Introducing Linguistic Research

Over the past decades, conducting empirical research in linguistics has become increasingly popular. The first of its kind, this book provides an engaging and practical introduction to this exciting versatile field, providing a comprehensive overview of research aspects in general, and covering a broad range of subdiscipline-specific methodological approaches. Subfields covered include language documentation and descriptive linguistics; language typology; corpus linguistics; sociolinguistics and anthropological linguistics; cognitive linguistics and psycholinguistics; and neurolinguistics. The book reflects on the strengths and weaknesses of each single approach and on how they interact with one another across the study of language in its many diverse facets. It also includes exercises, example student projects and recommendations for further reading, along with additional online teaching materials. Providing hands-on experience, and written in an engaging and accessible style, this unique and comprehensive guide will give students the inspiration they need to develop their own research projects in empirical linguistics.

Svenja Voelkel is a senior researcher/lecturer in linguistics at the Johannes Gutenberg University of Mainz, Germany. She has long-standing research and teaching experience in a broad field of topics, including language typology, anthropological linguistics, language contact, and cognitive linguistics. Her regional focus is on Oceania.

Franziska Kretzschmar is a postdoctoral research fellow at the Leibniz Institute for the German Language Mannheim, Germany. She has extensive research and teaching experience in psycho- and neurolinguistics, studying primarily language comprehension and reading both from a basic and an applied perspective.
Introducing Linguistic Research

SVENJA VÖLKEL
Johannes Gutenberg University of Mainz

FRANZISKA KRETZSCHMAR
Leibniz Institute for the German Language Mannheim
## Contents

List of Figures viii  
List of Tables ix  
Preface xi  
Acknowledgements xvii  

### PART I RESEARCH BASICS

1 Empirical Research in Linguistics 3  
1.1 Basics of Empirical Research 3  
1.2 Aspects of the Research Process 15  
1.3 Summary 39  
1.4 Exercises and Assignments 40  
1.5 Further Reading 41  

2 Basic Research Methods for Data Collection 43  
2.1 Research Design and Fundamental Considerations on Data Collection 43  
2.2 Observation 47  
2.3 Survey 52  
2.4 Experiment 60  
2.5 Mixed-Methods Design 69  
2.6 Summary 73  
2.7 Exercises and Assignments 74  
2.8 Further Reading 74  

### PART II SPECIFIC RESEARCH APPROACHES OF LINGUISTIC SUBDISCIPLINES

3 Language Documentation and Descriptive Linguistics 79  
3.1 Research Aims and Questions 79  
3.2 The Documentary and the Descriptive Approach 82  
3.3 Methodology 84  
3.4 Basic Research Findings 98  
3.5 Summary 102  
3.6 Exercises and Assignments 103  
3.7 Further Reading 104
## CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Language Typology</td>
<td>106</td>
</tr>
<tr>
<td>4.1</td>
<td>Research Aims and Questions</td>
<td>106</td>
</tr>
<tr>
<td>4.2</td>
<td>The Typological Approach</td>
<td>107</td>
</tr>
<tr>
<td>4.3</td>
<td>Methodology</td>
<td>109</td>
</tr>
<tr>
<td>4.4</td>
<td>Basic Research Findings</td>
<td>123</td>
</tr>
<tr>
<td>4.5</td>
<td>Explanation and Interpretation of the Results</td>
<td>126</td>
</tr>
<tr>
<td>4.6</td>
<td>Summary</td>
<td>129</td>
</tr>
<tr>
<td>4.7</td>
<td>Exercises and Assignments</td>
<td>130</td>
</tr>
<tr>
<td>4.8</td>
<td>Further Reading</td>
<td>131</td>
</tr>
<tr>
<td>5</td>
<td>Corpus Linguistics</td>
<td>133</td>
</tr>
<tr>
<td>5.1</td>
<td>Research Aims and Questions</td>
<td>133</td>
</tr>
<tr>
<td>5.2</td>
<td>Corpus-Linguistic Approaches</td>
<td>136</td>
</tr>
<tr>
<td>5.3</td>
<td>Methodology</td>
<td>137</td>
</tr>
<tr>
<td>5.4</td>
<td>Basic Research Findings</td>
<td>158</td>
</tr>
<tr>
<td>5.5</td>
<td>Summary</td>
<td>162</td>
</tr>
<tr>
<td>5.6</td>
<td>Exercises and Assignments</td>
<td>162</td>
</tr>
<tr>
<td>5.7</td>
<td>Further Reading</td>
<td>163</td>
</tr>
<tr>
<td>6</td>
<td>Sociolinguistics and Anthropological Linguistics</td>
<td>166</td>
</tr>
<tr>
<td>6.1</td>
<td>Research Aims and Questions</td>
<td>166</td>
</tr>
<tr>
<td>6.2</td>
<td>The Sociolinguistic and the Anthropological Linguistic Approach</td>
<td>168</td>
</tr>
<tr>
<td>6.3</td>
<td>Methodology</td>
<td>172</td>
</tr>
<tr>
<td>6.4</td>
<td>Basic Research Findings</td>
<td>188</td>
</tr>
<tr>
<td>6.5</td>
<td>Summary</td>
<td>190</td>
</tr>
<tr>
<td>6.6</td>
<td>Exercises and Assignments</td>
<td>191</td>
</tr>
<tr>
<td>6.7</td>
<td>Further Reading</td>
<td>193</td>
</tr>
<tr>
<td>7</td>
<td>Cognitive Linguistics and Psycholinguistics</td>
<td>195</td>
</tr>
<tr>
<td>7.1</td>
<td>Research Aims and Questions</td>
<td>195</td>
</tr>
<tr>
<td>7.2</td>
<td>Cognitive Approaches in Linguistics</td>
<td>198</td>
</tr>
<tr>
<td>7.3</td>
<td>Methodology</td>
<td>200</td>
</tr>
<tr>
<td>7.4</td>
<td>Basic Research Findings</td>
<td>221</td>
</tr>
<tr>
<td>7.5</td>
<td>Summary</td>
<td>224</td>
</tr>
<tr>
<td>7.6</td>
<td>Exercises and Assignments</td>
<td>225</td>
</tr>
<tr>
<td>7.7</td>
<td>Further Reading</td>
<td>227</td>
</tr>
<tr>
<td>8</td>
<td>Neurolinguistics</td>
<td>229</td>
</tr>
<tr>
<td>8.1</td>
<td>Research Aims and Questions</td>
<td>229</td>
</tr>
<tr>
<td>8.2</td>
<td>Neurolinguistic Approaches</td>
<td>234</td>
</tr>
<tr>
<td>8.3</td>
<td>Methodology</td>
<td>236</td>
</tr>
<tr>
<td>8.4</td>
<td>Basic Research Findings</td>
<td>254</td>
</tr>
<tr>
<td>8.5</td>
<td>Summary</td>
<td>256</td>
</tr>
<tr>
<td>8.6</td>
<td>Exercises and Assignments</td>
<td>257</td>
</tr>
<tr>
<td>8.7</td>
<td>Further Reading</td>
<td>258</td>
</tr>
</tbody>
</table>
### PART III LINGUISTIC RESEARCH ACROSS THE DISCIPLINE

9 Insights from Linguistic Research  
9.1 Summary of the Subdiscipline-Specific Research  
9.2 Interfaces of the Subdisciplines  
9.3 Inter- and Multidisciplinarity  
9.4 Current Trends in Linguistics: Technological Impact & Data Management  
9.5 Concluding Remarks  
9.6 Exercises and Assignments  

References  
Index
Figures

1.1 The process of research \hspace{1cm} page 4
1.2 The empirical and theoretical approach 5
1.3 The island of research 6
1.4 The main stages of a research process 7
2.1 Prototypical usages of research methods according to three dimensions 44
2.2 Types of observation 48
2.3 Types of survey 54
2.4 Types of experiment 61
2.5 Single-method and mixed-methods approaches 70
3.1 Example of an ELAN file 95
5.1 Approaches to corpus linguistic research 136
5.2 A typology of corpora 142
5.3 Concordance lines (from COSMAS II for DeReKo) 149
6.1 Stages of the researcher–community relationship in ethnographic fieldwork 175
7.1 Underlying design of the non-linguistic spatial experiment 220
8.1 The classical Wernicke–Geschwind model of language in the brain 235
8.2 Neurocognitive and behavioural methods ordered by their spatial and temporal resolution 243
8.3 Hypothetical ERP waveforms 246
9.1 Interfaces of the subdisciplines 271
## Tables

1.1 Basic kinds of research per linguistic subdiscipline  
1.2 Basic research questions of linguistic subdisciplines  
1.3 Example data for statistics  
1.4 Statistical measures and their visualisation depending on the level of measurement  
1.5 Linguistic subdisciplines and their basic procedure  
1.6 Linguistic subdisciplines and their basic outcomes  
2.1 Basic questions about research design  
3.1 Example research aims/questions in language documentation and descriptive linguistics  
3.2 Documentary and descriptive research  
3.3 Checklist for fieldwork preparation  
4.1 Example research questions in language typology  
4.2 Language families according to Ruhlen (1987) and Voegelin & Voegelin (1977)  
4.3 Rijkhoff’s sample per genetic group and per sample size  
4.4 Rijkhoff’s diversity values per genetic group  
4.5 Dryer’s results for word order in relation to adposition per geographic area  
4.6 Examples for the different kinds of universals  
4.7 Tetrachronic table  
5.1 Example research questions in corpus linguistics  
6.1 Example research questions in sociolinguistics and anthropological linguistics  
7.1 Example research questions in cognitive linguistics and psycholinguistics  
7.2 List of common experimental task types in cognitive linguistic research  
7.3 List of common experimental methods for data collection  
7.4 Tasks and paradigms in language acquisition research with children  
8.1 Example research questions in neurolinguistics
# List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.2</td>
<td>Temporal measures in neurolinguistics</td>
<td>245</td>
</tr>
<tr>
<td>8.3</td>
<td>Spatial measures in neurolinguistics</td>
<td>249</td>
</tr>
<tr>
<td>9.1</td>
<td>Summary of the basic research aims, methods, and findings per subdiscipline</td>
<td>265</td>
</tr>
</tbody>
</table>
Preface

This book is an introduction to linguistic research, particularly focusing on the multifaceted empirical investigation of human language. While the language sciences have probably always been empirically oriented to some extent, the second half of the twentieth century has seen a remarkable increase in empirical studies of language. Currently, many linguistics departments are specialised in one or more forms of empirical research, passing on in-depth knowledge to their students. As a result, many excellent introductions to the major empirical disciplines in linguistics – such as sociolinguistics, corpus linguistics, or psycholinguistics – have already been written. Given such broad coverage, one would be forgiven for asking why we felt the need to write yet another introductory book on empirical linguistics.

The story of this introduction begins a few years ago, when we decided to teach a seminar on empirical linguistics together, after having taught empirical classes on our respective research interests (Völkel: language typology, anthropological linguistics, and cognitive linguistics; Kretzschmar: psycho- and neurolinguistics). It soon became very apparent that research questions and methods, basic terminology, and implications for linguistic theory differed significantly between linguistic subdisciplines. Because most advanced linguists specialise in no more than one or two empirical approaches (as our own research affiliations demonstrate), there were virtually no textbooks available for a cross-disciplinary introduction to empirical linguistics targeting undergraduate students and their instructors – in stark contrast to the wealth of subdiscipline-specific introductions and the few compilations for advanced researchers. After experiencing this for ourselves, we found that this situation makes it extremely challenging to teach a broad spectrum of different methodological approaches and, therefore, most empirical classes will tend to focus on the instructor’s or institution’s own areas of research expertise. Since it is our belief that transferring knowledge between linguistic subdisciplines is essential for increasing our understanding of language, a textbook providing a cross-disciplinary introduction to both empirical research in general and linguistic subdisciplines in particular seems to be an optimal starting point to foster such cross-disciplinary dialogue right from the ground up – i.e., by merging the specifics with teaching the basics of empirical linguistics to students.

Therefore, the goal of this textbook is to provide an introductory and diversified insight into the vast realm of linguistic research, offering both an overview...
of the theoretical foundations of empirical studies on the one hand and the basic research methods and distinct approaches of various linguistic subdisciplines on the other. Our aim is to provide a comprehensive general introduction to empirical linguistics that does not focus on individual methods alone. Instead, the book puts particular emphasis on identifying the commonalities, differences and interrelations between the empirical approaches towards the study of language in addition to presenting subdiscipline-specific methodologies. To the best of our knowledge, a textbook such as the present one including methodological approaches ranging from documentary, descriptive, and anthropological-linguistic field studies to laboratory experiments in neuro- and psycholinguistics does not currently exist.

**Who Is This Book For?**

Empirical investigations generally require, at the very least, expertise in the basic terminology of the scientific discipline. Thus, *Introducing Linguistic Research* is meant for MA students or advanced BA students in linguistics programmes – be it general or comparative linguistics; linguistic studies with a genealogical or a geographic focus (such as African studies); or a language-specific discipline (such as English linguistics). It may also serve as a point of departure or a referral tool for empirical PhD projects.

At the same time, we also intend to address instructors of introductory classes in empirical linguistics. The book provides a general teaching guideline and comprehensive fundamental information for teaching research approaches with which one is perhaps less familiar, at least at a basic level.

**How Is the Book Structured?**

The following brief synopsis outlines the structure of the book which is made up of three major parts:

Part I addresses empirical research in general. Chapter 1 provides introductory information on empiricism; the stages and elements of the research process; quality criteria; basic types of research questions and methodological approaches; data collection; documentation and analysis; interpretation, reflection and presentation of the findings; and research ethics. Chapter 1 also contains detailed instructions for keeping research diaries and making poster presentations as forms of documentation and presentation which we recommend for student projects. Chapter 2 presents the three main research methods – observation, survey (interviews and questionnaires) and experiment. For each method, we outline a range of subtypes, including the consequences of various...
methodological decisions when methods have to be chosen in accordance with a specific research context.

Part II focuses on empirical approaches and methodological procedures stemming from distinct linguistic subdisciplines. In contrast to other linguistic textbooks, we have not chosen linguistic domains – such as phonetics and phonology; morphology and syntax; semantics and lexicon; and pragmatics – as the basic underlying structure, since we have observed more diversity in research within a linguistic domain in contrast to more homogeneity in the main approach of a linguistic subdiscipline. In selecting subdisciplines, we aimed for a broad range of distinct empirical approaches covering field work and laboratory experiments; research on individual languages and comparative studies; and so on. Nevertheless, this is by no means an exhaustive list of linguistic research approaches. Focusing on current core approaches in linguistics, we have, for instance, left out all kinds of empirical research in applied linguistics – such as studies on language teaching, language translation, natural language processing, forensic linguistics, and so on. Chapters 3–8 describe the fundamental research questions; empirical approaches and findings of language documentation and descriptive linguistics; language typology; corpus linguistics; sociolinguistics and anthropological linguistics; cognitive linguistics and psycholinguistics; and neurolinguistics. Cross-disciplinary fields such as language acquisition, language contact or language change do not have separate chapters dedicated to them as they can each be studied with multiple of the specific empirical approaches mentioned above. Consequently, in Chapters 3–8 we provide a list of research questions including the cross-disciplinary fields and linguistic domains.

Finally, Part III addresses linguistic research across the disciplines. Chapter 9 provides an overview contrasting the distinct empirical approaches, including their characteristics, as well as their strengths and weaknesses. Based on this summary, we discuss how the subdisciplines are empirically intertwined and how the findings of each subdiscipline contribute to the overall understanding of the complexity of human language. We use the cross-disciplinary fields of language acquisition and language contact as illustrative examples. Overall, we emphasise that no single approach is sufficient to answer all questions in linguistics and thus view mutual understanding of and collaboration between linguistic subdisciplines as a prerequisite for future linguistic endeavours.

All chapters include short exercises for students to gain experience with different methodological issues and the basic methods, and there are ideas for small research projects that can be carried out in parallel to class meetings.

Given its cross-disciplinary nature, our textbook cannot offer in-depth information as can be found in other more specialised books. Thus, for further specialisation on a particular methodological approach, more specific and detailed literature should be consulted. For this purpose, we list suggestions for further reading that we find particularly helpful at the end of each chapter.
How to Use This Book

Information for Students

The entire book provides you with a broad and comprehensive introduction to research in linguistics including different methodological approaches that study different fundamental research questions and, therefore, provide insight into different aspects of language. Depending on your educational level in empirical linguistics, you can use this book in different ways. As a beginner who has not yet worked empirically, we recommend working through the entire book in order to find your own research area of interest. If, however, you have already gained empirical experience and know your empirical focus, it is possible to work on individual subdisciplines in Part II, but you should always consult Part I, as it provides essential basic information without which Part II may be difficult to understand. Further readings for specialisation on various empirical aspects are given at the end of each chapter in Part II. Used in this way, our book serves as a starting point for subdiscipline-specific studies. However, even in this case, it may be useful to make yourself familiar with the other linguistic subdisciplines of Part II in order to get an understanding of where your field of research is situated within linguistics and how it interacts with research in other linguistic subfields. In this case, you can work with the book in reverse or nonchronological order and start with Part III.

While Part I describes general aspects and procedures of a research project, Chapters 3–8 of Part II are structured according to the methodological process that underlies empirical research in general. This will enable you to follow and compare subdiscipline-specific research step by step: general and specific research questions, the particular approach, a detailed description of the methodology and its components and the basic findings of each linguistic subdiscipline. For hands-on experience with linguistic research, short exercises in Parts I and II will familiarise you with various aspects. Furthermore, the lists of possible general research questions in linguistics (Chapter 1, Section 1.2.1) and discipline-specific questions and project ideas (Chapters 3–8: ‘research questions’ and ‘exercises and assignments’) may inspire you to pursue your own research projects.

The book may be a suitable starting point for independent research studies, but you should also consult your instructor about the particulars of the envisaged project.

Information for Instructors

The book resulted from a teaching schedule that we designed for our own purposes and implemented as an empirical module for the first year of the master’s program in linguistics at the Johannes Gutenberg University of Mainz. Thus, we propose a syllabus based on the average duration of a German semester...
which typically comprises about 13–15 weeks of teaching with two sessions (90 minutes each) per week, plus lecture-free time of 8–12 weeks:

Chapter 1: approx. 4 sessions or 6 hours
Chapter 2: approx. 3 sessions or 4.5 hours (1 session or 90 minutes per method)
Chapters 3–8: approx. 9 sessions or 13.5 hours (1–2 sessions per chapter/subdiscipline)
Chapter 9: approx. 1 session or 90 minutes

The chapters include student exercises that can be worked on in class or as homework. They aim to give hands-on experience with various research components and techniques.

In the final part of the course (i.e., the remaining sessions) and the beginning of the lecture-free period students should test their new theoretical and practical knowledge in their own small research project (about 4–6 weeks). Individual experience in designing and conducting small empirical projects produces valuable insight into what works, what does not, and why. Thus, the introductory class on empirical linguistics is intended to end with a project phase, including the following:

Joint project meetings: approx. 3 sessions or 4.5 hours
(ideally 1 session or 90 minutes biweekly)
Autonomous work on projects: remaining sessions/hours
Possible additional tutorials: e.g., statistics (4 sessions or 6 hours)

This teaching schedule is easily adaptable to a shorter course-run (e.g., trimester) by shifting the project phase partly or entirely into the lecture-free time and by offering an online platform for students’ dialogue regarding their questions and progress.

The students’ task is to develop a research question (some general project ideas can be found in Chapter 1 and discipline-specific ones are included at the end of the Chapters 3–8) and a research design with adequate variables and methods to subsequently collect and/or analyse data. Projects can be carried out as group work or alone, depending on the research plan. As for group work, each group member should take part in every critical research component as laid out above. Students may freely choose a research topic, but it is also possible to specify a linguistic topic (e.g., the syntax of noun phrases) or domain (e.g., semantic research) that should be addressed by all projects, but each taking different methodical perspectives. For this purpose, we have included specific research questions per linguistic domain for each subdiscipline (Chapters 3–8: ‘research questions’). Such thematic specification may result in interrelated and complementary findings (cf. Chapter 9).

From our own experience, student projects were especially successful when the individual research process was accompanied by joint project meetings in which students report on their progress and in which students and instructor
discuss problems or open questions. In this way, students learn and profit from each other’s experience. If necessary, additional meetings for projects can be offered.

Instead of the students’ performance assessment in terms of seminar papers, we recommend more research-relevant assessment formats such as an exposé/proposal, a research diary or a poster presentation (which are described in detail in Sections 1.2.4 and 1.2.10). We encouraged our students to keep their research diary from the beginning until the end of the course. The research diary can be started with a loose collection of research ideas, topics, and questions from the beginning of the class. It can then be continued at the beginning of the project phase, starting with an exposé/proposal that should be assessed by the instructor and later updated by the student during the research process. The research diary serves several purposes. First, it helps students to structure their research project in terms of time and work capacity from the start. Second, the individual research process becomes transparent and comprehensible to both the student and the instructor which is especially helpful should problems arise. The research diary ends with a reflection on the feedback given at each project’s poster presentation. The poster presentation should take place at the end of the semester and is thought of as a student conference where students present and discuss the results of their projects. After a short period of time for everyone to familiarise themselves with the content of all posters, students have about 10 minutes to present their poster which is followed by a short discussion and feedback session.

Additional teaching materials are available online: https://doi.org/10.14618/ids-pub-10454 (Kretzschmar & Völkel 2021). These include presentation slides following the structure of the book chapters.
First of all, we are very grateful to our families and friends for their encouragement and understanding that so much time and energy has gone into this project. Furthermore, our thanks go to the many people and institutions in the academy who supported us in various ways. Without their support, we would not have been able to write this book. The conceptual framework of this book was developed as part of an innovative research-oriented teaching curriculum which was awarded an extensive grant by the ‘Gutenberg Teaching Council’ (GLK) of the University of Mainz in 2014. Moreover, various colleagues of different linguistic departments at the University of Mainz supported us with their ideas for empirical studies, including Kristin Kopf (German Linguistics), Ulrike Schneider (English Linguistics) and Raimund Kastenholz (African Studies). They complemented our own empirical knowledge which is of course shaped by our former university teachers, most of all Walter Bisang (Language Typology), Jürg Wassmann (Cultural Anthropology), and Matthias Schlesewsky (Psycho- and Neurolinguistics). Furthermore, we are particularly grateful to Marion Grein (German as a Foreign Language) for the constructive collegial exchange regarding didactic ideas in research-oriented teaching over the years. We are also very grateful to our colleagues R. Muralikrishnan and Lisa Friederich who tested the curriculum in their classes and gave us valuable feedback on previous versions of our teaching manuscripts. Finally, we thank the many researchers who agreed to contribute to our research colloquium on empirical research methods in linguistics held at the University of Mainz in 2016 for inspiring presentations and discussions on subdiscipline-specific and interdisciplinary research in the broad field of empirical linguistics: Harald R. Baayen, Balthasar Bickel, Michael Cysouw, Sonja Eisenbeiss, Adolfo García, Tanja Kupisch, Ulrike Mosel, Petra B. Schumacher, and Gunter Senft. Finally, our thanks go to Robert Mitchell for carefully proofreading our book; to Helen Barton and the editorial team of Cambridge University Press for their patient assistance, to the anonymous reviewers for their valuable feedback; and to the students who enthusiastically supported our project with their assistant work (above all Svenja Lüll, Karin Kuldva, Martin Schröder, Nairi Demirkiran, Leonie Steimel, Annika Esch, and Jacqueline Wiedner) or by their contributions in class.