

PARADIGMATIC DERIVATION

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ABSTRACT

This paper proposes a class of derivational processes that define derived stem forms of basic lexemes. Non-finite verbs and non-absolute adjectives are identified as examples of such derivational stems, as are the stems that underlie non-default plurals in Germanic. The paper indicates how this analysis avoids the difficulties encountered by inflectional treatments of this class of stems, and suggests a general reevaluation of the criteria that are applied to distinguish inflection from derivation.

1. INTRODUCTION

It is conventional to recognise two dimensions of paradigmatic organisation in a morphological system. The inflected forms of a lexeme *L* make up the inflectional paradigms of *L*. The new lexemes that can be defined from the root of *L* form what is often, by extension, termed the derivational paradigm of *L*. Implicit in many traditional descriptions is a third subsystem, comprising the ‘principal parts’ or ‘stems’ that provide bases for complex word forms. The *inflectional stems* (Matthews 1991) that underlie inflected forms constitute one familiar subclass. This class is complemented by a system of what might best be termed *derivational stems*. Like inflectional stems, derivational stems are forms of a basic lexeme. However, unlike inflected words or stems, they may feed derivational processes such as lexeme formation or compounding.

Non-finite verbs and comparative and superlative adjectives are canonical examples of derivational stems. Irregular noun stems may also exhibit similar properties. In English, as in Germanic generally,

these stem types freely occur in compounds, such as *slowest-moving*, *half-remembered* or *oxen-cart*. The derived stems in these examples are very seldom treated as separate lexemes. Infinitives and participles are almost universally treated as forms of a basic verb lexeme, on a par with finite forms. Non-absolute comparative and superlative adjectives are likewise usually regarded as forms of a basic lexeme. It follows that these forms must be defined by lexeme-preserving rules or operations. Yet because these elements may occur in derivational formations, they do not fall neatly into the standard morphological classes defined, on the one hand, by lexeme-preserving inflection and, on the other, by lexeme-creating derivation.

This paper argues that this problem is a symptom of the failure to recognise lexeme-preserving derivation. In particular, the properties of non-finite verbs and non-absolute adjectives present no difficulties if, following Austerlitz (1966), these elements are analysed as derivational forms:

Participles and infinitives are here considered inflected forms, though in reality they form a productive system of exocentric derivation within the verbal paradigm. This explains why a participial form . . . can lie at the basis of a nominal form . . . The comparative and superlative are here regarded as derivational categories. (Austerlitz 1966: xii–xiii)

These analyses, which Austerlitz (1966) proposes for Finnish, rest on a notion of paradigmatic derivation that defines stem forms of a lexeme. Such uninflected stems may feed lexeme-creating derivation. Some paradigmatic stems, notably comparative and superlative adjectives, take the same inflections as the root form of the lexeme. Other stems, such as infinitives and participles, are derived by rules that compete with verbal inflection. These stems can only take ‘exocentric’ nominal or adjectival inflections. In each case, the conflict between the morphological properties and distribution of these forms reflects their status as derived stems of a basic lexeme. A derivational analysis likewise applies to the noun stems that underlie irregular plural forms (notably in Germanic), which may also feed compounding and lexeme formation.

2. INFLECTION AND DERIVATION

There are two principal benefits of admitting lexeme-preserving derivational processes. The first, outlined above, is a straightforward description of the paradigmatic stems that underlie non-finite verbs, non-absolute adjectives and irregular noun plurals. The second, more general, benefit is a morphological classification that clarifies the traditional distinction between derivation and inflection. The present account highlights the unargued and, in many cases, unsound assumptions that underpin inflectional analyses of paradigmatic stems. Refining these assumptions eliminates one class of problems that have been taken to cast doubt on the derivation–inflection contrast. Since non-finite verbs and irregular nouns in Germanic have been especially prominent in discussions of inflection and derivation, the examples below are drawn from English and German.

It is useful at the outset to review the types of properties that are typically used to distinguish inflection from derivation. A representative list of inflectional properties is given in (1).

(1) GENERAL PROPERTIES OF INFLECTION

- Inflection is monotonic, adding but not changing morpho-syntactic features.
- Inflection is paradigmatic, defining new inflected forms of existing lexemes.
- Inflection is relevant for syntagmatic dependencies (Anderson 1982).
- Inflection tends to be fully productive and semantically transparent.
- Inflectional exponents tend to occur on the periphery of a complex word.

The properties in (1) are interrelated in various ways. The claim that inflection only adds features underpins the view that it is lexeme-preserving. The idea that inflectional information is relevant, that is to say accessible, to syntactic processes is likewise correlated with the late application of inflectional processes, or with the peripheral placement of inflectional exponents. Each of the properties in (1) contrasts implicitly with its derivation counterpart in (2).

(2) GENERAL PROPERTIES OF DERIVATION

- Derivation may be destructive, changing as well as adding features.
- Derivation may create new lexemes, which may have their own inflectional paradigm.
- The input to a derivational process is not usually syntagmatically relevant.
- Derivational processes may be idiosyncratic or apply within sub-lexicons.
- Derivational exponents tend to occur close to the root, forming a derived stem.

Now the central problem posed by non-finite verbs, non-absolute adjectives, and irregular plurals is that they conform to the inflectional profile in (1) and yet feed processes that exhibit the derivational properties in (2). The systematic contrast between the syntactic and morphological distribution of non-finite verbs, non-absolute adjectives, and irregular plurals reinforces their problematic character. In one use, these elements may occur as free forms in syntagmatic contexts, where they function alongside incontrovertibly inflected words. For example, English participles like *eating* or *abandoned* may function as main verbs in finite verb phrases such as *is eating* or *was abandoned*. Yet as Bloomfield (1933) notes, the same forms also occur in compounds, such as *man-eating* or *semi-abandoned*, as well as in other derivational formations. Non-absolute adjectives in English and German show a similar alternation. Comparative forms like *older* or its German counterpart *älter* may occur as free words, in either an attributive or predicative function. However, they may also occur as stems in compounds like *younger-seeming man* or *älter gewordener Kanzler* 'older become Chancellor'. Irregular 'strong' plurals in German exhibit a similar pattern, as do productive 'weak' feminine nouns in *-n*. Thus the German forms *Männer* and *Spinnen* function as plurals in *die Männer* 'the men' or *die Spinnen* 'the spiders', but as number-neutral stems in *männerlos* 'manless' or *Spinnennetz* 'spider web'.

These patterns raise a common problem. How can the distinction between inflection and derivation be reconciled with the existence of forms that exhibit the properties and syntactic distribution of

inflected words, and yet appear within incontrovertibly derivational formations?

This conundrum has led some, notably Lieber (1980) and Di Sciullo and Williams (1987), to conclude that the traditional distinction between inflection and derivation is misconceived or unilluminating. More conservative approaches introduce a finer-grained distinction between types of inflection. Anderson (1992: 127), for example, contrasts productive and non-productive inflection, while Booij (1993, 1996) distinguishes inherently inflected forms from contextually inflected forms, and proposes that ‘only non-contextual inflection can feed word formation’ (Booij 1993: 42). By treating non-finite verbs, non-absolute adjectives and irregular noun plurals as inherently inflected forms, Booij can account for their participation in derivational processes.

While these accounts offer different solutions, they proceed from a common diagnosis. The perceived problem is that an inflected form unexpectedly participates in derivational processes. However, this consensus rests ultimately on a questionable interpretation of the generalisations in (1) and (2). First and foremost, the fact that derivational operations *may* be destructive does not entail that all derivation *must* be destructive, or that any non-destructive processes must be inflectional. Similarly, the claim that derivation may create new lexemes does not imply that all derivation must be lexeme-creating, or that any lexeme-preserving operation must be inflectional. Hence nothing follows from the fact that non-finite verbs, non-absolute adjectives and suppletive ‘plural’ stems are all forms of a basic lexeme that are more informative than the root form.

The idea that derivational *inputs* are not relevant or ‘visible’ to syntactic processes also does not entail that derivational processes cannot change or add features that are syntactically relevant. Incontrovertibly derivational processes like nominalisation or passivisation alter category and valence features in ways that are directly relevant for syntactic dependencies such as subcategorisation. Thus the fact that non-finite verbs or comparative adjectives may be selected by a syntactic head or construction does not reveal anything about their morphological status.

Claims about the restricted productivity of derivational processes,

though no less inconclusive, have a somewhat different status. To a considerable extent, these claims rest on inappropriately synchronic analyses of frozen formations, such as English derived nominals in *-ion*. The ‘semi productivity’ of this type of formation does not show anything about the productivity of derivation in general, but reflects the fact that derived nominals as a class exhibit residual patterns that are, in some analyses, misattributed to the application of a ‘minor’ or restricted rule. There is absolutely no reason to suppose that derivation cannot be productive. One need only consider the productivity of formations like agentive nominals in *-er* in German and English.

Finally, the generalisation that inflectional exponents tend to occur outside derivational exponents does not dictate an inflectional treatment of non-finite verbs or non-absolute adjectives. In German, the infinitival suffix *-en* and the regular participial suffixes *-d* and *-t* are the only verbal exponents on verbs that head non-finite phrases. When these forms occur in an attributive function, the exponents *-en*, *-d* and *-t* pattern with the comparative and superlative exponents *-er* and *-est* in occurring inside adjectival agreement exponents. Thus participial *-d* occurs inside the ‘strong’ agreement inflection *-es* in *ein schlafendes Kind* ‘a sleeping child’, while superlative *-st* occurs inside the corresponding ‘weak’ inflection *-e* in *das jüngste Kind* ‘the youngest child’. A derivational classification of *-en*, *-d* and *-t* accounts for this pattern directly, whereas an inflectional treatment must allow a single form to bear both verbal and adjectival inflections.

These various clarifications of the properties in (2) are summarised in (3).

(3) DERIVATION REVISITED

- Only derivation is destructive, but not all derivation is destructive.
- Only derivation may create new lexemes, but not all derivation creates new lexemes.
- The input to a derivational rule is not syntactically relevant, but the output may be.
- Derivational processes may be, but need not be, idiosyncratic or restricted.

- Derivation occurs inside inflection, but not all peripheral exponents are inflectional.

The central point that underlies the revisions in (3) is that the distinction between inflection and derivation must be clearly dissociated from the contrast between paradigmatic and lexeme-creating processes. All inflection can be regarded as paradigmatic, but it does not follow – and there are no independent grounds for assuming – that all paradigmatic processes are inflectional.

The proposed dissociation admits a paradigmatic subclass of derivational processes that resolves the difficulties presented by non-finite verbs, non-absolute adjectives and irregular plurals. As paradigmatic formations, these items share properties with paradigmatic inflectional elements. Yet as derivational forms, they exhibit distributional similarities with other derivational stems.

The problem posed by the syntactic distribution of paradigmatic stems can likewise be resolved by distinguishing two overlapping but separate senses of ‘word’. One sense corresponds to the ‘minimal free form’ that Bloomfield (1933: 178) defines in opposition to bound forms and phrases. Non-finite verbs, irregular plurals, comparatives and superlatives are all word *forms* in this, strictly distributional, sense, since they may occur as elements of a syntagmatic representation. Another, essentially morphosyntactic, sense underlies the distinction between derivational stems and inflected words in Bloomfield (1933: 223). The use of the term ‘word’ in these different senses gives rise to terminological confusion in Bloomfield (1933); there is absolutely no reason to assume that free syntactic forms need be inflected elements. Hence the syntactic use of non-finite verbs, non-absolute adjectives and strong noun stems implies nothing about their morphological status.

In sum, none of the considerations summarised above militates against treating non-finite verbs, non-absolute adjectives and irregular plural stems as paradigmatic stems of basic lexemes. Productive patterns, such as regular non-finite verbs or non-absolute adjectives, can be derived from the lexeme root. Non-productive patterns may likewise be encapsulated in suppletive stems. In the case of a ‘strong’ German noun like MANN, a suppletive ‘second’ stem *Männer* provides the base for the plural *Männer* and the dative

plural *Männern*, as well as for number-neutral compounds like *Männerstimme* ‘man’s voice’ or derivational formations like *männerlos*. Like roots and unlike words, these derived stems may feed further, lexeme-forming derivation. Yet like words and unlike proper roots, these derived stems may often occur in a syntagmatic context.

3. CONCLUSION

The status of the traditional distinction between derivation and inflection is arguably one of the most vexing questions addressed in current morphological theories. It is indisputable that lexical roots, and certain stem types derived from roots, may participate in processes that appear to exclude inflected elements. This contrast between roots and derived stems, on the one hand, and inflected elements, on the other, underlies the recognition of a class of ‘derivational’ processes that is distinct from – and in some sense prior to – ‘inflectional’ processes. Thus a verb root such as German *les-* ‘read’ may feed lexeme formation processes that define the deverbal noun *Leser* ‘reader’ or the adjective *lesbar* ‘readable, legible’. These derived stems may in turn feed further lexeme formation or compounding, yielding forms like *unlesbar* ‘unreadable, illegible’ or *Buchleser* ‘book reader’. In contrast, a fully inflected word like 2SG (present indicative) *liest* does not feed lexeme formation or compounding. Precisely the same restriction applies to an inflectional base like *las-*, which underlies preterites like 2SG *last* and past subjunctives like 2SG *läsest*. These contrasts are fully representative in German, as in other languages, as there are no derivational formations that contain *las-* or, indeed, any unambiguously finite verb form.

The preceding sections preserve the distinction between inflection and derivation by classifying one group of elements as derivational stems rather than as inflectional words. This section concludes with some suggestions about the basis of the contrast between inflection and derivation.

Morphological types are most often defined in morphotactic terms. This form-based perspective is reflected in the way that Robins (1989) distinguishes roots, stems and words below.

(4) MORPHOTACTIC TYPES

The term *stem* is often used specifically to refer to that part of an inflected word less its inflections; stems may therefore be the same in form as roots, or they may consist of root morphemes together with one or more derivational affixes. (Robins 1989: 244)

The core distinction in (4) holds between stem and word forms, as roots are just simple stems. However, the fact that stems ‘may be the same in form’ as roots or words indicates the shortcomings of a form-based classification. This point is tacitly acknowledged in item-and-arrangement analyses through the use of zero morphs to annotate morphotactically identical forms. From the standpoint of a lexeme-based approach, these morphemic annotations are proxies for the notional properties that distinguish stem from word entries. From this perspective, it is the presence of inflectional features rather than the attachment of inflectional exponents that defines word entries. The fact that this distinction may fail to be marked by an inflectional exponent is attributable to the generally non-biunique character of inflectional exponence (Matthews 1991).

These considerations lead, more generally, to the idea that the contrast between morphological types is morphosyntactic, not morphotactic. In short, the contrast between derivational and inflectional elements reflects their features, not their form. A candidate notional contrast between morphological types is given in (5). The feature-level distinction in (5a) incorporates the contrast between ‘inherent’ paradigmatic derivation and ‘syntactically relevant’ (Anderson 1982) or ‘contextual’ (Booij 1996) inflection. This classification in turn supports the contrast in (5b) between derivational and inflectional entries, and the parallel contrast between corresponding processes.

(5) MORPHOSYNTACTIC TYPES

- a. The morphological component of a language specifies, for each category of the language, a distinguished class of features that are inflectional on that category.

- b. Inflected base and word entries contain inflectional features; root and derived stem entries do not. A rule or process is inflectional if it refers to inflectional features.

Certain features appear to be characteristically inflectional. Prominent among these are the features that encode finiteness, number and structural case. Other features are just as consistently non-inflectional. This class includes category, inflectional class, and the features that distinguish comparative and superlative forms of adjectives. Nevertheless, as in Anderson (1992) and Booij (1993, 1996), particular occurrences of features are classified as inflectional in (5b). In the cases considered here, it suffices to allow the status of a feature to depend on properties of the entry on which it occurs, specifically the syntactic category of the entry. Agreement features in German illustrate this point. Whereas number features are normally classified as inflectional, gender has a more variable status. Gender features are, like person features, usually regarded as an inherent property of noun roots, but as an inflectional property of attributive adjectives. Thus the status of a gender property depends on the category of the entry with which it is associated. This qualification carries over to the rules and processes in (5b), which are inflectional whenever they make reference to features that are inflectional on the category of the entry to which they apply.

Within Germanic, the inflectional open class elements comprise finite verbs, agreeing adjectives, and nouns marked for number or structural case. The same elements tend to be inflectional in other languages as well. Other elements, whether morphotactically simple or complex, are non-inflectional. In particular, non-finite verbs, non-absolute adjectives and suppletive noun stems are non-inflectional. Hence these forms feed derivational compounding or lexeme-formation rules. At the same time, the paradigmatic character of these derivational stems is reflected in the fact that they, like inflected elements and unlike derived lexemes, may be defined by realisation rules of the sort proposed by Matthews (1991), Anderson (1992), Aronoff (1994) or Stump (2001).

It is perhaps appropriate to close this paper by acknowledging

that the central components of the proposal defended above are clearly anticipated in Robins (1959) (reprinted in this issue).

Derivational formations with a common base form can also be set out in paradigms, though these are mostly less regular and offer more variation as between individual bases in the classes involved. Some paradigms can be said to be on or near the borderline as between inflection and derivation. The category of grade in the Latin adjective is borderline in this respect; almost (though not quite) universal in their applicability to the class of adjectives, the comparative and superlative forms share the majority of the syntactic functions and relations of the positive forms, though a certain few constructions are unique to each. In the example of paradigm treatment given above grade was regarded as derivational and so not included in the (inflectional) paradigms of the adjective. . . . (Robins 1959: 126)

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REFERENCES

- ANDERSON, STEPHEN R., 1982. 'Where's morphology'. *Linguistic Inquiry* 13, 571–612.
- ANDERSON, STEPHEN R., 1992. *A-Morphous Morphology*. Cambridge: Cambridge University Press.
- AUSTERLITZ, ROBERT, 1966. *Finnish Reader and Glossary*. The Hague: Mouton.
- BLOOMFIELD, LEONARD, 1933. *Language*. Chicago: University of Chicago Press.
- BOOIJ, GEERT, 1993. 'Against split morphology'. In *Yearbook of Morphology 1993*, 27–49. Dordrecht: Kluwer.
- BOOIJ, GEERT, 1996. 'Inherent verses contextual inflection and the split morphology hypothesis'. In *Yearbook of Morphology 1995*, 1–16. Dordrecht: Kluwer.
- DI SCIULLO, ANNE-MARIE, and WILLIAMS, EDWIN, 1987. *On the Definition of Word*. Cambridge MA: MIT Press.
- LIEBER, ROCHELLE, 1980. *On the Organization of the Lexicon*. Cambridge, MA: MIT dissertation. Distributed by MIT Working Papers in Linguistics.

- MATTHEWS, PETER H., 1991. *Morphology*, second edition. Cambridge: Cambridge University Press.
- ROBINS, R. H., 1959. 'In defence of WP'. *Transactions of the Philological Society*, 116–144. Reproduced in this volume.
- ROBINS, R. H., 1989. *General Linguistics*, fourth edition. London: Longman.
- STUMP, GREGORY T., 2001. *Inflectional Morphology: a Theory of Paradigm Structure*. Cambridge: Cambridge University Press.