally found in OE, as are similar present participle constructions that are not so likely to be progressive in meaning. Later a progressive arose with *–ing*, and by the nineteenth century English came to have a grammaticalized progressive. This is a very rather different example from the other three since the alleged exaptation is not of a form but of a construction (also *-ende* and *–ing* have different forms, even if the grammatical function has some overlap).

How are these examples to be understood in the context of morphosyntactic change? Most especially, how do they relate to analogy, reanalysis and grammaticalization? Lass sees it as an alternative source of grammatical categories to grammaticalization and analogy. With respect to analogy, Lass says: "It is important to distinguish exaptation from analogical and similar processes, or abduction" (Lass 1997: 319).[5] Exaptation is "'conceptual invention', not extension or leveling or reformulation of paradigms in accordance with a 'target' or 'model'. In exaptation the 'model' itself is what's new" (Ibid.). By this is meant that the new function (marking of an adjectival

[4] It was subsequently lost in Germanic except Icelandic. "Junk" residue can be found in English *was-were*.

[5] The "or" in this quotation must be understood as the exclusive, since abduction leads to reanalysis not analogy.

category in Afrikaans, of concord in the Germanic strong verb preterite, or of progressive aspect) did not pre-exist the exaptation. The exaptation analysis of the Germanic preterite therefore depends crucially on the hypothesis that speakers did not associate ablaut with number, and that there was no model for the new development. However, Giacalone Ramat (1998: 110) has pointed out that Germanic preterite-presents retained the IE perfect morphology, including number contrasts, and served as a model for Germanic preterites in general. What may or may not be a comparable template on which a new function can be modeled can be determined only if a large number of possible structures in the grammatical network are investigated. This often requires looking outside the narrow confines of the specific structure in question (in this case regular versus preterite present verbs).

If exaptation is conceptual invention, then it is a special case of reanalysis. Harris and Campbell have defined reanalysis as "a mechanism which changes the underlying structure of a syntactic pattern and which does not involve any immediate or intrinsic modification of its surface manifestation" (Harris and Campbell 1995: 61). They suggest there are five types: constituency, hierarchical structure, grammatical relations, cohesion, and category labeling (p. 62-3). Lass's examples are essentially of the last type: category labeling (and concomitant hierarchic change in specific theories of syntax, e.g. Principles and Parameters, cf. Roberts 1993, van Kemenade 1999). Reanalyses of this kind are highly local. At the time that Lass (1990) appeared, reanalysis was often thought of as the final outcome of many smaller adjustments in the system, in other words, as a "catastrophic" change (Lightfoot 1979). Lass' focus on reanalysis of marginal material helped shift attention to early stages of restructuring and to the ways in which even major typological shifts such as word order shifts (e.g. OV > VO) have their origins in small dislocations.

Lass says exaptation can lead to "grammaticization", which he defines as "having become grammatically obligatory" (1997: 256, ft. 38), a property that Lehmann (1995[1982] has called "obligatorification" and has considered characteristic of grammaticalization. However, Lass differentiates exaptation from grammaticalization which he regards as a process of becoming "routinized, bleached, downgraded from lexical to grammatical status" (1997: 256, ft. 38), and of movement down a path toward an attractor-point, a "sink" which is a bound morph. In his view, the grammatical categories to which new lexical items may be attracted preexist grammaticalization to that category. This is, however, a concept of grammaticalization that is alien to other approaches, most especially that of Meillet (1958[1912]), who specifically introduced the concept in order to account for innovation that in his view could not arise from the mechanism of analogy: "Whereas analogy may renew forms in detail, usually leaving the overall plan of the system untouched, the 'grammaticalization' of certain words creates new forms and introduces categories which had no linguistic expression. It changes the system as a whole" (Meillet 1958[1912]: 133).. As we will see, Norde (2002) avoids this problem by treating grammaticalization and exaptation as different types of category innovation.

I turn briefly now to two papers that draw on Lass (1990: Vincent (1995) and Brinton and Stein (1995). Vincent (1995) seeks to make the relationship between exaptation and grammaticalization more explicit. He argues, contra Lass (1990), that exaptation does not operate only on "junk" (a point that Lass 1997 acknowledges). Indeed,

> Changes catalogued under the rubric of exaptation ... involve the assignment of new morphosyntactic functions to elements which are already *centrall*y part of the grammar, and typically part of the paradigmatic core of the morphological system. (Vincent 1995: 438; italics added)

In drawing a fuller distinction than Lass between exaptation and grammaticalization, Vincent privileges unidirectionality in grammaticalization and says that "in a number of the classic instances of grammaticalization there is an inherently conservative element built into the change itself" (p. 434). This conservative element is semantic and has an "inbuilt link to the pre-existing system" (p. 441); it is most observable and has the greatest force in early stages of grammaticalization. In these early stages grammaticalization "begins life outside the core morphosyntactic system" (p. 438); in later stages "the development is from less centrally to more centrally grammatical" (Ibid.). For Vincent, what differentiates the two kinds of change is that in grammaticalization a lexical item is given a new form as well as a new function relative to the system, whereas in exaptation an old grammatical form is retained and given a new function. This assumes that some kind of form change always accompanies grammaticalization, an assumption that is, however, called into question by such standard examples of grammaticalization as the development of *be going to*, or the Latin *hab-* perfect, which acquired reduced forms (e.g. *be gonna*) only after reanalysis and grammaticalization.

Vincent's example is the development of the Romance definite article and clitic object (e.g. French *le*) out of Latin *ille* 'distal deictic pronoun'. Both are often considered to be instances of grammaticalization (note the loss of segmental structure). Interestingly, Vincent treats both of them as involving both grammaticalization and exaptation. They illustrate grammaticalization in so far as "a new syntactic function, previously unexpressed in the language, emerges via a classic process of grammaticalization" (p. 443), a type approaching "Meillet's characterization of such changes as introducing categories which had no previous expression in the language" (p. 441). They illustrate exaptation in so far as there is "'natural selection' of discarded variants to ensure that the necessary functions have clear phonological expression" after case loss (p. 443-4). Although both Lass and Vincent appear to ignore "secondary grammaticalization" (the development of an already grammatical form into a yet more grammatical one), the development of the Romance definite article is clearly of this type, since the distal deictic pronoun is already a grammatical form. Vincent argues that given case loss, decategorialization of the article and pronoun resulting in eventual loss "would be fatal" (p. 444). Exaptation, then, appears to be a grammatical change that does not entail decategorialization, and that involves "some fairly radical changes of exponence".

If what is special to exaptation on these various views is that the model is new in a way that is different from grammaticalization, we must ask crucially, what is "conceptual novelty"? Can new categories really "be invented more or less *ex vacuo*" (Lass 1990: 82)? Does exaptation really lead to new models and categories via fairly radical changes that are not local or contextualized in ways typical of grammaticalization? As we have seen, the example of concord in the strong Germanic preterite does appear to have had a

model in the preterite-present system (and of course in the weak verb system). In the case of the progressive, Lass himself says that:

> the construction itself was sitting there on the margin, and centuries later was incorporated into a new aspect system, forming one term of a grammatical opposition which formerly did not exist. (1997: 319)

As Itkonen has said, it is misleading to think of a new "model" in any case of innovation. Change is made out of extant material in extant contexts, which are at the very least partial models or templates for future changes:

> Harris and Campbell (1995: 72-75) are explicit on this point: 'exploratory expressions' are produced by the *existing* grammar (and if they catch on, they may become the basis for reanalysis). Thus, neither reanalysis of existing forms nor production of new forms arises out of nothing. Rather, in both cases some sort of pre-existent model is needed. (Itkonen 2002: 419, italics original)

What may seem like a radical or disjoint change may in fact be so only because we do not understand (or have access to) the intermediate steps leading to the new structure.

In the last paper to be discussed in this section, exaptation is in fact not associated with an entirely new model. Noting that Lass restricted exaptation to essentially morphological contexts, Brinton and Stein (1995) suggest that it can also be usefully extended to syntax. Two of their examples involve the regularizing of extant constructions, in the process of the "firming up of SVO order in English" (p. 42). The first is the emergence in the seventeenth century of the "conclusive perfect" (stative) HAVE + PP + object construction, e.g. *I have a letter written*, after the development of the perfect, e.g. *I have written a letter*. Brinton and Stein argue that the two constructions were in competition in OE, when word order was not fixed. The perfect (*I have written a letter*) became regularized in the sixteenth century, while the conclusive perfect (*I have a letter written*) was "dormant" (p. 36), and in that sense marginal. The latter reemerged in the seventeenth century with slightly new constraints after syntactic changes made discrimination between erstwhile potentially ambiguous constructions feasible. The second example is the pragmaticalization of V1 and V2 inversion in the latter part of the sixteenth century, e.g. *Brought he was by his two brothers, Up comes the boy with a new pair of gloves* (pp. 40-41). A focusing construction became presentative under very strict conditions: "no compound tenses, bifocal structure, subject NP not in focus or not salient at this point…stress on the last open class item" (p. 41).

Brinton and Stein say that these and the other examples they give involve "functional renewal". It should be noted that this "functional renewal" is different from Meillet's "renouvellement" (1915-16/1958). The latter concerns the cooption of a new form for an old function, resulting in the eventual replacement of an older by a newer form, e.g. replacement of negative *ne* in English by *not*. By contrast, Brinton and Stein's functional renewal involves reuse of an old construction for a new(ish) function. It is:

> the retention or revival of an existing syntactic form with a new or renewed function … In functional renewal, an older form makes a resurgence with a meaning which is new, has been lost, or was on the decline. (Brinton and Stein 1995: 34)

4. Exaptation as a counterexample to grammaticalization

At about the same time as Lass' article on exaptation was being written, Greenberg (1991) apparently quite independently proposed the notion of "regrammaticalization" to account for changes somewhat similar changes to those Lass had identified. One of Greenberg's examples is desemanticization and reuse of Stage III articles marked by *k-* in Nilo-Saharan. Greenberg (1978) had proposed for grammaticalization of articles the stages in (5):

(5) Demonstrative > Stage I article (definite article)
Stage I > Stage II article (definite/indefinite article)
Stage II > Stage III loss of functional contrasts, occurrence with practically all Ns (gender marker, classifier)

In languages that do not have classifiers, a Stage III marker may be reinterpreted or "regrammaticalized" as a nominalizer (Greenberg 1991). Croft (2000: 129) gives the example of Ngambay Mundu *usa* 'eat', *k-usa* 'act of eating' (citing Greenberg 1990[1981]: 479, who in turn cites Vandame 1963: 66, 75). A second example is derivational Indo-European *-sk-* reused as inflection. As described by Greenberg, this sounds like regular grammaticalization, except that he supposes there is no obvious semantic connection between the earlier and later stages. A more detailed account is provided by Giacalone Ramat (1998). Originally an IE suffix for forming present tense, sometimes with iterative value, *-sk-* was reused as an inchoative in Latin (see *pallesco* 'grow pale'), then reused a second time in French as affix that "allows to fix [sic] the stress for the whole paradigm in a position after the stem, which remains unstressed" (see *je finis/nous finissons*) status (Giacalone Ramat 1998: 111). According to Giacalone Ramat, this second change has a more lexical than grammatical status, and therefore does not match the standard view of grammaticalization as a shift from lexical to grammatical.

Greenberg appears to reject unidirectionality, and in particular the shift from lexical to grammatical as criterial for grammaticalization. He prefers to regard grammaticalization as "development of grammatical elements from all sources" (1991: 303). On his view regrammaticalization is therefore not primarily a counterexample to unidirectionality. Instead, because it shows that "disjunctive" semantic change is possible (p. 301) it is a challenge to grammaticalization construed as synchronized form-meaning change. He does, however, suggest that because regrammaticalization does not have wide-spread effects (p. 312) the challenge can be assumed to be minimal.

Drawing on Lass (1990), Greenberg (1991), and Vincent (1995), Giacalone Ramat (1998) critiques Lass (1990) on a variety of grounds. For one, the notion of linguistic junk, free to be reused, underestimates the functionality of most morphology (p. 109). After discussing a number of functional renewals, including the development of the Latin inchoative suffix *–esc-/-isc-* (cited in Greenberg 1991, see above), she defines exaptation

as: “refunctionalization under conditions of discontinuity in the developmental continuum” (Giacalone Ramat 1997: 112). An example she gives is the redeployment of the Latin neuter plural ending *–a* as a collective when gender marking was restructured in the Romance languages leaving only masculine and feminine. Although this change is said to have taken a long time to propagate across nouns in Romance, and although it clearly has connections with the earlier category (number, but no longer gender), she claims that it is not a typical case of grammaticalization

> because it shows a kind of jump from one function to the other (p. 114)… The morphological marks have not followed the expected course of grammaticalization over time, which in this case would result in zero (loss of overt segment) as a consequence of the loss of the neuter, but have slid towards adjacent (and more central) area of morphology. (Giacalone Ramat 1998: 116)

Like Lass, Vincent, and Greenberg, Giacalone Ramat sees discontinuity in the development. In all cases one wonders whether what appears to be discontinuity from the distance of several hundreds of years and from partial evidence of change as made available by written documents, is likely to have been perceived as such by speakers of the language, at least in the early stages of the change. Is the discontinuity not a function of the assumption that reanalysis is late (Lightfoot 1979), the outcome of many smaller changes, a view that is probably best reserved for massive typological shifts? Is it not an artifact of the time distance between the stages considered, and of attention to citations forms out of context?

Giacalone Ramat cautions that refunctionalization of old grammatical forms such as has been identified as exaptation poses a "serious challenge to the unidirectionality hypothesis" (p. 123). Nevertheless, she concludes in the end that grammaticalization is best regarded as unidirectional, since that is the major constraint on change. Instances of refunctionalization/exaptation are rare and sporadic, “opportunistic” as Lass originally said, phenomena that remind us that language change must be understood as the product of use, not of grammars changing.

The last two papers to be discussed in detail in this section are Norde (2001) and Norde (2002). Norde (2001) follows Lass in saying that "a prerequisite for linguistic exaptation is that a grammatical distinction is lost prior to the loss of the morphological material that used [to] code it" (Norde 2001: 244). She reviews some of the examples mentioned above, including the development of the Latin neuter plural *–a*, pointing out that this example was discussed in Kury¬owizc (1975[1965]), and that Lehmann (1995[1982]) specifically rejects it as a counterexample to grammaticalization. Her own examples of exaptation are the development in Swedish of the masculine singular nominative inflection *-er* into a derivational suffix forming nouns from (derogatory) adjectives, e.g. *en dummer/fjäsker/slarver* 'a stupid/fawning/careless one', and the well-known development in Swedish, Bokmål Norwegian and English of the *-s* genitive inflection into a clitic. But it is not clear from her discussion that the use of *-er* for masculine singular nominative case had ceased before it was reused. As for the *-s* genitive inflection in English, it was clearly still used while the clitic was coming into being. As Norde herself says, there is (semantic) functional continuity in the development of the

genitive; only the grammatical status changed (she rejects the suggestion that the clitic might have originated in the pronominal *his* as in *for Jesus Christ his sake*, arguing with Allen 1997 and others contra Janda 1980, 2001 that this form is a spelling variant of *-es*). Indeed, in Norde (2002), although she still identifies exaptation with "novelty", she points out that the Swedish inflection *–er* was reinterpreted as derivational only "in adjectival noun constructions, which themselves are derivation-like" (Norde 2002: 61).

Norde embeds exaptation in discussion of "degrammaticalization" and of the final stages of grammaticalization. Like Heine (2003), Norde points out that the term degrammaticalization has been widely used in different, often contradictory, ways, ranging from loss of meaning and grammatical function, e.g. *for-* in *forget*, to conversion, e.g. use of preposition *up* as a verb.[6] Like Lass and Greenberg, she views exaptation as an alternative to inflectional loss, exploited most especially in the theoretically problematic space between inflection and derivation (Norde 2002: 55). It should be noted that the derivational morphology resulting from exaptation is in all cases cited so far grammatical, e.g. the inflection is exapted into a marker of nominal or adjectival category. With this focus on inflection to (grammatical) derivation Norde suggests a specific domain in which exaptation is used. As she importantly points out, this domain shares much in common with grammaticalization. It is gradual in the sense that there is an intermediary stage in which the older and newer form-function relationships coexist, and the identity of the construction in which the change occurs is not affected[7] (Norde 2002: 63). In this regard Norde's view is harmonic with Croft's suggestion that the source of what Lass called exaptation and Greenberg called regrammaticalization is "hypoanalysis" or "underanalysis":[8]

> In hypoanalysis, the listener reanalyzes a contextual semantic/functional property as an inherent property of the syntactic unit. In the reanalysis, the inherent property of the context … is then attributed to the syntactic unit, and so the syntactic unit in question gains a new meaning or function. (Croft 2000: 126-127)

On this view, the alleged and highly problematic semantic discontinuity or "conceptual jump" associated with exaptation by prior researchers is resolved.

5. Conclusion

Some distinctions between exaptation and grammaticalization have been built on spurious assumptions, e.g. new categories are not innovated in grammaticalization (Lass), grammaticalization always involves new forms (Vincent), new categories can be innovated *ex vacuo* (Lass), or by semantic discontinuity and conceptual jumps (Lass, Vincent, Greenberg, Giacalone Ramat). As Norde has shown, it appears to be similar in

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[6] Ramat (1992, 2001) and others have called this "lexicalization".

[7] In support of the latter point, she alludes to Haspelmath's observation that "in grammaticalization the identity of the construction and the element's place within it are preserved" (Haspelmath 1999: 1064).

[8] In other respects Croft's view is different, however, in that he conceptualizes hypoanalysis as functioning primarily in the domain of syntax, not morphology.

nature to grammaticalization, provided the latter is thought of not as attraction to a sink (Lass 1997) but as the subset of cross-linguistically recurring changes that involve correlations across time between semantic, morphosyntactic, and sometimes also phonological changes. Individual cases of grammaticalization always originate in exploratory uses of lexical items, constructions, or grammatical forms. Exaptation likewise appears to originate in exploratory uses of morphemes that no longer have a clear grammatical function (at least in certain contexts), i.e. at the end of grammaticalization.

Exaptation in language change can be thought of as the phenomenon of the emergence of a new grammatical function at what could otherwise be expected to be the end of a cline of grammaticalization. Since this phenomenon is attested, it does serve as a counterexample to the hypothesis of unidirectionality in grammaticalization. It is, however, apparently rare, as all those who have written about it have confirmed. Furthermore, particular examples of change do not appear to be cross-linguistically replicated, unlike typical examples of grammaticalization, such as the development of auxiliaries or of case (Heine 2003). It is possible that exaptation is limited to situations of "Systemstörung" 'system disruption' (Norde (2002: 61), e.g. typological word order shifts. This hypothesis deserves to be tested.

Attention to exaptation has been salutary because it has served to remind us that change is opportunistic, not predetermined (Lass, Giacalone Ramat), and has helped refine our understanding of what grammaticalization is: a robust tendency for lexical items and constructions to be used in certain linguistic contexts to serve grammatical functions, and, once grammaticalized, to be used to further develop new grammatical functions (Hopper and Traugott, 2003: 231).

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