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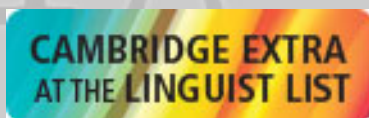
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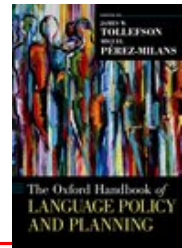
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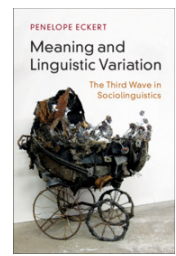
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Review of Unravelling the Evo

Reviewer: [Edward McDonald](#)

Book Title: [Unravelling the Evolution of Language](#)

Book Author: [Rudolf Botha](#)

Publisher: [Elsevier Ltd](#)

Linguistic Field(s): Linguistic Theories
Anthropological Linguistics

Issue Number: [16.1497](#)

Review:

Date: Tue, 10 May 2005 23:35:46 +0800 (CST)
From: Edward McDonald
Subject: Unravelling the Evolution of Language

AUTHOR: Botha, Rudolf P.
TITLE: Unravelling the Evolution of Language
SERIES: Language & Communication Library Vol. 19
PUBLISHER: Elsevier Science Ltd
YEAR: 2003

Edward McDonald, China Central Television Internat

INTRODUCTION

Rudolf Botha has set himself a difficult challenge. In this dense volume he sets out to shed some light on current theories of the evolution of language. Focusing on a decade of data from the interdisciplinary journal Behavioral and Brain Sciences and forums both print and oral in the 1990s, he attempts to clarify terminology, disentangle preconceptions and pin down what is being made by various competing theoretical proposals. What he reveals is one of considerable conceptual confusion about the "entities" nor the "processes" involved in language evolution. The topics of Parts I and II of the book respectively -- is the current consensus. And as for the status of "evidence and argument" on the specific topic of Part III but which Botha documents throughout the book -- none of the participants in the field have been shown to be even anywhere near the "restrictive theoretical claims" that would be necessary for making genuine progress on these problems.

SUMMARY

Botha's account starts with what he calls the "core findings" of the study. Contrary to what might be thought to be the main findings of language evolution studies, i.e. "a paucity of factual evidence", he claims instead that "[t]he main obstacle to gaining a better understanding of central aspects of the evolution of language is the poverty of restrictive theory." (p.7) He defines a "restrictive theory" as a "theory T of something... S... which makes it possible to distinguish in a non-arbitrary way between S and things whose properties do not match those of S in respects that matter" (p.7). In relation to the problem of language evolution, such a theory will provide "a set of characterizations" of a number of things: the entities and processes involved in language evolution, the correlations between linguistic entities and related developments such as intelligence and cognitive abilities, the evidence -- including indirect evidence -- for language evolution, and the status of arguments put forward in the study of language evolution (p.8).

Part I of the book examines the debates over language evolution and identifies the "entities" involved in language evolution. It also shows how the different participants define the entity that

have evolved into language and what they see as prec situation Botha characterizes as one of "terminologica (p.13) "the entity whose evolution is believed to be at these debates, covers at least the following wide rang (p.45):

- (a) "language as hard-wired competence",
- (b) "language as speech",
- (c) "language as an activity",
- (d) "language as a sort of contract signed by members community", and
- (e) "language as syntax".

In order to make sense out of this conceptual confusion founded linguistic ontology" is needed, in other word which "unambiguously identifies and restrictively cha following things (p.44):

- (a) the basic linguistic entities -- objects, states, events and so on -- that occur in linguistic reality,
- (b) the distinctive properties of those entities, and
- (c) the ways in which those entities are interrelated.

Part II moves on to the processes of language evolution was that the entity or entities, however defined, evolve would now characterize as human language, again ho Here again there are a range of possibilities which hav forward with analogies to different kinds of physical e optation or exaptation -- as in the evolution of the sna chamber; preadaptation -- as in the evolution of birds natural selection -- as in the evolution of the vertebra model is associated with the work of Stephen Jay Gou in which he argues for a type of adaptation he calls "e defined as "fitness enhancing characters... that enhanc their present role but... were not built for this role... by selection" (p.51). An example would be the snail's brc which arose "as a by-product of a biological process c a tube around an axis" (p.49). On this argument, also j speculatively by Chomsky, the evolution of language as an exaptation of changes in brain structure. (p.56).

The preadaptation model has been put forward by Ph (1991), on the analogy of the evolution of bird's feath having first developed as "adaptations for insulation" (ex-apted in Gould's terms) for insect catching, and th further adapted by natural selection for prey-catching for flight" (p.67). How this model applies in the case o explained by Lieberman as follows (p. 68, Lieberman "The brain mechanisms that control speech productic derived from ones that facilitated precise one-handed Through a series of perhaps chance events they event allow us to learn and use the complex rules that gover human language."

The natural selection model is put forward by Pinker (1990), drawing on arguments give by Darwin for the

slow stages of a "complex design for an adaptive function in the vertebrate eye (p.93). Pinker and Bloom argue as follows, also having evolved in this way (p.94):

"... human language, like other specialized biological functions, would be expected to have evolved by natural selection. Our conclusion is based on two facts that we would think would be entirely uncontroversial: Language is a product of complex design for the communication of propositions, and the only explanation for the origin of organs with such design is the process of natural selection."

After detailed discussion of these different models and the criticisms that have been made of them, Bloom draws the following conclusion (p. 115):

"The characterizations used in some of the most detailed accounts of the processes by which language is claimed to have evolved are ad hoc and arbitrary in various ways... The weakness of these characterizations has its main cause in the fact that they are based on informal assumptions about evolution which do not conform to a general theory of evolution that is restrictive enough to be well-founded... Accounts of the processes by which language and other linguistic entities evolved will remain as ad hoc and arbitrary as they are at present, unless their informal foundational assumptions about evolution are replaced by restrictive theories of preadaptation or exaptation, and adaptation."

Part III returns to the various arguments examined in Part II and critiques them as arguments, from the point of view of their logic (pp 121-140), their use of indirect evidence (pp 141-150), and their plausible evolutionary stories or "just-so stories" (pp 151-160). In what Botha politely terms "non-empirical argumentation" (i.e. rhetorical sleights of hand). In summing up the state of the argumentation on this topic, Botha restates his "core-claim":

"... poverty of restrictive theory is... the root cause of the problems involved in identifying what linguistic entities were affected by evolution, in discovering by what processes these entities evolved, and ensuring that accounts of language evolution have sufficient scientific substance."

CRITICAL EVALUATION

Professor Botha's book is not an easy read. Partly because of the complexity of the subject matter, but also because of the even "meta-meta" nature of its argument, which attempts to compare different theories of language evolution but does not measure up as scientific theories. Given the range of theories he covers, and the critical acuity with which he lays bare their inadequacies, his conclusion is oddly unambitious and disappointing:

"... to arrive at a better understanding of what the evolution of language involved, we would need to make substantial progress in developing restrictive theories of the kinds touched on here" (p.202)

I have two "explanations" for my disappointment, one speculative, the other which takes a historical perspective. To air the speculative one first, I wonder whether he will succeed at the task Botha has set himself without at the same time putting forward a theoretical proposal oneself. If we take an instrumental view of theory, in other words that a theory is only as good as the problems it can solve, then the theory is unavoidably shaped -- and restricted -- by what it sets out to solve. Theories are usable and useful for particular purposes and not for the point in asking whether they are "true" or not, or even whether they are true. Thus the fact that Botha's meta-theorizing is a particular stance in relation to the subject matter of language evolution, apart from evaluating the different theories put forward to explain it, seems to render his account rudderless. At the end of this 200 page book filled with discussion, I felt more informed certainly, but no more enlightened about the basic issues involved than when I started.

My second, historical, explanation relates to the type of critique Botha both critiques and calls on in his critique. It seems to me that despite being the author of trenchant critiques of Chomskian linguistics (Botha 1981, 1989), the linguistic universe of this book remains firmly circumscribed by Chomskian linguistics. This is problematic on two counts. Firstly it means that the question of language meaning is largely sidelined in favour of language structure, not only in the work of the scholars Botha critiques, but also in his own argument. The second is that Chomsky's own pronouncements on language evolution, a topic which admittedly he most often writes about, seem negative at best and oracular at worst. The Botha quotes from Chomsky's opinions on language evolution and presents them across to this reader as highly-crafted pieces of rhetoric, leaving vague possibilities without committing themselves to any one. For these pronouncements to form the baseline of a critical approach to language evolution, as in effect they do in Botha's book, is to condemn the argument to circle around the main issues without really coming to grips with them.

Looked at even from the relatively narrow perspective of 20th century linguistics, formal linguistics -- to give it the most common characterization -- has several striking features which are particularly unsuited for the sort of project treated in this book. Some of these features may not stand out for many of the participants in the discussion on language evolution, from both within and outside the tradition to whom formal linguistics has become something like a religion. The work of the late Charles Hockett provides a salutary critique of this tradition, coming as it does from one whose career spanned the high point of the previous (neo-)Bloomfieldian tradition in American linguistics in the 1940s and what was arguably the high point of the Chomskian tradition in the late 1960s. His book *The State of the Art* provides a devastatingly incisive critique of the philosophical bases of formal linguistics by a scholar who not only well -- and indeed helped shape -- the previous development but in part extended and in part reacted against. And twenty years ago he issued his call for *Refurbishing Our Foundations* (Hockett 1979).

call for some serious reevaluation of the basic assumptions of the whole discipline from one who spent a professional lifetime on both its achievements and its blind alleys.

While I can do no better than recommend all the participants in the language evolution debate to read these two short and readable monographs, the issues may become clearer if we step away from language for a moment and consider the evolution of music. A collection of papers of much the same quality as the ones Botha considers, *The Origins of Music* (Walli 2000) provides an interesting sidelight on the topic of language evolution with many of the papers in this collection -- e.g. Bickel (2000) specifically comparing the two; Brown (2000) actually combined "musi-language" evolutionary model for both language and music. Many of these discussions specifically refer to the influential generative model of music (Lerdahl & Jackendoff 1983) which demonstrates with admirable clarity both the strengths and disadvantages of the formalist tradition. A forthcoming book by McDonald (McDonald in press) critiques this model, and by extension other formalist models, as setting up a number of dichotomies of each dichotomy assigned to the uninteresting or the interesting: mental vs. material, psychological vs. social, structure vs. meaning, system vs. text.

What this leaves us with, in relation to the exploration of music or language, are models in which the main aim is pattern recognition, with little or no cognizance of how structural patterns relate to their expressive meanings.

In essence I would see the same criticism as applying the arguments discussed in Botha's book. It is important to note that these are in fact arbitrary choices of one side over another, and dichotomies more usefully seen as complementarities. The decision to see them as dichotomies is to a great extent a function of particular historical circumstances in which formalist linguistics flourished (see Hockett 1968, Ch.1). And the fact that this tradition is mostly unselfconscious about its own historical preconditions is that it largely remains locked within the assumptions

This unselfconsciousness often also extends to formalist linguistics' awareness of their own theories as theories, in other words, as tools developed for specific purposes. This means that many of the arguments documented by Botha turn on a particular point of divergence in the theories held by specific participants, whether one holds to the "modular" Government & Baker's formal linguistics or the simpler "Minimalist Program" of Chomsky. The implication that such claims need to be rethought with even minor changes in the model, from an interdisciplinary point of view, they operate on far too specific a level. It should be possible for linguistics to be useful and enlightening in addressing extra-linguistic questions in terms of the overall concept of language rather than in the minor details of a particular

So all in all, the picture of scholarship on the evolution shown in this book is a rather depressing one. Some serious "refurbishing of our foundations" in Hockett's greater appreciation of the historically contingent nature of the linguistic mainstream, would seem to be necessary before a preliminary consensus on the issues of language evolution could be reached.

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ABOUT THE REVIEWER:
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Edward McDonald has taught linguistics and semiotics at the National University of Singapore and at Tsinghua University in Beijing. He is currently working as an English editor at Chinese Central Television. His research interests lie in the areas of the grammar of modern Chinese, ideologies about language, and the relationship between language and music.



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