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## Morphology Productivity (review)

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The Canadian Journal of Linguistics / La revue canadienne de linguistique, 48(1/2), March-June/mars-juin 2003, pp. 80-82 (Review)

Published by Cambridge University Press

DOI: <https://doi.org/10.1353/cjl.2004.0005>



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about some thoughts they are entertaining on a host of individually defined topics. It can be enjoyable for readers who expect no more.

**Laurie Bauer.** *Morphological Productivity*. In the series *Cambridge Studies in Linguistics* 95. Cambridge: Cambridge University Press. 2001. Pp. xiii + 245. US\$59.95 (hardcover).

Reviewed by Karen Steffen Chung, *National Taiwan University*

In *Morphological Productivity*, Bauer addresses what could be considered the one central issue in all of morphology: Can morphological study transcend an observation and collation of mere *patterns* of word formation, or, can it be reduced to sets of reliable rules, formulas, to greater predictability? Like a good novel, you don't know until the very end of this volume which method will or will not work, or at least point in a fruitful direction. And if you prefer to prolong the suspense, please stop reading now and work through the book yourself. Otherwise be prepared for a "spoiler" review.

Bauer concludes that thus far there *is* no clear, unequivocal, or reliable method to determine the productivity of a morphological process. It sounds like a simple conclusion, and could even be mistaken for a cop-out — had Bauer not done so much work to reach his conclusion. Let us outline that work briefly.

In Chapter 1, "Introduction", Bauer asks a number of questions which condition his choice of approaches in subsequent chapters. These questions include: Is it useful to distinguish between "productivity" and "creativity" in morphology, and in what way? If it is a matter of gradient, does that mean productivity can be measured? And if productivity is not a function of frequency or semantic coherence, then what factors do influence it? Also, do unproductive processes lead to ungrammaticality (p. 10)?

Chapter 2, "A historiographical conspectus", presents an historical overview of studies on productivity, citing researchers from John Palsgrave (1530) to Morris Halle and Ronald Langacker. Bauer touches on such issues as whether productivity is an either/or matter or gradated, and the concepts of restricted and semi-productivity. He notes here that frequency, semantic coherence, and the production of a new word seem to be *prerequisites* for productivity rather than productivity itself (p. 32).

In Chapter 3, "Fundamental notions", Bauer offers a "provisional" definition of productivity: "The productivity of a morphological process is its potential for repetitive non-creative morphological coining" (p. 98). To bring the pieces together, we jump ahead to p. 211 in Chapter 7 to find his refinement of this definition, in which he suggests that productivity is ambiguous between availability and profitability. He says his provisional definition applies only to the "availability" part of the equation, further explaining that "availability" is the potential of a morphological process for repetitive rule-governed morphological coining, and "profitability" reflects the extent the availability of a morphological process is actually exploited in language use.

Chapter 4, "Psycholinguistic evidence about productivity", is perhaps one of the most interesting chapters of the book in that it presents actual results of various psycholinguistic experiments on productivity. One big question Bauer asks is whether complex words are stored as wholes or as morphological elements. In one experiment designed to throw some light on this question, the reaction time of subjects in determining whether a token is a "word" or "non-word" was measured, taking into account such factors as frequency and size

of a word's associated word-family; in some runs of the experiment, the subjects' varying reactions after phonological, semantic, or shared-stem priming were noted. Bauer concludes the chapter by suggesting that complex words are stored in terms of morphemes — noting that a “morpheme” is to be interpreted in a more restricted way than usual — though some very common morphologically complex words are stored as wholes (p. 124). He adds that new coinages seem to have varying degrees of ease of formation.

A quote from Shuel Bolozky on the opening page of Chapter 5 (p. 125), “Scalar productivity”, offers a foreshadowing of things to come: “Precise measurement of word formation productivity thus would not seem to be a realistic goal.” Bauer begins by presenting diverse viewpoints on the either/or vs. scalar nature of productivity, though it seems clear from the outset that the judgment must come down on the side of the latter. The next question, then, is how to deal with varying levels of productivity. And there are individual issues to decide, such as whether compound neologisms like “user-friendliness” constitute a novel productive use of the suffix *-ness*.

Bauer examines the role of corpora as valuable tools for studying and determining the productivity of morphological processes in actual language usage. Corpora can offer a much more realistic picture of language as it comes from the mouths, pens, and PCs of actual users than armchair speculations can. But all corpora have the same inherent and irremediable weakness: no corpus can cover everything that occurs in human language use, even in a selected subject area. We get samples, not comprehensive catalogs. And attempting to interpolate to fill in the gaps violates the very spirit and *raison d'être* of a corpus. So corpora, for all their immense usefulness, cannot crack the problem of morphological productivity, though very large corpora naturally fare better than smaller ones.

Bauer goes on to defend the usefulness of dictionaries in studying productivity. While dictionaries generally do not give full listings of the predictable morphological forms of base words, and thus may distort our impression of a word's productivity, certain dictionaries are more explicit than others on this count. Bauer singles out the *Oxford English Dictionary*, which also provides information on when a form ceases to be productive.

Bauer concludes in this chapter that “perhaps what we are seeking is a measure which will tell us for any morphological process M, what is the likelihood that the next word I meet which is formed by M will be a new word . . . ?” And that “[u]nfortunately, there does not seem to be any simple way of assigning reliable values to such a measure” (p. 162) . . . again.

From this somewhat gloomy conclusion, Bauer moves on to concrete illustration: Chapter 6 is entitled “Exemplification”. In this chapter, Bauer surveys the development and varying productivity of a number of diachronic and cross-language morphological phenomena. The first is the Proto-Germanic suffix *\*-dōm*, as it survives in Danish, Dutch, English, and German. He also studies nominalizations of colour words and of English verbs, and agentive/instrumental nominalizations of *-er* in English. He finds, among other things, that “patterns of productivity which superficially appear unpredictable can be reduced to a number of overlapping restrictions on what is permitted in word-formation, and correspondingly a superficially confused or inexplicable pattern should not immediately lead to the assumption that no explanation in principled terms is possible”, and that “the productivity of English nominalisation endings is far more constrained than would be expected from consulting a dictionary; this was not necessarily always the case, and standardisation appears to have a role to play in fixing such constraints as we find” (p. 204).

Bauer next reviews a number of formulas proposed to calculate productivity, starting with  $I = V/S$ , where  $I$  is the index of productivity,  $V$  the number of existing types, and  $S$  the number of types which the word-formation rule could potentially give rise to.  $S$  being difficult to calculate, Bauer explores the use of the ratio of *hapax legomena*, or “words formed by the appropriate process occurring in a corpus exactly once” (p. 189) to the total number of occurrences of words created by that process in the corpus. Though this looks to be a more feasible kind of measure, it also fails to deliver, even after various normalisation adjustments.

While Bauer does not give us a magic formula of productivity (as we have now been primed to expect) in his concluding chapter (Chapter 7), he does offer us a few observations collected along the way, including: restrictions of bases taking part in particular processes can change diachronically; the productivity of one process may restrict that of another; and productivity can differ for different uses of the same morphological process. While these are not quite what the book’s title may have suggested to the reader at first, they are interesting and useful additions to our slowly growing understanding of morphological productivity.

So in the end, the magic flourished cursive capital “P”, the mathematical symbol chosen to represent “productivity”, has not been found. Is it findable, calculable? Do we really want or need it that much? Where would it get us if we did get it? What other approaches are there to a meaningful study of morphology? While it is interesting to propose and experiment with different approaches, morphological research, at least for the time being, is likely to continue to build itself around observed patterns of varying, but not readily quantifiable, productivity.

Perhaps Bauer’s biggest contribution in *Morphological Productivity* is that he has ruled out a number of approaches that do not seem to advance the quest, and he thus can spare current and future researchers forays into some of the more fruitless avenues of exploration.

For those working in morphology, reading this work carefully is perhaps a worthwhile undertaking. It may suffice general interest readers to skim the work or stick to the chapter summaries.

**April McMahon.** *Lexical Phonology and the History of English*. In the series *Cambridge Studies in Linguistics* 91. Cambridge: Cambridge University Press. 2000. Pp. xi + 309. US\$64.95 (hardcover).

Reviewed by John T. Jensen, *University of Ottawa*

This discussion of synchronic and diachronic phonology and their relationship is unsatisfactory for a number of reasons. The revisions McMahon proposes for lexical phonology are arbitrary and motivated more by the desire to reduce abstractness than to achieve explanatory adequacy. In her discussion of historical linguistics McMahon presents a gravely distorted picture of the view of early generative writers on this topic, particularly Kiparsky (1968) and King (1969), attributing to them claims which they expressly deny. She then presents as her own a view which differs little from these authors’ actual views. She makes much of the apparent neglect of external evidence, but relies almost exclusively on internal evidence and ultimately obscures rather than clarifies the relation between the two. The result is a disappointment — I was expecting something much more interesting.