

The *Biolinguistics* Manifesto

Cedric Boeckx & Kleanthes K. Grohmann

1. What We Mean by *Biolinguistics*

Exactly fifty years ago Noam Chomsky published *Syntactic Structures* (Chomsky 1957), a slim volume that conveyed some essential results of his then unpublished *Logical Structure of Linguistic Theory* (Chomsky 1955/1975). The results were presented in such a way as to emphasize key aspects of the combinatorial properties of grammar (a reflex of the fact that the volume grew out of class notes for an audience of engineers), but, as is well-known, *Syntactic Structures* had an important subliminal message that was made explicit in Chomsky's famous review of Skinner's *Verbal Behavior* (Chomsky 1959), and even more so in chapter 1 of *Aspects of the Theory of Syntax* (Chomsky 1965). The message, decidedly psychological in character, defines the central goal of the generative enterprise as that of identifying the properties of the human language faculty. This central goal can be broken down into a series of more precise questions (see Chomsky 1986, 1988):

1. What is knowledge of language?
2. How is that knowledge acquired?
3. How is that knowledge put to use?
4. How is that knowledge implemented in the brain?
5. How did that knowledge emerge in the species?

Today these five questions constitute the conceptual core and focus of inquiry in fields like theoretical linguistics (the traditional areas of syntax, semantics, morphology, phonology), pragmatics, first and second language acquisition, psycholinguistics, neurolinguistics, and beyond.

What these research questions emphasize is the fact that language can, and should, be studied like any other attribute of our species, and more specifically, as an organ of the mind/brain.

The past fifty years have shown, uncontroversially in our opinion, that it makes eminent sense, at various levels, to regard the study of the language faculty as a branch of biology, at a suitable level of abstraction. After all, the five questions listed above are but (conceptually unpacked) variants of Tinbergen's famous four questions in his classic paper "On the Aims and Methods of Ethology" (Tinbergen 1963), a central document in the biology of (animal) behavior:



1. What stimulates the animal to respond with the behavior it displays, and what are the response mechanisms?
2. How does an organism develop as the individual matures?
3. Why is the behavior necessary for the animal's success and how does evolution act on that behavior?
4. How has a particular behavior evolved through time? Can we trace a common behavior of two species back to their common ancestor?

The goal of this new journal is to provide a forum, a context, and a framework for discussion of these foundational issues. We decided to call the journal *Biolinguistics* to highlight the commitment of the generative enterprise to the biological foundations of language, and to emphasize the necessarily interdisciplinary character of such enterprise.

There is both a weak and a strong sense to the term 'biolinguistics'. The weak sense of the term refers to "business as usual" for linguists, so to speak, to the extent they are seriously engaged in discovering the properties of grammar, in effect carrying out the research program Chomsky initiated in *Syntactic Structures*.

The strong sense of the term 'biolinguistics' refers to attempts to provide explicit answers to questions that necessarily require the combination of linguistic insights and insights from related disciplines (evolutionary biology, genetics, neurology, psychology, etc.). We regard Eric Lenneberg's book, *Biological Foundations of Language*, published exactly forty years ago (Lenneberg 1967), as the best example of research in biolinguistics in this strong sense.

We would like our journal to provide a forum for work in biolinguistics in both the weak and the strong sense. We would like to stress that the term 'weak sense' is not meant to indicate that we regard work focusing narrowly on properties of the grammar as inferior to interdisciplinary work. Indeed we think that such work is not only necessary, but has very often proven to be the basis for more interdisciplinary studies.

2. Why Start *Biolinguistics* Now?

The term 'biolinguistics' first appears, to our knowledge, as part of a book title, the *Handbook of Biolinguistics*, published nearly 60 years ago (Meader & Muyskens 1950). The book advocates (as the authors put it) a modern science of biolinguistics, whose practitioners "look upon language study [...] as a natural science, and hence regard language as an integrated group of biological processes [...]. This group seeks an explanation of all language phenomena in the functional integration of tissue and environment" (Meader & Muyskens 1950: 9).

The term 'biolinguistics' resurfaces in 1974 as part of a report on an interdisciplinary meeting on language and biology (Piattelli-Palmarini 1974), attended by Salvador Luria and Noam Chomsky, and organized by Massimo Piattelli-Palmarini, under the sponsorship of the Royaumont center for a Science of Man.

Around the same time (a period well-documented in Jenkins 2000), Lyle

Jenkins attempted to launch a journal entitled *Biolinguistics*, and received support from pre-eminent biologists (support documented by three extant letters reproduced in an Appendix to this editorial manifesto). The journal never materialized, but the concerns and issues discussed three decades ago didn't disappear. As a matter of fact, all these issues, many of which anticipated in Lenneberg 1967, came back on the agenda of linguists and other cognitive scientists.

We believe that the recent resurgence of interest in 'biolinguistics' is due in large part to the advent of the minimalist program in linguistic theory (Chomsky 1993 and subsequent work). At the heart of the minimalist program is the question of how much of the architecture of the language faculty can be given a principled explanation. Specifically, minimalism asks how well the engine of language meets design requirements imposed by the cognitive systems it subserves. Inevitably, linguists working in the context of the minimalist program are forced to address and sharpen questions of cognitive specificity, ontogeny, phylogeny, and so on, to even begin to understand the design requirements imposed on the language faculty. This is not to say that previous generations of linguists were not interested in such issues. But in practice biolinguistic issues had little effect on empirical inquiry into questions of descriptive and explanatory adequacy.

It is important for us to stress that biolinguistics is independent of the minimalist program. As Lenneberg's work makes clear, biolinguistic questions can be fruitfully addressed outside of a minimalist context. But we think that such a context certainly facilitates, indeed, necessitates inquiry into the biological foundations of language. Last, but not least, we want to remind readers that minimalism is an approach to language that is largely independent of theoretical persuasion. It is an aspect of linguistic research that can be shared by virtually all existing frameworks in linguistic theory that we are familiar with.

3. Our Hope for *Biolinguistics*

To paraphrase Theodosius Dobzhansky's well-known dictum, we think that nothing in language makes sense except in the context of the biology of grammar (cf. Dobzhansky 1973). It is a tribute to Noam Chomsky's own efforts (as well as the efforts of his associates, such as Eric Lenneberg) to treat linguistics as a natural science, and by doing so help her become one, that the term biolinguistics is now seen in course titles, workshops, reading groups, and so on. One can only hope that the term biolinguistics will make its way into institutional categories. Our hope is that this journal will contribute to this exciting and rapidly growing field.

We are fully aware of the fact that the uniquely interdisciplinary character of biolinguistics poses difficult problems of communication and misunderstandings, but we feel that a growing community of scientists of diverse background, including linguists, evolutionary biologists, molecular biologists, neuroscientists, anthropologists, psychologists, computer scientists, (language or speech and hearing) pathologists, and so on, are slowly overcoming these challenges. Only collaboration and mutual respect will make this type of research possible. We

would be delighted if the contributions to *Biolinguistics* could clarify issues, unearth new data, and answer some of the questions that will help us understand the nature of language, and what it is that makes us human.

4. Outlook: The First Volume and Beyond

As the journal webpage states, “*Biolinguistics* is a peer-reviewed journal exploring theoretical linguistics that takes the biological foundations of human language seriously” (see <http://www.biolinguistics.eu> for full text). The high standing of our editorial board members in their respective fields — leading scholars in theoretical linguistics, language acquisition, language change, theoretical biology, genetics, philosophy of mind, and cognitive psychology — helps to ensure a fair and thorough review process. The journal *Biolinguistics* has its own ISSN (1450-3417, as imprinted on every contribution’s first page footer as well as back and front cover) and is currently being abstracted and indexed for the usual places. Access to the journal is free, but online user registration is necessary. The full description of the aims, goals, and scope of the journal *Biolinguistics* can be obtained from the website. Subscribers will also receive regular updates and information, and in the near future, interactive tools will be integrated, for which Epstein & Seely’s (this volume) multimedia tutorial might just be one example. We encourage submission of products and ideas.

In terms of contributions we accept for submission, *Biolinguistics* features four types:

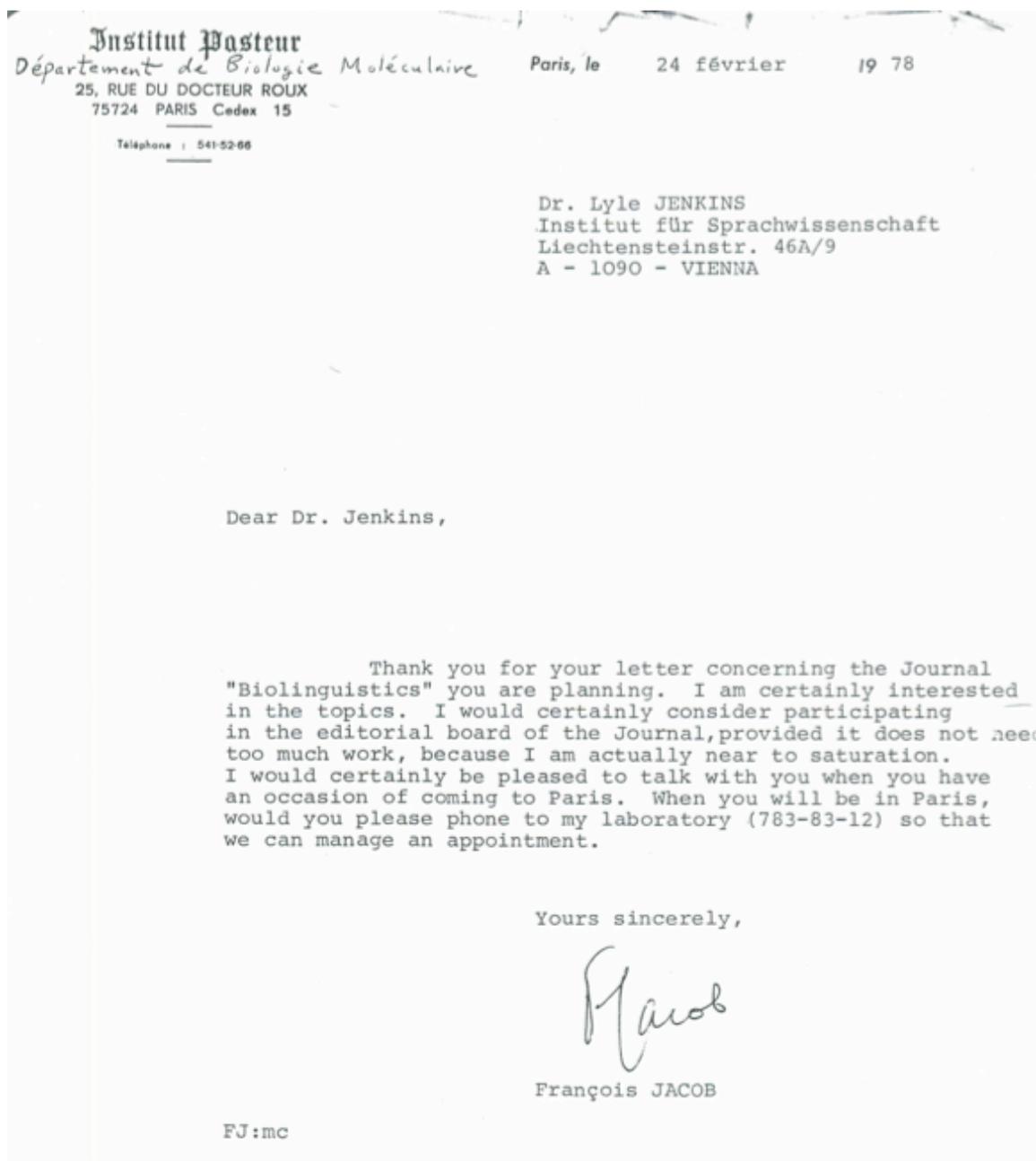
- *Articles* (full-fledged contributions to the field — complete with abstract, introduction, conclusion — peer-reviewed of ideally 10-12,000 words),
- *Briefs* (very short notes or points, certainly no more than 2,000 words),
- *Reviews* (of recently published books, particular software and other tech equipment, or any other items that warrant a review for *Biolinguistics*), and
- the *Forum* (contributions that don't follow into any of the other categories, such as state-of-the-art reports, research overviews, interviews, and so on).

As can be witnessed, this first volume features all types of contributions: Aside from an editorial (to appear on an irregular basis), it contains four articles (on philosophy, phonology, acquisition, and syntax), one brief (on parameters in acquisition) and one book review (on evolutionary phonology), as well as three forum contributions (a report on experimental syntax, a brief outline for a multimedia tutorial and the relevant link, and an interview).

We would like to close this editorial with an expression of our gratitude to all the people, especially our reviewers and task teams members involved, who helped complete the first volume (see also p. 150 in the “Forum” category at the end of this issue). We would also like to thank the Department of English Studies at the University of Cyprus for substantial financial support.

Appendix: Three Historical Letters

The three letters reproduced here are courtesy of Lyle Jenkins. We would like to thank François Jacob for giving us permission to reprint his letter here.



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23 April 1980

Dr. Lyle Jenkins
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Dear Dr. Jenkins:

In answer to your letter, I may say that I am pleased to accept your invitation to me to be a member of the editorial board of new journal Biolinguistics.

I mention to you that the President and Director of our Institute is a man who worked with me for a number of years before becoming the founder and director of a CNRS laboratory of macromolecular biology in Montpellier. After ten or eleven years he left that job, and came to the United States and to our Institute. He has been the editor-in-chief of the Journal of Molecular Evolution during the whole eleven years of its existence. You might consider whether or not he should also be a member of your editorial board.

Sincerely,



LP:dm

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15th July, 1980

Dear Dr Jenkins,

Thank you very much for your letter of 5th July concerning your plans to organize a journal and series of books on language and biology. I find this problem of biolinguistics extremely interesting. Linguistic questions have always fascinated me, also in their relation to other areas of biology. Moreover, I am myself multilingual having grown up as a child with three languages (English, Dutch and Danish) and speaking three languages here in Basel (English, French and German). But let me simply answer your question: Yes, I would enjoy joining the Editorial Board of your journal *Biolinguistics*. I shall look forward to hearing from you how these plans develop.

With kind regards,

Yours sincerely,



N. K. Jerne

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