Problems in Quantitative Linguistics

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by

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Studies in quantitative linguistics

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Preface

> *„It is not just that research begins with problems:*
> *research consists in dealing with problems all the way long."*
> (Mario Bunge, Philosophy of science. Vol. 1: From problem to theory. New Brunswick, London: Transaction Publishers, 2007, p. 187)

Finding a scientific problem is the first task of a young scientist. Solving it is the next one. A solution, however, does not finish a problem; on the contrary, every solution opens up a series of new problems. Thus, from time to time it would be useful for every scientific discipline to resume the topical problems, show some new ones and shed light on other aspects of old problems.

We present a collection of problems in the field of quantitative linguistics – as far as it is possible to find Ariadne´s thread in the jungle of its differently developed sub-disciplines. The whole field consists of *membra disiecta* and we try without too much violence to draw the reader´s attention to the way of unification, where theory building may begin. Today, it is not easy to imagine that in an empirical science a theory might arise without at least elementary quantification. Though in the problems presented here there is still a lot of qualitative work to be done, we try to convince the reader to form quantitative concepts, to strive for elementary quantitative solutions, to link some problems with some existing theories or to open a new field of research.

In the first volume of this series the authors presented problems concerning phonemics, script, grammar, lexicology, textology, semantics, synergetics, psycholinguistics, typology, different general problems and the relations of length and frequency to other properties. In the present volume, most of the above-mentioned domains are treated, too, but besides, a number of problems concerning pragmatics, proverbs, drama, philosophy of science, motifs, dialectology etc. are added.

If the reader decides to solve one of the problems, it is recommended to look first in "Problems Vol. 1" where a more elementary, preparatory problem concerning the same domain may be presented. If a problem has been successfully solved, one should always try to generalize it, to test the result on data from several languages or texts, to seek deviations, outliers, to enrich it with subsidiary conditions and to systematize it, i.e. to embed it in a more general framework from which it can be derived.

If one meets "hard" problems, the first step may be purely inductive, e.g. fitting a simple function to data mechanically, but in the next step, the tentatively tested function should be substantiated as to the question "why should this function be chosen?" which is nearer to a future explanation than a verbal description of the discovered phenomenon.

The problems presented here vary from classroom exercises in quantitative linguistics over take-off platforms for publications to themes for research projects.

Readers are invited to report on publications which departed from a problem in this collection or in the first volume to the editor of the *Journal of Quantitative Linguistics* (http://www.ldv.uni-trier.de/index.php?koehler) or the editor of *Glottometrics* (www.gabrielaltmann.de) Solutions to one of the problems may also be submitted for publication in one of these journals.

Readers are also invited to contribute more new problems by sending a description to one of the above-given addresses.

R.K., G.A

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