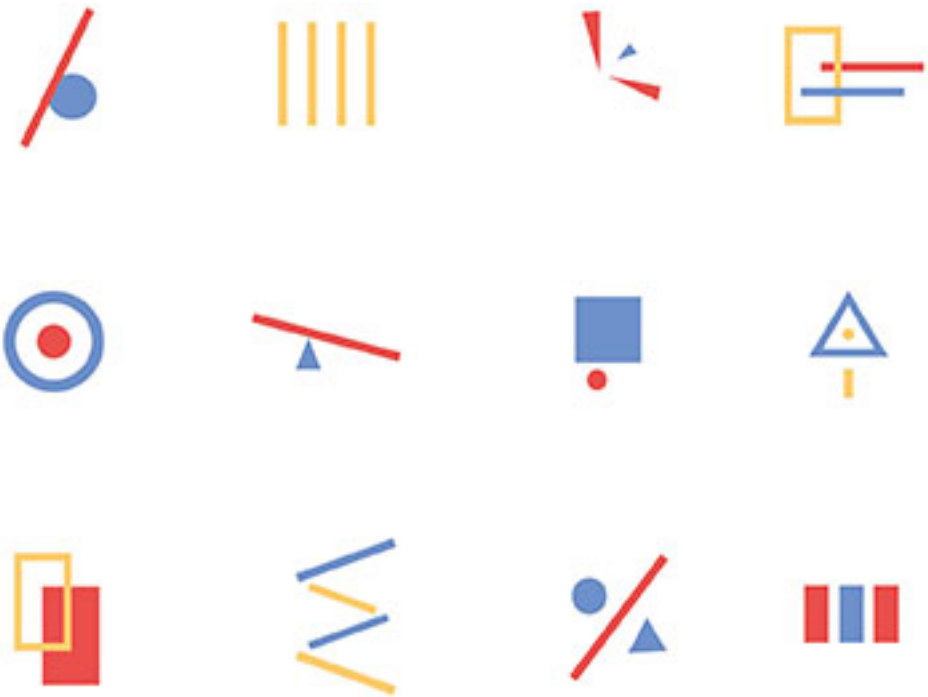

RESEARCH METHODS IN LINGUISTICS

SECOND EDITION

Edited by
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Research Methods in Linguistics

Second edition

By Lia Litosseliti

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For Judith Baxter, in memoriam

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Judith Baxter, Emeritus Professor of Applied Linguistics at Aston University, sadly passed away as this book was going to print. She will be fondly remembered by students, colleagues and collaborators (including many of this book's contributors) as an inspiring scholar whose work enriched the fields of language, gender, leadership and discourse analysis.

Judith played a key role in developing the discourse-analytical method of feminist poststructuralist discourse analysis (FPDA). She authored *Positioning Gender in Discourse: A Feminist Methodology* (2003); *The Language of Female Leadership* (2010); *Double-Voicing at Work: Power, Gender and Linguistic Expertise* (2014); and with Haleema Al A'ali, *Speaking as Women Leaders: Meetings in Middle Eastern and Western Contexts* (2016) and *Women Leaders and Gender Stereotyping in the UK Press* (2018).

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Introducing Research Methods in Linguistics

Lia Litosseliti

Linguistics is a multidisciplinary and interdisciplinary field of study, characterized by a diversity of theoretical, epistemological and methodological approaches. Linguists study a wide range of language phenomena and aspects of language use. They do this within and across different subfields (e.g. semantics, phonology, language acquisition), branches (e.g. experimental linguistics, psycholinguistics, sociolinguistics, applied linguistics) and related fields (e.g. education, psychology, anthropology, philosophy, mathematics, sociology) in the humanities, social sciences and natural sciences. It is not surprising therefore that linguistics as a heterogeneous field has been in a continuous process of reformulation and bridge-building, both across its subfields and in collaboration with other related fields. The chapters in this volume draw on several examples of such bridge-building and the opportunities and challenges involved (see also Podesva and Sharma (2013) for a similar approach).

However, the breadth and depth of bridge-building is not reflected in the very limited number of books and journals devoted to research methodologies in linguistics. In addition, discussions of research methods appear rarely or briefly in the various forms of dissemination of linguistics research (e.g. journal papers), are often missing from linguistics university courses or tend to be only discussed as part of a specific branch of linguistics. One of the aims of this book then is to *bring to the fore and make accessible what can be seen as an under-discussed and opaque subject*.

On a related note, when research approaches and methods as part of a study *are* discussed, what is often missing is an explicit acknowledgement of the research paradigms which underlie the choice of methods and/or an explicit acknowledgement of the researcher's positioning in relation to those paradigms. There are many reasons for this – some to do with research reporting conventions and space limitations, but also the fact that making assumptions explicit can be a daunting task, especially when our positioning in relation to paradigms is in a flux, being developed, questioned and reformulated. Making an effort to explicitly acknowledge our affiliation to certain paradigmatic principles is important however: positivist or constructivist paradigms, for example, entail a different understanding of what constitutes 'reality' or 'knowledge' and therefore what counts as valid data, reliable evidence or ethical practice. In other words, research paradigms have important ontological dimensions (about the nature of reality), epistemological dimensions (about the nature of knowledge) and methodological dimensions (about the research approaches adopted); I refer readers to Paltridge and Phakiti (2015) for a useful discussion. These dimensions can and should be made explicit, rather than remain assumed, as a number of chapters in this volume argue. In this respect, this book aims to be useful for both new and experienced researchers, *in encouraging them to reflect on the implications of paradigms – and their own positioning towards them – for the methodologies chosen and sometimes combined*. The authors in this book have endeavoured to take an honest and critical approach around these issues.

Similarly, this volume *encourages readers to take a wider view of key approaches along the quantitative–qualitative continuum*. Rather than arguing for a quantitative versus qualitative paradigmatic compartmentalization, the chapters critically reflect on the affordances and limitations of approaches for research practice, the value of mixed methods research and the need to push the boundaries of methodologies to incorporate cross-disciplinary perspectives. In this vein, the division of quantitative and qualitative perspectives into Part One and Part Two of this book should be treated as an aid for readers – especially those new to the topic – to navigate through the book's content and a starting point for a discussion of quantitative and qualitative perspectives, rather than a strict distinction. It will be clear to readers that it is neither possible nor fruitful to label many areas as strictly quantitative or qualitative – a debate with which a number of contributors in this volume engage.

This book is designed to be an in-depth introduction to the key issues, principles and contributions of some core methods in linguistics research. Each chapter can be used as a springboard, starting with basic concepts but moving beyond them to critically tackle important questions and debates around the topic. In each chapter, principles and concepts are explained and fully illustrated with concrete examples, which are wide-ranging and applicable more broadly. *The ultimate aim is to throw light on some of the complexities of linguistic research inquiry more generally and of research methodologies in particular, by showing how researchers negotiate them in the context of different research studies.*

The newcomer to the field will benefit from clear introductions to key concepts, a plethora of illustrative examples and carefully drawn links between theory and practice. The experienced researcher and teacher of linguistics will find authoritative and critical engagement with current debates in this diverse field. Both types of readers should find the book a useful resource for the supervision of research projects and theses.

The book does not set out to examine the different *stages* of project design, data collection and data analysis in linguistics. However, it will be evident to readers that issues of design and the collection and analysis of data are central to any discussion of methods, and are therefore salient in most of this book's chapters. This volume also does not focus on specific areas of research such as grammar, semantics, pragmatics, language assessment, language education, language and identity and so on. Rather specific areas of research and specific research studies are drawn on in each chapter for the purpose of illustration.

Given the above, the book can be used effectively alongside other texts, particularly Podesva and Sharma's (2013) comprehensive text on research methods in linguistics, which follows the research process stages and so includes chapters on project design, data collection, analysis and results; Podesva and Sharma also have a focus on variationist sociolinguistics and formal methods, which are not covered here. This book also complements Dornyei's (2007) volume on research methods in applied linguistics, which looks at the process from data collection to the reporting of results, as well as discussing quantitative, qualitative and mixed methods research in detail. Finally, this book can be used alongside Paltridge and Phakiti's (2015) applied linguistics-focused book, which covers both research approaches/methods *and* specific areas of research, and which prioritizes areas related to language learning. Another complementary text, also with an applied linguistics/second language teaching focus, is *Research Methods*

for Applied Language Studies: An Advanced Resource Book for Students (Richards et al., 2011).

There are twelve chapters in this edition of the book, organized in three parts as follows:

Part One, 'Issues', addresses key issues that are central to many areas of linguistic inquiry regardless of methodology, but which offer insights that help guide methodological decisions. The four chapters in this first part deal with research questions, the question of combining methods, ethics and transcription in linguistics. Apart from being useful for newcomers to the field, these chapters will also act as invaluable reminders for the more experienced linguists who are arguably in danger of becoming entrenched in the methodological avenues they pursue.

Part Two, 'Quantitative Perspectives', covers quantitative and corpus research methodologies. The three chapters in this part are intended as detailed overviews of basic quantitative and corpus research designs, with an emphasis on the practical steps needed in order to understand and implement such designs. The chapters also offer insights into common assumptions surrounding the quantitative–qualitative paradigms debate, with some arguing for approaches that combine quantitative and qualitative dimensions.

Part Three, 'Qualitative Perspectives', includes five chapters on selected qualitative linguistic research methods currently widely used in linguistic research. Some can be perceived more as qualitative approaches (linguistic ethnography, multimodality, case study research), others as commonly used qualitative data collection methods (interviews and focus groups) and others have elements of both approach and method (discourse analytic approaches). In practice, as the chapters in this part illustrate, there is considerable overlap and certainly a need for congruence between the research approach that structures a study and the data collection/analysis methods a study employs.

The chapters in this part of the book engage with discussions around the relationships between the micro and macro levels of linguistic inquiry, and in most cases they adopt critical perspectives which offer suggestions for new and emerging methodological pathways alongside the established models. It is also important to point out that the larger number of chapters under qualitative perspectives reflects the prevalence and momentum of such perspectives currently in the field. These chapters can in turn make this book particularly useful for those researchers working on the social interaction-oriented or discourse-oriented end of the linguistic spectrum.

The volume adopts a clear physical presentation of the material. Each chapter begins with a chapter outline, then

- introduces basic concepts and overviews key issues
- exemplifies the issues and features illustrative examples (e.g. of data, analyses, findings) from recent linguistic research studies
- outlines key assumptions underlying a particular approach or method, its contribution to the field, and where appropriate, its potential for combination with other approaches or methods

Each chapter includes a list of references, suggestions for 'Further reading' which will help readers learn more about that particular area independently, as well as three more sections which are new to this edition: a list of 'Online resources' for readers; 'Discussion questions' which aim to facilitate post-reading comprehension and further thought and/or invite readers to reflect on and apply the insight gained from the chapter in the context of their own research; and a 'Glossary of key terms' used across the chapters.

For this edition, chapters have been expanded throughout and new chapters have been included. This edition also features a multitude of examples situated outside Anglocentric contexts, a stronger emphasis on new modes of interaction (e.g. digital communication) and multimodality, as well as an even stronger focus on the *application* of approaches.

Chapter outline

In the first chapter of Part One, 'Issues', **Jane Sunderland** takes up the issue of 'Research Questions in Linguistics'. She takes the reader through the reasons why we need research questions (as differentiated from hypotheses), how they are formed, how they can be categorized and implemented and what implications they can have for linguistic data and analysis. Sunderland provides plenty of illustrative examples of types of research questions from previous sociolinguistic studies and her own research on gendered interaction in the foreign language classroom. For example, she distinguishes between primary and secondary, methodological and theoretical, and empirical and speculative questions. More generally, Sunderland's chapter is designed to provide practical guidance to new researches, particularly around justifying their methodological decisions and formulating questions that are operationalizable.

Chapter 2 by **Jo Angouri** critically examines the question of 'Quantitative, Qualitative, Mixed or Holistic Research? Combining Methods in Linguistic Research'. Angouri focuses on the integration or mixing of quantitative and qualitative elements in research designs. She draws on examples in the field of workplace discourse studies, to illustrate some of the benefits and challenges of combining paradigms. Her chapter problematizes the notions of compatibility, transferability, integration and triangulation of methodologies, as well as the rise *and* language of mixed methods research; it then makes a case for holistic and critical research that does justice to the complexities of language phenomena, especially in the workplace.

Chapter 3, 'Ethics in Linguistic Research' by **Christine Mallinson**, is an overview of some main concepts, guidelines and practices that inform the ethical conduct of linguistics research. The chapter introduces how and why ethical values and guidelines have come to be widely adopted, before comparing prominent models and frameworks for ethical research in linguistics. Mallinson guides the reader through issues of obtaining informed consent, the negotiation of researcher/participant roles and relationships, and issues of confidentiality, privacy, ownership, access and dissemination. The chapter is designed to help readers conceptualize research ethics and guide them on how to implement ethical considerations in practice.

In Chapter 4, 'Transcription in Linguistics', **Lorenza Mondada** focuses on transcription as an indispensable practice and tool for linguists studying spoken language. The chapter discusses key principles of, as well as problems raised by, transcriptions within a diversity of fields in linguistics. Both theoretical and practical considerations are explored by the author, including a discussion of responses to the challenges of transcription. Conversation Analysis is specifically discussed as an approach which has developed the practice of transcription of both language and multimodality in an exemplary way. The chapter aptly illustrates how even small choices in the transcription process can have big conceptual, analytical, practical and political consequences.

The first chapter of Part Two, 'Quantitative Perspectives', is Chapter 5, 'Quantitative Methods: Concepts, Frameworks and Issues' by **Sebastian Rasinger**. This chapter makes a distinction between quantitative and qualitative methods, then introduces readers to common characteristics and principles of quantitative research, such as forming a hypothesis and considering the quantifiability, reliability and validity of data. It also outlines the various research designs that can be used under a quantitative framework, with specific reference to their application in linguistics and

other language-related subjects. Finally, Rasinger takes a closer look at questionnaires in quantitative research, offering practical guidance on how to design and use questionnaires. In line with other authors in this volume, Rasinger also raises the fundamental question of whether a questionnaire captures reality or a perception of reality and the implication this has for quantitative research.

Chapter 6, 'Organizing and Processing Your Data: The Nuts and Bolts of Quantitative Analyses', by **Erez Levon**, follows closely from and complements Chapter 5, by focusing on the nuts and bolts of performing a quantitative analysis, particularly in terms of constructing and testing hypotheses for such analysis. The chapter then examines, with illustration from linguistic studies, the affordances and limitations of two of the most common statistical tests used in linguistics, chi-square tests and t-tests. Finally, the author discusses the interpretation of quantitative results and the issue of combining quantitative and qualitative methods in linguistic research.

In the final chapter of Part Two, Chapter 7, **Paul Baker** provides an overview of 'Corpus Methods in Linguistics', taking up theoretical principles surrounding corpus linguistics techniques, building and annotating a corpus, different types of corpora and different kinds of research questions that may be addressed through corpus linguistics. Examples of applications of corpora are provided throughout from studies in stylistics, discourse analysis, forensic linguistics and language teaching. Various techniques of analysis are demonstrated on corpora of British English, including comparisons of word frequencies, keyword analysis, collocates and concordances. Finally, Baker argues for corpus methods to be considered an approach that combines quantitative and qualitative processes.

Part Three, 'Qualitative Perspectives', begins with **Nigel Edley** and **Lia Litosseliti**'s Chapter 8, 'Critical Perspectives on Using Interviews and Focus Groups'. The authors critically examine the use of interviews and focus groups within social science and linguistics research. They first discuss the criticisms levelled against these methods and argue that it is problematic to use them as a tool for getting to people's 'true' or 'real' views. Rather, they emphasize the role of interviews and focus groups as collaborative or interactional events that are context-specific and shaped as much by the interviewer as by those being interviewed. The chapter ends with a critical review of the primary strengths and weaknesses of these methods.

In Chapter 9, **Judith Baxter** reviews 'Discourse-Analytic Approaches to Text and Talk'. Baxter focuses on five discourse-analytic approaches of

particular value for current research in linguistics: Conversation Analysis, Interactional Sociolinguistic Analysis, Discourse Analysis, Critical Discourse Analysis and Feminist Poststructuralist Discourse Analysis. Each approach is examined in terms of its background, motivation, key features, applications and possible strengths and limitations. The author critically explores the fundamental explores the issue of adopting a microanalytical perspective (examining the fine grain detail of linguistic interactions) or a macroanalytical perspective (examining language as constitutive of social practice), and questions the fruitfulness of such a dichotomy, if we are looking for richer, more complex insights within linguistic research.

Chapter 10 by **Fiona Copland** and **Angela Creese** focuses on the methodological and analytical contribution of 'Linguistic Ethnography' to the study of language and social life. The opportunities and drawbacks of theoretical diversity are discussed, before the authors turn to discussions of interdisciplinarity and the ways in which linguistic ethnography can bring data sets together. Several empirical studies illustrate linguistic ethnography's application in the study of social contexts. Finally, team ethnography is put forward as a means to introduce voice, diversity and complexity into linguistic ethnographic accounts.

Chapter 11, 'Multimodality: A Guide for Linguists' by **Jeff Bezemer** and **Carey Jewitt**, argues for a multimodal perspective – the use of modes beyond speech and writing, such as gesture, gaze, image – in the study of language, meaning and communication. The authors first discuss the role of multimodality in linguistic research. They then look at how multimodality has been taken up, in terms of questions posed, data collected and methods of analysis used. Taking one approach – social semiotics – and one area of research – online text making – as an example, the chapter illustrates key concepts and steps in multimodal inquiry. Overall, the chapter outlines theoretical and methodological dimensions of multimodality and briefly looks at future directions.

Finally, Chapter 12 by **Patricia A. Duff** discusses the role of 'Case Study Research in Applied Linguistics'. The author defines case study research; discusses its philosophical underpinnings; brings examples from qualitative case study research on language learning; and discusses some of the advantages and disadvantages of using single-case versus multiple-case designs, nested designs and cross-case analysis. Examples are drawn primarily from recent study-abroad research, as one of the areas of linguistic research that use case studies. Additional topics explored in this chapter include thematic analysis, longitudinal research and generalizability.

I am grateful to the individual authors of this volume for their excellent contributions, as well as their responsiveness to suggestions. They have brought to the book valuable knowledge, a passion for their topic area and a willingness to tackle some complex questions. I hope this work offers useful guidance to readers who are beginning, and to those who are continuing on, their linguistics research journey. Above all, I hope it will create opportunities for engaging with the many exciting debates in this field and for moving them forward.

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Part One

Issues

1

Research Questions in Linguistics

Jane Sunderland

Chapter outline

This chapter takes as given that research questions, appropriately designed, ordered and worded, are the key to any good empirical research project. Starting with why we need research questions (as opposed to *topics* or even *hypotheses*), I explore where they might come from, and propose different types of research questions. Research questions of course need to be operationalized, and the chapter explores the implications of different types of research questions for data, data collection and analysis. Equally importantly, research questions need to be explicitly documented, in terms *inter alia* of their origin, rationale and implementation, and the chapter looks at how (and where) this might be done. As Jennifer Mason writes:

> [Research questions] are vehicles that you will rely upon to move you from your broad research interest to your specific research focus and project, and therefore their importance cannot be overstated.
> (Mason, 2002: 20)

Why do we need research questions?

Research questions are, I argue, the key to any empirical research project. Without research questions, you will flounder; with them, you will be guided in terms of data needed, data collection methods and data analysis. Ask yourself, 'What data do I need?' The answer is 'That which best enables me to answer my research question(s)' 'How do I analyse it?' 'In a way which allows me to address my research question(s)' and so on. This is because a piece of empirical research is normally *designed* to address one or more research questions – the answers to which should constitute a 'contribution to knowledge'.

In the social sciences, empirical research very often employs *explicit* research questions. If you are about to conduct empirical research, first ask yourself, 'What am I trying to find out in my research project? What am I asking?' If you can answer these, you have the basis for a research question.

Many of us go into a research project with our ideas in general, and our research questions in particular, rather broadly formulated. Alternatively, our research questions may be precisely formulated, but, we may discover, unworkable (not amenable to investigation, or otherwise inappropriate). At the start of a project, neither may be too much of a problem, because a research question should not straightjacket you. Rather, you can see it as an initial direction – like a compass whose needle is swinging, but not too widely. Further down the line, you may find that issues come up which are interesting and relevant, but which are not addressed by your research question(s); that is, you have data which potentially answers questions you have not asked. If these do not require any new data, you may wish to consider adding a new research question (see below). At some point, however, your research questions need to stabilize (although there is room for getting their *wording* accurate right up until the end of the research project).

You may be used to the term *hypothesis* rather than *research question*. Hypotheses are more characteristic of the natural than the social sciences, tend to be more precise than research questions and are conventionally worded as statements, to be investigated and proved or disproved through empirical study. An example would be 'In terms of school library use, boys in the final level of French Primary Schools (*écoles primaires*) borrow (a) more works of non-fiction than of fiction, and (b) more works of non-fiction than do girls.' Hypotheses are also perhaps more characteristic of quantitative than qualitative research (see Rasinger, this volume), and research questions

more characteristic of *qualitative* research (see also Dornyei (2007) for more on research questions and 'paradigmatic differences'). Research questions are also likely to be both broader and more exploratory than hypotheses, for example, 'What are the borrowing practices of French Primary School (*école primaire*) final level girls and boys in terms of fiction and non-fiction?' Jennifer Mason's 'research questions checklist' includes: 'Are they open enough to allow for the degree of exploratory enquiry I require?' (2002: 19). A second, very important checklist item is 'Do they make possible, and probable, intellectually interesting answers or arguments?' – something required for doctoral and professional academic research.

Where do research questions come from?

One broad answer to this question – and indeed to that of being open enough – is 'the literature'. In the process of reading and writing a literature review around your topic:

- You may come across a suggestion for an (unanswered) research question; however, do check that it has not, in fact, been addressed, and, indeed, that as a question it is both worthy of investigation (is it still interesting and original?) and operationalizable (see below).
- You may decide to replicate someone else's work (and hence ask the same question), perhaps to challenge it, perhaps within a different or particularly interesting context, or perhaps to use a different form of data analysis.
- You may identify a 'niche' in the research literature; that is, while many questions related to a given topic have been asked, others (of interest) have not.

The advantages of arriving at research questions through a literature review are, as Andrews (2003: 17–18) points out, 'that the question(s) will be well-grounded in existing research (assuming the literature review is a good one); there will be a coherence between the literature review and the rest of the thesis (again assuming the rest of the thesis is driven by the questions)'.

A second broad answer to 'Where do research questions come from?' is 'a pre-existing topic' (which then drives the literature review). For example:

- You may have identified a recent and unpredictable political, social or natural event, which sheds light on our understanding of a particular social concept; for example, a severe hurricane might provide a 'site' for studying the sociolinguistic/ethnographic notion of 'Community of Practice', or the 2017 American Presidential elections a site of 'variation in modern political rhetoric' (and their aftermath another).
- You may have identified an interesting linguistic phenomenon or development (e.g. use of the phrase 'What's with … ?') to enquire about something unusual; particular social media such as WhatsApp would be another example, allowing the exploration of the affordances of a particular medium and – at the time of writing – new form of communication.

A third possible source of a research question, more controversially, is that it comes out of your own findings. Your data may suggest answers to research questions that you didn't ask; hopefully you will be able to ask them now, of that data – as long as this does not destabilize, divert or unacceptably increase the workload of your entire research project. If it can be addressed *without* dilution or compromise, then there is no reason why a new research question cannot be introduced, and its genesis incorporated into the documented 'story' of the research project in question. More generally, we can argue that a set of research questions *should* be formulated in ways which allow the identification and investigation of further issues that the research can bring to light. In her own 'research questions checklist', Jennifer Mason (2002: 19) includes: 'Will they allow me to generate further questions at a later stage, in the light of my developing data analysis, should I wish?' (see also Andrews, 2003).

Dick Allwright (1983) in this connection makes a distinction between data which is 'hypothesis-generating' and that which is 'hypothesis-testing'. Here, 'hypothesis' can be replaced by 'research question'. Diary studies, for example, may be 'hypothesis-generating' (let us imagine a group of students writing about their experience with a new language), in that the preoccupations documented in the diaries may suggest/generate research questions (e.g. 'What is likely to cause anxiety in novice learners of a foreign language?' – see Schumann and Schumann, 1977). These research questions can then be 'tested', or at least empirically addressed (e.g. 'Does reading or listening to words in a new language constitute a greater source of anxiety for novice learners of a foreign language?').

Research questions, topics and puzzles

When asked what their research question is (e.g. on their PhD proposal form), it's surprising how many novice researchers actually provide a *topic*. In the area of language education, your topic might be, say, 'Teacher beliefs', in particular 'the beliefs of UK primary school teachers about foreign language teaching and acquisition'; or 'Language testing', in particular 'testing foreign language use in genuinely communicative situations'. A research question however is not a topic, although it grows out of a topic. It is a *question* and should be worded as an interrogative (see below).

Alternatively, some people might consider an *intellectual puzzle* as a basis for their research, for example, 'Why is it that foreign language teachers tend to see girls as almost automatically better language learners than boys?' (see Allwright, 2003; Mason, 2002, for more on intellectual puzzles). Here, you may be drawing on your own experience and (informed) hunches. For example, as a teacher, you might feel that exercises from a certain textbook almost always go down better with the students than exercises from a different textbook, and you are curious to find out why (addressing such puzzles has been conceptualized by Dick Allwright (2003) as 'Exploratory Practice'). The answer to this particular research question would have implications for classroom texts and pedagogy beyond the particular teaching situation.

Both topics and puzzles need 'translating' into appropriate research questions, that is, through careful formal expression, including in terms of accurate, appropriate and productive interrogative wording. But to look at wording, we also need to look at *types* of research questions.

Types of research questions

To illustrate some possible 'types' of research questions, let us take the topic of 'beliefs of UK primary school teachers about foreign language teaching and acquisition'. Within this, your research question(s) might be one (or more) of the following:

- Do French teachers working in UK primary schools agree with the teaching of French to Year 6 primary school children?

- What reasons do French teachers working in UK primary schools give for including the teaching of French to Year 6 children in the curriculum?
- What reasons do French teachers working in UK primary schools give against the teaching of French to Year 6 primary school children?
- How do UK primary school teachers of French believe Year 6 children best learn French?
- What is the range and diversity of beliefs of UK primary school teachers of French in relation to the teaching of French to Year 6 children?
- Why do UK primary school teachers of French hold these beliefs?

Note that these research questions are formulated as a variety of *interrogatives: Do, What, How, Why*. Other research questions might start with *Is/Are, When, Where, Who* or *To what extent*. These interrogatives suggest different sorts of questions: whereas *How, When, Where, What, Is/Are, Do/Does* and *To what extent* may be descriptive,[1] *Why* is clearly explanatory. (I return to the question of 'explanatory' research questions below.)

Novice researchers often wish to address an 'evaluative' research question, such as 'What is the best method of teaching listening in [context X]?' or 'Should EFL teachers be discouraged from using the students' L1 in [context Y]?' The difficulty with such research questions, aside from the problem of 'operationalizing' them (see below), is that they tend to entail something like 'According to who/what' or 'If Y is to be achieved … ', or even a particular desideratum (see Litosseliti, 2003). My feeling is that evaluations, coming out of the findings of descriptive research questions, are best expressed in the form of recommendations (or implications), perhaps in a Discussion section or chapter. For example, the question 'What is the best method of teaching listening in [context X]?' might be addressed not through a research question *per se* but rather through a discussion of findings of research questions such as (a) 'What different methods of teaching listening are employed in [context X]?', (b) 'What are teachers' and students' views?' and (c) 'Is there any correlation between method and test results, here?' Recommendations however still need to be expressed with caution, in part because of the problem of establishing causality (e.g. between use of a new method of listening and improved results in a listening test), and the issue of test validity (i.e. here, of that listening test).

In addition to a categorization of research questions as *descriptive, explanatory* or *evaluative*, cutting the research question cake in other ways allows still other distinctions to be made, and referred to explicitly in the eventual publication. These include the following:

Primary/secondary: Quite simply, some research questions might be more important than others, in terms of the focus of the study, or simply of the quality and/or quantity of associated data collected, selected or elicited.

Main/contributory: It may not be possible to answer your main research question until an earlier ('contributory') research question has been answered. Here, sequence is clearly important. For example, in some research projects, research question 1 is *descriptive* (*Does … ?*) and research question 2 *explanatory* (*Why does … ?*) Alternatively, 'Does X happen … ?' can be seen as contributory if it is intended to allow, and then does allow, two further (alternative) main research questions to be addressed, for example: 'If X happens, why might this be … ?' and 'If X does not happen, why might this be … ?' (see also Andrews, 2003).

Overarching/subordinate: Two or more research questions might be grouped hierarchically under a 'higher' one, which together they address; for example,

Overarching research question:
What are some differences in the way [a given political event] is reported in newspaper X and newspaper Y?

Subordinate research question 1:
How are the 'social actors' nominalized in each newspaper report?

Subordinate research question 2:
Which report uses the greatest proportion of agentless passive verb constructions?

The above 'overarching' question is far too broad to be 'operationalized' (see below) as it stands, but can be operationalized through the two subordinate research questions.

Empirical/methodological/theoretical/speculative: While your research questions will probably be largely aimed at producing empirical findings (concerning, for example, part of the language system, an aspect of language use, language learning/teaching), you may also be interested in the investigative (methodological) process itself. An example of a methodological research question might be 'Are fieldnotes made by the researcher an effective way to investigate code-switching in workplace talk by migrant hotel workers in Germany?', and a second 'What might effectiveness depend on, here?' Another possibility might be 'Can Critical Discourse Analysis (CDA) be usefully applied to the talk of pre-school children?' Don't feel that you must have a methodological research question. However, if you are

doing something innovative or otherwise interesting methodologically – for example, combining two approaches which are not usually combined – this could constitute an 'intellectual contribution' of your study. If so, it may be worth 'promoting' this aspect of your methodology to the status of a research question.

Theoretical research questions are likely to refer to both theoretical concepts and their deployment in empirical research. Andrews (2003: 23) illustrates this with: 'What is a theoretical framework within which Hong Kong children's writing [in English] can be analysed and described?', although he does not label this as a theoretical research question as such. Given that 'Why?' research questions are notoriously hard to answer satisfactorily, they may be best seen as 'speculative', their answers perhaps being informed by the 'answers' to empirical questions (in combination with your own professional or other insights). Wiser, however, I suggest, may simply be not to have research questions starting with 'Why?' at all, and, instead, to have a full and substantial discussion of 'Why?' in an Analysis or Discussion chapter (see also the section 'Implications of your research questions for data, data collection and analysis').

Researcher-generated/participant-generated: Of course, almost all research questions are researcher-generated. But this begs the question of the role of your research participants (assuming you are not doing text-based research). Are you, as Cameron et al. (1992) pointedly ask, doing research on, with or for your participants? Relatedly, Cohen et al. (2007: 88) propose that the researcher ask not only 'What are the research questions?' but also 'Who decides what the questions will be?' and 'Can participants add their own questions?' Someone doing research for their MA dissertation or PhD thesis may have less space to explore the possibility of 'research for' participants than a researcher who has received a grant to do exactly that. However, MA or PhD researchers are often not accountable to a grant-awarding body, and this may be precisely the time when they *can* consider how to work with research participants, and how to address those participants' own concerns.

As the above set of distinctions suggests, your research questions can and should constitute a coherent whole, that is, be explicitly related to each other. Both sequence and hierarchy are important here. As shown above, for example, an overarching question (say, research question 1) may not itself be operationalizable, but may be operationalized via two or more subordinate research questions (say, research question 1a, research question 1b). The relationship between the research questions should be clear, to allow a reader to see what it is you are trying to do in your research project. But this

sort of organization is also important for you. Once you have created this coherent structure, you will be able to see if some of your research questions are basically the same, or if one is in fact a sub-research question of another. Andrews makes the useful suggestion of writing each research question on a separate strip of paper and organizing them accordingly:

> Experiment with moving the questions so that they seem to make sense in relation to each other. Does one of them seem like the main question? Are some more general or more specific than others? How do they stand in relation to each other? Can some of them be omitted, or fused, or added to?
>
> (Andrews, 2003: 39)

How many research questions?

This question, perhaps inevitable after considering the wide range of research question types, is however like asking about the length of the proverbial piece of string. Broadly, most research projects use more than one research question, often of different types. Mason (2002: 21) notes, 'In the early stages, it can be helpful to generate a lot of research questions.' Ultimately, however, the rule of thumb is to ask only as many research questions as can *satisfactorily* be addressed, through substantial, in-depth, nuanced analysis and discussion. The issue is not the number of research questions, but what is needed (in terms of data, analysis, time and effort) to answer a given research question, that is, the scale of a given project. Some questions are bigger than others. Andrews (2003: 4) cites 'What is the impact of communication technologies on learning worldwide?' as an unanswerable research question due to its level of generality; other research questions may be unanswerable (especially in postgraduate research) because they require a lengthy longitudinal study (e.g. data collection over five years), or more interviews than the researcher could conduct and analyse. In Mason's (2002: 21) words, 'you will quickly need to focus to ensure that you are designing a manageable project'.

It may be necessary to 'sacrifice' a research question if it cannot be done justice to (see, for example, Sunderland, 1996a). Painful though this may be, it helps ensure that you avoid producing a superficial and diluted piece of work – remind yourself that sacrificing a research question and all that goes with it often strengthens the study *and* provides material for a later piece of work (a publication in-the-making). In my own doctoral thesis,

on classroom interaction, I originally included research questions on 'wait-time' (e.g. the amount of time a teacher gives a student to answer a question before answering it him/herself) and interruption. I abandoned the wait-time question because it would have required special timing equipment, and the interruption question because of its specific transcription implications and conceptual complexity (which I could not have embraced within the scope of my thesis). These sacrifices entailed a sense of loss but, more importantly, enabled me to address the remaining research questions more fully.

Research questions, linguistic data and identifying originality

You may have noticed that the research questions in the section 'Types of research questions', despite being concerned with language education, could largely be addressed through data in which language *itself* was not to be analysed. Most linguistic and applied linguistic study, however, will include research questions with a linguistic component. (Indeed, it is arguable that many research projects outside linguistics would benefit from at least one research question which is concerned with language (see also Billig, 2001).)

Let us consider a set of research questions from a research project in the field of sociolinguistics[2]:

1. Is the quotative use of *be like* in talk (e.g. *He was like 'I can't stay here'*) on the increase in British English?
2. To what extent (if any) does the quotative use of *be like* in British English vary with age?
3. Is the quotative use of *be like* a greater marker of male or of female adolescent speech in the UK?

The focus of all three questions is language use. However, language can be a focus in terms not only of use, but also of perceptions. Other research questions on the topic of the quotative use of *be like* might be:

4. Is the quotative use of *be like* in talk in English perceived as gendered by users?
5. If yes, how?
6. If yes, why?

Research questions about language *use* and about *perceptions* of language use are both valid in sociolinguistics and indeed complementary in our understanding of a range of linguistic phenomena.

A research study can also include linguistically oriented research questions to do with a specific linguistic code or use of that code. When I was carrying out my own doctoral research (Sunderland, 1996a) on gender and teacher–student interaction in the foreign language classroom, work had already been done on interaction and gender in classrooms, including a little in second/foreign language classrooms, but there was (to my knowledge, at the time) no work on gender and interaction with regard to the foreign language classroom *as such*. This meant that I could ask research questions which had been asked of other classrooms but had not apparently been asked of foreign language classrooms. I could then consider one *special characteristic* of the foreign language classroom: that two languages (at least) would normally be in use there. This pointed to the possibility of research questions focusing on the 'codes' used in this foreign language classroom (the relevant languages were the students' L1, English, and the target language, German).

My empirical research questions asked about teacher talk and student talk. In terms of teacher talk, the *overarching research question* was 'Does the teacher use more or different language to boys and to girls?' The *subordinate* research questions were concerned with (a) teacher solicits (i.e. language used with the intention to get someone to do or say something), (b) teacher feedback to students' spoken answers to her question, (c) teacher comments and (d) teacher responses to student solicits. The list of subordinate research questions was long, and I include just seven (!) here as illustration:

1. How many male or female students are named (or otherwise identified) in the context of a solicit?
2. How many words of a solicit are directed to a particular student?
3. How many solicits are non-academic, how many academic?
4. **Of the academic solicits, does the teacher direct more solicits to girls or to boys in either German, English or both?**
5. **As regards the answer to the academic solicits,**
   a. **does the intended language of response vary with sex of addressee?**
   b. does the intended type of response (predetermined or 'pseudo-open') vary with sex of addressee?
   c. does the intended length of response (one word or potentially longer) vary with sex of addressee?

6. Does the teacher provide different types of feedback to girls' and boys' broadly 'correct' answers to her academic solicits?
7. Does the teacher provide different types of feedback to girls' and boys' broadly 'incorrect' responses, or lack of responses, to her academic solicits?

Of the above research questions, though all were concerned with language in the sense of 'teacher talk', research questions 4 and 5a (in bold) were also concerned with the use of a particular *linguistic code*: here, German or English.[3] As all the questions were original in that they had not been asked before of the language classroom (most had not been asked of *any* classroom), I saw this particular focus on gendered use of *linguistic code* in the classroom as one of the 'intellectual contributions' of my thesis.[4] More generally, then, given the importance of originality in research, it is always worth exploring and explicitly documenting which of the research questions in a given study have not been asked before.

Operationalizing research questions

For an empirical research question (the sort you can only answer through data) to be *operationalizable* (see also Cohen et al., 2007: 81–83), there must be a way of addressing it, in terms of identifying the appropriate data, collecting and analysing it (see the section 'Implications of your research questions for data, data collection and analysis'). Often there are indications of how to do this in the research question itself. For example, as we have seen, a research question like 'What reasons do French teachers working in UK primary schools give for the teaching of French to Year 6 primary school children?' suggests that the researcher would *elicit* data, for example, might ask teachers a set of interview (or questionnaire) questions which *together*, properly analysed, would address this research question. Note though that the words 'What reasons do [they] give … ?' constitute an important reminder that we cannot get at people's *actual* reasons directly from what they say – at best, these are 'reported beliefs', the beliefs they 'give' (see also Edley and Litosseliti, this volume). This has implications for the interpretation of findings and the strength of claims that can be made. (Note also that interview questions are not the same as research questions. It would be unreasonable to put your research question directly to a respondent.)

Secondly, every 'content' word in a research question matters. To operationalize your research question, you will need to know *exactly* what each word is to mean as far as your research project is concerned (a 'working definition', that is, 'for the purpose of this study/dissertation/thesis').

For the set of research questions given earlier about the 'quotative use of *be like*', we would need to be clear about what we mean by this, and how to recognize such use when it occurs in the data. It may seem obvious (as in the example in the research question itself, *He was like 'I can't stay here'*), but there will be cases where *be like* is not quotative (e.g. 'I'm like my friend') and other cases where it is unclear, and parameters will need to be drawn. Also in need of a working definition is the concept, in these research questions, of *adolescence* (who counts as an adolescent?). The terms in your questions will also correspond to your theoretical and epistemological focus: this is very evident in words like *ideology* or *discourse*, but even the word *beliefs* in a research question indicates that you consider your research participants' understandings as important, interesting and epistemologically valid (see also Mason, 2002).

Mason (2002: 19) also reminds us that we should ask of our research questions, 'Would anyone but me understand them?' It is crucial that the answer is 'Yes' – especially if aspects of your study are to be *replicable*. If others cannot understand your research questions, it is worth considering whether they are, in fact, formulated in a way which is clear enough for *you* to address them properly.

Implications of your research questions for data, data collection and analysis

Mason points out that your research questions should be clearly formulated, intellectually worthwhile and researchable 'because it is through them that you will be connecting what it is that you wish to research with how you are going to go about researching it' (2002: 19). I have already pointed to the role of research questions in identifying appropriate data and accordingly data collection, elicitation (generation) or selection (e.g. when looking at a body of literary or newspaper texts). Of course, you also need to be sure that you can get the relevant data, and can get enough of it.

One example of a research question with clear methodological implications for data collection, and research design more widely, is Nunan's (1992):

- Are authentic materials more effective in bringing about learning than materials written specifically for the language classroom?

In that this research question is *comparative*, addressing it would entail researcher intervention. The research project would require an experimental set-up, with materials (authentic/written specifically for the language classroom) as the independent variable, and 'effectiveness in bringing about learning' as the dependent variable. Both 'authentic' and 'effectiveness in bringing about learning' would need to be defined. Of course, the teaching and learning conditions would need to be controlled as far as possible, so that the materials were used by students of similar levels and abilities, who would ideally be taught by the same teacher.

Let us take an example of a research question from the area of gender and discourse and work it through: 'How do white female Spanish undergraduates construct their femininity in informal talk with their same-sex peers?' Our *data* might be transcripts of naturally occurring talk of such students in informal situations. (Note that if we elicited data, for example, through interviews, we would be answering a question about how these students *understand* or *report* their construction of femininity.) To *collect* this data, we would need to identify an 'informal situation' and then do some audio and/or video recording, perhaps asking the students to wear radio-microphones and/or giving them control of the recording equipment. Alternatively, we might identify and use a corpus of spoken Spanish which included conversations among white female Spanish undergraduates. In terms of *preparing the data for analysis*, with the first option, we would need to carefully consider how to transcribe the recorded data. This is not a mechanical procedure: on the contrary, again, it depends on the research questions. Let us say, for example, that we were interested in the role of overlapping speech in the construction of femininity, perhaps as a measure of articulated empathy and/or support (see Coates, 1996). In this case, we would have to make an active decision to indicate overlapping speech on the transcript, and further to decide (and document) *how* to do this.

As regards analysis, your research questions and data are likely to suggest a particular approach or framework, which would in turn be related to the theoretical underpinnings of your work. For this example, we would probably

decide on some form of discourse analysis (see Baxter, this volume), say, conversation analysis (CA) (Hutchby and Wooffitt, 2008), critical discourse analysis (CDA) (Fairclough, 2010), feminist poststructuralist discourse analysis (FPDA) (Baxter, 2008) or perhaps a combination. Analysis is not however a self-evident or straightforward procedure based on, say, efficiency, but more to do with what we might call 'ontological alignment'. For example, not all researchers self-identify as feminist; and opposition to both CDA and CA can be ideological, based on views about the appropriate stance and role of the analyst. What is likely is that your idea of theoretical/analytical approach will in fact inform your topic and indeed your research questions, so that when you come to analyse your data, your analytical framework is, if not exactly 'waiting for you', a 'rational' decision which is theoretically consistent with your entire research project. If you are interested in language, power and ideology – and accordingly in CDA – your topic and research question(s) are likely to reflect this (you might be investigating the 'legitimation' of racism in talk, for example, or verbal dominance of one group over another in a public meeting), and you are likely to wish to analyse your data through one of the several versions of CDA (see Wodak and Chilton, 2005).

Let us now return to two of the language education research questions referred to earlier in this chapter:

- Do French teachers working in UK primary schools agree with the teaching of French to Year 6 primary school children?
- What reasons do French teachers working in UK primary schools give for including the teaching of French to Year 6 children in the curriculum?

and research questions 4 and 5 (above) about *be like*:

4. Is the quotative use of *be like* in talk in English perceived as gendered by users?
5. If yes, how?

For these research questions, you would need to *elicit* data, since you are dealing with (reported) attitudes, reasons, beliefs and perceptions. You could record people's naturally occurring talk, hoping that they would express their understandings of these very topics – but you might wait for a very long time. You would therefore probably consider using questionnaires or individual or group interviews (see Edley and Litosseliti, this volume).

In contrast, for research question 1 about the quotative *be like*

1. Is the quotative use of *be like* in talk (e.g. *He was like 'I can't stay here'*) on the increase in British English?

you would need a corpus of spoken English (with talk collected more or less recently), as this research question is about change, in actual language use, over time. And for the second *be like* research question:

2. To what extent (if any) does the quotative use of *be like* in British English vary with age?

you might, in addition to corpus data, use naturally occurring data, that is, samples from speakers of different ages.

Some research questions can be answered from existing data. Look again at the fifth language education research question proposed in the section 'Research questions, linguistic data and identifying originality':

- What is the range and diversity of beliefs of UK primary school teachers of French in relation to the teaching of French to Year 6 children?

Here, the researcher needs to identify the range and diversity of beliefs from the total set of those s/he has already identified. This is important: a research question does not *necessarily* require its own specific data set.

Finally, let's revisit the last 'language education' research question, and research question 6 about quotative *be like*.

- Why do UK primary school teachers of French hold these beliefs?
- If yes, why [is the quotative use of *be like* in talk perceived as gendered by users]?

These research questions are more difficult to address. In the social sciences, as suggested above, it is almost impossible to answer a 'Why' question in a way which is completely satisfactory. I have already mentioned the problem of establishing causality (as opposed to association). Of course, even without any data from the questions preceding each of these two research questions, it is possible (and may be instructive) to speculate about many possible answers. But even *with* data, a variety of explanations (answers to 'Why?') will suggest themselves, constituting what can be called 'competing hypotheses' (Dick Allwright, personal communication). And even if we ask teachers 'Why do you hold these beliefs about teaching French to Year 6 primary school children?', we cannot see the teachers' answers as 'truth' or 'facts'. While interview respondents may not be deliberately deceiving the researcher or deceiving themselves, their responses are nevertheless 'co-constructions':

jointly co-constructed with the interviewer, within the interview process itself (see Edley and Litosseliti, this volume). Put simply, a respondent might pick up on the words of the interviewer, might tell the interviewer what she/he thinks the interviewer wants to hear or might construct an answer newly suggested to her/him by the interview prompt (see Litosseliti, 2003, for a discussion). 'Why' questions thus have to be handled with a great deal of caution, and 'answers' expressed in a way which is neither overstated nor reductionist. For this reason, the (very important) question of 'why' is often, as suggested above, best addressed in the discussion of findings, rather than asked through a research question at the outset.

Documenting your decisions in your article, dissertation or thesis

The many decisions described above are not a 'private' or implicit matter. When writing an MA dissertation or PhD thesis, it is most important to document *all* your decisions, and reasons for them. Helpful here is to start by summarizing your methodology in a table such as this:

	Research question	Data needed	Data collection	Data analysis (approach, framework)
1				
2				
3				

Such a table will help you organize your thinking and documenting of decisions; it will also help your all-important readers. Things are, however, rarely quite so cut and dried. For example, one research question might require two sources of data; conversely, as suggested above, one source of data might address more than one research question – and therefore your table will need adapting. But if you find that you have an empirical research question lacking data with which to address it, or data with no corresponding research question, then you have a useful alert to the fact that you need to reconsider your research design.

Documenting your decisions around your research questions however goes beyond justifying their operationalization through associated data, data

collection methods and analytical framework. You also need to show that the research questions *themselves* have not 'fallen from the sky'; each needs a rationale (see the section 'Where do research questions come from?'). This is related to originality and your own 'contribution to knowledge'. It is worth indicating in what sense each of your research questions is original: Has it ever been asked? Has it been asked before, but of a different context? For example, as indicated above, while most of my own PhD research questions had not, to my knowledge, been asked before, others had – but of a classroom other than a foreign language classroom.

Equally importantly, research questions can (indeed, *should*) be referred to throughout the work – especially if different parts of the study address different research questions. In particular, all the research questions should be referred to in the discussion: not so much in terms of you having 'answered' each question, but discussing it, and identifying implications, and looking at what it all means, together. Continuous reference to your research questions will not only help you stay on track and organize your thesis as a whole; it will also help the reader appreciate the reasons for what you are writing at all times.

Further reading

Andrews (2003)
A useful book for different levels of students in higher education whose research has a social or (language) education focus. Using several actual case studies, Andrews looks at the genesis and types of research questions and methodological implications, as well as problems researchers may encounter.

Cameron, Frazer, Harvey, Rampton and Richardson (1992)
A thought-provoking book, which looks at the questions of research 'on', 'for' or 'with' participants, and, implicitly, at where the research questions for a given study come from.

Cohen, Manion and Morrison (2011)
An extremely substantial and comprehensive 'classic' work, which is relevant to research both within and outside education. Make sure you get the latest edition (currently 8th)! 'Research questions' are referred to frequently throughout.

Mason (2017)
A very thoughtful book which appropriately encourages reflection throughout. Mason has always been something of a pioneer in the qualitative research field. Research questions are referred to explicitly in relation to different stages of research.

Nunan (1992)
Despite its relatively narrow research focus, a methodologically very useful book which includes a section on 'developing a research question'.

Paltridge and Phakiti (2015)
An up-to-date book on research methodologies (e.g. 'Case studies') which also considers areas of research (e.g. 'Researching vocabulary'). Research questions are exemplified extensively in Ortega's chapter on 'Research synthesis'.

Sunderland (1996b)
This paper looks at the 'paring down' of chapters and words – a frequent characteristic of thesis-writing. Research questions are dealt with in the 'refining' section.

Online resources

http://www.socscidiss.bham.ac.uk/research-question.html
Suggestions for social science undergraduates including criteria, cases studies, a framework and references (accessed 19 October 2017).

https://cirt.gcu.edu/research/developmentresources/tutorials/question
This site focuses on writing and evaluating research questions (accessed 19 October 2017).

http://www.theresearchassistant.com/tutorial/2-1.asp
Aims to relate research questions to hypotheses; goes beyond the social sciences. Encourages the researcher to ask 'So what [is the benefit of answering the RQ]?' (accessed 19 October 2017).

http://nsuworks.nova.edu/tqr/vol11/iss3/3/
Article entitled 'Linking research questions to mixed methods data analysis procedures 1' by Anthony J. Onwuegbuzie and Nancy L. Leech (accessed 19 October 2017).

Discussion questions

1. If you are well into your research project, at what point did you begin to pin down your research questions?
2. How early in a research project is it *desirable* to pinpoint your RQs? How late is still feasible? What does this depend on?
3. How comfortable are you with the idea of explicitly including (a) a theoretical RQ and/or (b) a methodological RQ in your research project?
4. In your own research project, are you able to make a distinction between 'original' and 'non-original' RQs? In what sense are some 'original'? (Remember that not all need to be original).

Notes

1. Note that these particular *Is/Are/Do/Does* questions 'expect' more than a Yes/No answer!
2. I am grateful to Kate Harrington (2008) for this example of a research topic.
3. I would not now necessarily employ (or recommend) a long list of subordinate research questions. Proper operationalization of an overarching research question should not result in what Cohen et al. call 'an unwieldy list of sub-questions' (2007: 89).
4. In many cases, the differences were non-existent or statistically insignificant (by no means disappointing). In particular, girls and boys had an approximately equal chance of being asked a solicit by the teacher in either German or English. Findings of *gender differential* tendencies related to linguistic code included that (a) girls were asked a greater proportion of academic solicits to which they were expected to respond in German than were boys (near statistical significance at 5% level) and (b) girls volunteered more answers than boys in German (statistically significant at 5% level).

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2

Quantitative, Qualitative, Mixed or Holistic Research? Combining Methods in Linguistic Research

Jo Angouri

Chapter outline

This chapter addresses the well-known qualitative/quantitative (QUAL/QUAN) versus mixed methods categorization focusing in particular on the latter. With the distance between QUAL and QUAN, allegedly, diminishing, mixed methods became the dominant paradigm and are typically seen to provide researchers with the best of both worlds. While there is an increasing body of research placing value in mixed methodologies, recent work has also indicated potential barriers and limitations in viewing the 'third paradigm' as a necessary alternative. Following Tashakkori and Creswell's (2007) overview of the conceptual and epistemological challenges in mixed methods research, one of the key issues I focus on here is the ongoing discussion on the *integration* or *mixing* of the quantitative and qualitative elements in research designs. I problematize this position and discuss the affordances and limitations of approaching research activity through those lenses. In this process, I use examples of studies from the field of Workplace Discourse that have employed tools

that are associated with, typically, the QUAL/QUAN spectrum. I align with those who argue that the mixed methods *language* often reinforces, instead of bridging, the divide between 'numbers' and 'words' and who make a case for holistic and critical research.

Introduction

Projects in the field of linguistics typically subscribe to some form of combining tools that fall under either the quantitative or the qualitative paradigm. The benefits of combining the two paradigms have been repeatedly discussed in the social sciences/humanities research methodology literature. In fact, there is a lot of work in the (applied and socio) linguistic field on the value of combining either direct or indirect data-gathering methods (e.g. Harrington et al., 2008; Litosseliti, 2003) or applying diverse techniques for data analysis. In a seminal early work, Greene et al. (1989) reviewed studies taking a mixed methods approach and argued that combining the two paradigms is beneficial for constructing comprehensive accounts and providing answers to a wider range of research questions. In the same vein, Tashakkori and Teddlie (2003) suggest that mixed methods, often operationalized as almost a synonym for collecting different data sets or applying more than one method for the data analysis, provide 'ways to answer research questions that could not be answered in any other way' (2003: x). And research in sociolinguistics has shown that combined methodologies can shed light on 'different layers of meaning' (Holmes, 2007: 5), as seen in, for example, Stubbe et al.'s (2003) work, which applied a wide range of analytic approaches, traditionally with methodologically distinct boundaries, to workplace discourse. At the same time, there has been a shift towards multidisciplinary research (e.g. Brannen, 2005) as more and more researchers undertake joint projects bringing together diverse areas of study and subsequently methodologies that are established in their respective fields.

Despite this purported move away from methodological purism however, it is still quite commonplace for the two paradigms to be directly contrasted.

As Green and Preston argued in the editorial of a special issue devoted to mixed methods research, 'the image of the introverted statistician […] or the hang-loose ethnographer are by no means eliminated' (2005: 167). These stereotypes draw on the residue of the *paradigm wars* of the 1970s and 1980s (Tashakkori and Teddlie, 2003 – see also end of this chapter) where the ontological and epistemological differences of the quantitative and qualitative approaches to research were foregrounded and sharply contrasted. Following a strong and long-held tradition of paradigm incompatibility, the turn to mixed methods, as the dominant approach, provided researchers with room to renegotiate their position on the QUAL/QUAN spectrum and combine or mix tools that were perceived as different in the past. It has also provided a language to talk about QUAL/QUAN in ways that are less linear and more multifaceted.

Against this backdrop, and in line with Dörnyei (2007), the stance I take here is that this juxtaposition of the paradigms may point to the researchers' (diverse styles and) world views rather than the mutual exclusiveness of the two approaches. Further, I adopt a *pragmatist's* stance, according to which methodologies represent a collection of techniques that can be meaningfully combined in order to address a set of research questions (Bryman, 2001/2016; Rossman and Wilson, 1985) as opposed to a *purist's* stance, which would see qualitative and quantitative methods as being incompatible. I do not aspire to exhaust the discussion on the merits and challenges of mixed methods here; rather, I aim to problematize a range of issues relevant to aligning a research project to a specific paradigm, and the practicalities that may affect research designs, the collection and interpretation of data and dissemination of findings keeping the field of Workplace Sociolinguistics as the main point of reference. I discuss the widely cited, but often-fused, notions of 'integrating' and 'mixing' both at the level of overarching paradigms (namely mixed methods, qualitative and quantitative) and at the level of specific methodologies associated with fields of study. I illustrate these issues drawing on studies in the field of Workplace Sociolinguistics.

This chapter is organized into four parts. In order to place the discussion in context, a brief overview of current issues in mixed methodologies is provided. I next move on to the thorny issue of triangulation and the way it is frequently used by researchers. I then discuss studies in the broadly defined field of workplace discourse, paying special attention to the relationship between mixed methodologies and applicability of research. I finally turn to the implications and conclusions that can be drawn.

Qualitative, quantitative, mixed and multi-method designs[1]

As Seliger and Shohamy (1989; DeVaus, 2002), among many others (including in this volume), suggest, the research methods and techniques adopted in any research project depend upon the questions and the focus of the researcher. This may suggest a rather instrumental stance, open to criticism that research methodology should not be reduced to a 'what works' approach. If one interprets 'what works' as 'anything goes', then the uneasiness is entirely justified. I would argue however that a systematic decision of 'what works' is in line with the philosophical and conceptual underpinning, as well as theoretical debates and complexities, of the 'approach' researchers choose in their work (Sunderland and Litosseliti, 2008; Tashakkori and Teddlie, 2003). What distinguishes, then, 'what works' from robust research, is the rationale for separating or bringing together methods at the level of each project, rather than abstract affiliations to research paradigms.

Specifically on mixed methods, over the last ten years an increasing volume of work has appeared (e.g. Bryman, 2006; Johnson et al., 2007) which illustrates (a) the conceptual decisions researchers make in choosing a particular design within this paradigm and (b) the robustness of the paradigm itself. In addition, there is great variety in mixed methods designs; Tashakkori and Teddlie (2003) have identified over forty types of designs within their recent handbook. Hence mixed methods is not to be mistaken for an 'anything goes disposition' (Dörnyei 2007: 166).

The issue to probe further, however, is what exactly mixed methods has added to our conceptual inventory, with reference in particular to the way it is implemented in Workplace Sociolinguistics. I will unpack this by looking into the core concepts of compatibility and transferability of various paradigms and methodologies, as well as the notions of 'mixing' and 'integrating'.

While there is a growing consensus that combining approaches is not only feasible but also beneficial in revealing different aspects of 'reality' (Lazaraton, 2005: 219), there is an open question as to whether many methods and types of research would comfortably sit under the same design within and across different disciplinary and epistemological communities. 'The question, then, is not whether the two sorts of data and associated methods can be linked during study design, but whether it should be done, how it will be done, and for what purposes' (Miles and Huberman, 1994: 41).

Within the linguistic field, Sunderland and Litosseliti (2008) provide clear examples of how 'affiliation' to certain epistemological approaches influences the approach taken and methodologies selected. In the case of discourse analysis, for instance, there are widely recognized approaches such as conversational analysis, interactional sociolinguistics, critical discourse analysis and others (see Baxter, this volume), each with a recognizable associated set of methodological tools. These different approaches often stay somewhat insulated within specific disciplinary boundaries, each working with distinctive conceptions of discourse, as well as distinctive tools and processes (e.g. regarding the operationalization of the context of interaction for the interpretation of discourse data). A discussion of how approaches (and researchers taking a certain stance) do not always sit comfortably under one design can be found in Harrington et al. (2008); also many a reader will be familiar with the debate that was published in *Discourse and Society* (e.g. Schegloff, 1997) around the different theoretical assumptions made by CA and CDA researchers. It is beyond the scope of this chapter to consider potential barriers in reconciling different theoretical assumptions (Angouri, 2018), however the question on the extent to which quantitative and qualitative methodologies are compatible is relevant. A growing number of researchers

> have consistently argued for, and indeed, adopted approaches which attempt to *integrate* [emphasis mine] quantitative and qualitative methods of analysis, using the patterns identified by the quantitative analysis as essential background to assist in the detailed qualitative interpretation of the discourse.
>
> (Holmes and Meyerhoff, 2003: 15)

The concept of integration is central in the mixed methods paradigm. Theorists have written time and again that mixed methods should not be seen as an unstructured 'fusion' of QUAL/QUAN research or as just the additive 'sum' of the two. In practice however, and especially outside research methodology literature, there is more conceptual 'fusion' than perhaps acknowledged.

In the editorial of the *Journal of Mixed Methods Research*, Tashakkori and Creswell (2007) provide a useful overview of the conceptual and epistemological challenges in 'bridging' quantitative and qualitative research designs. While recently the mixed methods paradigm was defined as 'the class of research where the researcher mixes *or* [emphasis mine] combines' (Johnson and Onwuegbuzie, 2004: 17) quantitative and qualitative elements, according to Bryman (2007) the key issue to be considered is the amount of

'integration' of the two paradigms. For instance, Geluykens (2008) suggests that most studies in his subfields of cross-cultural pragmatics combine rather than integrate research methods. A growing number of works distinguish between combination/integration. I follow Tashakkori and Creswell's (2007) approach and the studies I discuss later combine or integrate the qualitative/quantitative element in one of the following ways:

> – two types of research questions (with qualitative and quantitative approaches)
> – the manner in which the research questions are developed (participatory vs. pre-planned)
> – two types of sampling procedures (e.g. probability and purposive)
> – two types of data collection procedures (e.g. focus groups and surveys)
> – two types of data (e.g. numerical and textual)
> – two types of data analysis (statistical and thematic) and
> – two types of conclusions (emic and etic,[2] 'objective' and 'subjective,' etc.).
>
> Tashakkori and Creswell (2007: 4)

Typically the discussion on integration refers to the sequence and importance (or dominance) of the qualitative/quantitative component. Brannen (2005) usefully provides exemplar studies showing how the second (either qualitative or quantitative) component can be introduced at (a) the design, (b) the fieldwork and/or (c) the interpretation and contextualization phase of any research project.[3] As Greene suggests 'it is the mixing that is distinctive to a mixed methods methodology' (Greene, 2008: 18). Typically the process of mixing or integrating is transcribed by the use of symbols, particularly: +; → (or >), which represent the sequence while capitalization indicates the weight. One well-known system is the one suggested by Johnson and Onwuegbuzie (2004) as per below.

Mixing however does not mean that the original QUAN/QUAL elements are lost or invisible. To the contrary, researchers have argued that the very mixing metaphor reinforces the separation of the original ingredients and their categorization in QUAL/QUAN terms (see Figure 2.1, for instance). Giddings and Grant (2007: 52) provocatively refer to a 'Trojan Horse for positivism' suggesting that the methods and data analysis processes typically used under the mixed methods paradigm perpetuate a positivist epistemology while other methodological tools risk becoming marginalized. Symonds and Gorard (2008: 15 and in 2010) also make a case for 'paradigmatic separatism' and 'a world of limitation' superimposed through the QUAL/QUAN conceptual divide. Evidently, this does not mean that mixing methods, as such, is not conducive to better results. As Gorard argued, 'mixing methods

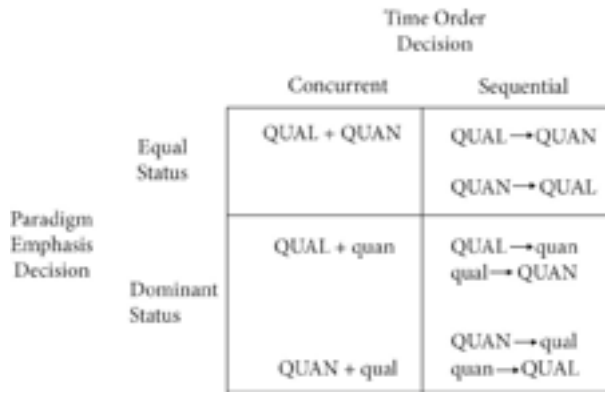

Figure 2.1 Common representation of research designs (from Johnson and Onwuegbuzie, 2004: 22).

is a bad idea, not because methods should be kept separate but because they should not have been divided at the outset' (2007: 1).

Overall, whether combining or integrating quantitative/qualitative elements, mixed methods designs arguably can contribute to a better understanding of the various phenomena under investigation compared to their exclusively QUAL/QUAN counterparts; while quantitative research is useful towards generalizing research findings (see Rasinger and others, this volume), qualitative approaches are particularly valuable in providing in-depth, rich data. However, mixed methods research designs do not indicate 'necessarily better research' (Brannen, 2005: 183) nor should they be seen as *deus ex machina*. The data (as in all paradigms) need to be analysed and interpreted systematically and following rigorous theoretical grounding. It is however the case that, when consistent, the practice of mixed methods research allows for 'diversity of views' and 'stronger inferences' (Tashakkori and Teddlie, 2003: 674). As such it is often associated with the concept of triangulation, the focus of the next section.

Triangulation and mixed methods research – an inseparable bond or a troubled relationship?

Triangulation is often one of the key reasons for undertaking mixed methods research.

Triangulation as a central methodological concept comes high on the list of key features of good research designs (Cohen and Manion, 1994: 233). The way the term is conceptualized by scholars is however epistemologically varied. Denzin's (1970: 472) early work indicated that there is more than one type of triangulation:

- Data triangulation (the application of more than one sampling method for data collection)
- Investigator triangulation (the involvement of more than one researcher)
- Theoretical triangulation (the use of more than one theoretical stance)
- Methodological triangulation (the use of more than one methodology)

Data triangulation and Methodological triangulation are arguably the most common operationalizations of the term – the former refers to data-gathering methods, while the latter is broader and refers to the use of more than one methodology in a research design. Denzin also drew an interesting distinction between inter-method and intra-method triangulation – the former referring to the use of facets of the same method and the latter referring to the use of two (often contrasting) methods (see Schryer, 1993, for an example).

According to the typology of mixed methods designs suggested by Greene et al. (1989) – but also by others (e.g. Bryman, 2006) – the *term* stands for *convergence* of findings and *corroboration* of research results. According to this view, the expectation is that different data sets or different methodologies will lead to similar results and hence allow for 'confident interpretation' (e.g. Lyons, 2000: 280) of the findings and strengthen the researcher's conclusions. An obvious limitation associated with this approach is the assumption that there is such thing as a single 'objective reality or truth' and that data collected using different methods can necessarily be compared and/or contrasted in order to answer the same set of research questions; in fact, as argued by Harden and Thomas (2005: 267), data from different sources can and do often reveal conflicting realities.

Triangulation (as defined above) is not the *only* purpose of mixed methods research. In their early work Greene et al. (1989) suggested an influential typology of mixed methods designs and their purposes (apart from triangulation); namely *initiation* – aiming at discovering meaningful contradictions, *complementarity* – aiming at shedding light on different aspects of the same phenomenon, *development* – aiming at using findings elicited by the use of one method for the design of the second, or subsequent,

expansion – aiming at broadening the scope and objective of the research (see Tashakkori and Teddlie, 2003, for further discussions of the model, and Bryman, 2006). And Bryman (2006) recently showed that a large number of scholars undertake mixed methods research in order to further *elaborate* their findings.

Despite this however, 'triangulation' is the term most commonly used and often as a generic term to refer to *all* purposes of mixed methods research. As Tashakkori and Teddlie argue, it has become, a 'veritable "magical" word' (2003: 674), with the concept being criticized for being too broad to have analytical value. They encourage 'mixed methodologists to refrain from using it unless they specify how it was specifically defined in their research context' (2003: 674).

To push beyond the, certainly not new, triangulating inferences and interpretations of data, a significant question has been raised in the turning of the century: what did mixed methods actually add, from the 1980s onwards, that researchers were not doing as a matter of course already - at least in parts of the sociolinguistic spectrum which is my broad disciplinary affiliation?

Holmes argues in 2006:

> The major proponents insist that what they have developed is a new way of doing research – an alternative to qualitative and quantitative research, but what's new about that? … ethnographers and other social researchers have been gathering data using mixed methods at least since the 1920s, and case study researchers and anyone using triangulation have also been using mixed methods. (p. 2)

Other, more recent, work (e.g. Creswell, 2013, and in Denzin and Lincoln, 2013) also acknowledges the contribution of early work and that mixing methods is not the new idea per se. Indeed, Creswell (2013) provides a useful discussion of pioneering work that brought qualitative research more prominently into the dominant, at the time, quantitative paradigm and triangulated its findings.

The issue for critics of the mixed methods paradigm remains that QUAL often takes a secondary position in QUAN designs and, more broadly, the relationship between the two is enacted in a rather linear way perpetuating the (post)positivist tradition. Giddings (2006: 202) argues that 'the positivist scientific tradition continues to be privileged as a way to know; its dominance is strengthened, rather than challenged, by mixed-methods research'. And it is the case that in research I review, supervise or read, mixed methods rarely

draws on methods associated with post-structuralism, critical discourse or critical feminist methodologies and also rarely challenges the ideals of robustness and generalizability/representability. This points to the way the paradigm is adopted and used and certainly indicates the need for a wider discussion on the use of labels in our research practice.

Having said this, we need not question the value of triangulation per se but we need to differentiate between *the technical term, the practice behind it* and *the concept* of mixed methods designs as a whole. Even though neither is a *panacea* for any research design, when applied in relation to a robust conceptual framework, triangulation (in any of the above senses) does lead to a better understanding of complex research questions and environments. For example, Dornyei (2007: 165) suggests that a better understanding of phenomena can emerge from triangulated findings (whether convergent *or* divergent). And in the same work Dornyei (2007: 186–189) reports on the value of mixed methods designs for classroom research where challenges (such as the diversity of student/teacher body) may be addressed through versatile designs (I return to the issue of versatility in relation to mixed methods later in this chapter).

A final point about triangulation emerges from Bryman's (2006) analysis of 232 articles in the social sciences; Bryman suggested that it is often an outcome of mixed methods research despite the fact that the desire to triangulate was not the original motivation for opting for this type of research. As put by Holmes and Meyerhoff (2003: 12), 'researchers fruitfully combine aspects of different methodologies to answer the questions that arise in the course of their research' and often they are not concerned with the surrounding epistemological debates (or they take what Teddlie and Tashakkori (2003) describe as the *a-paradigmatic* stance). In other words, researchers undertake mixed methods research in order to answer their specific research questions without positioning themselves to either qualitative, quantitative or mixed methods paradigms (Harden and Thomas, 2005). I return to this important point at the end of the chapter.

Bryman (2006) further usefully distinguishes between rationale (where explicitly stated) and practice: in 27 percent of all articles he analysed, the researchers did not explicitly state the purpose for undertaking mixed methods research, and out of the 80 articles that applied a triangulation design, only 19 set this as an explicit rationale – interestingly surveys (quantitative) and interviews (qualitative) seem to be the most dominant methods used by researchers.

Whether explicitly mentioned or not it remains the case that multilayered designs are often preferred to one-dimensional ones in eliciting and interpreting rich findings (see Northey, 1990, for an example). To further illustrate this I now turn to studies that have used a wide range of methodologies in the field of workplace discourse.

Applying mixed methodologies in research on workplace discourse[4]

Given the multifaceted nature of research on discourse, it has been argued that collecting data from different sources in an iterative way is an appropriate way to address research questions in this area (Beaufort, 2000). While discourse studies are often seen as 'by nature' qualitative, being largely based on naturally occurring 'real life' data, recent work (e.g. Holmes and Marra, 2002) has shown how quantitative and qualitative paradigms can be combined for a better understanding of the interactants' norms and practices in discourse.

To illustrate the issues addressed in the chapter so far around bringing together QUAL/QUAN methods, I now discuss examples of (socio and applied) linguistic studies of spoken and written discourse in the workplace. As suggested by Bargiela-Chiappini and colleagues, 'one of the defining features of business discourse research is that it has not relied on any one approach or methodology' (2007: 15). As such, it is a particularly apt area on which to focus for the purposes of our discussion here.

The workplace is an area of study for researchers from a number of disciplines (such as linguistics but also management, sociology and psychology), from different perspectives and with different foci. Within linguistics, the overarching foci of workplace-related research are (a) the identification of patterns of language use and/or development of the skills employees need in order to be competent users of the language(s) for work-related purposes and (b) the study and/or description of the spoken/written language – or rather the discourse – workplace participants engage in. Hence the former often has a pedagogic concern, while the latter is focused on understanding and describing how people communicate, say, in a business/corporate context, and often aspires to make the findings relevant to real-life concerns of employees or practitioners. Put simply, the two areas currently correspond to two broad fields of linguistic research, namely

LSP (Language for Specific Purposes) and (applied) sociolinguistics (see Bargiela-Chiappini et al. (2007) for a succinct overview of the development of the field).

These two overarching areas often have different aims and adopt different techniques for data collection and analysis (with the latter often being qualitative rather than quantitative in its aims and objectives). It is not unusual for researchers from one field to be sceptical towards the outputs of the other. Often LSP is criticized for not capturing the diversity and complexity of workplace interactions, by taking a static view of language and by separating the study of spoken and written professional language (Gunnarsson, 1995: 115; see also Holmes and Stubbe, 2003, and Sarangi and Roberts, 1999). In fact, any studies (quantitative or qualitative) which rely only on one set of sources, be it interviews with personnel, observations or questionnaires, can and have been criticized for failing to capture the dynamic nature of interactions (Holmes and Stubbe, 2003; Stubbe, 2001). This has prompted a large number of studies in workplace discourse which incorporate or are based on naturally occurring discourse data (e.g. Holmes and Marra, 2002; Sarangi and Roberts, 1999). In the light of such debates, in a project on intra-company variation in written processes and products (Angouri and Harwood, 2008), a case was made for more multifaceted, multi-method research on workplace discourse. Questionnaires, face-to-face interviews and participant observations were used and a corpus of real-life data was collected. In this particular study (which is part of a large project on language use in multinational companies), quantitative and qualitative methods were integrated at different stages of the research (in line with Brannen's 2005 work, discussed earlier in this chapter): in the *design, fieldwork* and *analysis* phases. These methods yielded different types of results. The analysis of the naturally occurring data indicated markedly different practices in the various communities of practice[5] studied, while the quantitative data revealed a pattern as to the genres (such as business letters, faxes and emails) the employees had to handle more frequently. I argued then that variation in practices could not be understood without a closer analysis of ethnographic data and a discourse corpus. At the same time, the analysis of the quantitative data showed inter- and intra- company macro-variation according to the informants' posts.[6] Hence it was through the use of mixed methods that conclusions were drawn on discourse practices in the communities of practice studied. The dialectic relationship between the quantitative and qualitative elements is clear here, as the instruments used to collect quantitative data were designed on the basis of ethnographic

observations, and the patterns revealed were studied further through a corpus of discourse data.

A case for integrating the two paradigms is also made by Holmes and Marra (2002) in a study on the functions of humour in communities of practice within different New Zealand workplaces – a research topic that many would associate solely with qualitative research. The quantitative data in this study reveal different frequencies of humour instances, as well as humour types. The researchers distinguish between supportive and contestive humour and also classify humour instances according to style (collaborative or competitive). At the same time the closer qualitative analysis of discourse data shows how 'humour is used' in the workplaces they study and the way the employees 'do humour' (2007: 1702) to achieve their interactional goals.

More recently Workplace Discourse analysts also combined corpus linguistics and discourse analysis in large-scale studies (see, e.g., Friginal 2009 on call centres) and there is a clear tendency in bringing together different discourse traditions (see Vine, 2017). The work briefly discussed above has shown how data from indirect sources and quantitative analysis can complement the findings of work focused on the micro-level of naturally occurring interactions and that there are 'insights to be gained by applying a range of different theoretical and methodological approaches to the same piece of discourse' (Stubbe et al., 2003: 380).

However apart from contributing to more in-depth analyses of research questions, mixed methods research also has an important part to play in reaching diverse audiences and overcoming challenges associated with certain research settings. Mullany (2008) shows how mixing methods (in this case recordings, interviews, observations and written documents) contributed to a wider dissemination of the findings in the form of written reports for the companies involved. Similarly, in my earlier research with multinational companies (Angouri, 2007), by using quantitative methods, I was able to identify patterns of foreign language use and the viability of existing language policies, which were major concerns for HR managers. By also drawing on my ethnographic observations and interviews, I produced written reports which turned out to be useful for the companies to assess current strengths and potential areas for further development. Even though my main focus was to examine the role of discourse in 'how people do' meeting talk in multilingual settings, I soon found out that adding another dimension to my design, namely analysing, from a macro-perspective/ quantitatively (foreign) language use in different departments of the

companies, was not only informative but also the best (and possibly the only) way for me to gain access to this very particular workplace setting. Adding this dimension, which was relevant and important for the HR managers themselves, meant that they in turn were willing to further collaborate and in effect I was able to carry out the rest of the study.

Mixed methods have, undoubtedly, a role to play in overcoming some of the challenges of the workplace as a site of research that is notoriously difficult in terms of gaining access and collecting data. The 'setting […] shap[es] the methods that a researcher is able to employ' (Mullany, 2008: 46; see also Stubbe, 2001), especially when HR managers are to be convinced of the value of a research project, and research designs need to be adapted to accommodate the exigencies of specific research settings (Angouri, 2018). While mono-dimensional studies can and do also result in rich data sets, mixed methods designs are versatile and can arguably address, from a more holistic perspective, issues the participants themselves relate to. As such they provide a powerful tool for research findings to feed back into research settings 'in order to draw attention to and challenge unquestioned practices' (Holmes and Meyerhoff, 2003: 14) such as gender and power hierarchies in workplace settings. If research is to produce findings that will be relevant and useful to those being studied, this then needs to be reflected in research designs and methodologies and mono-dimensional studies do not necessarily provide the means to meet this need. This is important, in the light of voices urging linguists and practitioners to work closely together in researching workplace discourse from different angles (see Sarangi and Candlin, 2003), and to draw on the real-life concerns or the 'habitus' (Bourdieu, 1993) of both research participants and practitioners (also reflected in the emphasis placed on knowledge exchange by the research councils in the UK).

Before closing this chapter, I would like to consider some of the implications of the issues discussed. *First*, labels such as QUAL/QUAN or mixed (and relevant terminology) can be limiting and limited in their ability to capture the complexity of research activity. A holistic research is necessary to capture the complexity of the questions in social sciences in general and Workplace Sociolinguistics in particular. I discuss this in detail elsewhere (Angouri, 2018), but I referred earlier to the work of methods theorists who have shown that researchers, often, avoid positioning themselves on the tri-paradigm continuum taking an *a-paradigmatic* stance. Symonds and Gorard (2010) make a convincing case towards an ecological perspective, a metaphor I have also used in my recent writing. At the same time, these issues are known but not always debated. As the field has come of age, it is good time

to turn our gaze to our own research practices and the way we 'talk research into being', as well as to engage with wider social sciences debates.

A *second* important point is that research practice of any type is a political activity. Power issues, local and global hierarchies and imbalances are at the heart of practices that have existential consequences for researchers. Further on this, factors outside each research project, such as the disposition of academic departments, journals, graduate programmes, funding agencies, policy-making bodies (Brannen, 2005), peer pressure (Denscombe, 2008) and the preference and background training of researchers (Bryman, 2007) affect research designs – most obviously, in the choice of research topics, but also methodologies and methods. Tashakkori and Teddlie (2003) also discuss what they call the 'residue of the paradigm wars' (2003: 699), arguing that it has an impact on both research designs and students, whereby young researchers often find themselves in programmes or organizations that align their work with either the qualitative or quantitative paradigm and 'proclaim the inferiority of the other group's orientation and methods' (2003: 699).

Mixed methods has gained momentum and the 'third' paradigm has found its place in graduate programmes and research methods curricula. It is time now to take a critical look and engage with the practice of applying it in order to further elaborate its affordances and to critique the language we use to construct it in our own circles. This would involve not only creating the context where issues of researchers' inclinations, affiliations and accountability are discussed, but also equipping novice researchers with the necessary knowledge and skills for undertaking critical mixed methods research. At the same time, mixed methods is not and should not be seen as a *necessary* alternative; the individual preferences and research strengths of researchers should not be overlooked (Dörnyei, 2007: 174). Similarly, the needs of a research project and the questions each researcher decides to address are and should be beyond loyalties to abstract method theory. In this vein Green and Preston (2005: 171) suggest caution towards the 'omni-competent professional research, the generic paragon of knowledge production'.

Overall, mixed methods research, as *practice* rather than *label*, can and does cross-disciplinary boundaries and overcome limitations associated with narrow, purist and 'potentially damaging to the spirit of enquiry' (Holmes and Meyerhoff, 2003: 15) approaches to the study of complex phenomena and research sites (such as the workplace).

This chapter argues that using a wide range of tools for data collection and combining quantitative and qualitative paradigms can provide rich data sets, make research relevant to wider audiences and enhance our understanding

of complexities in most research areas, in sociolinguistics in general (and workplace talk in particular). I have aligned here with those who have problematized the rise and language of mixed methods research and the often unquestioned assumptions that come with it. But I have also argued that a holistic, 'multi' instead of 'mono' enquiry is the way to go particularly in relation to the study of complex ecosystems such as the modern workplace.

Further reading

Denzin N. (2009)
This volume provides a thought-provoking critique of qualitative research as it is often operationalized in social science research. Although not on mixed methods per se, the discussion on social justice and the complexities of interpretation are directly relevant to the stance taken in the chapter.

Heller, Pietikäinen and Pujolar (2017)
This co-authored volume provides a timely and useful reading to critical research practices that go beyond a linear understanding of the QUAL/QUAN or mixed methods research design.

Tashakkori A. and Teddlie C. (eds.) (2003)
This edited volume presents a thorough discussion of mixed methods or 'the third paradigm'. Even though it is not aimed specifically at linguists, students and researchers will find it very useful for its overview of recent developments in this area and its comprehensive collection of sampling techniques for mixed methods designs.

Online resources

https://www.ncrm.ac.uk/resources/video/#
The National Centre for Research Methods provides a wealth of online material on research methodology in general and mixed methods in particular.

https://blog.esrc.ac.uk/
A general but useful resource for looking into ways of operationalizing methodology from the ESRC.

Discussion questions

1. Why do we need 'mixed methods' in sociolinguistic research?
2. What are the most common methods in mixed methods designs? Why do you think this is the case?
3. Develop two research designs for the same topic area. Decide on which methods you need to include in each and provide a clear rationale. Can you distinguish between integration and mixing of methods at either the fieldwork or the conceptual stage of the project?

Notes

1. Design here refers to 'a procedure for collecting, analysing and reporting research', as defined by Creswell et al. (2003: 210).
2. The terms emic and etic are widely used in social sciences to refer to accounts that are either particular to a certain group or system (emic) or observations about a group or system from the standpoint of an outsider (etic).
3. See also Creswell et al. (2003) for a discussion on generic types of concurrent and sequential designs (referring to the quantitative/qualitative components).
4. Capturing the dynamics of 'workplace discourse' as a field of study is not one of the aims of this paper. I will not distinguish between professional/ organizational/ institutional discourse and organizational discourse studies (but see Grant and Iedema (2005) for a discussion and Bargiela-Chiappini (2009)).
5. The concept of communities of practice is frequently adopted in research on workplace discourse. Eckert and McConnell-Ginet (1992: 464) define a community of practice as 'an aggregate of people who come together around mutual engagement in an endeavor [and] is defined simultaneously by its membership and by the practice in which that membership engages'.
6. The sample in the study is stratified according to their post and level of responsibility. Three strata are identified; namely post holders, line managers and senior managers.

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3

Ethics in Linguistic Research

Christine Mallinson

Chapter outline

This chapter is an overview of some main concepts, guidelines and practices that inform the ethical conduct of research in linguistics. The first two sections review statements on research ethics from prominent international organizations and institutions and cover how and why ethical values and guidelines came to be widely held and adopted. The following section compares and contrasts prominent models and frameworks for ethical research in linguistics. The next three sections focus on the importance of obtaining informed consent, the negotiation of researcher/participant roles and relationships, and issues of confidentiality, privacy, ownership, access and dissemination; the final section discusses unethical behaviours. The chapter is designed to help readers conceptualize research ethics and guide them on how to implement ethical considerations in practice.

Introduction

In May 2009, the Linguistic Society of America (LSA) issued a statement on research ethics in linguistics. In it, the LSA outlines five responsibilities of linguists: to individual research participants, to the communities they study, to their students and colleagues, to the field and to the public. The LSA statement was influenced by codes of research ethics from the American Folklore Society (1988) and the American Anthropological Association

(1998), which forefront scholars' ethical obligations to the people and communities participating in a study. As the LSA (2009) statement explains, 'Linguists should do everything in their power to ensure that their research poses no threat to the wellbeing of research participants' (p. 2). Moreover, 'In all cases where the community has an investment in language research, the aims of an investigation should be clearly discussed with the community and community involvement sought from the earliest stages of project planning' (p. 3). Finally, linguists must consider the social and political implications of their research and should make their findings available and accessible to the public, for public benefit (pp. 4–5).

Today, organizations devoted to linguistics around the world have issued similar statements that guide researchers in ethical conduct. For example, in 'Recommendations on Good Practice in Applied Linguistics,' the British Association for Applied Linguistics (2016) covers relationships with and responsibilities to informants, colleagues, students, institutions, sponsors and the public. Recently, the International Association of Teachers of English to Speakers of Other Languages initiated a task force to establish ethical standards for research practices with participants for whom English is not their first language (TESOL International Association, 2014).

Some organizations have issued ethical guidelines that are specific to certain populations or speech communities. For instance, the Australian Linguistic Society (1990) emphasizes the need to protect the rights of lay persons unaccustomed to research, as does the American Association for Applied Linguistics (Communication of Rights Group, 2015). The Australian Linguistic Society (1990) discusses linguistic rights with respect to Aboriginal and Torres Strait Islander communities, refugees and non-native speakers of English. The Sign Language Linguistics Society (2014) has compiled guidelines and outlines researcher responsibilities for conducting research with Deaf communities and the Linguistic Society of America (2001) also put forward a resolution on sign language, recognizing that sign languages, signers and signing communities hold the same rights and status as oral and written languages, speakers and communities.

Examples also abound of associations and organizations dedicated to examining research ethics according to data type and methodology. For example, the Association of Internet Researchers put forward ethical guidelines, offers case studies for consideration and reviews ethical questions that are specific to internet research; these materials touch on issues pertinent to many disciplines, including linguistics (Markham et al., 2012).

Other examples of research ethics relating to various fields of linguistics and their professional organizations are referenced throughout this chapter.

At colleges and universities around the world, research regulation is a primary task and the ethical conduct of research is a principal value and practice. Institutions of higher education and affiliated organizations recognize the need for all researchers, from beginning scholars to seasoned academics, to receive training on research ethics. In 2017, for instance, the Council on Undergraduate Research, whose members represent over 900 colleges and universities across the United States, unanimously approved a Code of Ethics for Undergraduate Research. Premised on the values of integrity, collaboration, respect and fairness, the Code of Ethics aims to 'promote dialogue about ethical issues and to serve as a framework for ethical decision making [by those] engaged in and promoting undergraduate research, scholarship, and/or creative inquiry' (CUR, 2017: 1).

In sum, the ethical conduct of human subject research is of paramount importance. With research ethics at the forefront, particularly in higher education, it is useful to review how and why these values and guidelines came to be widely held and widely adopted.

Background

The question of research participants' rights is, fundamentally, a question of human rights. Ethical considerations in linguistic research share a genealogy of research ethics in the broader social sciences that can be traced back to the Belmont Report, drafted by the United States National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (1979). The Belmont Report outlines key principles to govern research that involves human subjects, focusing on three core values: respect for persons, beneficence and justice.

In part, the Belmont Report was drafted in response to the ethical abuses of the notorious Tuskegee Syphilis study, which ran from the early 1930s to its exposure to the public and subsequent shutdown in 1972. The 'Tuskegee Study of Untreated Syphilis in the Negro Male' was conducted by the US Public Health Service and the Tuskegee Institute of Alabama (Centers for Disease Control and Prevention, 2015). In the study, 600 poor African American men from a rural area in the US South were selected for participation. Of the nearly 400 participants who had syphilis, none were

informed that they had the disease (instead, they were told they were being treated for 'bad blood') and they were not given treatment – even after 1947, when penicillin was widely known and available. An advisory panel later condemned the study as unethical.

Other examples of ethical abuses of participants at the hands of researchers abound. The Belmont Report cites, for instance, the use of poor ward patients as research subjects in the nineteenth and early twentieth centuries and the use of unconsenting prisoners for research in Nazi concentration camps. Such cases violate the ethical principles of the modern Belmont Report by denying participants the opportunity to provide informed consent before taking part in research, by inflicting harm upon those involved with no commensurate benefit and by forcing the afflicted, poor, unprivileged and imprisoned to bear the burdens of study, while the more affluent reap the benefits.

Since the time of the Belmont Report, further guidelines for ensuring the ethical conduct of human subject research have developed. In 1991, the US Federal Policy for the Protection of Human Subjects – widely known as the 'Common Rule' – was codified. It outlines ethical principles to be followed by Institutional Review Boards (IRBs), review board membership and criteria for review, approval and termination of research studies (U.S. Department of Human and Health Services, 2016). In addition, the U.S. Department of Human and Health Services (2017) has developed the International Compilation of Human Research Standards, which provides a list of ethical regulations and guidelines concerning human subject research outside the United States.

In Canada, the Interagency Advisory Panel on Research Ethics (PRE) produced the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (Canadian Institutes of Health Research et al., 2010). The TCPS 2 provides an ethical framework for human subject research, details the consent process, outlines the establishment of Research Ethics Boards (REBs), defines conflicts of interest and describes the relevance of ethics across types of research. In the UK, the Research Ethics Service (RES), housed by the National Health Service's (NHS) Health Research Authority (HRA), oversees Research Ethics Committees (RECs) and similarly provides ethical guidelines and recommendations.

International organizations have also put forward various statements on research ethics, relevant to numerous fields of study. In 2015, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) endorsed twelve ethical principles for safeguarding 'intangible cultural

heritage,' a category that includes individual and community practices, representations, expressions, knowledge, skills, instruments, objects, artefacts and cultural spaces. These principles emphasize the need for non-community members who aim to conduct cultural heritage research to ensure voluntary participation by those under study and to ensure that they have a primary role in safeguarding their own cultural heritage (UNESCO, 2015).

Ethical models for linguistic research

Questions surrounding what responsibilities linguists have to research participants have been circulating for decades. At the same time, as Rice (2006) points out, more attention should be paid to research ethics in linguistic scholarship. She calls for more linguists (anthropological linguists in particular) to write about research ethics, to provide models for other colleagues and to train the next generation of linguistics scholars. As a starting point, Rice (2006) reviews the work of Cameron et al. (1992), who proposed three models for doing language research: (1) *ethical research* – research on subjects, (2) *advocacy research* – research on and for subjects and (3) *empowering research* – research on, for and with subjects.

In the *ethical research* model, one exemplar is Samarin's (1967) *Field Linguistics*. In this classic text, the speaker with whom a researcher interacts is called an 'informant' – defined as 'one who furnishes the researcher with samples of the language' (Samarin, 1967: 20). Some ethical considerations that Samarin discusses include how to select informants, whether to pay them and how to avoid deceiving them. As Rice (2006) points out, 'this is a linguist-centered perspective … one that involves research on subjects (or, here, the language of the subject), with the goal being to further the linguists' own research' (p. 128).

In the *advocacy research* model, there is 'a commitment on the part of the researcher to carry out research on and for subjects' (Rice, 2006: 130). An example of this approach is Sutton and Walsh (1979), whose manual on linguistic fieldwork with speakers of Australian Aboriginal languages recognizes that researchers have a responsibility to include the individuals and the communities under study. Similarly, in the United States, Labov's (1982) sociolinguistic work on Black English and Wolfram's (1993) concept

of 'linguistic gratuity' also exemplify this model. For decades, Wolfram's work has illustrated how sociolinguists can 'give back' to participants and communities, through language awareness programmes, museum exhibits, films and the like, particularly in ways that position community members as authorities on their own language. Other activities can include preparing dictionaries, promoting literacy in the language and leading workshops for teachers (Rice, 2006). In sum, the advocacy model includes 'not just ethical treatment of individuals, but also the development of an ethical relationship with a community' (Rice, 2006: 131).

In the *empowering research* model, 'the work is on the language, for the speakers, and with the speakers, taking into account the knowledge that the speakers bring and their goals and aspirations in the work' (Rice, 2006: 132). Rice (2006) notes a clear shift in linguistics (and in other disciplines, such as anthropology) towards embracing the empowerment model. She attributes this shift to the efforts of Aboriginal communities, who in recent decades have insisted that they be part of any research carried out on themselves, their languages or their cultures. The empowerment model has also influenced language revitalization efforts with indigenous peoples in the Americas; see, for instance, England (1998) on doing Mayan linguistics in Guatemala, Grinevald (2006, *inter alia*) on carrying out the Rama Language Project in Nicaragua and numerous case studies featured in Hinton and Hale (2001). In the community-centred model, researchers must promote the agency of speakers and facilitate their control of the circulation of their knowledge: 'to act otherwise is to repeat that familiar pattern of decisions being made for Indigenous people by those who presume to know what is best for them' (Battiste and Henderson, 2000: 132).

Scholars who take an empowering research approach focus on how to ensure collaboration with communities when carrying out research. In Blommaert and Dong's (2010) co-construction model, speakers are viewed as owners of their linguistic repertoires. As such, researchers must consider what type of research the community members themselves think is appropriate and valuable, as well as who community members consider to be the linguistic experts. Similarly, Czaykowka-Higgins's (2009) community-based language research model centres on how linguistic information is produced for, by and with community members – that is, in ways that are not primarily for or by linguists. As Fitzgerald and Hinson (2013) summarize, in this model, 'the training goes both ways, with the community also training the linguist, in the language, the culture, and how to conduct themselves appropriately in the community. The mutual learning, mutual partnership,

and removal of boundaries between the linguist and the community are what make Community-Based Language Research distinctive as a research model' (p. 54). Sammons and Leonard (2015) describe lessons learned from an indigenous language revitalization institute, in which speakers of the language who may not be linguists are central to the workshops: in this configuration, there is no one 'expert' and learners may also be teachers (see also Yamada, 2007). Further, community members may also be researchers, with the goals of the research driven by community goals (Fitzgerald and Hinson, 2013; see also Bischoff and Jany, 2018).

Co-construction and community-based models also require scholars to examine the linguistic and cultural constructs that are relevant to the community. For instance, what terminology do community members wish to use to refer to their language? Should a language be referred to as 'dying', 'endangered' or 'sleeping' (Leonard, 2011)? What social implications might be involved when a language variety is referred to as a 'dialect' (Charity Hudley and Mallinson, 2011)? If transcription is used, consider the politics surrounding standardization and dialectization (Bucholtz, 2000). Similarly, researchers must consider how we select examples to demonstrate particular linguistic phenomena, so as not to unethically represent speakers or, indeed, entire speech communities in biased or stereotypical ways (Rickford, 1997; Trechter, 2013).

Proceeding from co-construction/community-based frameworks can also position scholars to take a de-colonizing, social justice-oriented approach to research (Charity Hudley, 2017; Leonard, forthcoming). Researchers consider carefully how a given community and its members are approached, engaged with and represented, and the entire research process from start to finish is designed to privilege community members' values, views and research goals in ways that directly inform the research questions, data collection, analysis, outcomes and sharing of findings. Indeed, the very notion of a dichotomy between researcher/researched may not be assumed and may be strongly challenged (see, e.g., Czaykowka-Higgins, 2009; Fitzgerald and Hinson, 2013).

This section has largely focused on ethical models for linguistic research that centre on scholar/speaker/community interactions, which are prominent in linguistic anthropology, endangered language research, sociolinguistics and the like. But ethical issues can arise in research no matter the subfield or discipline. D'Arcy (2016) emphasizes the importance of considering research ethics in linguistics, whether we use survey methods, draw upon archival recordings (historical, digital, web based), carry out experiments, develop

corpora or more. Research ethics also pertain to collaborations among linguists and scholars from other fields, partnerships with practitioners and consultancies with or for specific groups. Butters (2011) spearheaded the Code of Ethics for Linguists in Forensic Linguistic Consulting, which (among other topics) discusses linguists' responsibilities as consultants in legal cases. Lo Bianco (2015) discusses ethical dilemmas pertinent to linguistic consulting in the area of language policy research. Such models continue to be developed across linguistic subfields.

Subsequent sections review key ethical concepts in carrying out linguistic research. Because questions surrounding research ethics are variable and often case specific, it is critical for all linguists to receive training in research ethics – particularly students. By understanding ethical issues, learning ethical principles and considering carefully what ethical models we adhere to, we can be prepared to interact ethically with a diverse array of participants, communities, institutions, stakeholders and other constituencies.

Informed consent and risk

Informed consent is at the core of human subjects research. This concept rests on the premise that an individual must voluntarily give permission to participate in research – without coercion, with full opportunity to withdraw from the study at any time and without repercussions, and with full understanding of the risks and responsibilities. On its face, this concept seems clear. But in practice, key issues must be considered.

A primary issue is that of deception and the degree to which a participant is aware of the purpose and procedures of a study. These issues are highly relevant in experimental linguistics, psycholinguistics and related fields. Psycholinguistic techniques may include decision tasks, priming, sentence completion, moving window experiments and acceptability judgement tasks (Fernandez and Cairns, 2011). The area of experimental pragmatics often features participants interacting with verbal and non-verbal stimuli (Noveck and Sperber, 2004). Perceptual dialectology and other areas in sociolinguistics can involve eliciting speaker judgements. Such procedures often involve a measure of deception – the purposeful misleading of participants about the nature of a task – so that speakers' knowledge of it does not bias or affect the research outcome. These cases may be treated as exceptions from the principles of full disclosure, but usually researchers

must debrief participants (Blom and Unsworth, 2010: 6). Adapting the code of ethics from the American Psychological Association, cognitive linguists Gonzalez-Marquez et al. (2007) explain that participants who receive informed consent should 'receive enough information about the experiment to be able to make an educated choice to participate' (p. 75). According to Blom and Unsworth (2010), 'the extent to which these practices are ethical depends on the potential harm caused by the deception' (p. 6). Not all researchers are comfortable with any level of deception, however; and the extent to which deception is used also may vary by field.

When considering consent and risk, important linguistic and cultural factors can also play a role. First, it is widely recognized by academic and governmental organizations that, when asking for consent, researchers must approach participants using language that they can readily understand. As Title 45 of the US Code of Federal Regulations, Protection of Human Subjects (2009) clearly states, 'The information that is given to the subject or the representative shall be in language understandable to the subject or the representative.' But what constitutes clear and understandable language may not always be straightforward.

Particularly in the case of research with remote or non-literate communities, it can be difficult to obtain informed consent in ways that adhere to the requirements of university research ethics review boards. Sieber et al. (2002) describe how 'a linguist seeking to study language development in a pre-literate tribe' was instructed to have participants read and sign a consent form, which they could not do. A lack of understanding of particular concepts – such as the internet or publication – can further undermine the notion of an informed subject. As Bowern (2015) puts it, '"Informed consent" is meaningless if the person does not know to what they are agreeing. For example, a person agreeing to put materials on the Internet has not given informed consent if they don't have access to a computer and have never used the Internet' (p. 201). Dorian (2010) similarly notes that, for speakers disconnected from scholarly circles or the internet, it is particularly difficult to envision where and how their language and community will be represented. Indeed, the entire notion of 'research' and 'consent' may be completely unfamiliar to communities that do not participate in these practices.

Obtaining informed consent can also be complicated by participants' perception of the consent process. Yu and Lieu (1986) recall an account of Vietnamese refugees who were wary of signing informed consent

documents, even though they were willing to participate in the study. The authors attribute the refugees' reluctance to a fear of political repercussions, despite researchers' assurance of confidentiality. Robinson (2010), drawing upon her work with speakers of Dupaningan Agta, a language spoken in semi-nomadic hunter-gatherer communities in the Philippines, also acknowledges that signed consent forms can '[pose] problems in field situations where people tend to mistrust forms and contracts' (p. 188). She reflects on how she communicated about the project with her participants and debates various alternatives: the possibility of obtaining oral consent in non-literate communities, the use of checklists in place of consent documents and an understanding of consent as an ongoing practice. University review boards often differ, however, on whether they permit such variations on the consent process (p. 188).

The requirements of review boards may also introduce regulatory issues, such as those surrounding the mitigation of risk. Duff and Abdi (2015) discuss their two-year ethnographic case study of transnational Canadian-Chinese children. When carrying out research with children (and other vulnerable populations), ethical procedures are generally heightened and often involve adhering to different regulations (e.g. obtaining assent from children as well as consent from their guardians). In this study, cultural and linguistic factors further complicated matters. The authors detail the challenges surrounding the process of gaining access, approval and consent from participants in this bilingual, bicultural and transnational research study, which involved following varying procedures and meeting different requests of school boards and research ethics review boards in Canadian and Chinese locations.

Regarding informed consent, there are two important takeaways for researchers to bear in mind. The first takeaway is the need to connect with communities themselves and take their cultural considerations into account when seeking members' consent. As the National Science Foundation (n.d.) recommends:

> The cultural norms and life-styles of subjects should be considered in deciding how to approach informed consent. Protocols for research on such populations should show evidence that the researcher is informed about the culture of the intended research population and has arranged the informed consent and other research procedures accordingly. In some situations, it may be desirable for the researcher to consult with community representatives or leaders first, in order to enhance respect for and well being of individual research subjects.

Cultural norms may dictate who has the authority to allow a study to proceed, and consent or support from an individual may not always indicate that the community itself has also given its support. Bowern (2015) details a situation in northern Australia in which anthropologists organized a community-wide meeting to gauge opinions about their research project. However, in this community, land tenure is held by families and clan groups, not by everyone. Thus, even though the researchers tried to do the 'right thing' by seeking everyone's opinion, some cultural considerations were still overlooked, and several community members, particularly the senior Yan-nhaŋu women, were upset. As a result Bowern (2015) urges researchers, 'make sure that you are seeking permission from the right people' (p. 153) – which requires knowledge about the community and familiarity with its customs.

Rice (2006) found it valuable to work with official bodies, as a means of connecting with those community members who were most interested in and most instrumental to carrying out her study. But not all researchers agree that going through official gatekeepers is the best method. Furthermore, in cases where an appropriate official body does not exist, one may need to be formed. Kelley et al. (2013) describe a situation in the United States in which approval from a university review board was not sufficient for indigenous tribal leaders to agree that their community should participate in a study. Accordingly, researchers and tribal leaders developed 'an intertribal regional IRB [Institutional Review Board], housed at an intertribal consortium (ITC), that would address Tribal community issues and rights' (p. 2147). As Kelley et al. (2013) point out, this type of partnership model, in which communities are involved in research regulation, 'is a natural progression in building community ownership and involvement in research' (p. 2150).

The second takeaway is to remember that review boards are not the enemy of researchers. While it may be tempting to see ethics review boards as an obstruction or even as a necessary evil, they serve a critical role. Instituted in response to serious ethical abuses and human rights violations, review boards are a critical mechanism for protecting vulnerable participants and ensuring that ethical values and practices are implemented consistently and fairly for all parties. In cases where review board guidelines do not take into account the specific nature of linguistic research, it may be useful for linguists to volunteer to serve as members of review boards – helping develop research guidelines in ways that can account for special linguistic and cultural considerations while still adhering to research regulations and upholding ethical ideals.

Researcher/participant roles and relationships

Ethical issues can abound when expectations about roles for researchers and participants come into conflict. Relationships between researchers and participants can also raise complications, whether those relationships are 'too close' or too distant.

One immediate issue when working with participants is what to call them. In the past, the term 'informant' was used widely, in many fields. Now, as Rice (2006) points out, it is seen as archaic, suggesting a mechanical relationship between the questioning researcher and answering subject. More contemporary terms include 'speaker', 'talker', 'consultant', 'participant', 'colleague' and 'collaborator'. Often used by scholars who follow an advocacy or an empowerment model of research, these terms can signal greater reciprocity (Rice, 2006). In her own work, Rice points out that she often views herself as a 'student', learning from the 'teachers' who are the community members (see also Nida, 1981).

It can sometimes be important for researchers to maintain a clear distinction between their role as a scholar and their role as a friend or a community member. Dorian (2010) notes that researchers sometimes struggle to balance personal friendship with scholarly distance. Wei (2000), in his interactions with the Chinese community in Tyneside, England, describes his reservations on becoming 'too close' with participants in a way that impacted his research. He writes, 'I was sometimes asked to do things for families which either cost valuable research time or affected my relationships with other families in the community' (p. 445).

Some researchers may opt to pay their speakers or compensate them with other items such as food, books or gift vouchers. Issuing payment can help draw a clear line between scholars and participants, but it raises the question of how much to pay, to whom and for what activities. Nambiar and Govindasamay (2010) discuss 'money and appreciation' when working with Orang Asli communities in Malaysia. They write, 'money is an important ethical consideration, the bottom line being whether money can buy information, or, even more crucially, if the availability of money encourages or attracts false information' (p. 177). Sometimes, exchanging money for data can be fair compensation; when too much is offered, however, it may cross the line into manipulation or coercion, by tempting a person

who otherwise does not want to participate. When contemplating paying participants, Bowern (2015) recommends seeking advice from others who have worked in the area (p. 163).

Community members may also feel uncomfortable with the notion of participating in a study. Interviewing in particular is a very Western practice; in other cultures, direct questioning can be perceived as threatening (Briggs, 1986; Eades, 1982). Talmy and Richards (2011) remind scholars that interviews are co-constructed speech events and interviewees may not always share their attitudes and beliefs with an unfamiliar interviewer. Participants may also feel pressure to give socially desirable answers or answers that they believe would be most helpful for the study – which, in addition to causing stress for participants, can pose a problem for reliability (Nortier, 2008; see also Edley and Litosseliti in this volume). Other participants may keep concerns or anxieties about research participation to themselves, not wanting to appear to cause trouble or to hinder the study. Such considerations may particularly apply to working with communities of colour:

> Some community members may have unarticulated concerns about how they are being described racially but, due to the position of power of the researcher, may have a well-founded fear of refuting how they have been characterized or described. Community members may not want to jeopardize relationships with the universities or community foundations with which the researcher may be working, or community members may hope for other benefits by working with the researcher. For example, a school may not have the resources or time to devote to a research project, but fears losing the tutoring and mentoring that the local university students provide. (Charity Hudley, 2017: 399)

Researchers must be attuned to how culturally or community-specific concerns may affect consent and participation. In addition, it is important to point out that the type of research model that is being adhered to has an effect on participants. Researchers proceeding from a community-based framework note that community members' hesitation or pushback may be more likely to arise when research is conducted in a way that is focused on linguists' priorities (see, e.g., Czaykowska-Higgins, 2009: 45). Instead, in a collaborative research model, the researcher/community partnership arises out of mutual goals and is anchored in a community's 'cultural and linguistic values', which help ensure a strong working relationship, greater comfort level, stronger research design and better data (Fitzgerald and Hinson, 2013: 59).

Confidentiality, privacy, ownership, access and dissemination

Ethical issues of confidentiality, privacy, ownership, access and dissemination are intertwined, centring on who is able to obtain, use and share data and results. These questions can encompass a tension between a researcher's obligations to linguists and the academic community and obligations to participants and communities.

To begin with, researchers must consider whether and how to recognize participants. Often, to protect their confidentiality and mitigate risk, researchers assign or ask participants to choose a pseudonym; ethical review board guidelines generally support this practice. Issues of confidentiality can be tricky and may need closer attention, however, when it comes to internet-based research. Online, and particularly with regard to social media, the distinction between public and private may be less clear, as participants themselves may have a different visibility than their posts, tweets and other online artefacts do. Herring (1996) notes that a researcher may disguise a person's screen name, for instance, yet identify the name of the public discussion group to which the person belongs. Other scholars may opt to disguise both. Bolander and Locher (2014) thoroughly review the complexities surrounding confidentiality and privacy when conducting sociolinguistic research online and describe how scholars' views on these issues have evolved over time. For scholars seeking to understand issues and debates about ethics in online research more broadly and/or in other fields, there are now several handbooks devoted to online/internet research methods, many of which have specific chapters on the ethics of online research (see, e.g., Hewson et al., 2016; Fielding et al., 2017).

In another perspective, Jordan (2015) details the journey of language data into and through a Swedish data repository, noting the legal, ethical and organizational challenges that data curators faced when attempting to archive and curate language data. Legally, research data gathered by public universities in the European Union is considered public document; however, the Data Protection Authority considers language data personal (and, therefore, identifiable) data, which falls under the protection and strictures of the 1998 Personal Data Act. Accordingly, Jordan (2015) identifies three main ethical challenges: (1) the researcher's awareness of the public nature of research data (and obligation to relate that data to the public), (2) issues of privacy or confidentiality in protecting language speakers and (3) the

acknowledgement of language speakers in connection to that data, especially when subjects want to be named.

Sometimes, research participants wish to be identified. They may seek credit for their intellectual contributions to the research. They may enjoy or appreciate the recognition (see, e.g., Schilling-Estes, 1998). They may be the 'last' member of a community and as such it may be fairly impossible to disguise their identity (see, e.g., Wolfram et al., 1997). It may also be important to name Elders and other venerable speakers as a matter of respect, in keeping with the wishes of the community (see, e.g., Dorian, 2010). The Linguistic Society of America's (1992) 'Research with Human Subjects' statement acknowledges some of these issues:

> Those who participate in [scholarly] work often do so with pride in their command of their language and may wish to be known for their contributions. Not to disclose their names would do them a disservice. Native Americans sometimes justly criticize earlier work with their language for not having adequately proclaimed the contributions of the Native Americans themselves. Fairness to speakers of a language is very much a matter of understanding their viewpoint, and what is appropriate in one situation may not be in another. (p. 1)

The identification of research participants is a decision that should be cleared with community members, as well as with the appropriate review boards.

After a study is completed, researchers must decide what to do with the data and whether and how to share the results. Scholars proceeding from advocacy, empowerment and co-construction/partnership models generally assert a researcher's obligation to ensure that data and/or results are shared widely for the benefit of the community. For example, Sutton and Walsh (1979) argue that the rights to recordings and analyses belong to the community and its speakers. Drawing upon ethnographic experience with an Aboriginal community, Wilkins (1992) supports a model in which communities maintain control over linguistic research and materials (see also Rice, 2006: 149–150).

Issues surrounding who retains copyright and who owns intellectual property can turn out to be complex when working with communities, particularly across international lines. Sometimes, local customs may contradict national law. Bowern (2015) describes how, within the Aboriginal community in Australia, language can be copyrighted – which differs from Australian national law. Palosaari (2016) also discusses non-Western conceptions of intellectual property rights and informed consent.

Debenport (2010) argues that the very notion of 'universal ownership' – the idea that languages are shared intellectual property and therefore open to dissemination and publication – alienates communities from their language and constitutes a problematic ethical assumption. Based on her work with an indigenous Pueblo community, she asserts that researchers can learn from local community efforts to control circulation of their language materials.

The basic premise of such models is that dissemination endeavors must be carried out in consultation with the community, following their preferences. For instance, England (1992) agrees that linguists should publish our work and make publications available to speakers, but we must also '[pay] attention to their expressed wishes for the public presentation of facts about their languages' (p. 32). Battiste and Henderson (2000) state that it is best to grant communities and speakers control over and access to linguistic material and to seek their direct input in all research practices that involve them or their knowledge. Charity Hudley (2017) concurs that linguists should find out how community members want materials to be disseminated, as goals and values may differ. Beyond sharing publications, she notes, linguists can give community talks, create websites or, more broadly, engage in efforts to ensure better access to education for the community, for instance.

Involving the community directly is crucial because not all groups will want their materials shared in the same ways, if at all. When working in Papua New Guinea and Melanasia, Dobrin found that not all of the indigenous communities wanted their texts to be translated into the heritage language. Rather, some felt that having access to a text in English would provide more access. In other communities, speakers may simply prefer not to participate in revitalization efforts or may see them as intrusive. Collaboration with the community may thus require linguists 'to make some significant compromises', but doing so is important when proceeding from a community-centred approach (Dobrin and Schwartz, 2016: 258–259). In another case, when working with the Māori in New Zealand, Ngaha (2011) described how two groups of participants decided to withdraw data they had provided after hearing a report-back from the research team, because they did not feel their contributions were 'good enough' for the study. Despite assurances from researchers, the participants still preferred to have their records returned to them. Ngaha's team complied. Her experience exemplifies the ethical importance of yielding to participants – even if they choose a course of action that the researcher does not agree with and even when valuable data must be relinquished.

With respect to archiving recordings or other collected data, situations also vary, by data type and field. Crasborn (2010) discusses consent in the open access publishing of data from sign language corpora. Baker (2012) covers some ethical considerations in archiving sign language data, as do O'Meara and Good (2010) with respect to legacy language archival data. Sammons and Leonard (2015) note that language archival materials can serve a restorative function in indigenous communities, when proceeding from a collaborative approach. Another type of secondary data is recordings made by institutions such as the police or insurance companies. Jol and Stommel (2016) discuss several pertinent ethical considerations, such as legal and professional constraints on obtaining informed consent, the use of institutional gatekeepers to request informed consent on the researcher's behalf and the sensitive nature of seeking post-hoc informed consent (e.g. concerning victims of abuse or assault). Finally, with respect to digital data, the American Anthropological Association (2016) has an extensive set of resources, including a digital data management course geared for students.

Unethical practices and consequences

This section confronts the issue of unethical practices that researchers may engage in – knowingly or unknowingly and that can have damaging consequences – intended and unintended. Trechter (2013) describes how, in sociolinguistics, the quest to obtain data, particularly 'authentic speech', can lead researchers to engage in what she calls 'methodological machinations, which are sometimes less than ethical and sometimes more'. These can range from choices such as asking participants for a highly emotional 'danger of death'-type narrative (in which the speaker is asked to recall and narrate a moment in which they felt their life was endangered) without considering potential psychological repercussions involved in fulfilling such a request, to hiring community members to serve as informants, to secretly recording individuals (p. 33). Labov (1966) notes that even pointing out to participants that they sometimes use vernacular features can cause psychological distress (p. 329). Other potentially problematic interview-based behaviours can include asking participants to engage in gossip about their peers (e.g. in school settings) or about other community members and asking participants

questions about sensitive topics such as immigration status or immigration history (of themselves or others).

Sometimes scholars have different interpretations as to whether certain behaviours are ethical or unethical. For instance, Harvey (1992) covertly recorded Quechua-speaking Peruvian Indians when they were inebriated, in order to obtain their unselfconscious speech, free from the 'self-censoring' that they tended to engage in while sober. Nowadays, it is viewed as unethical/illegal to record individuals without their permission for any reason and review boards generally forbid surreptitious recording. Furthermore, in many jurisdictions, privacy, eavesdropping and wiretapping laws prohibit recording someone without their knowledge. In the United States, these laws vary by state.

Ethically problematic behaviours are wide ranging. Dorian (2010) gives several examples, including publishing on a sensitive topic in a paper far from the population under study and making public a recording that contains personal or sensitive content. Sometimes a researcher may not realize such decisions are ethically problematic until another person brings it up. Other issues are more obvious – for example, publishing a quote, despite a participant having objected to its use. Asmah (2008) discusses another particularly problematic situation, in which a researcher described the phonological system of a language – and then went and obtained recordings of it, coaching speakers to produce the 'sounds to fit the phonological moulds devised by the researcher' (p. 645). Similarly, Nambiar and Govindasamay (2010) report situations in which a researcher may 'claim to have been to a particular geographical area' but instead has only 'spoken to some members of the community at the market place, for instance' (p. 172). These are illustrations of data forging, a serious ethical breach.

Unethical practices can also be undertaken by outside forces, without the knowledge of the researcher, which can affect a study and its participants. In a cautionary tale, Wei (2000) describes how, during his research with the Tyneside Chinese community in England, various community leaders misrepresented his research as providing evidence that bilingual students would face difficulties with English at school. Starks (2013) reports a similar situation in which, as part of her study, she created bilingual materials – only to later discover that they were used as a rationale to end a Māori bilingual programme. Sometimes, when misrepresentation or misappropriation occurs, legal action can be taken. Bowern (2015) cites an example in which Mapudungun speakers in Chile threatened to sue Microsoft, who created a version of Windows software in Mapudungun, because the community had not been consulted on the use of its language.

Engaging in unethical behaviour can not only destroy a researcher's career, but also directly harm participants and communities. The examples of unethical behaviours discussed above speak to the need for researchers to always interrogate their intentions and to think through potential consequences of their actions, both direct and indirect. No one can ever fully anticipate all ethical situations that may arise. But with training and guidance, they can learn to spot potential ethical pitfalls, make good decisions and follow ethical practices throughout their research.

Conclusion

Researchers face many ethical considerations, from the beginning of a project, when planning takes place, through the end – which may not be finite at all, since data, results and write-ups may live in perpetuity online or in other accessible formats. In all likelihood, every researcher will at some point confront one or more ethical questions or quandaries, including those covered in this chapter and others. Ethical topics are continually under discussion by scholars and practitioners, and best practices are ever evolving. Accordingly, researchers must investigate and adhere to current guidelines, within our specific fields of study and with respect to specific populations, communities and data type. If ethical situations or questions arise that we cannot answer ourselves, there are always research ethics statements to refer to, mentors to ask and colleagues and professional organizations to consult for clarity, advice and direction.

At the most basic level, as researchers we must bear in mind that we gain from the work we do. Ideally, we will conduct our research in ways that participants gain from as well, but in fact we are primary beneficiaries of our own research. Doing research increases our academic capital via degrees, publications and promotions, which in turn upgrade our professional standing, improve our salaries and can lead to other financial gains such as royalty payments. Even if research is carried out within a volunteer context, there are always power hierarchies and dynamics between researcher and researched, each with their own rights, obligations and responsibilities. By bearing these considerations in mind and following ethical principles and guidelines, we can help ensure that our work exemplifies the core values of respect for persons, beneficence and justice established in the Belmont Report decades ago.

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Further reading

Cress, Collier and Reitenauer (2013)
Learning through Serving, 2nd edition, is an accessible guide to service-learning, an approach that integrates community service into the learning experience. With self-study and peer-study components, the book guides students to learn about service-learning projects; to understand key issues such as power, privilege and social justice; and to develop their own civic mindedness.

Gray (2017)
Focusing on applied research, *Doing Research in the Real World* guides students to carry out research studies, from start to completion. The book covers quantitative, qualitative and mixed methods approaches, provides examples from a range of disciplines and provides helpful tips for students; in addition, several sections of the book are devoted to discussions of research ethics. The 4th edition also includes an interactive ebook with digital resources.

Mauthner, Birch, Jessop and Miller (2002)
In this edited collection, contributors draw upon their own experiences as researchers as they review ethical issues specific to qualitative research. Discussions cover such topics as informed consent, the negotiation of researcher roles and responsibilities and common ethical dilemmas that scholars may face.

Online resources

https://www.brown.edu/academics/science-and-technology-studies/framework-making-ethical-decisions

'A Framework for Making Ethical Decisions', developed in 2011 by the Program in Science and Technology Studies at Brown University, is 'designed as an introduction to making ethical decisions'. The document summarizes theoretical approaches to research ethics, presents three frameworks to guide ethical decision-making in research and suggests principles to follow when making ethical judgements.

http://www.americananthro.org/LearnAndTeach/Content.aspx?ItemNumber=2645
The American Anthropological Association's website includes a 'Methods and Ethics' section. Some available resources include an Ethics Handbook, which contains research case studies with commentary, and a Digital Data Management Course, which contains a General Module and a Linguistic Anthropology Module – both pertinent to linguistic research.

https://www.linguisticsociety.org/news/2015/03/31/watch-our-linguistics-and-human-rights-webinar-online
'Linguistics and Human Rights' is a webinar organized by the Linguistic Society of America and the American Association for the Advancement of Science Human Rights Coalition. Examples from Haiti, Hawai'i, Mexico and China reveal how linguists have played a role in applying our work to advance human rights.

Discussion questions

1. Define a community, site, topic or data set that is relevant to your research interests. Search online to discover any ethical statements issued by academic or professional organizations that may be relevant to your intended research. Do any of the statements speak to your intended participants, community or their location/country, or to your status as a researcher? What ethical considerations are common across the different ethical statements and how do they differ?
2. In pairs or groups, choose one of the following scenarios and consider whether any ethical issues or challenges related to linguistic data collection might arise:

- Collecting data in the public domain of the internet (e.g. from social media, blogs, YouTube, etc.)
- Gathering data from specific minority groups or vulnerable populations (e.g. minority language communities, refugees, schoolchildren, etc.)
- Garnering data from public trials, forums, speeches and the like.

How might these issues be resolved? Do any of them affect how a scholar might publish about this research? Do they relate to the principle held by many linguists that we should 'give back' to the communities we study?

3. Ownership is a complex question unique to (and within) each community. Consider the following scenario: A researcher returns to a community where she had previously conducted fieldwork, to gather materials for a follow-up dictionary using speaker-generated examples of vocabulary and grammar. Upon arrival, she learns that a community elder who was a major contributor to the original study has since died. Who maintains the rights to that person's data? What if publication or circulation of data was not discussed (or condoned) in the original informed consent process? Would post-hoc consent by the community at large allow that person's data to continue to be used? Why or why not?

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4

Transcription in Linguistics

Lorenza Mondada

Chapter outline

Transcription is an indispensable practice and tool for linguists studying spoken language: it allows scholars to represent recorded talk in a textual written form and thereby to transform the transient and fleeting nature of spoken language into a visual stabilized object. This chapter presents and discusses principles and problems raised by transcriptions within a diversity of fields in linguistics. The first section 'Introduction: Transcription as research practice' shows that transcripts connect to key issues, touching on practical and theoretical aspects. The section 'Diversity of transcription practices: Different responses to perpetual challenges' discusses several controversies in linguistics, which reveal a variety of possible responses to the challenges of transcribing. The last section 'Practices of transcription in CA' focuses on a particular discipline, conversation analysis. This approach to social interaction has developed the practice of transcription in an exemplary way, first on the basis of talk, then expanding to the transcription of multimodality, integrating language and body conducts. In conclusion, the chapter shows how even small choices concerning the annotation of minute details have big analytical and conceptual consequences.

Introduction: Transcription as research practice

The use of recording technologies in linguistics – and other fields of the social sciences – for documenting spoken language has generated audio (and later video) data requiring adequate forms of representation, annotation and inscription of the recorded sounds (and visual cues). Transcription is one response to this need. The practice of transcription in several fields of linguistics has been extensively developed since the 1970s, thanks to two concomitant factors. On the one hand, the increasing sophistication, miniaturization and accessibility of recording technologies have made it increasingly easy to document communicative events. On the other hand, the development of a diversity of approaches centred on spoken language, discourse and interaction, such as ethnography of communication, discourse analysis (DA), conversation analysis (CA), sociolinguistics and anthropology of language, has prompted a renewed interest in spoken language and favoured the use of these technologies for its study in its actual contexts of use.

Transcription in linguistics has emerged as a necessity for textually and visually representing language as an object of study. Given the labile nature of the original spoken event, which disappears as soon as it is uttered, linguists work on two artefacts that represent it: the first is the recording (often different audio/video sources) and the second is their transcription/annotation/coding. The former constitutes the primary data, the latter a form of selective and interpretive reconstruction that refers to them. As Duranti put it (2006), in reference to Plato's myth of the cave, transcripts are shadows on the wall: they never exhaust either the original data or the original event, which is lost forever.

Therefore, although transcripts are often detached from the original data and circulate autonomously as 'immutable mobiles' (Latour, 1986), they are objects and practices that lie at the core of a long and iterative research process. They crucially depend on recording technologies and what they make available (or not); they result from the work of going back and forth between transcribing and analysing. Thus, transcripts are a reflexive and emergent outcome, making analysis possible and at the same time being generated through some form of protoanalysis. They also depend on technologically supported listening and viewing practices, in

which not only the professional hearing and sight of the researcher but also the quality of technical tools like players, headphones and software play a crucial role.

Transcripts and transcription practices are comparable to other practices and inscriptions that characterize scientific research in a broader sense. As demonstrated by the social studies of science, inscriptions (Latour, 1986) are theory laden and have theoretical consequences. In particular, they are crucial in objectifying and rationalizing the phenomena to be studied: they transform them into 'Galilean objects' (Lynch, 1988); that is, into objects that are characterized by observable forms, recognizable patterns and regularities. Scientific practices make use of a variety of these – field notes, minutes, tables, visualizations, maps, transcripts, annotations, coding sheets – which are, in the Western scientific tradition, heavily dependent on textual representations, including not only written language, but also visual and spatialized features (Goody, 1977).

In linguistics, transcription constitutes one such mode of inscription that plays a central role not only within research procedures but also in the constitution, training and manifestation of the researcher's professional identity. These inscriptions are characterized by a paradoxical status: they try to respect the specificities of their object, *orality*, which is a dynamic, labile and evanescent series of sounds (and body movements), within a mode of representation that is a *written, textual, spatialized* and *visualized* fixation. Thus, the challenges of transcription concern the manner in which these two somehow contradictory aspects are managed: transcripts are aimed at preserving the specific features of spoken language as a dynamic temporalized object by using inscriptions that are a static spatialized representation (Bergmann 1985).

In the first part of the chapter, I present and discuss some issues and principles of transcription characterizing a diversity of fields in linguistics, with a special focus on a series of controversies that reveal the variety of possible responses to the challenges of transcribing and their consequences. In the second part of the chapter, I focus on a particular discipline, CA, which has developed the practice of transcription in an exemplary way, and which continuously reflects on its possible expansions, within new challenging dimensions, such as the transcription of multimodality, integrating language and body conducts.

Diversity of transcription practices: Different responses to perpetual challenges

Transcription is used within different fields of linguistics concerned with spoken language – such as phonetics, syntax of spoken language, child studies and psycholinguistics, acquisition studies, sociolinguistics and anthropology linguistics, DA and CA, as well as, more recently, corpus linguistics. Transcription is also practised in other cognate disciplines in the social sciences, such as anthropology and sociology. Each discipline, school or model has its own vision of what a transcript should be.

The practice of linguistic transcription is not new, but can be traced back in the history of linguistics. In the fields of phonetics and dialectology, for instance, transcription represents an important step in the promotion and professionalization of linguistic research. As shown by Bergounioux (1992) in a note about the history of dialectology in France, the use of a specific convention and alphabet for transcribing dialect – introduced by Gilliéron and Rousselot in their new journal *Revue des Patois Gallo-Romains* in 1887, just one year before the official publication of the International Phonetic Alphabet (IPA) – operated the separation not only between speakers and fieldworkers, but also between amateur defenders of dialect and professional academics studying dialect. A technical tool for representing language, the transcription system established a divide between common sense interest in dialect and scientific research about it, achieving a new professionalization of the linguist. This historical example shows that transcription raises issues intertwining scientific and political dimensions, of which this section will give other examples.

Nowadays, transcription is a central concern for a variety of subdisciplines of linguistics. It is a central tool for studying phonetics and prosody. These fields have developed not only specific phonetic notations, such as the IPA, but also specific visualizations of sound, thanks to transcribing and aligning software, such as Praat. Transcription is also a long-term practice for dialectologists, as well as sociolinguists, where the search for an adequate rendition of dialects and socially stratified varieties has been central to the investigation of the specificities of these varieties as well as to the way in which speakers manifest and negotiate their identity (e.g. Bucholtz, 2007; Bailey et al., 2005; Macaulay, 1991; Miethaner, 2000). In the

1970s the emergence of a variety of paradigms focused on specific features of spoken language as well as on spoken communication and interaction – such as ethnography of speaking, interactional sociolinguistics, CA, DA and linguistic anthropology – prompted new reflections on transcription. Their focus on the importance of the situated communicative activities in which spoken language is used, the sociocultural context in which they are meaningful and the broader discursive and interactive environments that shape and motivate details of talk had important effects on the practices of transcription (e.g. Sherzer, 1994; Edwards and Lampert, 1993; Du Bois, 1991; Ochs, 1979; Jefferson, 1985, 2004).

The following subsections present some of these key issues and reflections by centring on some controversies that have sparked lively debates in the literature. These controversies reveal how transcribing always relies on choices. These options are both practical and theoretically informed; they are differently framed and justified depending on the linguistic models researchers adopt, and they have very different consequences in terms of how researchers define their empirical object and develop empirical analyses. The issues discussed concern the differences between the focus on content versus form while transcribing (section 'Focusing on content versus form'), the consequences of orthographic conventions (section 'Issues of spelling and respelling: Orthography, eye dialect and phonetics'), the problems of dealing with multilingual data and data that have to be translated (section 'Dealing with multiple languages: Translations and multilingual data'), the way in which transcripts are consequential for the way researchers treat the identity and categorization of speakers (section 'Categorizing speakers') and the effects of how transcripts are formatted and presented on the page for their interpretation (section 'Spatializing talk'). These issues (summarized in section 'Synthesis: Some issues') show that transcribing is a practice involving options and choices at many levels, which lead – sometimes in an explicit, but often in an implicit and tacit way – to different types of categorization regarding forms and units, language(s), speakers and actions.

Focusing on content versus form

Transcripts in the academic literature range from a continuum going from a common sensical textualization of contents to the specific transcription of forms obeying transcription conventions. The two ends of this continuum differ in their focus on *content* (*what* has been said) versus *form* (*how* it was said). The former characterizes studies that exploit talk for the information

it delivers (e.g. it is common in content analyses of interviews). The latter characterizes approaches centred instead on ways of speaking (e.g. a particular pronunciation, contrastive prosodic patterns, the choice of a particular syntactical construction or the discontinuities of self-corrected talk). The former generally adopts conventional written norms, including orthography, punctuation and layout used for representing direct reported speech in literary and theatrical texts. The latter manifests a critical stance towards written norms, motivated by a special attention to the difference between written and spoken language. Consequently, in the latter case, scholars search for forms of representation of spoken details that preserve the specific details of orality, without reducing them to written standards – avoiding what Linell (2004) calls the *written language bias*. This is why conventions are used that specify orthographic and phonetic notations, but also specific uses of punctuation (avoiding the implicit adoption of written norms and reusing punctuation in a different way).

A vivid example of the contrast between these two poles is offered by Bucholtz (2007), reflecting on two versions of a transcript she used in two different circumstances. The first was used as an ethnographic testimony with a focus on the information it contained, transcribed in a standard written text, and the second as a piece of data to be studied for its socio-interactional organization, transcribed according to the Santa Barbara Corpus conventions (Du Bois, 1991).

(1a) (Bucholtz, 2007: ex. 1a)
Fred: We're always the nerds. We like it. We're glad to be the nerds and the squares. We don't drink, we don't do any drugs, we just get naturally high, we do insane funny things. And we're smart. We get good grades. (Bucholtz, 1998: 122)

(1b) (Bucholtz, 2007: ex. 1b)

l Mary:	[So]
2 Fred:	[We're al]ways the nerds.
3	We like it.
4 Mary:	You@'re the nerds?
5 Fred:	We're <creaky> {glad } to be the ner:ds,
6	a@nd the squa:res and,
7 Mary:	Is that what
8 Fred:	[we don't–]
9 Mary:	[you say] you are?
l 0 Fred:	<[i?]> Well,
11	we don't exactly s: –

12	We don't always say it,=
13	=I say it. n@
14 Mary:	@@[@ !]
15 Fred:	[But-]
16 Mary:	@ You're [[prou:d.]]
17 Fred:	[[you]] know,
18 Mary:	[@@]
19 Fred:	[we don't–]
20	We just don't (0.5) drink,

Bucholtz contrasts these two extracts, pinpointing that 'Fred's comments are not the product of an autonomous, triumphant voice of nerd pride but are rather the result of considerable co-construction (and obstruction) by me as the researcher. Her stated views, while clearly strongly held, are much more hedged and halting in their expression than my first transcript acknowledged' (2007: 788). If we further focus on the details of these transcripts, we notice how revelatory they are of distinct research practices. In particular, what is missing in version 1a relates precisely to the methodology of the interview: questions are erased and the interviewer is made invisible. In version 1b, the negotiation of not only content but ways of speaking is observable. Line 1, a new sequence, seems to be started both by the interviewer, Mary, and the interviewee, Fred. Fred's claim (2–3) is not said in response to a question, but as a self-initiated turn. This claim, and the use of the category 'nerds,' is repaired by the researcher (4), prompting Fred to reissue her claim in an even more emphatic way (creaky voice, stretched syllables, laughter particles indicated by the symbol @). This is again repaired by the researcher (7, 9) in overlap with Fred's progression into her description – which might already be initiated in lines 19–20, again showing her autonomous organization of the progressivity of her talk, which is not merely responsive to the interviewer. Interestingly, the repair initiation (9) occasions a dispreferred repair (10) not targeting the category of 'nerd,' but the voice to which this category is attributed, introduced by the researcher (using the verb 'you say' [9]). First, the verb is repaired in two negative utterances (11–12) and second, the pronoun is repaired from 'we' into 'I' by Fred now assuming personally the use of the category laughing (13). What Fred does here is reflect and negotiate, and eventually subvert, the way in which the researcher reformulates what she says and attributes claims to her and her group. This lies at the core of what researchers do when using interviews and other reporting methods (see also Edley and Litosseliti's chapter in this volume). If we look back at extract 1a in the light of extract 1b, we observe that what is

ignored are not only the interventions of the researcher, but the negotiations of meaning, authorship and representativity between her and the informant. Thus, from this example we learn not only about transcription choices, but more radically about field methodologies, the work of researchers behind the scene, and procedures of objectivation (of the informant's talk) and transparentization (of the interviewer's interventions).

Issues of spelling and respelling: Orthography, eye dialect and phonetics

Transcripts involve the representation, in a written form, of what has been said. Orthography represents the most frequently used option (see example 1) – contrasting with the IPA, which is used only in restricted cases, even by phoneticians. The IPA is often considered relevant for a fine-grained phonetic annotation (albeit not in a straightforward way – because it implies other forms of normalization and selection [Local and Kelly, 1989]). However, the IPA is also often considered difficult to use as well as to read, especially for longer transcripts. Furthermore, orthography does not solve all the problems; its use is submitted to very contrasted choices, which have generated considerable controversies. Orthography can be used in a standard way, respecting written norms; it can also be transformed into non-standard and even creative ways, in order to better represent individual, dialectal, ethnic or social particularities of spoken productions. For example, Preston (1982) identifies three categories of what he calls 'respellings' of words in transcripts: *eye dialect* (free adaptation of orthography for capturing phonetic details), *allegro* forms (elision of non-pronounced sounds) and *dialect respellings* (normalization of dialectal features). These adjustments of normative orthography have been diversely discussed and evaluated in the literature (see also Bucholtz, 2000, 2007).

A first issue discussed in the literature concerns the adequacy of written standards for capturing spoken variation. Orthographic adjustments aim to show the difference between spoken and written norms, and give a hint about the specificity, and even uniqueness, of a single production. One example of orthographic adjustment is the use of so-called eye dialect; that is, the spelling of words in non-standard ways in an attempt to represent specific ways of pronouncing them (e.g. 'coz' for 'because' and 'I dunnu' for 'I don't know'). Eye dialect has been used in literary texts, as well as in popular prose. It is also used by some scholars in an analytical way. An exemplary case

of the use of eye dialect is the work of Jefferson (1983, 1985) in CA, which captures meaningful distinctions that would have been erased by a standard orthographic rendition. As a criticism of eye dialect, some linguists have argued that it often displays a naïve conception of orthography and its rules and it creates graphemic 'monsters' that are contradictory and inconsistent within its system (Blanche-Benveniste and Jeanjean, 1987). It can also be superfluous, since it is 'unnecessary to indicate phonetic features which are predictable from general rules of the orthography' (Macaulay, 1991: 287). It should be noted that these discussions vary depending on the languages considered, their orthographic rules and the national normative traditions.

A second issue concerns the fact that eye dialect has been considered stigmatizing for certain linguistic communities. Preston (1982) observes that folklorists tend *not* to represent American middle-class 'northern' English speakers with eye dialect, whereas such respellings are abundant for African Americans, Appalachians and non-native speakers. Moreover, he notes that in the latter case, they demote the speakers in terms of social status, intelligence and sophistication. Blanche-Benveniste and Jeanjean (1987) reveal that perception is often systematically biased by sociological variation: some categories of speakers tend to be transcribed in a way that interprets what they said as 'errors' rather than as (correct) grammatical constructions (e.g. in the French double negation system, the first negative particle is often omitted, especially among certain categories of speakers; but the transcriber might contribute to the stigmatization of the speaker by not transcribing the negative particle 'ne' in 'on *ø* avait rien à manger'/"we had nothing to eat," even when it does not present any audible difference with the standard spelling 'on *n*'avait rien à manger'). This is consequential for the description of the grammar of spoken language and its social stratification. In sociology, Bourdieu et al. (1993) use similar arguments, but leading to different conclusions than the ones generally assumed by linguists. He argues in favour not only of the written standard, but even of normative corrections of the responses given by his interviewees, in order to avoid their caricature and stigmatization. In a response, Lahire (1996) accuses him of producing sociological artefacts by erasing details constituting and revealing the social identity of the speakers. This controversy shows how issues of ethics and politics are at the core of orthographic representations.

A further, very different, issue related to orthography concerns the use of transcripts in corpus linguistic data banks: because search engines find it difficult, and sometimes impossible, to recognize words in non-standard orthography, standard orthography is favoured by computer scientists in

order to enable automatic searches within larger corpora (see, e.g., Leech et al., 1995). In this case, standard orthography constitutes a solution to technological constraints – although algorithmic solutions have also been found to include non-standard spelling in searches.

These controversies show that standard orthography is much more than a representational convention: it is a form of sociocultural technology that characterizes and enables practical uses of texts and contains normative values. Reproducing standards as well as subverting them can produce strong normative effects. Their effects of authority versus stigmatization shape the way in which the original talk and its transcription are categorized and interpreted, and therefore shape the identities of both transcribers and transcribed, by positioning them socially and accentuating their (a) symmetries.

Dealing with multiple languages: Translations and multilingual data

Transcribing embeds implicit norms about written and spoken language, as seen in the previous discussion, as well as multiple tacit assumptions about what (a) language is. These are revealed most explicitly when transcriptions go beyond the monolingual space of a homogeneous community of speakers, researchers and publishers. I will discuss two cases in this respect: the first concerns transcripts in a language that is not the same as the language of the published article, and consequently need to be translated for a recipient who does not know it; the second concerns transcripts of multilingual talk. Both cases question straightforward conceptions of what a language is.

Often data feature in publications that do not use the same language (typically journals in English) and for readers who may not understand the original language of the data. Translating data is a delicate and often frustrating process. A lot of the specificities of the original language are not available in the final translation (Traverso, 2002). Many choices, concerning not only the translated forms, but their visual disposition on the page, have significant implications for how the data will be finally accessed by the reader. The distance from the original can be managed in different ways: if the transcript and its translation are quoted separately, one after the other (or even in a footnote), their distance is significantly greater than in interlinear translation; likewise, an idiomatic translation, trying to give an equivalent flavour of the original in another language, tends to be read in

an autonomous manner, detached from the original, whereas a translation trying to maximally fit with the original invites the reader to return to it and helps them to understand it. To enhance the readability of the original, grammatical glosses are added to the interlinear translation (see excerpt 2a). These glosses are important for highlighting the grammatical structures and sometimes for allowing some elements to be left in their original form rather than translating them. This is the case, for example,with Finnish particles studied by Sorjonen (2001), as illustrated in the following short example:

(2) (Sorjonen, 2001:91)

```
0:   .hhh (0.7)  Joo::. Annap-pa-s  se tarke-mpi   osote
                 PRT    give-CLI-CLI it precise-COM  address
     .hhh (0.7) Joo::. Give me the more precise address
```

Sorjonen transcribes the particle on the first line in Finnish ('joo'), she glosses it on the second line (categorizing it as 'PRT,' particle), but she refuses to translate it on the third line (actually, she integrates its original form in the English translation), because this would just erase the subtle differentiations that her study is precisely aiming to demonstrate.

Glosses rely on a linguistic model and theory, providing specific grammatical categories that are used for the original language and can be understood by the recipient – therefore often their universal character is presupposed by applying them to very different languages. Moreover, glosses and their level of detail depend on the focus of analysis. Glosses and translations can reveal the theoretical framework of the researcher and how it impinges on the intelligibility of the transcription and the orderly character of the material represented.

Multilingual data raise similar challenges, showing the limits of the categorization of recorded forms as belonging to a single clearly identifiable language (Mondada, 2000). To discuss these issues, I draw on an example from Léglise and Sanchez Moreano (2017), featuring a client talking to an employee at the national electricity company in Cayenne (French Guiana).

(3a) (Léglise & Moreano, 2017: ex. 1: Corpus EDF Clapoty - Nelson/Léglise)

a. **Yèr** **mo** **té** **pasé** **la**
yesterday 1SG PST went here
Yesterday I was here

b. **i** **té** **gen** ***an::*** madame un peu costaud à côté là
3SG TE.PST avoir ART.INDF misses a little.ADV sturdy next to.ADV here.ADV
there was a:: woman a little bit sturdy just here

c. **i** m' a donné […] comme **té** ***ni*** **problem**
3SG 1SG have given as if.CONJ TE.PST have problem.N
she game me […] as if there was a problem

Multilingual data – in which the phenomena of code-switching and code-mixing are observable – raise the issue of how not only to transcribe but also to *categorize* the languages used by the speaker (e.g. being French or English). Often the solution consists in identifying the language in a typographically visible way: in extract 3a, bold refers to Guiana Creole, bold italics to Antillan Creole and roman to French. This kind of notation imposes clear-cut decisions, attributing to each form a unique and full membership of a language. These decisions are implicit in all transcriptions – revealed by their orthographic norms and explicit in the glosses – but are particularly exhibited in transcriptions of code-switched/-mixed talk. These can be problematic, especially for languages that are closely related and in which contact phenomena blur clear-cut boundaries between them. Léglise and Sanchez Moreano (2017) discuss several difficulties raised in this extract by the continuum between French and various Creoles spoken in the same area. For instance, 'yèr' (a.) is written in Creole, but nothing distinguishes it orally from 'hier' in French; likewise, the final adverb 'la'/"là" (end of lines a. and b.) is fundamentally the same, but gets transcribed with two different orthographies, treated somehow differently in the glosses; furthermore, the word 'problem'/"problème" (c.) is pronounced in the same way in the three languages. The third line is particularly tricky, given that both Guiana and Antillan Creoles use 'té,' the pre-verbal marking of the past tense. These possible alternatives show the choices made visible by the first version of the transcript: the first line is treated as being consistently in Guiana Creole; the second line is treated as beginning in Guiana Creole, then using a determinant in Antillan Creole and finally ending in French – where the word 'madame' constitutes a boundary case, since it could be French as well as Creole, although it would have different connotations in both languages. The third line is treated as beginning with a pronoun in Guiana Creole, continuing in French, and ending with a mix of Guiana and Antillan Creole ('ni' is the only form here that is univocally identifiable in the latter language). Thus, the first line supposes the continuity and consistency of the speaker's linguistic choices through spates of talk, but the third line does not.

Given the proliferation of problematic choices in this kind of transcription, Léglise and Sanchez Moreano propose three alternatives for categorizing the

words of the third line: their possible categorizations are indicated both in the orthography and in the typographical convention:

(3b) (Léglise and Moreano, 2017: ex. 2: Corpus EDF Clapoty - Nelson/Léglise)

c.	***i***									probléme
c.	**i**						***té***			***problem***
c.	i(l)	m'	a	donné	[…]	comme	**té**	***ni***		**problem**
	3SG	1SG	have	given		as if.CONJ	TE.PST	have		problem.N
	she game me […] as if there was a problem									

This example shows the interest of multi-transcription; that is, a transcription integrating various possible variants. More generally, Léglise and Sanchez Moreano (2017) propose computer-supported solutions for their corpus, enabling multi-transcription and alternative labels. The general strategy consists in leaving the choices open for further steps in the research. In this case, the solution is both technologically supported and pragmatically postponed to a later phase in the analytic process.

Categorizing speakers

Transcripts are not only constituted by transcribed talk; they also integrate other information, and most notably the identification of the participants speaking – often in the form of either a name or a category in the left margin. This identification is seldom discussed in the literature (but see Mondada, 2002), although it has important consequences for the interpretation of the transcript. The identification of the speaker is the first element to be read on the left, at the beginning of the line, and this position is consequential for how the text will be read, understood and interpreted. Speakers can be identified by a choice of letters (S, D, R, for example, which has a different impact than A, B, C, the latter imposing a sense of order that the former does not), or of names (Bea and Ahmed vs. Mrs. Baker and Mr. Hakimi, allowing different levels of formality as well as different social and ethnic identities to transpire). This also raises issues of how to anonymize the names of the participants and to choose their pseudonyms, for instance by selecting names that are both distinct and related to the original ones. Speakers can also be identified by categories (Interviewer and Interviewee, Doctor and Patient, etc.), which raises issues of local relevance. As pointed out by Sacks (1972) and Watson (1997), a diversity of categories can potentially be used to describe a person: they might be referentially correct, but the issue is whether they are treated by the participants themselves as *relevant* at a particular

moment within the talk, possibly changing as talk unfolds (Mondada, 2002). These considerations show the problematic character of identifications such as Man and Woman (which suppose the a priori relevance of gender and essentialize it), Native and Non-native (much criticized for their linguistic and ideological presuppositions, as well as for excluding other social identities than those manifested by the participants' linguistic competences), Student1, Student2, Student3 (supposing homogeneous characteristics of persons belonging to the same class), etc. These considerations show the importance of the choice of names identifying the speaker for the analysis of their talk and their possible stereotyping consequences, aggravating possible effects of orthographic misspellings.

Spatializing talk

In her seminal article on transcription as theory, Ochs (1979) shows the consequences of the layout of transcripts and the spatial disposition of their text on the page. A transcript is not just a linear continuous text, but a spatialized text, in which the identification of the participants, line numbering, disposition of transcribed talk and representation of time through the positioning of textual strings all contribute to the interpretation of the coherence, consistency and progressivity of the participants' action unfolding line by line. Ochs's argument points out the fact that the successive disposition of the transcript's lines, one after the other, corresponds to the sequential organization of the adults' talk, where a turn responds to the previous one and projects the next. Interactions with or among children might not work in the same way, and their textual disposition should take their specific interactional competences into consideration. For instance, Ochs shows that transcripts beginning with an adult's turn in first position on top of the page and on the left of the line impose a reading of the next (child's) line as dependent on the previous one – and possibly as incoherent, if it does not respond to it. Ochs contrasts the *list format* (in which one turn is followed by the next on the verticality of the page) with a *column format* (in which each turn is disposed beside the other, as distinct columns, and the child's column is placed on the left of the adult's one, favouring the reading of the child's actions as having their own coherence and not only as responding to the adult's ones). Although the column format is now seldom used, this example shows the interpretive effects of the spatialization of talk on the page, which can reinforce other effects of (a)symmetry between the participants, as discussed above.

Synthesis: Some issues

The variability of transcripts has often been treated by scholars as the result of 'errors,' and as showing the low reliability of the transcribers' work, due to carelessness (Kitzinger, 1998) and inconsistencies (O'Connell and Kowal, 1990). But variation has also been treated as inherent to the linguistic phenomena transcribed, as well as to the practice of transcription, which is a never-ending process (Bucholtz, 2007; Mondada, 2007). The controversies exposed in this section show that transcription is never a mechanical practice, but instead requires constant choices that have analytical consequences.

Transcripts exhibit not only the choices of the transcriber, but also their membership within a theoretical paradigm and a disciplinary community. These choices concern different issues:

- the definition of the phenomena to be transcribed and their preservation, including the accuracy and precision of their annotation;
- the organization of these phenomena and the principles on which their order is based, according to the analytical and theoretical approach adopted;
- ethical and political issues, often associated with problems of stereotyping and erasure of (ir)relevant details;
- technical issues, associated with demands of robustness, consistency, reproducibility of the conventions and their implementation, which are particularly important for the digital treatment of transcripts and the automatization of searches.

Each of these layers implies necessary choices, which can become arenas for controversies and discussions, depending on the principles and objectives governing transcription – which are sometimes discussed, but often remain implicit and tacit. One field in which transcription practices have been explicitly articulated with analytical principles is CA, to which we now turn.

Practices of transcription in CA

CA represents a field within linguistics and the social sciences (see also Baxter's chapter in this volume) in which transcription has been developed in detail over the last decades, in a way that is particularly coherent with the principles of its analytical mentality. In the second part of this chapter, I

focus on this approach in order to show how transcription can be explicitly related to the analytical principles of a paradigm and how new challenges emerging from empirical studies foster solutions that are crucially based on new ways of transcribing.

CA's distinctive way of transcribing is strongly related to its fundamental tenets. In particular, these principles concern a focus on situated action, as it is organized within social interaction and among various co-participants, as it unfolds sequentially, establishing retrospective relations with previous actions and projecting subsequent actions, within a temporality organized in a continuous, emergent and incremental way. These constitutive aspects (see Sidnell and Stivers, 2012, for an extensive presentation) inform a methodology that is crucially based on audio-video recordings of naturally occurring interactional activities and on their fine-grained transcription. The focus on situated actions entails the audio-video recording of interactions in their social context, without being orchestrated by the researcher and in a minimally invasive way. Moreover, the attention to the way participants themselves organize these actions and make them intelligible for others materializes in audio-video recordings that document in the most comprehensive manner the communicative resources used by the participants, including not only language but also body conducts (Heath et al., 2010; Mondada, 2012).

In the following sections, I first detail the principles supporting verbal transcription and show some of their analytical consequences (section 'Verbal transcripts in CA'). Then I show how transcripts have been expanded for multimodal analysis (section 'Multimodal transcripts in CA'); that is, how they have integrated, besides language, details of embodied conducts, such as gesture, gaze and body postures.

Verbal transcripts in CA

CA's transcripts are consistent with CA's conception of social action. The starting assumption is that action is produced in an orderly and accountable way by and for the participants (Sacks, 1984: 22), and thus 'no order of detail in interaction can be dismissed a priori as disorderly, accidental, or irrelevant' (Heritage, 1984: 241). This prompts a textual and visual representation of talk and embodied conduct that carefully considers the orientation of the participants towards the issues of 'why that now?' and 'what's next?' (Schegloff and Sacks, 1973). These orientations

incarnate the fundamental principles of temporality and sequentiality on which the organization of social interaction is based. Therefore, transcripts are particularly careful in representing the emergent, incremental, situated and contingent unfolding of action in time. Moreover, they reflect the fact that what makes social interaction intelligible is not a predefined set of forms decided upon by the analyst, but an open-ended indexical arrangement of resources that are mobilized and oriented to moment by moment by the interactants, within an *emic view* (endogenously defined by the participants) (vs. an *etic view*, exogenously defined by the analyst) (Mondada, 2014a).

This endogenous order has been captured by the transcript notation developed by Gail Jefferson, which is currently widely used to represent talk in interaction (although national variants, all inspired by her, exist, such as GAT or ICOR). Gail Jefferson was a founder of CA, a charismatic figure of the movement, who developed some of the most important analytical objects of CA (such as turn-taking, overlap, repair and laughter; see Sacks et al., 1974; Jefferson, 1983, 1985, 2017). Jefferson (2004) also developed a way of transcribing them that would make it possible not only to *represent* them but more fundamentally to *discover* them – to hear and see, notice and capture them (see also Psathas and Anderson, 1990; Hepburn and Bolden, 2017).

An example of analysis of laughter discussed by Jefferson (1985) shows the issues and the payoffs of this kind of transcription. It is a dirty joke, for which she provides a transcript in two versions, the first *describing* laughter and the second *transcribing* it. The first adopts an orthographic transcription; the second an adapted version of it.

(4a) Jefferson (1985: 28-29, ex. 7)

Ken: And he came home and decided he was gonna play with his orchids from then on in.
Roger: With his <u>what</u>?
Louise: heh heh heh heh
Ken: With his orchids. [He has an orchid.
Roger: [Oh he h hehheh
Louise: ((through bubbling laughter)) Playing with his organ yeah I thought the same thing!
Ken: No he's got a great big[glass house-
[I can see him playin with his organ hehh hhhh

(4b) Jefferson (1985: 28-29, ex. 8)

Ken: An'e came home'n decided'e wz gonna play with
his o:rchids. from then on i:n.
Roger: With iz what?
Louise: mh hih hih[huh
Ken: [With his orchids.=
Ken: =Ee[z got an orch[id-
Roger: [Oh:. [hehh[h a h 'he:h]' heh
Louise: [heh huh 'hh] PLAYN(h)W(h)IZO(h)R'N
ya:h I [thought the [same
Roger [uh:: ['hunhh'hh'hh
Ken: [Cz eez gotta great big[gla:ss house]=
Roger [I c'n s(h)ee]=
Ken: =[( )
Roger =[im pl(h)ay with iz o(h)r(h)g' (h)n 'uh

When Ken says that the guy 'was gonna play with his orchids' this generates a repair initiated by Roger ('with his what?'), to which Louise responds with slight laughter – indicated by several aspired syllables – and Ken with a repair ('with his orchids'). Now Roger laughs too, overlapping with Ken's continuation of the turn and before he has completed his explanation. Louise, in the next turn, formulates again the gist of the joke: in the first transcription, which uses in fact a *description* of the laughter, Louise's turn is orthographically rendered in a unique way, making the relation between 'orchid' and 'organ' totally explicit. In the second transcription, Jefferson shows the pay-off of *transcribing* it: Louise's turn overlaps Roger's laughter, and 'O(h)R'N' is a very different form, in which laughter 'invades the talk' (1985: 29). Here both 'uncontainable' laughter and 'difficulty in hearing the punchline' (1985) are constitutive elements of the dirty joke – which get lost in a normalized orthographic transcription and in the description of laughter.

More generally, the careful transcription of turns-at-talk as they unfold in a finely grained way shows the way turn-taking operates, how participants make recognizable and recognize possibly completed units of talk and opportunities to speak and how they exploit them for organizing their participation in the ongoing activity.

Multimodal transcripts in CA

Transcription challenges have become even more important as scholars have begun to transcribe not only verbal but also embodied conducts.

With the spread of video technologies, CA has increasingly integrated the study of multimodal resources; that is, language and embodied conduct (Goodwin, 2000; Heath, 1986; Mondada, 2014a, 2016; Streeck et al., 2011). This has raised new challenges not only for transcription, but more radically for analysis. Multimodality (see also Bezemer and Jewitt's chapter in this volume) includes annotations of language, gesture, gaze, head movements, body postures, body movements and object manipulations. This makes multimodal transcription even more complex than linguistic transcription, because it concerns not only the relatively linear unfolding of verbal turns, but also many embodied courses of action emerging and expanding at the same time. If temporality is fundamental in the transcription of talk, it is even more crucial for the transcription of body movements. This has prompted researchers engaging in a detailed representation of multimodality to develop specific conventions for its notation.

Like Jeffersonian transcripts, multimodal transcripts are aimed at showing the ordered details of interactivity, temporality and accountability of action. First, with regard to *interactivity*, multimodal transcripts, even more than verbal ones, allow the researcher to show that all participants are possibly constantly participating in the current action, for example, gazing, nodding, etc., expressing their online embodied responses, or silently displaying their (mis)understanding or (dis)agreements. Second, the *temporality* of multimodal conducts integrates within the transcription not only pauses and overlaps, but more radically a continuous flow of multimodal resources, such as gesture, gaze, body postures and movements. These resources emerge, unfold and are retracted across time, in both simultaneous and successive ways, exhibiting their fine-grained mutual coordination and their responsiveness to previous actions. Third, the *accountability* of action is achieved by resources that have ordered, distinctive, recognizable forms and trajectories in time, annotated as far as their intelligibility and visibility are concerned (the visibility of a gesture, the noticeability of a gaze shift, the transformation of a body posture and the like, as orchestrated by a participant and seen, glanced at, or monitored by one or more co-participants).

Unlike Jeffersonian transcripts, multimodal transcripts confront the analyst and transcriber with new challenges. There are standard conventions for talk, but not yet standardized conventions for multimodality (but see Goodwin, 1981, and Rossano, 2012, for gaze; and Mondada, 2014a, 2016, 2018, for an integrative system concerning all resources). These conventions face different problems, since the linearity and successivity of linguistic production contrasts with the possible mobilization of several embodied conducts, often

unfolding in a parallel but not synchronous way. Moreover, whereas there are conventional ways of writing and segmenting talk, the same does not hold for the continuous unfolding of embodied conducts, which are often juxtaposed and intertwined: contrary to the graphemic representation of the spoken, the transcription of embodied conducts relies on their description. Finally, questions of relevance and selectivity, present in verbal transcripts, are even more important for multimodal transcripts, in which the issue of relevance is vividly present and locally defined moment by moment. Their relevance varies with the context (resources are *indexical*) and more particularly with the ecological specificity of each embodied resource (in the sense that some resources are particularly fitted to a given material environment, but would not make sense in another: for example, pointing gestures can be made with different prosthetic objects, depending on the material specificities of the ongoing activity – a cook might point with a knife, a surgeon with a pair of scissors, an architect with a drawing pen and so on).

These differences between verbal and multimodal transcripts account for the fact that, while thanks to the standardization of verbal transcripts it is possible to produce a quite homogeneous transcript of an entire conversation; this is practically impossible for multimodal transcripts. In this sense, multimodal transcription is, more than any other, a form of protoanalysis: it is the result of an analytical eye on the data; it allows the researcher to inscribe this protoanalysis and then to further enhance it.

Ultimately, video data remain the primary reference source for any analysis – transcripts being a secondary source. This generates analytical practices in which the researcher constantly moves back and forth between the video and the transcript in progress. This movement is facilitated by some software (called 'alignment software' – such as ELAN), which integrates within the same interface a video player and a writing tool, allowing the researcher to temporally associate details of the video with details of the transcript, as well as to measure and annotate segments of talk as well as of embodied conducts.

The following example, taken from my own data, shows how video data can be annotated and the analytical issues raised by their transcription. The fragment is extracted from a guided visit of a famous architectural site in France, comprising an ecological garden. The visit is guided by the chief gardener, Luc, who leads three visitors, Jean, Yan and Elise, through the garden. We join the visit as Luc is explaining general problems related to the use of pesticides, with the visitors listening and looking at him (Figure 4.1). Suddenly, he spots a butterfly (line 2), which he points out to his co-participants, abandoning the current topic, changing the position of his body and turning towards the animal:

(5) (Mondada, ARCHIVIS/argus)

1 LUC y a des limites, quoi:, là là on est# on est un
there are limits,right, there there we are we are
fig #fig 4.1
JEAN YAN ELISE LUC

Figure 4.1 Transcript: Luc explaining how he manages the garden.

2 pξeu- *r'gardez +%le: #*ξ .hβh+h #le papi%β©llon% +bleu là: *#+
bit- look at the: .hhh the blue butterfly there
luc ξ……ξpoints twd insect----------->>
luc *one step forward*another step forward---------*
eli %looks----------%pivots%
yan +looks----------+pivots----+
jea βturns H back---βpivots---------->
cam ©pans to right--->>
fig #fig 4.2 #fig 4.3 #fig 4.4

3 c'est unβ argus. >voyez<?
it's an argus. >see<?
jea ->β

Figure 4.2 Luc begins to point.

Figure 4.3 Luc points, the co-participants begin to respond.

Figure 4.4 All look at the pointed-at object.

The principles of the convention used (Mondada, 2014a, 2016, 2018) consist in paying special attention to the *temporality* of the multimodal conducts, as well as to their *form*. The temporality is indicated by precisely bracketing the beginning and the end of a movement (with the same symbol: for example, Luc's gesture ξpointsξ is bracketed by two ξ, which are reproduced within the talk in order to show how pointing relates both to the turn – here it is synchronous with the in-breath between two occurrences of the article ξ.hhhξ – and to the other conducts of the speaker or the co-participants). The form is described between these two symbols delimiting the movement and is augmented by images (screenshots extracted from the video) – which are also precisely temporally positioned within the transcripts (with the symbol #). This allows for a fine-grained analysis of the ordered contributions of the multimodal resources used.

At the beginning of the extract, the participants' bodies are arranged around Luc, looking at him (Figure 4.1) while he is engaged in his explanation (1–2). When he spots the butterfly, he interrupts his ongoing talk ('peu-'/'bit' [2]), and instead utters an imperative ('r'gardez'/'look' 2) while beginning to point at the object referred to. We notice that Luc does not just use a gesture that co-occurs with its verbal reference. Rather, he moves his entire body, stepping forward (Figures 4.2–4.4) in such a way that he extends not only his finger but also his body – his entire body contributing to the visibility of his pointing gesture. Moreover, the way he utters the name of the insect (2) is characterized by a stretched article, an in-breath, the self-repair of the article, followed by the name and a locative deictic ('le:.hh le papillon bleu là'/'the:. hh the blue butterfly there' [2]). His turn is formatted in such a way that it is expanded during the time it takes the co-participants to change their bodily and spatial positions. They progressively look at him and pivot their bodies, so that by the end of Luc's utterance (end of line 2) they are all reoriented towards the referent. The last to move is Jean (Figure 4.4). The cameraperson moves too, panning towards the left. This annotation integrates the action of the cameraperson in the transcription, treating her as another participant adjusting and responding to the ongoing action, interpreting it in real time (Mondada, 2016).

Thus, the progressivity of Luc's turn is *reflexively* organized with respect to the co-participants' responses: he adjusts to them as they respond to it. As soon as they all look at the butterfly, he names it and ends his utterance with an accelerated '>voyez?<'/'>see?<' (3) – both forms expecting that the participants are now in a relevant position to grasp it. This timed multimodal

organization of Luc's turn and the responses of the co-participants shows that temporality and sequentiality are the fundamental principles governing social interaction. Sequentiality might not be organized turn by turn, strictly successively, but rather in parallel flows of action, as emergent embodied conducts respond to a previous action and unfold simultaneously with it. Contrary to interactions analysed within an exclusive focus on talk, this implies a plurality of temporalities and sequentialities progressing at the same time. Temporality is crucial for the understanding of language and the body in interaction: syntax and body movements are finely organized as emergent *multimodal Gestalts* (Mondada, 2014b), temporally coordinated within and between speakers. On the one hand, these Gestalts are organized in systematic ways: it is possible to identify their recurrence and to describe their multimodal praxeological grammar. On the other hand, they are deeply and indexically embedded in the specific ecology of the activity, since they are adjusted to its material and spatial environment (including the way the socio-institutional context is materialized).

This has consequences for the study of language and grammar. Multimodal transcripts contribute to a better understanding of topics for which linguists have classically recognized the importance of the interplay between language and the body (such as deixis, which has always been understood as articulating speech and gesture, but for which detailed multimodal interactional accounts are still scarce). But they also contribute to a wider range of linguistic topics (such as spoken syntax, which has been recently understood as temporally emergent and incremental, but for which a multimodal account remains to be provided).

Transcription also plays a central role in defining current challenges for the study of multimodality in interaction. These challenges enlarge the array of resources that have been included in transcripts until now, as well as the variety of activities that can be analysed in this way – such as mobility, multi-activity, writing and the use of technologies, as well as silent activities. As can be seen in the extract above, mobility constitutes an important dimension complementing the rather sedentary vision of social life favoured in many audio and video recordings (Haddington et al., 2013), opening up questions around the organization of sequentiality, multimodality and language on the move. Multi-activity, as a particular praxeological configuration in which participants engage in more than one activity at the same time, constitutes another challenge (Haddington et al., 2014), since simultaneous lines of action make temporality more complex, multiplying the relevant parallel courses of linguistic and embodied actions. A form of multi-activity,

practices involving manual writing, typing at the computer or using other technologies in interaction, constitutes a further challenge. They embed embodied conducts that are privately designed and public activities, as well as different forms of public visibility and accessibility (such as writing private notes and reading them aloud during a collective working session) (see Mondada and Svinhufvud, 2016). For instance, the study of writing as an embodied conduct in interaction allows scholars to integrate analyses of textuality within analyses of social interaction by considering how co-participants actually manage and coordinate the production, transformation and reading of texts in embodied ways. The same can be said of writing and communicating by means of digital technologies (e.g. Luff and Heath, 2015). Finally, video analyses and multimodal transcripts allow scholars to go beyond the limits of language by considering moments in which participants silently engage in collective action. Silence – not only in the form of pauses or lapses within talk in interaction, but more radically in the form of silent collective activities – represents a form of embodiment without language, the analysis of which multimodal transcripts make possible (Mondada, in 2018).

Conclusion

This chapter has discussed several aspects of transcription practice and conventions, showing that they articulate both empirical and theoretical aspects. Ochs's (1979) claim that transcription is theory is evident in the consequentiality of many details of transcripts, such as the choices of orthographic or non-orthographic notations to use, the identification of participants, the translation and glossing of the language transcribed, as well as the annotation of interactional and multimodal features of talk and action. These theory-laden dimensions of transcriptions account for the fact that transcription practices are so different and specialized across academic groups – and are even a distinctive sign of membership in specific scientific communities. On the other hand, interdisciplinary dialogue and cross-fertilization, as well as standardization constraints coming from big data banks of spoken corpora, motivate the negotiation of common standards. Computer-supported interfaces can use multiple standards within multilayered transcripts integrating possible alternatives in different lines of transcription (or tiers) – including different phonetic and orthographic

versions, intonation curbs, and other prosodic features, glosses, translations and multimodality. But although technology can open up transcription choices, in the end analysts have to make the ultimate decisions when selecting details to be analysed and shown in published extracts.

As has been seen in this chapter, the choices motivating transcripts – at very different levels – have practical/technological, conceptual/analytical and ethical/political consequences. They emanate from conceptualizations (which might be very explicitly stated or remain largely implicit) of what language, orality and interaction are and allow scholars to elaborate empirical analyses that are in line with these conceptions. They also integrate a certain view of who a speaker or a participant is, encapsulating issues not only of identity but also of voicing – by recognizing and respecting the speakers' voices or by rewriting and revoicing them within complex relations of authority and subordination, embedded within choices of norms and standards. This shows how serious the practice of transcribing is.

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Further reading

Bucholtz (2007)
A comprehensive presentation of the challenges of transcription in sociolinguistics.

Hepburn and Bolden (2017)
A very clear and pedagogical introduction to the Jeffersonian way of transcribing in CA.

Mondada (2018)
Multiple Temporalities of Language and Body in Interaction: Challenges for Transcribing Multimodality.

Online resources

Transcription conventions mentioned

Santa Barbara Corpus – see Du Bois (1991) and http://www.linguistics.ucsb.edu/projects/transcription/representing Conversation Analysis – see Jefferson (2004) and http://www.liso.ucsb.edu/liso_archives/Jefferson/Transcript.pdf

Multimodal transcription – see Mondada (2018) and https://franzoesistik.philhist.unibas.ch/fileadmin/user_upload/franzoesistik/mondada_multimodal_conventions.pdf

GAT (Gesprächsanalytisches Transkriptionssystem) – see Selting et al. (1998, 2009)

ICOR (Conventions de Transcription, ICOR group) – see http://icar.univ-lyon2.fr/projets/corinte/documents/2013_Conv_ICOR_250313.pdf

Other websites

IPA/International Phonetic Alphabet:
http://www.internationalphoneticalphabet.org/ipa-sounds/ipa-chart-with-sounds/

Leipzig Glossing Rules:
https://www.eva.mpg.de/lingua/pdf/Glossing-Rules.pdf

Transcription Module/Conversation analysis (Schegloff):
http://www.sscnet.ucla.edu/soc/faculty/schegloff/TranscriptionProject/

Tools for alignment of transcriptions

Praat: http://www.fon.hum.uva.nl/praat/

ELAN: https://tla.mpi.nl/tools/tla-tools/elan/

CLAN: http://talkbank.org/software/

Transana: https://www.transana.com

Discussion questions

1. How are transcription conventions and linguistic theories related?
2. Search for examples of transcripts in the linguistic literature: Which options are visible in the way extracts are spatially disposed on the page, speakers are identified and their voices are textually represented?
3. In what sense can transcribing be seen as an *analytical* act? In what sense does it also have a *political* dimension?
4. Record a short moment of talk and experiment with different conventions for transcribing it. Also try different audio and video players and software for listening to and inspecting the data. Reflect on the differences you experience in using them.

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Part Two

Quantitative perspectives

5

Quantitative Methods: Concepts, Frameworks and Issues

Sebastian M. Rasinger

Chapter outline

This book introduces some of the various different approaches to collecting and analysing linguistic data. We may distinguish between two basic types of methodological frameworks under which all other methods and approaches – in linguistics or any other discipline – can be subsumed: qualitative methods on the one side and quantitative methods on the other. Yet, over the last decade or so, in social science research this dichotomy has become less rigid, and the use of mixed methods methodologies and triangulation approaches (the use of several methods to support each other) has increasingly led to the simultaneous use of quantitative and qualitative methods (see also Angouri, this volume), whereby 'structural features are analyzed with quantitative methods and processual aspects with qualitative approaches' (Flick, 2014: 31).

In this chapter I will focus exclusively on quantitative methods, with specific reference to their application in linguistics and other language-related subjects. The chapter starts with a comparison between quantitative and qualitative methods in general (in the section 'Quantitative versus qualitative methods'), followed by a discussion of various research designs that can be used under

a quantitative framework (in the section 'Research designs'). In the section 'Using questionnaires: Measure if you must', we take a closer look at the design and use of questionnaires. Questionnaires come with the reputation of being a quick and easy way to collect a vast amount of data and are hence a tool frequently used in quantitative studies. Yet, as we will see, questionnaires, like any other methodological tool, need thorough planning in order to provide valid and reliable data. We will also raise the fundamental issue of what a questionnaire really captures: reality or a perception of reality and the implication this has for quantitative research.

Quantitative versus qualitative methods

Particularly students or those new to research often struggle to understand the difference between qualitative and quantitative approaches to data analysis. This misconception comes from the use of the terms in daily discourse, where 'quality' usually refers to 'good' (unless something is of 'bad quality'), whereas 'quantity' frequently refers to 'much'. When we use the terms qualitative and quantitative in the context of a methodological framework, however, we have to modify these definitions. The following is an extract from a conversation between a mother (M) and a 2.5-year-old child (C) (Peccei, 1999: 95).

C: daddy is coming down too
M: who's coming down too?
C: daddy
M: daddy? No. where's daddy?
C: me want – daddy come down
M: working sweetie
C: no, no. Find her cheque book
M: finding her cheque book

There is a multitude of ways to analyse these eight lines. We could, for example, look at the transcript with a focus on the conversational exchange between mother and child, with reference to theories of first language acquisition, such as child-directed speech. In this case, we would mainly

be interested in what is going on between the two interlocutors during the conversation: there is a clear question and answer sequence and we could argue that the mother, as the linguistically more competent, is guiding the exchange – not to say she is controlling it. She is also, to a certain extent, adjusting her language, for example, in terms of its syntactic complexity, towards a linguistically less competent child. In general terms, we could look for certain patterns or sequences in the text in order to come to a result. In yet other words, we could analyse the text with regard to its main characteristics or qualities – and hence carry out a qualitative analysis.

However, we can also take an entirely different approach. Language acquisition research is, ultimately, always concerned with the development of linguistic proficiency, and in first language acquisition, the mean length of utterance (MLU) has been around for a long time as a frequent – albeit somewhat unreliable – way of measuring children's first language proficiency and development (see, *inter alia*, Bedore et al., 2010). The MLU is an index which tells us, as the name implies, the average length of children's utterances in words or morphemes. In its simplest form, to calculate the MLU for our example, we count all of C's words and divide it by the number of utterances:

C:	daddy is coming down too	5 words
C:	daddy	1 word
C:	me want – daddy come down	5 words
C:	no, no. Find her cheque book	6 words
Total number of words:		17
Number of utterances:		4

MLU = 17/4=4.25

For our example, the MLU is 4.25; that is, on average the child produces utterances of 4.25 words length. So, the MLU allows us to put a numeric value onto something that originally is nothing else but text; in other words, it allows us to quantify proficiency by giving us a – more or less meaningful – number. Unsurprisingly, then, the MLU is a quantitative measure.

Put briefly, qualitative research is concerned with structures and patterns, and *how* something is; quantitative research, however, focuses on *how much* or *how many* there is/are of a particular characteristic or item. The great advantage of quantitative research is that it enables us to compare relatively large numbers of cases (linguistic forms, people, etc.) by using a comparatively easy numerical figure. For example, when marking student

essays, a lecturer will first look at the content, the structure and coherence of the argument and the presentation; that is, analyse it qualitatively. In many universities in the UK, this will then be translated into a numerical mark (i.e. a number, usually out of 100), which allows us to compare two or more students with each other: a student gaining a 61 percent did better than a student achieving a 57 percent, because 61 is larger than 57 – we do not need to look at the essays per se once we have the numerical, quantitative value indicating their quality. It also allows us to categorize students' work into larger categories, for example, degree qualifications and set pass/fail grades. Quantitative data can be analysed using statistical methods; that is, particular mathematical tools which allow us to work with numerical data.

There is another fundamental difference between qualitative and quantitative studies. Qualitative studies are, by their very nature, inductive: theory is derived from the results of our research. A concrete example: Bucholtz in her ethnographic study at a US high school looks at how teenagers from a 'European American' (Bucholtz, 2011: 3), that is, white ethnic background use language to create ethnic and social identities, taking into account a variety of linguistic features. This enables her to identify patterns that drive the construction of different identities. As such, she used an inductive qualitative approach: theory was derived from (textual) data. In reality, the situation is more complex: nowadays it is difficult to argue that there is no theory whatsoever on any one research topic; it is likely that there is a body of literature on the topic already in existence. However, qualitative research is not aimed at proving a specific hypothesis (such as 'white teenagers use linguistic feature X more frequently than Afro-American teenagers').

Quantitative research, however, is deductive: based on already known theory we develop hypotheses, which we then try to prove (or disprove) in the course of our empirical investigation. Hypotheses are statements about the potential and/or suggested relationship between at least two variables, such as 'the older a learner, the less swear words they use' (two variables) or 'age and gender influence language use' (three variables). A hypothesis must be proven right or wrong, and hence, it is important for it to be well defined. In particular, hypotheses must be falsifiable and not be tautological: the hypothesis 'age can either influence a person's language use or not' is tautological – independent from our findings, it will always be true. A good hypothesis, however, must have the potential of being wrong. For a more detailed discussion of hypotheses (and laws and how they can be combined to form theories), see Scott (2014).

A typical example is the age of acquisition onset debate in second language acquisition research. Based on a now substantial body of previous research (for overviews, see Singleton and Ryan, 2004, or Muñoz, 2006), we can develop a particular hypothesis, such as 'second language learning becomes more difficult the older a learner is'. In a quantitative approach, we use these hypotheses and develop a methodology which enables us to support – ideally to prove – their correctness or incorrectness. In the example, this is usually done by finding adequate numerical measures for language proficiency, whereby a high value indicates high proficiency. Age, by its very nature, is already a numerical value, so, using appropriate statistical methods we can compare how the two sets of values – proficiency and age – are related, allowing us to draw a conclusion about the relationship between these two factors and to prove our hypothesis right or wrong: if the age values go up while the proficiency values decrease, there is some evidence that our hypothesis 'the older the learner the more difficult it is to learn a second language' is true.

At this point, I need to issue a 'health warning': all too often, while qualitative research is seen as interpretative and hence subjective, quantitative research is seen as objective and hence, inherently, 'better'. This is not the case. A statistical measure will always mean the same thing: an average age of twenty-four years in a sample will always mean that the average age of this sample is twenty-four, assuming we measured and calculated it correctly. Yet, how we interpret this statistical measure is up to us. It is the proverbial glass half full/empty problem: a glass that is filled with liquid to exactly 50 per cent of its capacity is both half full (good!) and half empty (bad!). What we make of 50 percent is up to us. Much of this depends on the context of what we are investigating. If I am driving in an urban area with a petrol station on every corner, a fuel tank that is three-quarters empty is not an issue. If I am driving under the same conditions with the next petrol station 300 miles away, it is. While, depending on discipline and statistical tool employed, there may be certain agreements as to what a figure means; ultimately, the interpretation is up to us.

Talking about quantitative methods inevitably means talking about variables and it is worth defining what exactly variables and other crucial concepts in quantitative research really are – particularly since misconceptions of these terms may lead to serious problems during any quantitative study. The *Oxford English Dictionary (OED)* defines *variable* (noun) as 'something which is liable to vary or change; a changeable factor, feature, or element.'

In slightly different words, a variable is a feature of a particular case and a particular case can take one of a set of possible features. For example, a frequent variable in sociolinguistics (and other social and psychological sciences) is gender. Gender is a variable which, with human beings, can have two possible values: male or female.[1] Now imagine we are standing in front of a class with twenty students and we are trying to find out how many women and how many men we have in the class: in this example, we have twenty cases; that is, twenty 'items' for which we have to assign a particular value for the variable 'gender'. Now comes the important part: every case can only take one value (or 'outcome') for the particular variable; that is, any one student in our class can only be either male or female, but cannot be both at the same time.

The attribution of a particular variable outcome – male or female – to a particular case is made by means of measurement: we assign a variable value to a particular case using predefined criteria. And here is the crux of the matter: How exactly do we define these criteria? Let's assume that, when assigning gender, we only take into account certain physical features of a person and based on our experience and preconceptions, we come up with the following three criteria for our two gender categories:

Female	Male
Long hair	Short hair
No facial hair	Facial hair
Wears make-up	Does not wear make-up

Two problems should immediately strike us: First, how exactly do we define 'long hair' and 'short hair'? In other words, we again need certain predefined criteria for our defining criteria. Second, what about men who have long hair, are clean shaven and wear make-up? Or women with short hair who do not wear make-up? Inevitably, our criteria will fail to assign the correct gender value; that is, by using our three criteria we cannot accurately measure gender. We would probably have to use other, more biologically founded ones (admittedly rather difficult in a classroom setting).

This rather simplistic example illustrates one of the most important aspects of quantitative research (and indeed all research): whenever we want to quantitatively measure something, that is, assign a variable value to a particular case, we need to thoroughly think about a reliable way to make this decision. We need a set of clear and objective definitions for each category or outcome. Moreover, our measure should be designed in such a way that it comprises as many cases as possible, without creating overlap,

being overly inclusive or too restrictive. For example, for human beings involved in linguistic research, it is usually sufficient to define two values for the variable 'gender', however, in the animal kingdom, and especially with some invertebrates, 'male' and 'female' might be categories which are just not up to the job, as organisms such as worms or sponges are hermaphrodites; that is, have both male and female characteristics. So which category to put them into, bearing in mind that any one variable can only have one outcome for any one case?

We shall be staying with animals for a moment: spend a moment to think about what makes a dog a dog. Dogs come in different sizes (large to small), different shapes (think about a dachshund compared to a pug), different coat lengths and colours, different temperaments and so on. Even within dog races, there is variation: Labrador Retrievers can come in yellow, chocolate or black – but they are still all dogs of the same race and crucially, they are all dogs. At the same time, a terrier and a cat can be of roughly the same size, shape (head at the front, tail at the back, four legs), coat length and colour, but they are nevertheless two very different species of animal. So in order to assign the value 'dog' to an animal, we must be both exclusive (to distinguish cats from dogs) but not over-exclusive, else we would categorize only a black but not a yellow Labrador as a dog.

Let's think about a more linguistic example. Traditionally, dialectology, and later sociolinguistics, has looked at the presence, absence or different realization of certain linguistic features, often in the area of phonetics and phonology, but also in morphosyntax. Milroy in her well-known Belfast study (1987), for example, has looked at, among many other things, how the realization of the vowel/e/in different linguistic environments, particularly the merge of the/e/as in *peck* with/æ/as in *pack* into homophones, relates to the degree of a speaker's inclusion into the social network, with a high frequency of non-standard/æ/in both contexts indicating a higher degree of inclusion (1987). To cut a long story short, at the very end it comes down to measuring (in this case, count) the number of different realizations of the vowels: how often does/e/occur in words such as *peck* and how often is/e/ replaced by/æ/making it homophone to *pack*. Anyone vaguely familiar with phonology will know that this can be difficult at times, and it is important to establish a clear set of rules as to what constitutes an/e/and what counts as an/æ/. Depending on the level of detail needed, we may have to go as far as a proper acoustic analysis using specialist equipment and software to find out the exact physical properties of a sound and base our decision on this. We may say, anything up to x Hertz counts as an/e/and everything below as

an/æ/. This procedure that leads to the 'translation' of (physical) properties of a case into a numerical value is known as operationalization.[2]

Once we have established our measure and have operationalized it, we must not ever change it in the course of our study, as this will distort the results. For example, most of us have a rather good idea of how long an inch is, so if someone tells us that an object is about 2 inches wide, we implicitly know its width. However, this only works because an inch always refers to the same amount of length (namely around 25 millimetres). Imagine someone would arbitrarily change 1 inch to 45 millimetres – how could we possibly make any reliable statements about an object whose width is 2 inches if we do not exactly know what an inch refers to?

Closely related to the issue of measurement are the concepts of reliability and validity. Reliability refers to our measure repeatedly delivering the same (or near same) results. Ideally, if we use the same measure with the same people under the same conditions, our measure should give us the same result. In basic chemistry, this works well: if we add exactly the same amount of chemical A to exactly the same amount of chemical B, with external conditions such as temperature being identical, we should reliably get chemical C. Working with human beings is more difficult. For a start, external factors are notoriously difficult to keep constant. Also, people learn from experience, so if we run the same test with the same people again and again, they will – eventually – improve just through experience. A common way of checking reliability, the test-retest method, is hence problematic. A quick and easy solution to check a measure's reliability is the 'split-half' method (see, e.g., Schnell et al., 2005: 152): we take a group of people, measure whatever we like to measure, then randomly split the group into two smaller groups and compare the results. If the measure is reliable, we should get very similar results for both subgroups. If we get substantially different results, we should become very cautious and investigate the reliability a bit further, through re-tests (with other people!) or by adjusting the measure.

Validity, however, can be more problematic. It refers to our measure actually measuring what it is supposed to measure. Hence it is also known as measurement validity or instrument validity (Bernard, 2006: 38). Validity is often an important issue when using questionnaires – as discussed in the section 'Using questionnaires: Measure if you must' of this chapter – and in particular when we measure abstract concepts such as attitudes. There are several sophisticated mathematical procedures for checking a measure's validity, all of which go beyond the scope of this chapter; Bryman (2016) and Scott (2014) provide good overviews on these issues, while authors such as Allen

and Yen (1979/2001) or Kaplan (2004) discuss the mathematical intricacies of measures such as 'Cronbach's Alpha' – a mathematical approach to determining reliability. The easiest, but only to a certain extent reliable, way to insure validity is to use common sense: if we get significantly different results from previous research, under very similar circumstances, we should carefully look at our method before we get too enthusiastic about our results. We will return to the issue of validity in the section 'Using questionnaires: Measure if you must'.

Research designs

In the previous section we have looked in some detail at variables and measurement and have outlined some basic definitions. Assume we would like to investigate the impact of corrective feedback given by a caregiver on two-year-old children's first language acquisition. Based on previous research, we have a clear hypothesis in mind: 'The more corrective feedback children receive, the quicker they progress'– bear in mind we are working deductively, so we already have the theory. Let's also assume we have a set of well-working methods to measure both the amount of feedback and language development; both are quantitative measures so we can later process our results statistically, trying to prove or disprove our hypothesis. What we need to do now is to think about the actual structure of how we go about our study; in other words, we have to consider the research design.

The research design is best understood as a framework or scaffold around which we organize our study, but it does not refer to the actual tools we use to carry out our research (questionnaires, recordings, etc.). In other words, not only do we need a set of tools to get our data, we also need to think about a coherent and solid framework around which we organize our data collection. For example, we might have a well-working questionnaire (which we have used before, and which we know is reliable and valid) and a brand-new digital recording device. However, we need to think carefully about how, when, in which order and who with (in terms of sample) we deploy them. If we just randomly record people and ask them to complete the questionnaire, what we will get is a pile of data (good!) but certainly not the kind of data we want and need in order to answer our research questions (bad!).

It should not take too long to see that research design, theoretical background and actual methods used are inseparably linked and form the overall framework for our study, hence it is crucial that these three parts

work well together. We can imagine research designs to be designed either along the dimension 'time' or the dimension 'cases', and we will discuss the different types in each dimension in what follows.

Research designs frequently used in linguistics, psychology and other social sciences are cross-sectional designs: we collect a comparatively large amount of data at one point in time, hence obtaining a snapshot of the status quo. In our example, in order to establish the impact of feedback on two-year-old children, we would measure both proficiency and feedback for a group of, for example, a hundred two-year-old children, and, using statistical methods, look at how the two variables are related. This would provide us with a cross-sectional view or 'snapshot' of the relationship between proficiency and feedback.

Longitudinal studies, however, are based on the repeated collection of data over a longer period of time, hence enabling us to observe any changes in variables which may occur over time. We may, for example, take a twelve-month-old child and, over a period of two years, that is, until age three, assess both its proficiency and the extent of feedback in regular intervals by testing it every six months. In this example, we get data at five points in the child's life: at 12, 18, 24, 30 and 36 months of age, which will enable us to trace the child's development – something we cannot do using a cross-sectional design with only one data collection.

Longitudinal designs come in two types: panel designs use a sample randomly drawn from the population and data is taken repeatedly from the members of the panel. Cohort designs are slightly different, in that the members of the cohort share certain – often temporal – characteristics. For example, we may be interested in the change of attitude towards the use of taboo words over time (hypothesis: older people are more critical towards taboo words than younger ones). In a panel design, we randomly select 100 people from the population, both male and female, from all socioeconomic backgrounds and all age groups. In a cohort design, we may select a particular cohort, such as 100 ethnically white adolescents between the age of 15 and 17, and we observe them for let's say five years. According to Bryman (2016), the crucial difference between panel and cohort designs is that while panel designs allow us to observe both cohort and ageing effects, cohort studies can only identify ageing effects, hence allowing us to control for third variables. In our taboo word example, we may only be able to observe that with increasing age, tolerance towards taboo terms decreases, but with a heterogeneous group we cannot account for exactly what is responsible for this change. With a cohort design as outlined, we can more accurately pin down age as a major factor contributing to the change in attitudes.

The biggest advantage of longitudinal designs – the ability to observe change in real time – is also its biggest disadvantage: if we want to observe a group of people over a prolonged period, we must make sure that these people are available for observation over the entire period; in other words, we must consider the difficulty of sample retention. Another problem is resources: repeated observations and/or testing cost time and money, both of which are increasingly unavailable in research. An elegant way to circumvent problems related to longitudinal designs is to simulate them. In particular, in Labovian sociolinguistics, this is known as real-time and apparent-time studies. Bayley (2004) explains that we can design a cross-sectional (or synchronic) study in such a way that we can infer, to some extent, diachronic, that is longitudinal, development. For example, Woods (2000) in her study on sound changes in New Zealand, collected data from three generations of one family at (more or less) the same time (the 'real time') and was able to use generational differences to 'simulate' time and make inferences about longitudinal change (the 'apparent time').

An entirely different approach to research design is to look at it not from a temporal point of view (like the designs discussed above), but to consider how data is collected. In particular, in sociolinguistic research – longitudinal or cross-sectional – language is observed in its natural environment; that is, when it is used by its speakers and the data we obtain is 'natural', spontaneous speech. In technical terms, this way of collecting data does not allow us to manipulate the variables we are interested in: we might be interested in whether a particular speech community shows a particular linguistic feature, but through observation we can only observe – not manipulate how frequently members of this community actually use this feature. This is where experimental designs come into play. In experimental designs, we as researchers deliberately and explicitly manipulate the variables in order to prove/disprove our hypothesis. In addition, experiments usually comprise two groups of participants: the experimental group (EG), that is, the group that is undergoing the 'treatment' or stimulus, and the control group (CG), which is unaffected by the stimulus. Li (1988) analysed the impact of interaction on second language learners' comprehension using a pre-/post-test set-up based on three groups: an EG 1, receiving premodified input, but no interaction; an EG 2, receiving interaction but no premodified input, and a CG receiving neither. A pre-test showed that there were no significant differences between the three groups. After the introduction of the different stimuli, though, Li observed changes in comprehension in the two EGs, but less so in the CG, as illustrated in Table 5.1.

Table 5.1 Experimental pre-/post-test set-up with three groups

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
EG 1	PRE-TEST	EG 1 =	Stimulus 1	POST-TEST	EG 1 ≠
EG 2		EG 2 =	Stimulus 2		EG 2 ≠
CG		CG	No stimulus		CG

Li's study is interesting, as it combines two types of experimental set-ups in one: it is a within-subject design, as it compares members of a group (e.g. EG 1) in two situations, namely pre- and post-stimulus, but is also a between-subject design as it compares several groups with each other. A 'pure' within-subject design tests only one group of people twice (pre-/post-stimulus), while a pure between-subject design compares EG and CG once. Both within- and between-subject designs have advantages and disadvantages. Probably the most problematic issue about within-subject designs is the fact that repeated testing of the same group can lead to participants' performance changing through experience with the task, boredom or fatigue. Between-subject designs are arguably more difficult to control for other factors, as they only produce reliable results when both groups are very equal in terms of their characteristics (e.g. age, gender, linguistic proficiency). A careful consideration of the research question and other factors (resources being increasingly one of them) is hence essential for the choice of experiment type.

Using questionnaires: Measure if you must

There are probably as many different methodological tools for collecting quantitative data as there are research projects. We test, record and measure, trying to come to meaningful answers for our research questions; and as every undergraduate student is told in their first year at university, these methods need to be carefully adapted to provide us with the data we require. One method (or rather type of method) which is frequently used for collecting data across most linguistic subdisciplines are questionnaires. Questionnaires are frequently used to measure people's attitudes to and perception of languages (or variations of particular languages, such as dialects and accents) or groups of speakers. Prominent examples for the

effective (and extensive!) use of questionnaires include studies surrounding the concept of 'ethnolinguistic vitality' (see, *inter alia*, Ehala, 2010; Yagmur and Ehala, 2011) or investigations into language use and choice (e.g. Extra and Yagmur, 2004; Rasinger, 2007).

In this final section, we will have a closer look at the issues surrounding the use of questionnaires in quantitative research, highlighting design, advantages and pitfalls. This section is best read in conjunction with the following chapter by Erez Levon, which discusses the processing and analysing of data generated by questionnaires.

Let's start with having a look at one of the major benefits of questionnaires: they can, potentially, generate a large amount of data which is comparatively simple to process. While interviews are time-consuming to conduct and transcribe and the coding of qualitative data is sometimes difficult, questionnaires, with their neat tick-boxes, seem like a blessing. Unfortunately, it is not that easy. Questionnaires must be perfect before we distribute them: we must be confident that they work well and that they reliably generate valid data. A questionnaire that is in the hand of respondents cannot be changed – it either works or it does not. Questionnaire design is a complex area and a detailed discussion goes far beyond the scope of this chapter (or even this book), so we will focus on some of the core aspects.

A common problem, especially for student researchers, is the number of questions a questionnaire should include. As a general guideline, a questionnaire should include exactly the number of questions it needs to investigate a particular issue validly and reliably – no more, no less. Before we start writing our questionnaire, we should therefore ask ourselves the following two questions:

1. What data do I want my questionnaire to give me; that is, which of my research questions should it answer?
2. Which questions do aim at answering my research questions?

Less experienced researchers will stumble across the first question – very often, research questions are too vague and need to be defined more clearly (see also Sunderland, this volume). But even for the most experienced of us, the second question can pose a major problem. How do I phrase my questions so they address exactly the issues I want to investigate? Here, we will focus on a few guidelines that can help us to solve this problem.

Ask what you need to know. A common problem is questions that have been, quite simply, badly phrased and do not address the actual issue. For example, a student of mine was looking at the impact of learners'

motivation on their L2 English development. As one of the key questions in a questionnaire, she planned to ask a group of teachers:

'Do you think the students are interested in learning English?'

On the surface, this might do the job. It allows for a yes/no answer and she could eventually count the instances of 'yes' and 'no' answers to draw whatever conclusions she wants to draw. However, on second sight, the question does not actually give us any useful information, just because all we get is either a 'yes' or a 'no'. Even worse, the respondents might be unable to answer the question as such because the available answer options are too general. What we would really like to know is not only whether students are interested in a subject or not, but to what extent they are interested in it. And hence, the question needs to be rephrased accordingly:

'To what extent do you think your students are interested in learning English?'

With questions like this one, questionnaires usually give their participants a range of available answer options, usually in the form of a scale or a semantic differential: respondents can indicate their answer on a numerical scale (where a higher number signals higher agreement) or on a scale between two opposing terms:

'On a scale from 1 to 5, whereby 5 indicates "very interested" and 1 indicates "not interested at all", to what extent do you think your students are interested in learning English? Please circle your answer'

1 2 3 4 5

This time, the question includes two types of information: whether teachers think students are interested or not – replacing the former 'yes'/'no' option – but also the extent to which their teachers think they are interested.

A related concept is Likert scales, where respondents indicate their agreement or disagreement to a particular statement on a scale. For example, we may want to measure how satisfied first-year linguistic students are with their choice of academic discipline. We produce a set of three questions, based on five-point Likert scales.

'Please indicate how strongly you agree or disagree with the following statements on a scale from 1 to 5, with 1 meaning "strongly disagree" and 5 meaning "strongly agree". Please circle your answer.'

It may take some time to getting used to phrasing questions in such a way that they give you exactly the kind of information you need, and this presupposes that you yourself are absolutely certain what kind of information you actually want – Is the question you want to ask worth asking and how

can you phrase it to get the most information out of it? All too often we do not think about this thoroughly enough.

Ask comprehensive and 'objective' questions. Related to this issue is the fact that we as researchers are 'experts'[3] in the field we are investigating; however, most of our respondents are usually not. Hence, we should avoid using any technical terminology or jargon as there is a substantial risk that respondents do not understand them.

A common misconception is that a questionnaire should be designed is such a way that it gives you the answers that fit your hypothesis and argument best. Sometimes questions are phrased in such a way that they imply a particular answer; other questionnaires avoid questions which bear the potential of eliciting an 'unwanted' response altogether. However, questionnaires are nothing but scientific tools that help us to measure different aspects of 'reality' – very similar to a voltmeter measuring an electric potential. And as such, they must measure neutrally and objectively. That means that questions should avoid as much as possible being biased or leading; in other words, they should not be phrased in such a way that they imply the 'correct' answer – quite simply because there is no 'correct' answer per se. Typical (and rather extreme) examples of leading questions take the form of 'Don't you think that … ?' or include semantically strongly loaded terms which are best avoided, for example, 'good'/'bad' and their synonyms, 'ugly', 'stupid' or 'unnecessary' (see also Litosseliti, 2003). Try this: compile a list of adjectives and adverbs and test how different people react to them – you will be surprised by the differences in reaction you receive.

Open versus closed questions and multiple item responses. We could have an endless debate about what is better: open questions, which allow respondents to write down their answers in their own words, or closed questions, which provide respondents with a set of possible answers to tick from. From a quantitative point of view, the latter is preferable as they are just easier to process. Similar to the phrasing of questions, we have to take great care in designing our answer options. Since respondents cannot give an answer in their own words, we must provide them with a set of all possible (and/or relevant) answers in order to get an accurate picture. Hence, especially with large-scale studies, researchers often conduct pre-studies with interviews or focus groups (see, for example, Litosseliti, 2003, for an overview; Harris, 2006, and Spotti, 2008, for examples; and Edley and Litosseliti, this volume, for references) to see what potential issues/answers a particular topic raises.

When designing answer options, especially scales or semantic differentials of the 'agree/disagree' type, we also have to be aware of what is known as response sets and acquiescence responses (see Johnson et al., 2005, or Ping, 2005). The former refers to some people's tendency to go for a particular direction of the scale, for example, 'agree', independent of what they might actually think. The latter is the phenomenon whereby respondents give the answer which they think is the 'correct' one – it is particularly frequent with questionnaires dealing with socially delicate issues where political correctness or constructing a particular version of self may override 'true thoughts' or 'genuine beliefs'. Too many response sets and acquiescence responders may have a negative impact on your questionnaires' validity. Thus, it is important to phrase both questions and answer options carefully. In Rasinger (2013) I discuss question and answer designs which avoid response sets in more detail.

Before we can move on and analyse our data – Erez Levon will guide you through this in the next chapter – we need to go through a final step: the coding of the questionnaire. So far, our questionnaire consists of nothing more than ticked (and unticked) boxes and a few numbers (for respondents' age, for example) or possibly individual words or short phrases (in open-ended questions where respondents are asked to write down their answer). The use of computer software for coding will be extremely useful at this stage. I discuss the coding of questionnaires with specific reference to analysing data using the Microsoft Excel software in detail in Rasinger (2013), so will limit the explanations here to the basics.

Essentially, in order to enable a computer-assisted analysis, we need to 'translate' all variable outcomes in our questionnaire into a neat set of numbers. If the variable is already a number, we do not need to do anything but can transfer this straight into our program. For example, if a respondent's age is twenty-five (years), then we can input twenty-five without any 'translation'. It becomes slightly trickier when we have a question regarding gender (or sex) and provide respondents with two tick-boxes: one for male and one for female. Because some statistical software is unable to deal with text, we may need to translate our answer options into numbers. A common way of coding sex is to assign the number '1' to 'male' and the number '2' to 'female' (or vice versa). Depending on whether a respondent is a woman or a man, we can then input '2' or '1' respectively, into our software. In theory, for this type of categorical data (see Levon, this volume), we can allocate any two different numbers (such as '23' for 'female' and '88' for 'male'), but it makes sense to keep it simple and logical. Imagine the respondent whose

questionnaire we are inputting right now is John, who was born in 1980 and is twenty-eight years old. The data matrix for John would hence look like Table 5.2; apart from the respondent identifier (first column), all data is in numbers. Note that we have coded 'male' as '1'.

The coding of all other variables works analogically: every potential variable value is assigned a particular numerical value (i.e. a number). If, for example, we have a Likert scale with the options strongly agree, agree, neutral, disagree, strongly disagree, we would assign numbers from 1 to 5 (or any other sequence of numbers that logically reflects the hierarchical order of answers) to each value (although we may want to inverse the order):

Strongly agree	Agree	'Neutral'	Disagree	Strongly disagree
5	4	3	2	1

A final example based on our discussions of Likert scales (see above) and questionnaire coding: Susan is a nineteen-year-old linguistics student, who could hardly live without linguistics (variable NOLIFE), which is her one and only passion in life (PASSION); the respondent has, in fact, dramatically changed the way she sees the world (VIEW). Her data matrix would look like Table 5.3.

Truth, facts and 'reality'. We have spent the last few pages looking at how to design questionnaires and phrase questions. There is, however, a problem we have yet to address. We have already touched on this issue to some extent when discussing acquiescence responses or response sets: questionnaires only provide us with the data that those who complete them are willing to provide. It is important to understand this: questionnaires do not provide us

Table 5.2 Fictive data matrix

Respondent	Sex	DOB	Age
John[a]	1	1980	28

[a] It is good practice, if not a legal requirement, to use pseudonyms or abbreviations so as to ensure respondents' anonymity (see also Mallinson, this volume).

Table 5.3 Data matrix

Respondent	Sex	DOB	Age	NOLIFE	PASSION	VIEW
Susan	2	1989	19	4	5	5

with 'facts' or 'reality' – they provide us with the 'facts' and 'reality' that our respondents provide us with. This is also an issue with other methods, such as interviews or narrative data: what people tell us is what they tell us (see Edley and Litosseliti, this volume). One of the first scholars to investigate this systematically was La Pierre in 1934, who illustrated how what people *said* they did and what they *actually* did, does not always correlate. This raises a fundamental issue for using questionnaires in quantitative research, as it is directly related to validity (what we measure) and how we measure (operationalization). A questionnaire investigating the use of racially abusive discourse provides us with data on how our respondents present, or perceive, the phenomenon. What is actually happening, however, is only something we can see through observing what is going on the ground. Victims of racial abuse might report comparatively low levels of abuse in a questionnaire, while observation in real life might reveal they are subject to a torrent of racial insults every day. It does not mean that they are completing the questionnaire incorrectly or that they are lying – it may simply mean that the way they perceive 'reality' is markedly different from how 'reality' is. This is a crucial problem for what and how we measure and what conclusions we draw with regard to our hypothesis. If our hypothesis was 'Black people encounter more racially abusive language than Asian people' and we investigate this using a questionnaire, what we are really investigating is 'Black people perceive or report encountering more racially abusive language than Asian people' – and this may or may not be identical to the amount of abuse they actually encounter; those are two quite different things. As such, questionnaires add a layer of mediation to reality – they do not necessarily provide accurate representations of it.

Summary

In this chapter, I have tried to outline some of the very basic concepts and ideas of quantitative research. You as a reader should now have an overview of the differences between qualitative and quantitative research (and be aware of the problems and overlaps this dichotomy may bear), and should be familiar with the key terms and frameworks and general approaches to doing quantitative research. The second part of this chapter has focused on questionnaires, a method widely used (and possibly overused) in many linguistic subdisciplines, trying to highlight the advantages and disadvantages of using questionnaires

as tools for data collection and giving advice on the design and processing of questionnaire-based data. If you had been following this chapter in parallel to carrying out an actual quantitative study, you would now be sitting in front of your PC, with coded questionnaire data waiting to be analysed. This is where I stop. In the following chapter, Erez Levon will explain how to make our data 'talk'; that is, how to perform a quantitative analysis that enables us to answer our research questions and prove our hypotheses.

Further reading

Bryman (2016)
An introductory textbook geared towards the social sciences, which provides a comprehensible starting point for all aspects related to quantitative and qualitative research.

Fowler (2014)
A comprehensible introduction to survey-based research with a discussion of various techniques available.

Rasinger (2013)
This book focuses explicitly on quantitative analysis in linguistics.

Woodrow (2014)
Unlike other volumes, this book does not focus on methods per se but explains how to best write up quantitative research.

Online resources

Christina Hughes at Warwick University has written this useful comparison between qualitative and quantitative research: http://www2.warwick.ac.uk/fac/soc/sociology/staff/hughes/researchprocess/quantitative_and_qualitative_approaches.docx

The University of Southern California has an excellent page on how to write research papers, with a section dedicated to quantitative research: http://libguides.usc.edu/writingguide/quantitative

The British Library has published this useful bibliography on quantitative research:https://www.bl.uk/reshelp/findhelpsubject/socsci/topbib/quantmethods/quantitative.pdf

The University of Amsterdam's MOOC on quantitative methods is good but free only in its basic version: https://www.coursera.org/learn/quantitative-methods

Many universities have subscribed to Epigeum, an online learning platform with a good selection of courses on methodology. https://www.epigeum.com but check with your university for a subscription

A lot of surveys now take place using online questionnaires:

Google Forms (https://www.google.com/forms/about/) is entirely free and allows you to build complex online surveys.

Surveymonkey (http://www.surveymonkey.co.uk/) is relatively straightforward to use, and in its limited version, free.

The University of Bristol's BOS (http://www.onlinesurveys.ac.uk) costs money, but many universities in the UK have a subscription.

Discussion questions

1. Pick a random article from a linguistic journal and determine whether it uses a quantitative or a qualitative approach.
   a. If the approach is quantitative, identify three potential limitations that this approach brings with it for this particular study.
   b. If the approach is qualitative, how could it be re-framed to allow for a quantitative approach? What would the hypothesis/hypotheses be? What would the variables be in a quantitative approach?
2. A questionnaire uses a seven-point Likert scale, with 1 being the lowest and 7 being the best rating. You want to assign the adjectives 'exceptional' and 'outstanding' for scores 6 and 7. Which of these adjectives do you assign for 6, which for 7? Is the ranking straightforward?

3. As outlined in the chapter, a common question in second language acquisition research is the role of learner motivation. For a project investigating motivation and learner achievement, form a clear hypothesis. Is there only one answer?
4. Think of any quantitative project investigating language change. What are key variables and how do you define them? What, and how, would you measure?

Notes

1. I am aware that this may be more complex in real life. This is for simplicity's sake.
2. Bernard (2006) provides a good overview of operationalization and operational definitions.
3. I deliberately put the terms 'experts', 'objective/ly', 'reality' and 'neutral/ly' in inverted commas, as all of them are inherently problematic.

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6

Organizing and Processing Your Data: The Nuts and Bolts of Quantitative Analyses

Erez Levon

Chapter outline

In the previous chapter, you were introduced to the basic principles underlying quantitative research methods. You learned, for example, that quantitative tests employ deductive reasoning to examine predetermined hypotheses, and that these tests are subject to certain constraints, such as reliability and validity. In this chapter, we build upon this theoretical base, and discuss some of the concrete issues involved in the quantitative analysis of language. We begin in the first section ('What quantitative analyses do') with an extended discussion of how to construct hypotheses for quantitative investigation. We also examine the basic concepts required for testing these hypotheses. We then turn, in sections 'What quantitative method to use' and 'Processing the data', to a detailed exposition of two of the most common statistical tests used in linguistics, chi-square tests and t-tests. You will learn what these tests are, how to use them and what they can (and cannot) tell you. Finally, in the section 'You're not done yet: Interpreting your results', we look at how

to go about interpreting quantitative results and discuss some of the ways in which quantitative and qualitative methods can be brought together in linguistic research.

What quantitative analyses do

Quantitative analyses are all about *counting* something. In the first section of this chapter, we discuss what we mean when we talk about *counting* in an analytical or scientific sense. We then turn, in the remaining sections, to a detailed explanation of how we actually *do* that counting in linguistics research.

In order for something to be counted, two conditions are normally considered to be necessary: (a) what you want to count must itself be 'countable' (i.e. *quantifiable*) and (b) what you want to count must have the potential to be *variable* (i.e. be able to change). Imagine, for example, that you were conducting a poll on which issues most affected voters' choice of candidate in recent parliamentary elections. The condition of quantifiability requires that you *operationalize* the possible set of responses so that they can be counted in a clear and coherent way (see previous chapter). You may, for instance, decide that you will group responses into categories, such as 'environment', 'economy' and 'education', such that you give a certain structure to the diversity of responses you receive (this is typically called 'coding'). It is this structure that will then allow you to quantitatively analyse the results, by, for example, counting how many responses fall into each of your predetermined categories.

The condition of variability, however, is a more abstract and basic one. It requires, simply, that the possibility of variation exists in your response set. In your poll of voter motivations, this condition is met, since all voters are presumably not motivated by the same things. Now, you may find in conducting your poll that in fact all voters do claim to be motivated by the same issue, the 'environment', for example. This result, however, does not mean that the condition of variability is violated since they *could* have been motivated by other things, and it just so happens that they are all motivated by the same thing. The condition of variability is therefore a requirement about the *possible* existence of variation, and does not mean that variation will actually be found.

Because of this variability requirement, the things that we count in quantitative analyses are called *variables*. Let's take another example. Say we are interested in the colour of shoes people buy in a certain shop. The first thing we need to ask ourselves is whether this variable (shoe colour) is quantifiable. The answer is straightforwardly 'yes'. The second thing we need to ask ourselves is whether this variable is in fact variable. Once again, the answer is straightforwardly 'yes' (i.e. the possibility exists that not everyone will buy shoes of the same colour). With these two conditions met, we can proceed to quantitative analysis. Obviously, the first step is actually conducting the research. So, let's say that we spend a week in the shop noting down what colour shoes every customer buys. There are three shoe colour options: black, brown and red. We therefore have three options for the shoe colour variable. In addition, imagine we are also interested in gathering additional information about the customers, for example, whether or not they are wearing earrings. We can create two categories of customers, those with earrings and those without, and note the different colour shoes that each category of customers purchases.

After seven days of collecting data, we turn to the quantitative analyses. In terms of these analyses, we have several options. We may decide that we want to simply *describe* the situation in the shoe shop. To do so, we use what are called *descriptive statistics* (e.g. Sternstein, 1994). Descriptive statistics are indices that give information about the general shape or quality of the data, and include such things as the *mean* (i.e. average) and the *median* (i.e. middle) of the data. Using descriptive statistics, we could, for example, calculate the median number of black shoes purchased per day in the shop. Or, we could decide to analyse the data in more detail and calculate the mean number(s) of red shoes purchased per day by customers with and without earrings, respectively. What these calculations allow us to do is identify *potential* patterns in our data set. Say in calculating the mean number of red shoes purchased per day, we find that customers without earrings bought on average three times more pairs of red shoes per day (twenty-four pairs) than customers with earrings did (eight pairs). We therefore seem to have identified a pattern in which customers without earrings buy more red shoes than customers with earrings do. However, we are *unable* to make this kind of claim based solely on the descriptive statistics. In other words, we cannot know at this point whether what appears to be a pattern really is one or is just a product of chance. In order to try and determine whether there really is some meaningful correlation between red shoe buying and wearing earrings, we must turn to a different kind of statistical analysis, what is called *inferential statistics*.

Inferential statistics are designed to determine whether apparent patterns in a data set really are patterns – whether they are what we call *statistically significant*. It might be the case, for example, that the apparent pattern of people without earrings buying more red shoes than people with earrings is the result of the simple fact that there are more customers overall without earrings than customers with earrings. This would mean that the correlation between not wearing earrings and buying red shoes could simply be an artefact of the subject population of our study. Inferential statistics can test this possibility, and make predictions about the validity of the patterns observed. In other words, descriptive statistics allow us to define patterns in the data. Inferential statistics then allow us to *infer* whether those patterns truly exist in some kind of meaningful way.

In order to conduct inferential statistical analysis, we must first come up with a *hypothesis* (i.e. an educated guess) to be tested. This hypothesis is called the *experimental hypothesis*, and is normally derived from the patterns identified by the descriptive statistics. An experimental hypothesis always takes the form of a statement that a certain variable (e.g. number of red shoes purchased) is affected in a predictable and systematic way by some other variable (e.g. wearing earrings). In this scenario, the variable that gets affected is called the *dependent* variable; that is, it *depends* on something else. The thing (or things) that the dependent variable depends on is (are) called the *independent* variable(s). As a general rule, experimental hypotheses make the claim that a relationship exists between a dependent variable and one or more independent variables, such that the independent variable(s) affect the dependent variable in some predictable way. In the current example, then, the experimental hypothesis would be that buying red shoes (dependent variable) is in some predictable way affected by whether or not the buyer wears earrings (independent variable).

Experimental hypotheses never exist alone, but are instead always paired up with their polar opposite, what we call the *null hypothesis*. Null hypotheses are in a sense the counter-claim of experimental hypotheses; null hypotheses predict that *no* relationship exists between the dependent and independent variables. For our example, then, the null hypothesis would be that there is no relationship between red shoe buying and wearing earrings. Interestingly, in quantitative analyses, we always test the *null* hypothesis, not the experimental one. In other words, we examine whether there seems to be no relationship at all between our dependent and independent variables. If through our analyses of the null hypothesis, we determine that there is *not no* relationship (note the double negative), then we can claim that a

relationship between the dependent and independent variable(s) does seem to exist (i.e. that the experimental hypothesis may be true).

You will notice that I state that the best our analyses can do is tell us that the experimental hypothesis *may* be true, not that it necessarily is true. This is because inferential statistics provide a *probabilistic* measure of the *likelihood* that we would obtain the data we observe if the null hypothesis were true. To use our example, an inferential test would examine the probability (or likelihood) of us observing that people without earrings buy three times as many red shoes as people with earrings do if the null hypothesis is true and there is no relationship between wearing earrings and the colour of shoes that are bought. This 'likelihood' is expressed by a probability figure (abbreviated as 'p = X', where 'X' is some percentage). The easiest way to think about this p-value is as a measure of how often we would expect to observe the patterns that we find in our data if there is no relationship between the dependent and independent variables. So, for example, a statistical test can predict that 99 times out of a 100 we would obtain the data we observe when the null hypothesis is true and there is no relationship between the dependent and independent variable(s).We would write this statistical prediction as 'p = 0.99'. Alternatively, a statistical test can predict that only 1 time out of a 100 would we obtain the data that we observe if the null hypothesis were true. This time, our 'p-value' would be 'p = 0.01'. As a convention in the humanities and social sciences, we take a prediction of 5 times out of 100 ($p = 0.05$) as a cut-off point. Greater than 5 out of 100 ($p > 0.05$), we cannot reject the null hypothesis; less than or equal to 5 out of 100 ($p \leq 0.05$), we can reject the null hypothesis. Since the null and experimental hypotheses are two sides of the same coin, when we *reject* the null hypothesis, we conversely are able to support the experimental hypothesis. In this situation, we claim that the quantitative analysis was statistically significant. What this significance means is that there is less than a 5 percent chance that we would observe the patterns that we find if the null hypothesis were true. As a result, we are at least 95 percent sure that the patterns in our data are not accidental and that a relationship does in fact exist between our dependent and independent variable(s).

Up until now, we have been discussing the theoretical concepts underlying quantitative analysis in somewhat abstract terms. In the next two sections, we will illustrate these concepts with concrete linguistic examples, and see how experimental and null hypotheses work in action. Before we get to that, however, make sure that you have a good grasp of the basic schematic structure of quantitative analyses, summarized as follows:

- We identify the variable of interest (dependent variable).
- We use descriptive statistics to get ideas about potential patterns in the data.
- These patterns then help us to devise experimental and null hypotheses.
- We then use inferential statistics to test the null hypothesis.
- If these inferential statistics return a p-value less than or equal to 0.05, then we have statistical significance and can reject the null hypothesis.
- If the p-value is greater than 0.05, then the null hypothesis cannot be rejected and we are unable to support the claims made by the experimental hypothesis.

What quantitative method to use

There are hundreds of different inferential statistical tests than can be used in quantitative analyses. The choice of which test to use depends primarily on the kind and number of variables in your data set, and the sorts of relationships that exist between the variables you consider. In this section, we briefly go over some of the basic concepts involved in choosing an appropriate statistical test, before turning to a more detailed examination of two of the more commonly used tests.

In general, we distinguish between two basic kinds of variables: *categorical* variables and *continuous* variables. Categorical variables (also known as discrete variables) are those variables whose values can be easily separated into distinct categories. In our example from above, shoe colour purchased is a categorical variable since we can group the available choices (black *or* brown *or* red) into distinct, non-overlapping groups. Similarly, whether or not a customer is wearing earrings is also a categorical variable. Categorical variables are common in linguistics, especially when studying phenomena such as allophony (e.g. alveolar *or* dental realization of /t/) and allomorphy (e.g. presence *or* absence of third person singular verb marking in English). Continuous variables (also known as interval variables), however, cannot be easily classified into categories in this way. Rather, they are variables whose values exist on a mathematical scale. A canonical example of a continuous variable is age, where one variable value (e.g. thirty-six) is straightforwardly larger than another (e.g. twenty-four) and smaller than a third (e.g. forty-five). The difference between these values is also mathematically meaningful. We can say, for example, that someone who is thirty-six years old is closer

in age to someone who is forty-five (e.g. nine years difference) than she is to someone who is twenty-four (e.g. twelve years difference). Now, we obviously can create categories for continuous variables like age, deciding, for example, to label 0–24 years old as 'younger', 25–60 years old as 'middle-aged' and 60+ years old as 'older'. Yet, these categories are in a certain sense arbitrary, and are not a part of the age measurement itself. Rather, what we are doing in creating age categories is transforming a continuous variable into a categorical one (see Rasinger's discussion in the previous chapter). In linguistic research, we also often analyse continuous variables, whether in terms of various social aspects (e.g. income) or linguistic ones (e.g. vowel formants, utterance length).

Different statistical tests are used depending on whether the variables you are examining (both independent and dependent) are continuous or categorical. For the sake of simplicity, in this chapter we will only consider cases where the independent variables are categorical. Statistical tests exist for examining continuous independent variables (e.g. correlation analyses) or for examining a combination of continuous and categorical independent variables (e.g. generalized linear models, linear mixed models); these tests, however, go beyond the scope of what we are able to do here (see, for example, McCullagh and Nelder, 1989; Johnson, 2008). In addition, we will also only consider cases that involve *one* dependent variable and *one* independent variable. Again, tests exist for examining multiple independent and dependent variables (e.g. ANOVAs, MANOVAs, linear regressions – see Bryman and Cramer, 2008), but these tests require a more advanced explanation than we can provide here. We will therefore restrict our discussion to situations in which there is *one* independent variable and *one* dependent variable and the independent variable is categorical. In situations of this kind, two possibilities arise: (a) the dependent variable can be categorical or (b) the dependent variable can be continuous. When the dependent variable is categorical, the statistical test we use is called a *chi-square test* (sometimes abbreviated as χ^2). When the dependent variable is continuous, the statistical test we use is called a *t-test*.

Chi-square tests examine the distribution of data across the categories of our analysis. The goal of chi-squares is to determine whether the proportional distribution we observe in our sample population (e.g. X percent of values in one category, Y percent of values in another) is significantly different from the distribution we would expect to find in any population of the same size and shape. In other words, chi-square tests calculate what the distribution of variable values would be if the null hypothesis were true for

our sample. They then compare this 'null' distribution to the distribution that we actually found in collecting our data, and determine whether the two are significantly different from one another. So recall our fictitious example from above, where people without earrings bought three times as many red shoes per day as people with earrings. A chi-square test would be able to tell us whether this descriptive difference is in fact a significant one (i.e. the experimental hypothesis) or is instead just a result of the fact, for example, that three times as many people came into the shop without earrings than did people with earrings (i.e. the null hypothesis). In the next section, we will go through linguistic examples of chi-square tests in detail, and you will learn how to perform the mathematical calculations required for these tests.

Because they compare proportional distributions across *categories*, chi-square tests cannot be used to examine data from continuous variables where no *a priori* categories exist. Instead, when dependent variables are continuous we examine them through the use of t-tests. In order to understand what t-tests actually do, we must first think about what the distributions of continuous variables look like. Take any continuous variable: height, for example. We can measure the height of a sample population of 10 people, and come up with the following data set (in centimetres): 154, 163, 166, 166, 174, 176, 179, 181, 182, 186. There are many ways in which we can *describe* this data set. We can look at the *range* of values (32 cm). We can also determine the median height in our sample (175 cm). Yet one of the most common measures for describing a series of continuous data is the *mean* (i.e. average) and *standard deviation*. The mean refers to an imagined central point of the data set; it is a figure that can be used to represent the overall character of the data. In our current example, the mean height of the sample population is 172.7 cm. The standard deviation is then a measure of how much the data varies around that mean; that is, how well the mean represents the actual variation found in the data. Here, the standard deviation is 10.1 cm. For the mean to be a good representative index of a sample population, we want the majority of the data to be clustered within ±1 standard deviation from the mean. This is the case in our example above, where 8 out of the 10 values are within 1 standard deviation of the mean (i.e. 172.7 ± 10.1).[1]

What t-tests do is examine the means and standard deviations of two sample populations in order to determine whether the populations are significantly different from one another. At first glance, this could seem like a relatively easy task. We could, for example, compare our sample population above and its mean height of 172.7 cm with another sample population of 10 people

who have a mean height of 165.4 cm. Just by looking at these raw descriptive statistics, it would seem that the two populations have significantly different means. Imagine, though, that the population whose mean height is 165.4 cm has a standard deviation of 21.6 cm. This could mean that the mean value of 165.4 may not be very representative of the actual height distribution across the population (i.e. the standard deviation is relatively large). There may in fact be many people who are much taller than the mean of 165.4 cm, meaning that the actual distribution of this second population may not be as different from the distribution of the first population as it initially seems. T-tests examine this possibility and determine whether the means of two sample populations are in fact significantly different from one another (i.e. the experimental hypothesis) or not (i.e. the null hypothesis).

Before moving on to the next section, remember that the most important considerations to take into account when deciding which statistical test to use are the number and kind of variables you are examining. As illustrated schematically in Figure 6.1, you should first ask yourself how many dependent and independent variables you have. If you have more than one of either, you cannot use t-tests or chi-squares and would instead need a more sophisticated test (such as an ANOVA or a regression model). If, however, you only have one of each, you should then ask yourself whether

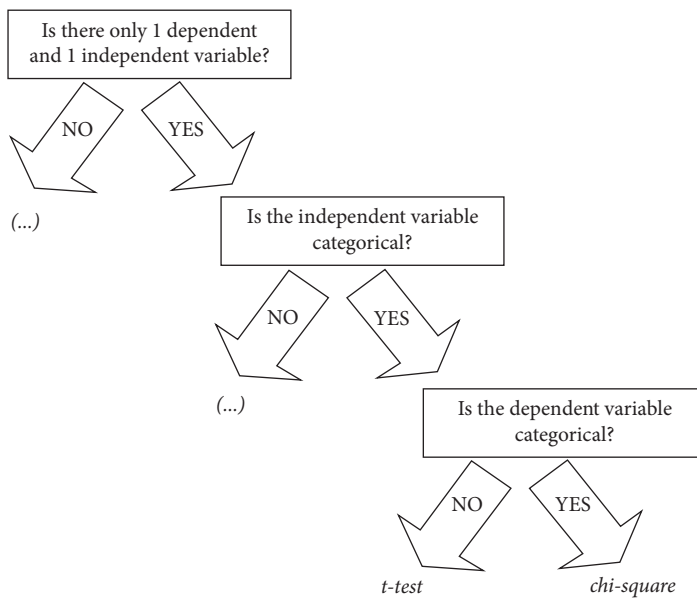

Figure 6.1 Decision tree for statistical tests.

your independent variable is categorical. If not, you also cannot use chi-squares or t-tests and would again need a different statistical test (such as a regression or correlation). Finally, if you have only one dependent and one independent variable, and your independent variable is categorical, you then ask yourself whether your dependent variable is categorical or continuous. If continuous, you would use a t-test to analyse your data; if categorical, you would use a chi-square. With this decision tree in mind, let us now turn to a detailed illustration of how chi-squares and t-tests are used in linguistic research.

Processing the data

In this section, we will apply the ideas and concepts introduced above to the analysis of actual linguistic data. In the interest of demonstrating the range of applicability of chi-square tests and t-tests, we will see how to apply these two methods to linguistic research based on both natural language data (i.e. recordings) and questionnaire-based data. Note that the discussion below assumes that the collected data is ready to be processed. In other words, we will not go through the steps required for collecting and coding the raw data (but see Rasinger, this volume), and instead only describe the methods to follow once the data is ready to be examined.

Chi-square tests

We begin with an illustration of chi-square tests as they can be applied to natural language data. For the purpose of this illustration, we use data drawn from Sharma's (2005) examination of definite and indefinite article use among speakers of Indian English. In the data we consider, Sharma investigates speakers' article use in sentences like the following (adapted from Platt et al., 1984, cited in Sharma, 2005: 539):

(1) I want to spend some time in *a* village, definitely if I get *a* chance.

The article of interest to us is the indefinite *a*, as in 'a village' and 'a chance'. In Hindi, the L1 of the speakers Sharma considers, noun phrases (NPs) like 'a village' and 'a chance' (what we call *non-specific indefinites*) take no article. Among Indian English speakers, then, what is often found is an apparent L1

transfer pattern, where the indefinite article system of Hindi is calqued into English. The sentence in (1) thus becomes as in (2):

(2) I want to spend some time in *ø* village, definitely if I get *ø* chance.

This calquing of the Hindi article system into English is a variable process, and it is the variability that is the focus of Sharma's analysis. In her research, Sharma hypothesizes that variation in the use of Hindi-derived articles in English is related to speakers' levels of education and functional use of English (where lower levels of education in English and experience speaking in English would be correlated with an increased use of Hindi-derived articles). To test the experimental hypothesis (i.e. that educational and functional use of English influences the use of Hindi-derived articles), Sharma examines data drawn from twelve Indian English speakers. She divides these speakers into three groups based on their functional and educational mastery of English, where group 1 consists of those with the lowest levels of mastery and group 3 of those with the highest. In this scenario, the dependent variable is *use of Hindi-derived articles* and the independent variable is *speakers' educational and functional level in English* (i.e. group 1, 2 or 3). Since both the dependent and the independent variables are categorical, a chi-square test is appropriate.

Table 6.1 presents the results found in Sharma (2005). Note that the numbers in Table 6.1 refer to *actual* (also called *raw*) numbers of tokens (or examples of the target variable), not to proportions or percentages. This is important since chi-square tests must always be performed on raw numbers like these, and never on percentages. Another thing to keep in mind when first considering your data is the amount of data necessary. Students often ask 'how many tokens do I need to collect?' While the answer in quantitative research is usually 'the more the better', for chi-square tests, a good benchmark is at least five tokens per cell or a total of five times the

Table 6.1 Null article use with non-specific indefinite NPs

Observed	Null article	Overt article	Total
Group 1	34	8	42
Group 2	117	89	206
Group 3	26	106	132
Total	177	203	380

Adapted from Sharma, 2005: 551.

total number of cells. In Table 6.1, there are six total data cells (excluding the Total row and column). That means that in order for the chi-square test to be robust, we need at least thirty tokens. We have a total of 380 tokens and no cells with less than 5 tokens, so we have no problems in terms of amount of data. So to recap, the first thing you do when conducting a chi-square test is to create your table of *observed* data (i.e. the data that you actually found). Make sure that you make that table using raw data (not percentages), and also make sure to include row and column totals. Finally, verify that you have at least fives tokens in each cell and/or a total number of tokens that is greater than five times the total number of cells.

The next thing to do is to construct your table of *expected* values. Recall that chi-square tests examine the extent to which the distribution of your observed data varies from the distribution that would be expected if the independent variable had no effect on the dependent variable (i.e. the null hypothesis). Constructing a table of expected values is relatively straightforward (if a bit tedious). What you do is for every cell, you multiply that cell's *column total* by that cell's *row total* and then divide that number by the *grand total* of values. This process is illustrated in Table 6.2.

You will notice in Table 6.2 that the row and column totals for the expected values remain the same. This is because what you have done is construct the expected distribution of data for a population of the same size and shape. This is what allows us to compare this expected distribution in Table 6.2 to the observed distribution in Table 6.1. In order to actually make this comparison, what we need to do is compute the chi-square statistic. Once again, the computation of a chi-square statistic is rather straightforward (if again a bit tedious). Basically, for every cell, we compute the *difference* between the observed value and the expected value (i.e. observed – expected). We then *square* this difference (i.e. raise the difference to the second power).

Table 6.2 Expected values for null article use of non-specific indefinite NPs

Expected	Null article	Overt article	Total
Group 1	(42 × 117)/380 = 19.6	(42 × 203)/380 = 22.4	42
Group 2	(206 × 177)/380 = 96	(206 × 203)/380 = 110	206
Group 3	(132 × 177)/380 = 61.5	(132 × 203)/380 = 70.5	132
Total	177	203	380

Finally, we *divide* this squared difference by the *expected value*. After we have done this for each cell, we simply *add* up all the resulting figures for each cell. This new total figure is our chi-square statistic. This entire calculation can be expressed mathematically as in (3):

(3) $$\Sigma \frac{(Observed - Expected)^2}{Expected}$$

Doing the calculations with our current example, we get the following:

(4)

(a)

$$\chi^2 = \frac{(34-19.6)^2}{19.6} + \frac{(8-22.4)^2}{22.4} + \frac{(117-96)^2}{96} + \frac{(89-110)^2}{110} + \frac{(26-61.5)^2}{61.5} + \frac{(106-70.5)^2}{70.5}$$

(b)

$$\chi^2 = \frac{14.4^2}{19.6} + \frac{-14.4^2}{22.4} + \frac{21^2}{96} + \frac{-21^2}{110} + \frac{-35.5^2}{61.5} + \frac{35.5^2}{70.5}$$

(c)

$$\chi^2 = \frac{207.4}{19.6} + \frac{207.4}{22.4} + \frac{441}{96} + \frac{441}{110} + \frac{1260.3}{61.5} + \frac{1260.3}{70.5}$$

(d)

$$\chi^2 = 10.6 + 9.3 + 4.6 + 4.0 + 20.5 + 17.9$$

(e)

$$\chi^2 = 66.9$$

We see from the calculations in (4a–e) above that the chi-square statistic associated with Tables 6.1 and 6.2 is 66.9. Now the last thing we need to do is to determine the *p-value* that corresponds to this chi-square. In order to determine the p-value, we need to know one last thing about the distributions we are examining, and that is what is called the distribution's *degrees of freedom* (abbreviated as *df*). It is not necessary for us to get into a definition of what degrees of freedom represent in a mathematical sense. You can just think of them as the general parameters under which the statistical test holds true. All you need to know to finish the chi-square calculations is the *number* of degrees of freedom present. We calculate this number by using the following simple formula: df = (# of chart rows − 1) × (# chart columns − 1). For our current example, this translates to: df = (3 − 1) × (2 − 1) = 2.

Now armed with our chi-square statistic (66.9) and our df (2), what we do is turn to a chi-square *significance chart*.[2] These charts, which can be found

Table 6.3 Chi-square significance values

df	0.10	0.05	0.025	0.01	0.001
1	2.706	3.841	5.024	6.635	10.828
2	4.605	5.991	7.378	9.210	13.816
3	6.251	7.815	9.348	11.345	16.266
4	7.779	9.488	11.143	13.277	18.467
5	9.236	11.070	12.833	15.086	20.515

in the back of all statistics textbooks and online, provide the critical p-values for chi-square statistics with x degrees of freedom. This may sound complex, but all it means is that the chart can tell us what p-value is associated with a chi-square statistic of 66.9 with 2 degrees of freedom. In Table 6.3, I reproduce the first five lines of this kind of chart. In Table 6.3, the numbers across the top row (0.10, 0.05, etc.) represent p-values (i.e. the chance that the null hypothesis is true). The numbers down the left-hand column (1, 2, etc.) represent degrees of freedom. What we do with this chart is locate the row that corresponds to how ever many degrees of freedom we have in our analysis. In our case, that is two. When we look at the first entry in this row, we see the number 4.605. This means that in order for an analysis with two degrees of freedom to have a p-value of 0.10, the chi-square statistic must be *at least* 4.605. Recall that the standard p-value required in the humanities and social sciences is 0.05. When we look at the relevant requirement for this p-value, we see that we need to have a chi-square statistic that is at least 5.991. With our chi-square value of 66.9, we go above and beyond this requirement and thus can claim statistically significant findings.[3]

What does this statistical significance mean? It means that in fewer than 5 cases out of 100 would we expect to obtain the data we observe if the null hypothesis were true. That indicates that we have *quantitative* support for our experimental hypothesis that educational and functional level in English affects speakers' use of null non-specific indefinite articles. If we were writing up this result in an essay or presenting it in an academic setting, we would therefore be able to talk about the *descriptive* facts (that the group least functionally proficient in English, for example, uses more than four times as many null articles than overt articles) and state that these facts are *significant* at the $p < 0.05$ level. In essence, then, what the chi-square test does (like all inferential statistical tests) is provide a *predictive* power to the descriptive facts and tell you that there is at least a 95 percent chance that the independent variable does in fact have an effect on the dependent variable.

Let's go through another example of chi-square analysis, this time with data drawn from language questionnaires. Note that even though the data comes from a different source, the procedure for conducting the chi-square test is exactly the same. The data that we will use this time is drawn from Blake and Cutler's (2003) analysis of New York City high school teachers' attitudes to African American English (AAE). In this study, Blake and Cutler surveyed eighty-eight teachers from five different New York City high schools: what they call Bilingualism High (BH), Inner City High (ICH), Self-Choice High (SCH), Upperside High (UH) and West Indian High (WIH). Their goal in the study was to examine whether the different demographic compositions and educational offerings of the schools had an effect on teachers' affective evaluations of AAE as a linguistic system. The experimental hypothesis is therefore that *school has an effect on teachers' affective reactions to AAE* (the null hypothesis is that *there is no such effect*). Data was collected from a questionnaire that contained nineteen statements, to which respondents indicated their relative agreement or disagreement on a five-point Likert scale (see Rasinger, this volume). For ease of quantitative comparison, Blake and Cutler re-coded the Likert results into a binary system of 'agree' and 'disagree' responses. We will only concern ourselves here with the results to the statement 'African American English (Ebonics) is a form of English.' These results are presented in Table 6.4. You will notice that Table 6.4 is similar to Table 6.1, in that it lists the dependent variable across the columns and the independent variable down the rows. Totals are also given for all columns and rows. The first thing to do with the table is check that raw data is listed (not percentages) and that there is enough data to satisfy the requirement of five times the total number of cells. Both of these conditions are met. The next step is then the calculation of the expected frequencies, given the size and shape of the subject population. Remember that we do

Table 6.4 Responses to the question 'AAE is a form of English'

Observed	Agree	Disagree	Total
BH	20	3	23
ICH	13	4	17
SCH	5	6	11
UH	13	10	23
WIH	11	3	14
Total	62	26	88

Adapted from Blake and Cutler, 2003: 176.

Table 6.5 Expected values for the question 'AAE is a form of English'

Observed	Agree	Disagree	Total
BH	16.2	6.8	23
ICH	11.99	5.01	17
SCH	7.75	3.25	11
UH	16.2	6.8	23
WIH	9.86	4.14	14
Total	62	26	88

this by multiplying the row total and the column total for each cell and dividing that number by the grand total. In the interest of space, I will not produce those calculations here. If, however, you are unsure of where the values in Table 6.5 come from, have another look at the relevant discussion of Tables 6.1 and 6.2.

With the expected values as given in Table 6.5, we can proceed directly to the calculation of the chi-square statistic. Recall that we do so by taking the difference between the observed and expected values for each cell and squaring it. We then divide this number by the expected value for that cell. Once we have repeated this process for all of the cells, we add up each of the numbers obtained. Doing this for the values in Tables 6.4 and 6.5 yields a chi-square statistic of 9.19. Now, the last thing we need to do is calculate the number of degrees of freedom so that we can see whether this value of 9.19 is large enough to be statistically significant. In Tables 6.4 and 6.5, we have five rows and two columns. We therefore have four degrees of freedom in our analysis ($df = (5 - 1) \times (2 - 1)$). If we refer back to the chi-square significance chart given in Table 6.3, we see that in order to be significant at the $p = 0.05$ level, a chi-square value with degrees of freedom must be at least 9.488. Our result is, therefore, technically non-statistically significant.[4] What this means is that it is impossible for us to reject the null hypothesis. We are therefore unable to support the experimental hypothesis that a relationship exists between high school and teachers' attitudes on the question of whether AAE is a form of English. In order to continue investigating this question, we would be forced to conduct further research.

Before moving on to the next subsection, make sure that you understand how to proceed through each of the steps of a chi-square analysis, as listed in the checklist below:

- Create table of observed frequencies (be sure to include row and column totals).

- Make sure that the numbers in the Observed table represent raw data and not percentages; confirm that there is enough data for the chi-square to be robust.
- Compute the relevant values for the Expected table.
- Using the formula given in (3) on page 155, calculate the chi-square statistic.
- Calculate the number of degrees of freedom (df).
- Consult a chi-square significance chart to determine whether the chi-square statistic obtained is significant at the $p \leq 0.05$ level.

T-tests

We now turn to the application of t-tests. Recall that t-tests are what we use to examine, *continuous* dependent variables (i.e. those whose values are not inherently categorized). We take our first example from Fought's (1999) analysis of vowel fronting among Latino speakers in Los Angeles. Fought's interest is in whether Latino speakers are taking part in the widely studied California Vowel Shift or whether this shift is arguably a property of Anglo speakers only. The most salient aspect of the California Vowel Shift, and the feature upon which Fought focuses, is the movement of the high back rounded vowel /u/ forward in the vowel space, to the point where it can almost begin to crowd the high front vowel /i/. To test this, Fought calculated a ratio that compared each of twenty-six speakers' second formant frequencies (F2) for /u/ with their F2s for /i/. Doing so allowed her to gauge the position of each speaker's /u/ vowel in relation to the rest of their vowel space.

Fought hypothesizes that /u/ fronting may not in fact be linked to ethnicity (i.e. Anglo versus Latino), but may instead be related to a speaker's social class. The experimental hypothesis she proposes is that speakers of a higher social class will show more /u/ fronting than those of a lower social class (with the null hypothesis that there will be no difference). Fought divides her speaker sample into two basic categories: Middle Class and Working Class (see Table 6.6).[5] These class categories represent the *independent* variable, the one that she hypothesizes has an effect on the *dependent* variable, which is /u/ fronting. (It should be clear that the independent variable is categorical and that the dependent variable is continuous; if not, see the discussion in the section 'What quantitative method to use'.)

The first thing to do when conducting a t-test is to calculate the *mean* and *standard deviation* for each of the two groups. Recall from the section 'What quantitative method to use' that what a t-test does is examine whether

Table 6.6 Ratio of /u/ to /i/ F2s

Middle class	Working class
0.77	0.71
0.76	0.71
0.72	0.7
0.71	0.66
0.69	0.64
0.67	0.63
0.67	0.61
0.66	0.59
0.65	0.59
0.64	0.52
0.62	0.51
0.6	0.46
0.48	0.46

Adapted from Fought, 1999: 14.

two sets of continuous data have significantly different distributions. It does this by comparing the mean and standard deviation of one group with the mean and standard deviation of the other. To calculate the mean of each group, we simply find the average (i.e. add up each of the values and divide by the total number of values). In our example, the mean of the Middle-Class group is 0.665 and the mean of the Working-Class group is 0.599. Calculating the standard deviations is somewhat more involved, and I do not have the space to describe the process in detail here. With these descriptive statistics in hand, we can turn to the computation of the t-test statistic. There are multiple computational formulas that can be used for t-tests and your choice of which one to use depends on two things. First, you need to decide if you have *paired* or *unpaired* data. Paired data refer to situations where there is some natural relationship between subjects in each of the two groups before the data is even collected. The most common example of paired data is what is called a *repeated measures* study, where you measure a variable value on the same person twice (usually before and after some experimental treatment). We will not deal with paired measures t-tests here (but see Urdan, 2005). If you have unpaired data (as we do here), you need to determine whether the two groups in your analysis are equal or unequal in size. In Table 6.6, we see that both the Middle-Class and Working-Class groups have thirteen members and so are equal in size. We will therefore use

the formula for computing the t-test statistic for independent (i.e. unpaired) equal samples. This formula is presented in (5).

(5) $$t = \frac{\bar{x}_1 - \bar{x}_2}{s_{\bar{x}_1\bar{x}_2}} \quad \text{where} \quad s_{\bar{x}_1\bar{x}_2} = \sqrt{\frac{s_1^2 + s_2^2}{n}}$$

In this formula $\bar{x}$ refers to the mean of each of the groups, with the subscripts 1 and 2 referring to the groups themselves. The t-test statistic is calculated by taking the difference of these two means (i.e. group 2 mean subtracted from the group 1 mean) and then dividing that difference by what is called the *pooled standard deviation* (*s* stands for standard deviation). This pooled standard deviation is calculated by adding the squares of the standard deviations of each of the groups (i.e. s_1 and s_2), dividing that sum by the number in each group and then taking the square root of that quotient. This all sounds much more complicated than it actually is. To see how this formula works in action, let's go through our example from above and calculate the t-statistic for the data in Table 6.6.

(6) (a) $$t = \frac{0.665 - 0.559}{\sqrt{\frac{0.075^2 + 0.089^2}{13}}}$$

(b) $$t = \frac{0.665 - 0.599}{\sqrt{\frac{0.0056 + 0.0079}{13}}}$$

(c) $$t = \frac{0.665 - 0.559}{\sqrt{\frac{0.0135}{13}}}$$

(d) $$t = \frac{0.665 - 0.559}{\sqrt{0.001}}$$

(e) $$t = \frac{0.665 - 0.559}{0.032}$$

(f) $$t = \frac{0.066}{0.032}$$

(g) $$t = 2.063$$

In (6a), we substitute the values for the mean and standard deviation for each group into the formula given in (5). In the numerator of (6a), we subtract the mean value of the Working-Class group (0.599) from the mean value of the Middle-Class group (0.665). In the denominator, we take the square root of a fraction composed of, in the numerator, the sum of the squares of the standard deviations for the Middle-Class group (0.075) and the Working-Class group (0.089) and, in the denominator, the number of people in each group (13). In (6b–6f), we perform the arithmetic calculations, which result in the t-value of 2.063 (6g).

Now that we have this t-value, we once again need to calculate the degrees of freedom for our analysis. Just as with the chi-square tests above, the degrees of freedom are what allow us to determine whether the t-value obtained reaches a level of statistical significance. For t-tests of independent samples with equal sample size, we calculate the degrees of freedom by taking the *total* number of subjects in both groups and subtracting 2. In our case, then, df = 26 − 2 = 24. Knowing now the t-statistic and the degrees of freedom, we consult a t-test significance chart. This chart is just like the one described above for chi-square statistics, except that it is used for evaluating the results of t-tests (note: you *cannot* use a chi-square significance chart for evaluating t-tests and vice versa). I have reproduced the relevant row from a t-test significance chart in (7).

(7)

df	0.1	0.05	0.01	0.001
24	1.71	2.06	2.80	3.75

We see in (7) the row from the t-test significance table for twenty-four degrees of freedom. Going across the row to the 0.05 column, we see that our calculated t-value of 2.063 is greater (if only slightly) than the required 2.06. This means that our result *is* statistically significant and that our analysis is at least 95 percent sure that the null hypothesis can be rejected. In other words, Fought's experimental hypothesis that Middle-Class speakers show higher levels of /u/-fronting than Working-Class speakers appears to be borne out.

Let's have a look at another example of t-tests, this time from questionnaire-based data. For this example, I take inspiration from Lambert et al.'s (1960) germinal study of language attitudes towards French and English in Montreal.[6] In this study, Lambert and colleagues were interested in examining the affective reactions that residents of Montreal (both French-speaking and English-speaking) have to speakers of the two languages. To hone in on attitudes towards language itself, Lambert and colleagues

conducted what is called a *matched-guise experiment*. Listeners were told that they were going to hear ten recorded male voices, five speaking French and five speaking English. What they were not told was that eight of these voices belonged to only four bilingual speakers. In other words, four French-English bilinguals were recorded once reading a passage in English and once reading a passage in French (the other two recordings, one in French and one in English, were decoys and were not considered in the analysis). So, in reality, what listeners heard was two recordings from each of four different speakers, where the only difference between the two recordings for each speaker was the language spoken (i.e. French or English). By examining whether listeners' reactions to the speakers changed depending on whether the speaker was speaking in French or in English, Lambert and colleagues were able to tease out listeners' affective judgements of the *languages* under consideration, not the *speakers*.

The subject population comprised 130 listeners, 66 of whom were English-speaking and 64 of whom were French-speaking. After hearing each recording, the listeners were asked to rate the voice of each speaker on a variety of personality traits (e.g. height, good looks, intelligence, sense of humour). These ratings were done on a six-point Likert scale that ranged from '1/very little' to '6/ very much'. Lambert and colleagues then tallied up the listeners' ratings of each recording. A hypothetical result of these tallies for the trait 'intelligence' for one of the English-speaking recordings is presented in Table 6.7.

In Table 6.7, we see that the English-speaking listeners gave the English recording an average score of 2.39 (which would translate to something like 'not very intelligent'). The French-speaking listeners, however, gave the English recording an average score of 4.52 (or something like 'relatively intelligent'). On the face of it, we would seem to have a difference between how French- and English-speaking listeners judged the intelligence of the speaker for this English recording. To test, however, whether that difference is a significant one, we need to conduct a t-test.

Table 6.7 Hypothetical result for listeners' ratings of 'Intelligence' in Lambert et al. (1960)

	Mean score	Standard deviation	N =
English-speaking listeners	2.39	1.08	66
French-speaking listeners	4.52	1.18	64

The first thing we do is decide whether the two groups in our analysis (French- and English-speaking listeners) are *paired*. We can decide that they are not (i.e. there is no inherent relationship between the groups). Next, we need to determine whether the two groups are of equal size. In this example, they are not equal in size: the English-listener group has sixty-six people, while the French-listener group has sixty-four people. What this means is that we do not use the formula for calculating the t-statistic as in (5), but instead use the one given in (8).[7]

$$(8) \qquad t = \frac{\bar{x}_1 - \bar{x}_2}{\left(s_{\bar{x}_1\bar{x}_2}\right)\left(\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}\right)} \quad \text{where} \quad s_{\bar{x}_1\bar{x}_2} = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{(n_1 + n_2) - 2}}$$

The equation in (8) is slightly more complicated than the equation we saw in (5). This is because the sample sizes are unequal, and so the t-test needs to take the size of each sample into account. You should, however, be familiar with all of the mathematical symbols in the equation. The means for each group are still represented by $\bar{x}$ and the standard deviation by s_1 and s_2. In (8), we also see n_1 and n_2, which refer to the size of groups 1 and 2, respectively. Plugging the values from Table 6.7 into the equation in (8), we get the following:

$$(9) \qquad t = \frac{2.39 - 4.52}{\left(\sqrt{\frac{(66-1)(1.08)^2 + (64-1)(1.18)^2}{(66+64)-2}}\right)\left(\sqrt{\frac{1}{66} + \frac{1}{64}}\right)}$$

Before moving on, make sure that you understand where each of the values in (9) comes from (note: all of the information you need is in Table 6.7). We will not take the time to go through all of the arithmetic steps of the calculation. If we were to do so, however, the result we would get is $t = -10.7$. With the t-statistic computed, we now need to determine the number of degrees of freedom. We do so here in exactly the same way as we did above, by taking the total number of subjects in both groups and subtracting 2: df = (66 + 64) – 2 = 128. If we were then to look at a t-test significance chart, we would find that a t-statistic of 10.7 (note that we ignore the negative sign and treat the t-value as if the result were positive) with 128 degrees of freedom is significant at the $p < 0.001$ level. This means that we would expect to obtain this data fewer than 1 time out of 1000 if the null hypothesis were true. We can therefore claim with confidence that English-speaking listeners and French-speaking listeners do in fact rate the intelligence levels of this English recording differently.

Having now gone through two examples of t-tests, one with natural language data and the other with questionnaire-based data, make sure that you understand how to proceed through each of the steps of a t-test, as listed in the checklist below:

- Identify the two groups to be compared (this should correspond to the two possible values of your independent variable).
- Calculate the mean and standard deviation for both groups.
- Determine whether the data in your two groups are paired or unpaired (recall that we have only gone over the procedure for *unpaired* data).
- Determine whether your two groups are equal in size; choose the correct formula for calculating the t-test based on whether the sample sizes are equal (as in (5)) or unequal (as in (8)).
- Calculate the t-statistic using the appropriate formula.
- Calculate the number of degrees of freedom.
- Consult a t-test significance chart to determine whether your finding is statistically significant at the $p \leq 0.05$ level.

Resources for quantitative analysis

Even though we have just spent quite a bit of time going through the detailed calculations involved in t-tests and chi-square analyses, most researchers do not work these calculations out on their own by hand. This is both because of the time it can take and because of the likelihood of human error in all of the arithmetic computations. There are hundreds of electronic resources for running t-tests and chi-square tests, including both spreadsheet and statistical analysis software and various internet-based calculators (a search for 't-test calculator' on an internet search engine, for example, will turn up hundreds of responses). Though you will likely make use of these resources in your future work, it is important that you understand where the chi-square statistic or the p-value that a computer program may provide you with comes from. Many students end up relying too heavily on the results of statistical tests without considering the explanatory limits of those tests. This can cause them to make false or overgeneralized claims that are not substantiated by their analyses. Knowing what steps the computer is taking to calculate a given number gives you better insight into what that number actually means and what it can (and cannot) tell you. By having learned how to calculate both t-tests and chi-squares by hand, you are now better

prepared to *interpret* the results of quantitative analyses, which is the subject of the next and final section.

You're not done yet: Interpreting your results

Determining statistical significance is an important, if not crucial, step in quantitative research. It is, however, only the first step in your analysis. Once all the calculations are done and you have found that your analysis is in fact significant at the $p \leq 0.05$ level, what you then need to do is decide what that result means, if it means anything at all. This is what we mean when we talk about interpreting results.

Let's reconsider Fought's data with respect to /u/-fronting among Latinos in Los Angeles. Recall that our t-test showed that speakers in the Middle-Class group have more fronted /u/ vowels (with an average /u/ to /i/ F2 ratio of 0.665) than speakers in the Working-Class group (with an average /u/ to /i/ F2 ratio of 0.559). The first thing we want to ask ourselves in interpreting this result is whether it really represents a difference that is large enough to be salient in the real world. While the quantitative analysis can tell us that mathematically an average of 0.665 is significantly larger than an average of 0.559, the question remains as to whether somebody just walking down the street would be able to hear that difference. In other words, *statistical* significance and *real-world* significance (sometimes called substantive significance) are not always the same thing. Whenever interpreting a statistically significant result, it is important to question whether that finding really corresponds to something meaningful in the world. Sometimes, we can do this just by looking at the quantitative results where, roughly, a large difference (and corresponding small p-value) is more likely to be salient than a small one. More often, however, we need to do further research to help us understand what our significant results may indicate.

This further research can take a variety of forms. In the case of Fought's data, for example, we could conduct perceptual salience testing on groups of Los Angeles residents to examine whether listeners can hear the difference between a ratio of 0.665 and 0.559 and whether that difference has any meaning to them. A more common method, however, is to introduce *qualitative* evidence into our analysis. As you learned in the previous chapter, qualitative research methods can focus on pinpointing

the qualities or characteristics of a given group. Qualitative research methods may therefore allow us to determine that speakers in Los Angeles are in fact highly attuned to variation in the pronunciation of /u/; that, for example, they comment on it (even if indirectly) regularly or that they make use of it when impersonating different kinds of speakers. This finding would support the quantitative result and perhaps indicate that the statistical significance does in fact correspond to something in the real world.

The basic point is that quantitative methods can only take you so far. They can act as a crucial first step in mapping out the sociolinguistic terrain and in telling you *what* people are doing with language. To understand, however, *why* people may be doing what they are doing, you normally need to bring in qualitative considerations. Qualitative research methods are explored later in this volume, while Angouri (earlier in the volume) looks specifically at issues around combining quantitative and qualitative methods in linguistics.

Further reading

Baker Kuebler (1992)
This book on language attitudes offers a comprehensive introduction to the field of attitude testing and the various methods involved in using language questionnaires.

Bryman and Cramer (2008); Miller (2002)
Both texts give detailed and accessible instructions on the use of the popular statistical software package SPSS.

Johnson (2013); Gries (2013)
These are chapters in a comprehensive advanced textbook on research methods in linguistics. The chapters offer extensive introductions to descriptive statistics (Johnson) and basic inferential statistics (Gries). Both chapters are a useful resource for students wishing to build on the foundational knowledge presented in this chapter.

Milroy and Gordon (2003)
This book provides an excellent introduction to variationist (i.e. Labovian) sociolinguistics, including an exposition of both theory and research methods.

Rasinger (2013)
The second addition of a useful introduction to quantitative methods in applied linguistics research. The book includes detailed discussions of important concepts and step-by-step guides to conducting statistical tests in Microsoft Excel.

Weinberg and Schumaker (1981)
A classic introductory text in statistics for the social sciences (both inferential and descriptive), written in a simple and engaging style.

Online resources

Social science statistics (http://www.socscistatistics.com/tests/Default.aspx) web pages offer a number of different online statistical calculators, including for chi-square and t-tests, all within an easy-to-use interface.

Online statistics education: A multimedia course of study (http://onlinestatbook.com/). This is a publically accessible interactive multimedia statistics resource, developed by scholars at Rice University, University of Houston Clear Lake and Tufts University (project leader: David Lane). Offers extensive materials about a wide range of quantitative techniques and includes information in both textbook and video formats.

The quantitative methods initiative, funded by the UK Economic and Social Resource Council, maintains a useful Learning Resources page for quantitative research in the social sciences (http://www.quantitativemethods.ac.uk/) with links to various free online courses and texts.

Discussion questions

1. What are the minimal conditions required for conducting a quantitative analysis of your data?

2. What is an experimental (or alternative) hypothesis and how does it relate to a null hypothesis?
3. People often describe hypotheses as having been 'proved' or 'disproved'. Is this an accurate way to discuss them? Why or why not?
4. What does it mean to say that we have found 'statistical significance'?
5. What is the difference between 'statistical significance' and 'substantive significance'?

Notes

1. This is a very brief and simplified overview of concepts such as *mean* and *standard deviation*. While sufficient for our current purposes, rest assured that a great deal more mathematical complexity is involved in defining and interpreting these terms.
2. This kind of chart is also often called a Table of Chi-Square Critical Values.
3. In fact, if we look all across the chart we see that our value of 66.9 is even greater than what is necessary to have a p-value of 0.001. This means that we can claim that we would only expect to obtain the data observed 1 time out of 1000 if the null hypothesis were true.
4. The actual p-value for this analysis is $p = 0.051$. This is so close to the significance border that we might be able to argue that the result does in fact meet the quantitative requirement. How we might go about doing so, however, is beyond the scope of our discussion here.
5. Fought's original analysis makes a four-way distinction that I have simplified here for the purposes of illustration. Note also that I have artificially adapted the data (from thirty-two to twenty-six speakers) for ease of explanation.
6. Lambert et al. (1960) provide no raw data, only tables listing significant values. The data presented above is therefore hypothetical and constructed to reflect the original study's significant findings.
7. I am ignoring a detail here, which is the distinction between groups that can be assumed to have equal variance and those that cannot. For our present purposes, I am assuming equal variance.

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7

Corpus Methods in Linguistics

Paul Baker

Chapter outline

This chapter examines how corpus linguistics techniques can be used to aid a range of linguistic analyses. The chapter begins by defining corpus linguistics and describes some of the theoretical concepts surrounding the field (such as the importance of using large bodies of naturalistic data in order to investigate language usage and the distinction between corpus-based and corpus-driven approaches). This is followed by a discussion of principles that are useful to take into account when building and annotating a corpus, as well as the different types of corpora that can be built, their relationship to the various fields of linguistics that corpus research has contributed to and the sorts of research questions that corpus linguistics can enable us to ask. Then, a number of techniques of analysis are demonstrated on general corpora of British English. These include comparisons of word frequencies, a keyword analysis and examinations of collocates and concordances. The chapter ends with a critical discussion of issues that need to be considered when carrying out corpus analysis, noting that corpus methods should not be considered as only quantitative, but rather an approach which should combine both qualitative and quantitative processes.

Introduction

Corpus linguistics is an increasingly popular field of linguistics which involves the analysis of collections of electronically stored texts, aided by computer software. The word *corpus* is Latin for *body* – a corpus is therefore a 'body' of texts. McEnery and Wilson (1996: 1) characterize corpus linguistics as a 'methodology' rather than a traditional branch of linguistics like semantics, grammar, phonetics or sociolinguistics.

This chapter examines some of the most important ways in which corpus linguistics can be used for linguistic research, focusing on theoretical concepts (the section 'Theoretical concepts'), building, obtaining and annotating corpora (the section 'Building and annotating corpora'), types and applications of corpora (the section 'Types and applications of corpora'), analytical procedures (the section 'Corpus software and analysis') and critical considerations (the section 'Critical considerations'). As with other chapters in this book, it is only possible to give a broad overview of the field; so I end with a short list of books which provide more detailed coverage of some of the issues that are addressed.

Theoretical concepts

Corpus linguistics is firmly rooted in empirical, inductive forms of analysis, relying on real-world instances of language use in order to derive rules or explore trends about the ways in which people actually produce language (as opposed to models of language that rely on made-up examples or introspection). There are sound theoretical justifications for this approach: humans do not always make accurate introspective judgements regarding language, instead relying on cognitive and social biases (see, e.g., Kahneman and Tversky (1973), Mynatt et al. (1977), Vallone et al. (1985), Haselton et al. (2005)). In addition, computers can calculate frequencies and carry out statistical tests quickly and accurately, giving researchers access to linguistic patterns and trends – such as collocational information (e.g. instances where two words tend to co-occur such as *illegal* and *immigrant*) – that were previously inaccessible. Corpus analysis can therefore enable researchers to confirm or refute hypotheses about language use, as well as allowing them to raise new questions and theories about language that otherwise would not have been possible.

A further advantage of the corpus linguistics approach is that it can enable researchers to quantify linguistic patterns, enabling more solid conclusions to be reached – for example, rather than making a claim such as 'men swear more than women', a corpus analysis would not only allow us to support or reject this hypothesis, but also show proportionally how often men swear compared to women, the range of swear words that they use, along with their relative frequencies, as well as affording evidence regarding differences and similarities of particular contexts or functions of swearing. One aspect of corpus linguistics research that has come to light is that patterns are rarely absolute, but are instead based on gradients. In addition, large corpora allow researchers to find evidence of rare or unusual cases of language, as well as shed light on very frequent phenomena.

Within corpus linguistics, a distinction has been made between corpus-driven and corpus-based approaches. Corpus-driven linguists tend to use a corpus in an inductive way in order to form hypotheses about language, normally not making reference to existing linguistic frameworks. Corpus-based linguists tend to use corpora in order to test or refine existing hypotheses taken from other sources. Some corpus-based linguists have been accused of discarding inconvenient evidence that does not fit the pre-corpus theory, while corpus-driven linguists have been said to be committed to 'integrity of the data as a whole' (Tognini-Bonelli, 2001: 84). However, McEnery et al. (2006: 8) argue that the distinction is somewhat 'over-stated' and these positions should be viewed as extremes.

Building and annotating corpora

At the centre of corpus linguistics is the concept of the corpus. Any text or collection of texts could be theoretically conceived of being a corpus (and it is possible to carry out corpus analysis on very small texts (cf. Stubbs's (1996: 81–100) analysis of two letters consisting of a few hundred words each). However, McEnery and Wilson (1996) note that a corpus normally consists of a sample that is 'maximally representative of the variety under examination' (p. 22), is 'of a finite size' (p. 22), exists in 'machine readable' form (p. 23) and 'constitutes a standard reference for the language variety which it represents' (p. 24). This means that it will be large enough to reveal something about frequencies of certain linguistic phenomena, enabling researchers to examine what is typical, as well as what is rare in language.

There are no hard rules regarding how large a corpus ought to be, instead size is dictated by a number of criteria. One of these criteria concerns the aspects of language that the corpus is used to investigate. Kennedy (1998: 68) suggests that 'for the study of prosody' (i.e. the rhythm, stress and intonation of speech), 'a corpus of 100,000 words will usually be big enough to make generalizations for most descriptive purposes'. However, Kennedy goes on to say that an analysis of verb-form morphology (i.e. the use of endings such as *-ed, -ing* and *-s* to express verb tenses) would require half a million words. For lexicography (i.e. the analysis of words and their uses, often for dictionary building), a million words is unlikely to be large enough, as up to half the words will only occur once (and many of these may be polysemous; that is, have a number of different meanings). However, Biber (1993) suggests that a million words would be enough for grammatical studies. In addition, the type of language being investigated needs to be taken into account – a rule of thumb is that the more varied the language, the larger the corpus required. So the British National Corpus, which covers a very wide range of written and spoken language genres and is intended to act as a standard reference for British English, is 100 million words in size. A corpus of a restricted language variety such as weather forecasts could be much smaller. Finally, there may be more pragmatic reasons for building a corpus of a particular size – depending on what texts are available, how much money or time we have to devote to a project or whether we can obtain permission from copyright holders to include a text in a corpus (which many corpus builders do if they intend to make their corpus publicly available).

Sampling, balance and representativeness are key theoretical concepts in corpus linguistics. Because a corpus ought to be representative of a particular language, language variety or topic, the texts within it should be chosen and balanced carefully in order to ensure that some of them do not skew the corpus as a whole. Corpora may not contain whole texts but instead utilize parts of texts. For example, if we wanted to build a corpus of Victorian fiction, we might select thirty authors of that period and take, say, three of each of their novels for inclusion in the corpus. However, some authors may write longer novels than others, which would result in their style of writing being over-represented in the corpus. As a result, we may decide to only take equal-sized samples from each novel (say, 30,000 words). However, we would also need to ensure that we balanced these samples by taking them from different places in the novels – if we only took the first 30,000 words from each novel, we would have a corpus of the beginnings of novels. Therefore, we would need to ensure that text was equally sampled from beginnings, middles and

ends of different novels. In other cases, sampling does not need to be so carefully considered – if we were only collecting text from one author, or if we wanted to consider whole texts or if the texts were very short, then this might mean we would include whole texts rather than samples.

Corpora are often annotated (or tagged) with additional information, allowing more complex calculations to be performed on them. Such information can take several forms, for example, individual texts within a corpus are often stored as separate files and each one can contain a 'header' which gives information about the text such as its author, date of publication, genre, etc. This information can be useful in allowing researchers to focus on particular types of texts (e.g. just newspaper articles) or carry out comparisons between different types (e.g. male vs female authors). Such annotation sometimes employs eXtensible Mark-up Language (XML), whereby tags take the form of codes (known as *elements*) inside matching angle brackets < >.

In addition, certain characters such as letters with accents are represented with codes known as *entities*. These always begin with an ampersand character and end in a semicolon. For example, the accented letter é can be represented as the entity é.

Tagging the text in a corpus with XML codes can also be a useful way of representing information like quotes, headings, accented characters, paragraph breaks, etc., which can change form depending on which computer software is used with the corpus. For example, the element is often used to represent a paragraph break. The example below is taken from

<text><text id=FLOBE01><head> Basic Techniques: Knotted Balls
 Pamela Watts </head>
 One of the many delights of embroidery is piecing together the history of a technique, and the insight this gives into the lifestyle of the women who practised it. An understanding of our heritage of embroidery can enrich the creative interpretations we all seek in our own embroidery today.
 The only mention I have been able to find of knotted balls is in the
<hi>Encyclopedia of Needlework</hi> by Thérèse de Dillmont.

the start of a text in the FLOB (Freiberg Lancaster-Oslo/Bergen) corpus of early 1990s British English. In addition to <p>, there are the codes <head> (to show headings) and <hi> (to show highlighted text), while the word Thérèse is represented as Thérèse.

Besides tagging stylistic features of the text, words, phrases or sentences can be tagged with additional linguistic information. The most common way of doing this is to add part of speech information to each word in the form of tags. The following is an example of a grammatically tagged sentence (using the C5 tagset[1]) taken from the British National Corpus.

405 <w PNI>Nobody <w VVZ>seems <w TO0>to <w VHI>have <w VVN>explained <w DT0>this <w PRP>to <w PNP>her <c PUN>, <w CJC>but <w AV0> finally <w PNP>she <w VVZ>understands <c PUN>. 406 <w DPS>Her <w NN2> daughters <w VHB>have <w AV0>however <w VBN>been <w VVN>contacted
<w CJS>so <w PNP>I <w VVB>agree <w TO0>to <w VVI>keep <w DPS>her
<w NN1>company <w CJS>until <w PNP>they <w VVB>arrive <c PUN>.

The tag <w PN1> means 'word' (the w part), followed by the code PN1 (meaning indefinite pronoun). Tagging can be carried out automatically by computer programs, although hand-checking of the output is usually required, as tagging software tends to be close to but not always 100 percent accurate and normally works best on texts that contain grammatically predictable sentences and relatively well-known words. Texts containing spoken conversations with lots of interruptions and false starts, jokes which contain wordplay or technical documentation which may contain a lot of unusual lexis, do not always have high tagging accuracies.[2]

Most corpus analysis software allows the tags to be hidden if required, so they do not interfere too much when humans try to read the text. Part of speech tagging is useful because it allows us to distinguish between different grammatical uses of the same word; in the example below, compare the two uses of *to*:

Nobody seems *to* (infinitive marker) have explained this *to* (preposition) her.

It is also possible to tag a corpus for other types of linguistic information. For example, a popular semantic tagging system is the USAS (UCREL Semantic Analysis System) (Wilson and Thomas, 1997). This semantic tagset was originally loosely based on McArthur's (1981) *Longman Lexicon of Contemporary English* and contains twenty-one major fields, which are subdivided further. In the example below from Baker (2005), part of a script from the TV situation comedy *Will & Grace* has been semantically tagged. The word *kids* receives the code T3–. Here the code T3 refers to 'Time: Old, new and young; age', while the negative symbol refers to youth. However, words can also receive multiple tags under this scheme, so *kids* is also tagged as S2mf which places the word in the category of people. The letters m and f refer to gender (in this case, *kids* can refer to both males and females). For further information about types of tagging, see Garside et al. (1997) and Kübler and Zinsmeister (2014).

<JACK> Why_Z5 is_A3+ n't_Z6 there_Z5 any_N5.1+ coffee_F2 ?_PUNC </JACK>
<KAREN>Same_A6.1+++ reason_A2.2 you_Z8mf do_Z5 n't_Z6 have_A9+ a_Z5 wife_S4f and_Z5 three_N1 kids_T3–/S2mf ._PUNC It_Z8 's_A3+ the_Z5 way_X4.2 God_Z4 wants_X7+ it_Z8 ._PUNC </KAREN>

Types and applications of corpora

We can make distinctions between a range of different types of corpora. A *general corpus* is one which aims to be representative of a particular language (such as the British National Corpus, The Bank of English or the ukWaC). These corpora tend to be extremely large (millions or billions of words in size) and can take a long time to collect and annotate. However, they are useful resources when completed and can be used for a wide range of research purposes. A *specialized corpus*, however, is usually much smaller and contains a more restricted set of texts. For example, there could be restrictions on genre (e.g. just newspaper reporting), time (e.g. just texts that were published in May 1990) and/or place/language variety (e.g. just texts that were published in Singapore). Specialized corpora are generally easier

than general corpora to collect and are used to answer specific research questions. However, specialized corpora are often used in conjunction with *general corpora*, with the general corpus acting as a 'benchmark' about typical language being compared to the specialized corpus in order to show what forms of language (e.g. lexis, grammar, topics) are over- or under-represented in the smaller corpus.

Another distinction involves whether a corpus contains spoken, written or computer-mediated texts (such as emails, text messages or websites) or a mixture of all three. *Spoken corpora* generally tend to be smaller than written or computer-based corpora, due to complexities surrounding gathering and transcribing data. The British National Corpus contains almost 10 million words of spoken British English (collected in the early 1990s), whereas the Diachronic Corpus of Present Day Spoken English contains 800,000 words of spoken British English from 1960 to 1992. Some spoken corpora are also specialized corpora, such as the 2 million-word Corpus of Spoken Professional American English or the 1.7 million-word Michigan Corpus of Academic Spoken English. Some spoken corpora have transcriptions aligned with sound files, so it is possible to listen to a sound clip while reading a part of the corpus. *Written corpora* are generally easier to build (and large archives of texts that were originally published in paper form can be found on the internet, meaning that such texts are already electronically coded). However, unless specifically encoded, formatting information such as font size and colour, as well as pictures are often absented from written corpora. Corpora of computer-mediated texts are increasingly popular, as societies make more use of electronic forms of communication. Such texts are relatively easy to gather – text-mining software can collect whole websites at a time, although computer-mediated texts can contain a lot of 'noise' such as spam, hidden keywords designed to make a page attractive to search engines and navigation menus which may need to be stripped out of individual pages before the text can be included in the corpus.

A third distinction involves the language or languages which a corpus is encoded in. A growing area of corpus linguistics involves the comparison of different languages, which is useful in fields such as language teaching, language testing and translation. A *multilingual corpus* usually contains equal amounts of texts from a number of different languages, often in the same genre. Such texts do not need to be direct translations from one language into another. However, a *parallel corpus* is a more carefully designed type of multilingual corpus, where the texts are exact equivalents (i.e. translations) of each other. Parallel corpora are often sentence-aligned

(i.e. tags are added to the corpus data which act as markers to indicate which sentences are translations of each other). With the right software, these tags allow readers to view translations of sentences, side by side. Such corpora have enabled researchers to identify the differences between translations and the original text, which helps to point to features of 'translationese'. For example, Mauranen (2000) notes that translators tend to make optional cohesive markers explicit in the translated text even though they are absent in the source text, which suggests that translators have a tendency to spell things out rather than leave them implicit. In addition, Malmkjaer (1997) notes that in translations, punctuation often gets strengthened, with commas often being replaced with semicolons or full stops and semicolons being replaced with full stops. This results in long, complex sentences being broken up into shorter and less complex clauses in translations, reducing structural complexity.

Finally, a *learner corpus* is a corpus produced by learners of a particular language. Learner corpora can be useful in allowing teachers to identify common errors at various stages of development, as well as showing over- and under-uses of lexis or grammar when compared to an equivalent corpus of native speaker language. Many learner corpora consist of essays or letters produced in classroom environments. Both the Longman Learner Corpus and the International Corpus of Learner English contain contributions from a wide range of learners across the world, allowing researchers to identify the extent to which a student's first language is likely to impact on the way they learn English.

As stated at the beginning of this chapter, as corpus linguistics is mainly characterized as a methodology, it can be used in a number of different applications. For example, it can aid linguistic description, such as providing dictionary makers with real-life examples of words in use. Hunston (2002) compares three dictionaries: the 1987 *Longman Dictionary of Contemporary English*, which was created without the aid of a corpus; the 1995 version of the *Longman Dictionary*, which did use a corpus; and the *COBUILD 1995 Dictionary*, which also uses a corpus. She notes (2002: 97) that 'Longman 1987 gives 20 senses of KNOW. Longman 1995 gives over 40 and COBUILD 1995 gives over 30'.

Corpora can also aid language teaching; for example, Mindt (1996) looked at a corpus of spoken English and found that native speakers tend to use the modal verb *will* most frequently for future time reference. However, in German textbooks used to teach English, Mindt found that *will* was introduced to students about halfway through the second year, whereas

other modal verbs, that were less frequent in corpus data, were introduced earlier. Such studies have implications for textbook and syllabus design. Other applications of corpus linguistics involve stylistics (Semino and Short, 2004), forensic linguistics (Coulthard, 1994) and critical discourse analysis (CDA) (Baker, 2006).

For example, in forensic linguistics, Coulthard (1993) reports on his analysis of witness statements that had been used as evidence in the trial of Derek Bentley, who was executed in the UK in 1953 for his involvement in the death of a policeman. Coulthard compared the frequencies of words in Bentley's own statement with their frequencies in general written and spoken English, and other police and witness statements. His analysis pointed to some odd aspects of Bentley's statement: for example, it contained the word *then* much more frequently than expected when compared to spoken English or other witness statements. However, *then* was a very typical feature of police statements. This, and other corpus-based evidence, was used to argue that Bentley (who had a mental age of eleven) had not produced his own statement, but that it had been written for him.

In stylistics, corpus methods of analysis have been used in order to add systematicity to and reduce subjectivity in stylistic analysis. For example, Malhberg (2009) argues that Charles Dickens often references the ways that characters use household objects as a way of drawing attention to their emotional states. Starting with a number of individual examples which involve objects like a watering-pot or a knife and fork, she searches in a corpus consisting of all of Dickens's novels in order to show how these objects are consistently used by Dickens to highlight emotions.

Finally, in the area of CDA, Baker (2006: 13) shows how corpus techniques can be used to show the 'incremental effect of discourse'. He argues (2006: 13) that 'an association between two words, occurring repetitively in naturally occurring language, is much better evidence for an underlying hegemonic discourse which is made explicit through the word pairing than a single case'. In addition, Mautner (2007) draws on CDA to examine how the elderly are constructed (as victims, in ill health and in need of care – more often than as empowered or independent) in a corpus consisting of language from a wide range of sources.

Most research questions in corpus linguistics are based around one overarching question: 'How do people use language?' This research question can often be related to specific fields in linguistics – for example, with the language teaching example above, Mindt (1996) wanted to know whether the language used in textbooks actually reflected the language that people

encounter in everyday life. This is also a research question guiding many of the descriptive studies carried out on language (especially English) using corpus-based approaches: 'Most of these descriptive studies include quantitative information on the distribution of linguistic features in particular genres or for different functions in speech and writing' (Kennedy, 1998: 88). As stated in the section 'Theoretical concepts', some research questions involve tests of existing claims or theories about language, for example, 'has written language become more informal over recent years?'

Many research questions within corpus linguistics also tend to have a comparative aspect to them, such as 'how does the use of linguistic feature X differ in usage between language varieties A and B in terms of frequency and/or typical usage?' It is important not to overlook the concept of similarity, however – if a small difference or no difference is found, then this is still a finding. In addition, corpus linguistics approaches can be used to ask research questions about language patterns that we are unaware of but may still have the power to influence us. For example, Stubbs (2001) notes that many words tend to hold semantic prosodies, based on their repeated uses in particular contexts. So, for example, if the word *illegal* strongly collocates with *immigrant*, then we may be primed to think of illegality whenever we encounter the word *immigrant*, even on the occasions where it occurs without the word *illegal*. So a research question that corpus linguists could ask would be 'what associations are triggered by the use of linguistic item X, based on its typical uses?'

Corpus software and analysis

A stand-alone corpus is not particularly useful in terms of aiding linguistic enquiry. For this reason, corpora are normally used in conjunction with analysis software, which are able to carry out the counting, sorting and presentation of language features (the results of which must be interpreted by humans). Some corpora come with their own analytical interfaces (e.g. BNCweb is a web-based platform for use with the British National Corpus). However, other software (such as WordSmith Tools,[3] #LancsBox,[4] Wmatrix[5] and AntConc[6]) can be used in conjunction with a range of corpora. This section illustrates some of the ways in which corpora can be manipulated in order to carry out linguistic analyses. I will be mainly using two corpora, the LOB (Lancaster- Oslo/Bergen) corpus of British English from 1961 and the

FLOB corpus of British English from 1991. Both corpora are a million words in size, containing fifteen genres of writing (including press, religion, science fiction and humour). In order to carry out comparisons of these corpora, I will be using WordSmith Tools. Because the LOB and FLOB corpora are equivalent corpora, with a thirty-year time span between them, they can be used to answer research questions regarding language change, as well as giving us a general profile regarding written British English.

Many forms of corpus analysis are based around the concept of frequency (and attendant statistical tests allowing us to compare frequencies). The most basic aspect of frequency analysis simply allows us to derive frequencies of particular words (or phrases or tags) or lists of all of the words in a corpus, presented alphabetically or in order of frequency. Table 7.1 shows the ten most frequent words in the LOB and FLOB corpora, respectively. I have also presented their percentage frequencies – so the word *the* accounts for 6.67 percent of all words in LOB. Presenting frequencies as percentages is often useful, particularly when making comparisons between multiple corpora (especially of different sizes).

Table 7.1 Top ten word frequencies in LOB and FLOB

	LOB (1961)		**FLOB (1991)**	
1	THE	68,379 (6.67%)	THE	64,813 (6.35%)
2	OF	35,769 (3.49%)	OF	34,147 (3.35%)
3	AND	27,932 (2.72%)	AND	27,292 (2.67%)
4	TO	26,907 (2.62%)	TO	27,058 (2.65%)
5	A	23,170 (2.26%)	A	23,168 (2.27%)
6	IN	21,338 (2.08%)	IN	20,880 (2.05%)
7	THAT	11,197 (1.09%)	THAT	10,481 (1.03%)
8	IS	10.995 (1.07%)	IS	10,923 (1.01%)
9	WAS	10.502 (1.02%)	WAS	10,039 (0.98%)
10	IT	10,031 (0.98%)	FOR	9,344 (0.92%

It ought to be clear from Table 7.1 that, in terms of the most frequent words at least, there is not a great deal of difference between LOB and FLOB. The ordering of words in both columns in the table is almost identical (apart from line 10). There are also similar frequencies, with *the* having an extremely high frequency (above 6 percent), then a set of words with frequency at around 2–3 percent (*of, and, to, a, in*) and then another set of words with frequencies around the 1 percent mark (*that, is, was, it, for*). It might help to be able to distinguish between different grammatical uses of some of these words (e.g. *that* can be a conjunction, a determiner or a gradable adverb), which is where consulting tagged versions of these corpora would be useful. The table allows us to conclude that high-frequency words tend to be grammatical words (conjunctions, determiners, prepositions), but in terms of exploring language change, it doesn't offer much of interest.

A related form of frequency analysis involves calculating keywords. A keyword, put simply, is a word which occurs statistically more frequently in one file or corpus, when compared against another comparable or reference corpus. For example, we could derive a list of keywords by comparing a small learner corpus of English against a much larger corpus of general native speaker of English. The keywords would be words which occurred relatively more frequently (taking into account overall sizes) in the learner corpus. Among such keywords we are likely to find simple adjectives and adverbs like *nice, big* and *very*, which learners tend to over-rely on, particularly in the early stages of their development. Regarding LOB and FLOB, because they are the same size, we would obtain two lists of keywords – one which gives words which are statistically more frequent in LOB (when compared to FLOB), the other giving words that are more frequent in FLOB (when compared to LOB). Table 7.2 shows some of these keywords.

The words in Table 7.2 are more suggestive of differences. Some keywords can perhaps be explained due to events or people who were particularly in vogue at the time when the corpora were collected. For example, *Thatcher* and *Major* were British prime ministers in the early 1990s. In 1980, *Rhodesia* gained independence from Britain and then changed its name to Zimbabwe, so it is hardly surprising that Rhodesia is a keyword in the LOB corpus – Rhodesia only existed as a historical concept by the time we get to the period of the FLOB corpus. Similarly *Kenya* became independent from Britain in 1963 – so Kenya as a subject would have been in the British news a lot in the 1960s, because of this change in its status. The FLOB keywords *privatisation* and *market* are suggestive of discussion around neo-liberal ideologies and practices which had become more common in the UK by the 1990s.

Table 7.2 Some keywords in LOB and FLOB when compared against each other

LOB (1961)	FLOB (1991)
COMMONWEALTH	THATCHER
MISS	MAJOR
MAN	WOMEN
THE	OK
HE	FUCKING
GIRL	AROUND
MUST	ET
SHALL	PRIVATISATION
RHODESIA	MARKET
KENYA	BLOODY

Other words suggest more subtle social changes. For example, the LOB corpus contains keywords which indicate male bias (*man* and *he*), whereas FLOB has *women* as a keyword. However, we also find some female keywords in LOB (*miss* and *girl*) which could also be argued as contributing towards male bias (see below). We could refer to social changes (such as women's equality movements and greater awareness of sexism towards the last half of the twentieth century), in order to hypothesize explanations for our results. Hypotheses are not always confirmed upon closer investigation, meaning that we should not take frequencies at face value. For example, consider the word *ET*, which is key in FLOB. One hypothesis we could make is that this is a 'cultural keyword', referring to the Steven Spielberg film *ET* from 1982. However, upon investigation of the corpus, it transpires that it is always used to refer to academic references such as *Tunwell et al., 1991*.

A number of keywords are more indicative of changes in style, which can also ultimately be linked to social change. For example, the keywords *fucking, bloody* and *OK* suggest that written language has become more informal in the thirty-year period between LOB and FLOB. In addition, the modal verbs *shall* and *must* are key in the 1961 LOB corpus. Both these modal verbs suggest strong modality, indicating that a more authoritarian tone of language was used in the 1960s, compared to the 1990s. A detailed study of modal verbs in these corpora by Leech (2002) confirms this (the only modal verbs which actually increased in usage over time were *can* and *could*, which suggest weaker modality).

Both Leech (2002) and McEnery and Xiao (2005) found evidence that British English was becoming more similar to American English, by comparing frequencies in the LOB and FLOB corpora to their American equivalents (the Brown and Frown corpora). Leech demonstrated that between 1961 and 1991 both American and British English users showed a trend towards decrease in use of modal verbs, with an increase in semi-modals (such as *have to, need to, want to* and *got to*). However, the changes appeared to be more advanced in American English, with British English appearing to lag behind. McEnery and Xiao looked at change and variation in infinitive use (i.e. use of the full infinitive as in 'help him to forget' vs use of the bare infinitive as in 'help him forget'). They found that both American and British English users were showing a tendency over time to use fewer full infinitives, instead preferring bare infinitives. Again, this trend appeared to be more advanced in American English, with British English lagging behind.

As I have noted above, it is often not enough to simply extrapolate explanations based on the presence of keywords alone. They need to be investigated in more detail and in context. So how can we investigate context? This is where the concept of the concordance is useful. A concordance is simply a list of all of the cases of a word or phrase in a corpus, with a few words of context either side, so we can examine how the word tends to be used. Corpus analysis software normally allows concordances to be sorted alphabetically in various ways (e.g. one, two, three, etc. words to the left or right of the word under examination), which enables us to recognize patterns more easily. Table 7.3 presents an unsorted random sample of concordance lines of *girl* from the LOB corpus.

From a close examination of the concordance lines we can start to get an idea of some of the ways that *girl* is used. For example, it is often preceded by adjectives or other words which relate to appearance (*fat, coloured*), occupation (*army, sales-, call-*), morality (*good*) or sexuality (*heterosexual*). The words to the right of *girl* also indicate similar groups (*civil servant, young, tall, pretty*). Such words can therefore be grouped in order to indicate what Louw (1993) calls 'semantic preference', for example, *girl* holds a semantic preference for physical appearance. The examination of concordances also helps to reveal discourse prosodies, this being 'a feature which extends over more than one unit in a linear string' (Stubbs, 2001: 65). Discourse prosodies are often indicative of attitudes. One discourse prosody that could be noted from the concordance is the way that *girl* tends to be used to refer to adult females, as seen for example in lines 5, 6, 9 and 11, which tend to refer to females involved in more 'adult' activities. This use of

Table 7.3 Sample concordance of girl (LOB Corpus)

1	ung people except with sports programmes. A girl civil servant of 17 likes TV for showing olde
2	a fuss all over again Charlotte, there's a good girl , Esmond said. Save your breath. You've got
3	that it was wrong to impregnate an unmarried girl for to do so would reduce her bride-price and
4	othing, even if it wasn't much of a match for a girl as young and pretty as that. You may have so
5	rner, covered by stony indifference. The army girl , tall and demurely pretty, threw a quick side
6	ars. There could be a lot of money in the call-girl racket, and not many expenses either, just a t
7	How old are you? Peter asked stiffly. The fat girl stared at him; pulling him around the floor as
8	and her elder sister, Georgina, who is a sales-girl for the firm. Georgina does not envy her sist
9	ly to Simone. As Gay watched he offered the girl a cigarette and lit it, his hands cupping hers i
10	y scripted), is remarkable. There is a coloured girl who pretends to sophistication but is horrifi
11	are that Gavin would make love to the French girl on the sands, and no doubt he would come ba
12	and Albertine a perfectly normal heterosexual girl, the novel would have been, qua novel, neith

girl could be suggestive of a patronizing attitude towards women (see also Sigley and Holmes, 2002), at least in the LOB corpus. When *boy* is used in the LOB corpus, it tends to be used on children, rather than adult males. It is notable that *girl* is a keyword in the LOB corpus – perhaps users of British English are refraining from using it so much in contexts where it could refer to adults (again, concordance analyses would be required to confirm this).

A concordance analysis therefore combines aspects of quantitative and qualitative analyses. In the case of *girl* above, there were 334 concordance lines to read, which is where sorting the corpus alphabetically would prove to be handy in helping the analyst to digest the large amount of information on display. In addition, Sinclair (1999) suggests that we take thirty lines at random, examine them to see what patterns or prosodies are present, then examine another thirty lines, then another, until we do not find anything more of interest. Hunston (2002: 52) advocates that 'a small selection of lines is used as a basis for a set of hypotheses about patterns. Other searches are then employed to test those hypotheses and form new ones'. For example, based on the above concordance we could specify searches for terms like *pretty girl* or try to see which other sorts of nouns tend to occur with words like *pretty* or semantically related words like *attractive* and *beautiful*.

Because corpora can contain thousands or millions of words, this can often result in an overwhelming amount of information to analyse by hand. A statistical procedure which helps to reduce this information to more manageable chunks is collocation. Collocation refers to the statistically significant co-occurrence of words. For example, *bank* will collocate with lexical words like *blood, account* and *river* which tell us something about its semantic uses, but it is also likely to collocate with grammatical words like *the, to* and *of* (indicating grammatical patterns). There are a number of different ways of calculating collocation. Some, like the mutual information score (i.e. which takes into account exclusivity of collocation – for example, words must regularly appear together and not apart), tend to give precedence to low-frequency collocations involving nouns, adjectives and verbs. For example, using mutual information to calculate the collocates of *bank* in the British National Corpus, we find that most of the resulting collocates are low-frequency nouns or proper nouns like *Jodrell, Barclays, Gaza, balances* and *lending*. Other ways of calculating collocation, such as log likelihood (which gives precedence to highly frequent collocates), tend to favour grammatical relationships. So collocates of *bank* calculated with log likelihood are *the, of, a, and, to* and *in*. There is no 'best' way of working

Table 7.4 Strongest twenty collocates of *girl* and *boy* in the British National Corpus using log-log

girl	Boy
little, young, dark-haired, boy, 15-year-old, teen-age, raped, 14-year-old, 16-year-old, clever, pretty, mclaren, guides, golden, beautiful, blonde, nine-year-old, raping, five-year-old, poor	scouts, naughty, scout, scano, girl, waterloo, little, 12-year-old, 15-year-old, 14-year-old, clever, bonanza, errand, dear, old, wee, kritian, bistro, rivet, messenger

out collocation, but certain techniques favour certain types of words, so it makes sense to determine which sorts of collocates we wish to focus on.

In the British National Corpus, *girl* occurs over 14,000 times. Looking at its strongest collocates (using the log-log statistic, which gives a good compromise between high- and low-frequency collocates), we find words like *little, young* and *dark-haired*. Table 7.4 shows the most frequent twenty collocates for *girl* (for comparative interest, the collocates of *boy* are also presented).

Most of the collocates listed in Table 7.4 are adjectives or nouns, tending to occur one or two places to the left of the search word. There are some similarities between the two lists (*little, 14-year-old, 15-year-old, clever*), as well as the equivalent *guides* and *scouts*, but also some interesting differences. As noted above, a number of collocates of *girl* refer to appearance (*dark-haired, pretty, beautiful, blonde*), whereas no such collocates occur with *boy*. Instead we find collocates to do with jobs (*errand, messenger, rivet*). Such findings echo non-corpus-based research on gender representations (e.g. Sunderland, 2004).

Some of the collocates are difficult to make sense of, requiring concordance analyses, for example, *waterloo* is a collocate of *boy* due to the name of a horse called Waterloo Boy in a text about horse racing. *Kritian* is from references in the corpus to the 'kritian boy', a famous sculpture in Greek Art, while *scano* is a character in a novel in the corpus called *Death in Springtime*. Such collocates, when limited to numerous citations in a single text, or small number of texts, might be best discarded, unless, taken as a group, they contribute towards some other pattern. It is recommended that concordance analyses of collocates are undertaken, even in cases which look obvious. For example, the collocates *raped* and *raping* suggest that it is girls who are described as victims rather than perpetrators, but a quick concordance analysis could confirm this.

Critical considerations

As with all methodologies, corpus linguistics is not able to answer every research question in the area of linguistics. In this section I outline a few criticisms of corpus approaches and identify, where possible, ways of defending such positions.

First, corpora can be time-consuming, expensive and difficult to build, requiring careful decisions to be made regarding sampling and representativeness. There is a continuing need to create up-to-date balanced reference corpora, especially in languages other than English. More corpus users are turning to the internet for data (and a number of web concordancers[7] are in existence, offering researchers access to much larger sources of data than even the most ambitious corpus builders can conceive). However, internet data is a genre of language in itself and should not be considered to be necessarily representative of general language use, although as many texts are being deposited on the internet, the task of building balanced corpora is now often less arduous than in previous decades.

Second, researchers who are not computer literate may initially find it off-putting to have to engage with analytical software or statistical tests. Although corpus linguistics is often seen as a quantitative form of analysis, in fact human input is required at almost every stage, from corpus building (deciding what should go in the corpus) to corpus analysis (what research questions should be asked, what should be looked for, what analytical procedures should be carried out, how the results can be interpreted). With that said, the software tools which are currently available are reasonably easy to learn how to use and are certainly no more complicated than a typical piece of word processing software. In addition, the software carries out the statistical tests for the user, so corpus linguists do not need to be mathematical wizards. Instead, knowledge of what the tests do rather than how to carry them out is more important.

Third, corpus analysis works best at identifying certain types of patterns. For example, BNCweb CQP edition allows users to search for patterns such as any adjective followed by an optional noun, followed by a conjunction occurring somewhere later in the same sentence. But identifying the absence of a feature can be difficult – for example, with McEnery and Xiao's (2005) study of infinitives, it is not so easy to instruct corpus software to identify all the cases where the infinitive *to* is implied but missing. More complex phenomena such as metaphor or cases where people disagree are also difficult to identify automatically, necessitating analysis of concordance

lines by hand. With that said, analytical software is continually improving, meaning that fairly complex patterns can be searched for, particularly on tagged data, and the problem of identifying absence is not unique to corpus methods but to all forms of research. In addition, some advances have been made in the automatic identification of metaphor, see Sardinha (2002), Charteris-Black (2004) and Neuman et al. (2013).

As mentioned earlier, corpus data tends to work at the textual level. For many forms of linguistic analysis this may be sufficient, but for more applied forms of analysis (such as visual analysis or CDA) it is often important to consider texts at other levels, such as their methods of production and reception, whether texts refer to or are referred by other texts, and the social, historical and political contexts within which texts occur. For example, in Baker (2008) I examined linguistic patterns around the word *bachelor*, finding ultimately that there were three sets of collocates: those which referred to the sense of bachelor as a university degree; those which referred to a young unmarried man (and tended to suggest positive constructions to do with eligibility); and those which referred to an older unmarried man (and tended to hold a negative discourse prosody linked to loneliness, domestic incompetence and eccentricity). However, the corpus did not reveal anything about the etymology of the word *bachelor* and it was only by investigating other sources that I found that the 'university degree' and 'unmarried man' meanings are likely to be due to historical polysemy rather than being accidental homonyms.[8]

Similarly, a corpus analysis may produce interesting findings about language, but as with many other methodologies, it is a task for humans to provide explanations for those findings. For example, a corpus analysis tells us that *girl* collocates with *pretty* and *beautiful*, but it does not tell us why. Both a qualitative analysis which involves examining concordance lines to see in what contexts girls are being referred to in this way, and a further qualitative analysis which steps outside the corpus to examine gendered relationships in society, would help to provide explanations.

However, these criticisms should not preclude corpus analysis (all methods have limitations), but should instead make users aware of potential limitations, giving them information about when corpora should be used alone, when they could be combined with other methodological approaches and when they might be best avoided. My personal feeling is that the positives far outweigh the negatives (which can often be tackled via triangulation). The strength of the corpus approach is in using fast and accurate techniques to identify patterns that human analysts would not notice. And in using large amounts of naturally occurring data, corpus analysis offers a high degree of reliability and validity to linguistic research.

Further reading

Hunston (2002)
A book which focuses on applications of corpus analysis, particularly relating to language teaching.

Kübler and Zinsmeister (2014)
Focusing on annotation, this book explores a range of different types, including part of speech, morphological, semantic and discourse-level.

McEnery and Hardie (2012)
This book provides a good overview of the field, from its historical antecedents to more current uses, focusing on debates around ethics and different approaches to using corpora. For intermediate readers.

McEnery, Xiao and Tono (2006)
A comprehensive account of the field, suitable for advanced readers.

Stubbs (1996, 2001); Hoey (2005)
Both use corpus-based methods in order to develop a theory of linguistics, based around priming and prosodies.

Teubert and Cermáková (2007)
An introductory textbook, giving a concise survey of corpus linguistics, suitable for beginners.

Online resources

WordSmith Tools: A suite of corpus analysis tools http://www.lexically.net/wordsmith/

#LancsBox: Downloadable software which displays collocations visually in networks http://corpora.lancs.ac.uk/lancsbox/

Wmatrix: An online tagging and corpus analysis tool http://ucrel.lancs.ac.uk/wmatrix/

AntConc: Free and easy to use corpus analysis software http://www.laurenceanthony.net/software.html

CQPweb: Web-based corpus analysis system https://cqpweb.lancs.ac.uk/

Sketch Engine: Online corpus management and query system https://www.sketchengine.co.uk/

Discussion questions

1. Imagine you want to examine whether people use language in online contexts differently now, compared to twenty years ago. Describe the corpus or corpora you would build in order to answer this question, how you would go about collecting the texts and what problems you might encounter.
2. To what extent does corpus linguistics reduce researcher bias, in what ways might a corpus linguistics approach lead to bias and how could such biases be countered?
3. What type of research questions are best answered by using (a) collocation (b) keywords and (c) concordance analyses, and what problems are associated with each of these techniques?

Notes

1. The full tagset is at http://ucrel.lancs.ac.uk/claws5tags.html
2. A free trial service offers automatic part of speech tagging at http://ucrel.lancs.ac.uk/claws/trial.html
3. http://www.lexically.net/wordsmith/
4. http://corpora.lancs.ac.uk/lancsbox/
5. http://ucrel.lancs.ac.uk/wmatrix/
6. http://www.laurenceanthony.net/software.html
7. http://www.webcorp.org.uk and http://www.kwicfinder.com/KWiCFinder.html
8. The term *bachelor* was used in the thirteenth century to refer to a young monk, someone belonging to the lowest stage of knighthood or

the younger members of a trade guild, so while there are now distinct meanings, the term originally referred to a young person (always male), who was at the start of their profession.

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Part Three

Qualitative perspectives

8

Critical Perspectives on Using Interviews and Focus Groups

Nigel Edley and Lia Litosseliti

Chapter outline

In this chapter we look at the use of interviews and focus groups within social science and linguistics research. Working on the basis that they are closely related methods, we begin by examining the arguments, put forward by a number of critical commentators, that they are fundamentally flawed in offering up artificial or contaminated data. In line with those criticisms, we agree that there are some serious problems involved when they are deployed and understood – in traditional terms – as means of mining particular 'nuggets of truth'. Rather, following a more constructionist stance, we recommend that interviews and focus groups are treated as collaborative or interactional events in which the interviewer or moderator plays an important, participative role. So conceived, we argue that there is still a legitimate case for employing either of these research methods – and we end by providing a critical review of what are widely considered to be their primary strengths and weaknesses.

Introduction

In recent years it has been claimed that the inhabitants of the Western world (at least) are living in 'interview societies' (see Atkinson and Silverman, 1997: 309). In Britain, for example, by the time a person reaches adulthood, it is very likely that they will have had some first-hand experience of being interviewed – in either 'careers' interviews at school and/or, of course, later on in interviews for jobs. But, more to the point, the claim rests on the assumption that, as a third party, the typical adult will have been witness to hundreds, if not thousands, of interviews broadcast by the media, in things like news and current affairs programmes, sports' reports and in feature articles found in newspapers, magazines and online platforms. Given the reach of globalized media, one could say that interviews are now familiar to people all around the world as a valued source of common interest. It is generally assumed that the main benefit of interviews is that they give us privileged access to a person; that they allow us an intimate – or 'first-hand' – sense of what, say, a politician or a celebrity both thinks and is like as a person. By comparison, wider society is nothing like as familiar with focus groups. A person could watch television non-stop for weeks or months without ever seeing one. Likewise, readers are unlikely to find a journalist reporting explicitly on a focus group meeting in a newspaper or magazine article. That's not to suggest, however, that the general public are oblivious to the existence of focus groups. Many people will recognize the term and some may have even taken part in one (organized, perhaps, by a marketing organization or a political party), but they still do not enjoy the same degree of presence as interviews, in ordinary, everyday culture.

Within the world of academia, however, the use of both interviews and focus groups is widespread. Over the course of the last few decades, their employment within the Social and Human Sciences has increased significantly, partly as a consequence of a more general shift from quantitative towards qualitative methods (in response to a growing disenchantment with positivistic, laboratory-style experiments – see Armistead, 1974; Hepburn, 2003; Pancer, 1997 for a discussion of the so-called crisis debates). Within Psychology, one of the principal drivers of that shift – Rom Harré – once came out with a memorable injunction: that the basic principle for any social research should be to 'treat people as if they were human beings' (Harré and Secord, 1972). Harré's point was that people are not robots; their behaviour is *meaningful* rather than mechanical. So instead of concocting all kinds of

weird and wonderful experiments in attempting to track down the causes of human behaviour, 'why don't we simply *talk* to people?', he said 'ask them to account for their own actions because', he went on, 'it is very likely that people will be able to provide us with good or, at least, plausible explanations'. Since then, it seems that many social researchers have opted to speak to those in whom their interests lie. Not only has focus group methodology become popular within many social research projects (in education: e.g. Lederman, 1990; linguistics: e.g. Myers, 1998; health research: e.g. Barbour, 2010, Kitzinger, 1995, Powell and Single, 1996; feminist research: e.g. Wilkinson, 2004; Jowett and O'Toole, 2006, and in cross-disciplinary research) but, in some quarters of the academy, interviews have emerged as *the* method of choice (Potter and Hepburn, 2005a – see also Wray and Bloomer, 2012, chapter 14).

Given the above, it should come as no surprise to find that there are a good number of available texts providing guidance on how to conduct interviews and focus groups and to analyse the resulting data (see the end of the chapter for some useful suggestions). What this also means, of course, is that there is not much point in us dedicating a whole chapter to providing yet another step-by-step or practical guide. So what we want to do here instead is to concentrate on some ongoing debates which raise pertinent questions about the merits or value of conducting language research using data generated by these closely related means. We want to examine why it is that some language researchers (e.g. Edwards and Stokoe, 2004; Potter and Hepburn, 2005a, b, 2012; Silverman, 2014, 2013) are arguing that we should move away from a reliance on these particular methods of data collection. In preparation for that task, it is necessary for us first to review and interrogate some of the basic assumptions concerning research interviews and focus groups.

The logic of the research interview/ focus group

Despite the obvious etymology of the term, most *interviews* are understood, not as reciprocal or two-way exchanges, but as a mechanism by which one party (i.e. the interviewer) extracts vital information from another (i.e. the interviewee). As Patton (1980) explains, they are usually seen as a means of

accessing stuff that cannot be got at by direct observation. So, for example, in the context of a job interview, the series of questions put by the interviewing panel will be designed to elicit all kinds of information; including factual details about such things as the applicants' formal qualifications and previous work experience, but also more intangible phenomena like their motives for applying and enthusiasm for the post in question. As already mentioned, the interview is seen as providing us with a *window* onto the mind or 'life-world' (see Brinkman and Kvale, 2015) of the interviewee. Of course, any interviewing panel worth its salt will be aware that the characters parading before it will be trying to cast themselves in a particular light; but it will be assumed, nonetheless, that the central business at hand is, in theory at least, a basic fact-finding mission.

According to David Silverman (2014), these same assumptions underpin most research within the social and human sciences that uses either interviews or focus groups as the primary means of data collection. Of the many thousands of studies that have done so, the majority presuppose that these tools are (at least ideally) neutral devices, facilitating the assembly of so many facts. Accordingly, the main methodological concerns expressed in many of these studies are about ensuring the neutrality of the interviewer or 'moderator' – through the eradication of leading or ambiguous questions and through the standardization of their delivery. One of the ways of responding to these concerns has been the development of the so-called structured interview. Here the interviewer's task is to work through a series of pre-scripted questions, ensuring that both the order and the wording used are identical on each and every occasion. In many structured interviews the questions are 'closed' or restricted in terms of how an interviewee can respond – either by using 'yes/no' formats, multiple choice questions or rating scales of one kind or another. Within more semi- or unstructured interviews (see Dörnyei, 2007; Hughes, 1996, for further discussion of these differences), the process is more free-flowing and indeterminate. As with focus groups, in these cases, an interviewer/moderator may possess a set of guide questions, but they would not usually seek to impose them. Instead, they are encouraged to improvise; allowing the interview or focus group to follow whatever course it takes. Nevertheless, the interviewer or moderator is often implored still to remain neutral during the data-gathering process; to withhold their own opinions vis-à-vis the questions and to remain impassive in the face of their respondents' answers. Common to both of these approaches, then, is the assumption that interview/focus group data are essentially free-standing or independent of the (discourse of

the) interviewer/moderator. This is evident, not only in terms of the appeals to interviewers/moderators to remain neutral (i.e. to have no bearing or impact upon what a respondent might say), but also in the fact that, in the presentation of empirical data, the contributions of the convenor are often omitted or ignored.

Recent challenges

During the early 1990s, however, a number of academics began to raise questions about the validity of these underlying assumptions; and so too, therefore, about the legitimacy of interviews and focus groups as prime social research tools. In this regard, one of the landmark publications was an article written by two anthropologists, Lucy Suchman and Brigitte Jordan 1990), which drew attention to some of the unfortunate consequences that may arise from failing to understand interviews, in particular, as a form of social *interaction*. More specifically, their article looked at some of the misunderstandings that can accrue when interviewers adhere strictly to a fixed schedule of questions. A short article by Antaki (2000) can help to illustrate the kind of point they were making. In the extract reproduced (see Extract One – NB, see end of the chapter for a key to the transcription notation), a psychologist is seen posing a question in a way that conforms to a very common 'structured' survey method. The interviewee ('Anne') is given a range of potential answers from which to select her response ('never'/'so metimes'/'usually'); but, as we can see from the transcript, she doesn't wait for the provision of the three standardized options. Instead, she provides a response immediately after the completion of the initial question (i.e. at the end of line 2). Seemingly undeterred, the psychologist forges ahead with the set protocol. On three successive occasions Anne denies that she feels uncomfortable 'in social situations', before she eventually comes out with a different response (in line 9) – which just happens to coincide with the psychologist coming to the end of that protocol. 'Sometimes I do' Anne says – which is then summarily accepted and translated into an 'equivalent' numerical score.

Extract One

1	Psy:	d'you feel out of place (0.4) out an about
2		in soc<u></u>ial (0.2) situations
3	Anne:	n[o
4	Psy:	[Anne (0.2) n<u></u>ever?

5 Anne: no
6 Psy: sometimes?
7 Anne: °no°
8 Psy: or usually
9 Anne: <u>some</u>times I do:
10 Psy: <u>ye</u>ah? (0.4) OK we'll put a two down for that one then (*sniff*)

(from Antaki, 2000: 242–243)

The question is, of course, what are we to make of those three previous denials? Was it prudent of the psychologist to ignore them in this way? The answer, surely, is no. But, as Antaki (and Suchman and Jordan) point out, the source of this seemingly fundamental error is that the researcher fails to appreciate the encounter as a stretch of dialogue. In this case, for example, Antaki explains that the psychologist fails to appreciate how, in everyday conversational interactions, if a person is repeatedly asked the same question, they will usually infer that their previous responses are wrong or somehow inadequate. The normal response, therefore, would be to come up with a new or different answer. For many linguists, it is precisely these responses (by Anne in the example above) that would constitute a topic of investigation (with conversation analysis (CA) analysts, for example, focusing specifically on aspects of this interaction such as sequencing, adjacency pairs and pauses) – more on this below.

The case for treating interview data as social interaction was given significant further impetus with the publication of James Holstein and Jaber Gubrium's book *The Active Interview* (Holstein and Gubrium, 1995). The crucial contribution made by these two sociologists was to apply various social constructionist insights, regarding the nature of language, to the consideration of interviewing. In particular, drawing upon the work of Berger and Luckmann (1967), Garfinkel (1967) and Cicourel (1964), they tried to emphasize that language is a form of social *practice*; that it does not just describe a world 'out there', but rather, that it is a means of *acting* in the world. Additionally, they argued that language has a *constitutional* as well as a representational function; that both the interviewee and the interviewer are, during the real time of the interview itself, in the process of creating knowledge and understanding. As they put it:

> Both parties to the interview are necessarily and unavoidably *active*. Each is involved in meaning-making work. Meaning is not merely elicited by apt questioning nor simply transported through respondent replies; it is actively and communicatively assembled in the interview encounter. Respondents are

> not so much repositories of knowledge – treasures of information awaiting excavation – as they are constructors of knowledge in collaboration with interviewers.
>
> (Holstein and Gubrium, 1995: 4)

In keeping with a constructivist stance, Holstein and Gubrium saw interview discourse as their central *topic* of interest – rather than as a simple *resource* (i.e. as a route through to the 'treasures' mentioned above). That said, they maintained, nonetheless, a distinction between what they referred to as the 'hows' and the 'whats' of meaning or knowledge construction; in other words, a difference between the *performative* and the *referential* aspects of discourse. More specifically still, Holstein and Gubrium claimed that it is possible to disentangle – or at least keep simultaneous track of – what people are both *doing* and talking *about* when they take part in an interview (or, for that matter, in any other kind of verbal interaction). So, in Gubrium's own work looking at the life histories of nursing home residents (Gubrium, 1993), attention was paid, not just to how the residents' discourse was designed to both respond to and function within the local context of the interview itself, but also to what their discourse said about their actual lives, their sense of self and so on and so forth. In that respect, Holstein and Gubrium's position echoes that of other discourse theorists, such as Freeman (1993: 16), who described the analytical challenge as one of '[trying] to maintain and embrace [the] primacy of the word without losing the world in the process'.

There are others, however, who take a very different stance in relation to these issues. Silverman (2013), for example, argues that any data emanating from interviews or focus groups is 'got up' or 'manufactured' and should only be used as a last resort. Likewise, Jonathan Potter and Alexa Hepburn (2005a, b) regard these forms of data as contrived and so compromised; preferring, instead, what they, and others, refer to as *naturalistic* or *naturally occurring* data. Previously, Potter (1996) has suggested that discourse analysts ought to be able to apply what he called the 'dead social scientist test' as a means of assessing the appropriateness (or otherwise) of their data. For him, naturally occurring data emerge out of social interactions that would have taken place even if the researcher set to gather that data had been run over and killed some time earlier in the day. Needless to say, interview and focus group data tend, therefore, to fail Potter's test – insofar as they are prompted by the initiative of the social researcher her or himself. Indeed, for Potter, the only truly legitimate grounds for using data from either interviews or focus

groups is when those very fora are, themselves, the topic of one's analysis. For instance, in his work with Claudia Puchta (Puchta and Potter, 1999, 2004), the meaning and knowledge-producing practices of focus groups were the object of study. So, for Potter, interviews and focus groups can supply us with 'natural' data, but only in these very particular circumstances.

According to Potter and Hepburn (2005a, b), there are several problems inherent in using 'manufactured' data, the most serious of which derive from the fact that, in establishing any interview or focus group, the social researcher sets the whole agenda. Volunteers are recruited, in the first instance, to talk about a given theme or topic. As such, they will usually come along on the understanding that they are to speak on behalf of whatever group or category of person is the focus of the researcher's interest (i.e. as an immigrant, single mother, school governor, etc.). What is more, the researcher's concerns and concepts will also tend to be foregrounded, as embodied in the scripting of the questions. The authors claim that all these things put unnecessary constrains upon the parameters of what gets said and that they also tend to draw people into talking about the world around them in strange and artificial ways.

Now, before proceeding any further, it might be worth trying to provide an illustration of at least some of these issues. To that end, we have chosen some data that comes from a series of interviews conducted with a small group of sixth form (i.e. 17–18 years) students who, at the time (during the early 1990s), were attending a single-sex boys' school in the UK (see Wetherell, 1994, for a full account of this project). The data that constitute Extract Two come from a discussion about heterosexual relationships. Just prior to this stretch of talk, Phil had been recounting a story about a weekend in which his friend (Aaron) had purportedly 'struck it lucky' with a number of young women. Indeed, it was claimed that he had 'got off' with four in one night. Line 73 sees Phil bringing that story to an end.

Extract Two

73	Phil:	So that like took me aback somewhat (0.3) so that was
74		a good weekend for you
75		(.)
76	Nigel:	Is that good?
77	Phil:	Well in his books yes you know=
78	Aaron:	=hhhh.h [yeah]
79	Phil:	[The thing] is you got so much stick for it
80	Aaron:	Well yeah I could take the stick because it was
81		almost like (0.2) a good ego trip when everyone was

82		taking the stick oh you got off with her ah ha ha
83		yep I did so what's your problem? [Oh, er..errr]
84	Nigel:	[Hm mm]
85	Aaron:	[Errr]
86	Phil:	[None of them] were particularly pikey so you were
87		alright really
88	Aaron:	No (.) they weren't.hh none of them were like majorly
89		pikey.hh (.) one or two perhaps could have like
90		(.)
91	Phil:	I don't know I don't know I think I know this Cathy
92		bird I know Jenny I know Cathy thing I don't know who
93		the other one was and neither do you so can't tell=
94	Nigel:	=Yeah I mean I wasn't sort of saying is four in two
95		days good I mean it's impressive [you know]
96	Aaron:	[hh [hhh] hh
97	Phil:	[hhhhh] hhhh
98	Nigel:	But I me:an like (.) it presu:mes that erm that's:: a
99		creditable thing (.) yeah? Is it?
100		(0.2)
101	Phil:	°No because you're on the moral low ground°
102	Aaron:	But I don't mi↑nd being on the moral [low ground]
103	Phil:	[Oh no you don't]
104		mind I I it didn't fuss me at all you know and I wasn't I
105		thought it was quite (.) it was quite impressive you
106		know you're sort of thinking that's shocking because it
107		never happens to me um::.h hhh
108	Aaron:	Hhhh

There are, of course, many things that one could say about this extract; but, for now, we want to focus upon just three aspects. First of all, this slice of interaction, like all of the interviews in this project, was framed in terms of the topic of masculinity. As a consequence, the participants are all being invited to speak *as* members of that gender category. As it happens, the 'jury' still appears to be 'out' as to whether or not gender is an omni-relevant feature of all discursive encounters (see Garfinkel, 1967; Klein, 2011; Land and Kitzinger, 2011; Schegloff, 1997; Speer and Stokoe, 2011; Stokoe and Smithson, 2001; Weatherall, 2002); but in any case, in instances such as this, it is clear that speaking as a gendered subject is a structural requirement of the task. In other words, it's not something that the participants could easily avoid. The second feature worthy of comment takes us back to a point made earlier – regarding the conventional understanding of repeated questions.

Across lines 76 and 98/99, Nigel (in?)effectively poses the same question twice over. Little wonder, then, that Phil comes back with two different answers. As is evident from the transcript, the second formulation of the question is an attempted clarification (or 'repaired' version) of that posed on line 76. But, as Potter and Hepburn (2005a) pointed out, it would be unwise to take Phil's answer on line 101 as the more reliable (or authentic) opinion – because, in effect, the shape of the dialogue makes it difficult for him to just repeat his previous answer. The third aspect of the data is also concerned with line 101. Note how *quietly* it is produced. Moreover, it is delivered in a somewhat monotonic fashion. Listening to the tape, one gets the distinct impression (particularly as an experienced teacher) that what we have here is akin to a bit of *seminar* interaction; where Phil is supplying what he imagines is the 'right' or 'sought after' response. How much more dangerous, therefore, to presume that this is what Phil really thinks!

Such an illustration allows us to appreciate better the force of Potter and Hepburn's arguments, as we can begin to see how, in various ways, the framing of an interview or focus group can impact one's data. The idea of either method as a neutral mechanism for generating data is thoroughly unsettled. Instead, we come to see interview and focus group talk more as forms of 'institutionalised' discourse (see Heritage, 1997), rather than identical to the kind of material that emerges over the phone, down at the pub or in the privacy of people's own homes. However, are Potter and Hepburn (as well as Silverman) entirely justified in treating interview and focus group data as fatally compromised or second rate (in comparison with 'naturalistic' data)? Should we, in effect, just write them off as a 'bad job' – or are there any positive reasons for wanting to hang on to these most popular of research methods?

In defence of interviews and focus groups

Of course, one of Potter and Hepburn's central objections regarding interviews and focus groups – that such events are 'flooded' by the interviewer's/moderator's research agenda – has often been seen as one of their great strengths or advantages. If a person is interested in analysing how people perform greetings or negotiate invitations, it's all very well using (naturalistic) data taken from, say, a telephone exchange. But if one is interested in looking at people's understandings of, say, the British royal family (see Billig, 1991) or of 'lad mags' (see Benwell, 2003) or of career choices (see Litosseliti and

Leadbeater, 2013), then things aren't always that simple. One might record thousands of hours of casual conversation without encountering even a single snippet on any of these topics. Silverman (2013) has suggested that, with a bit of thought and imagination, it is often easy to solve these problems of access – and that researchers should resist falling back on the interview (or focus group) option. But it's hard to ignore the economies made by setting the agenda – in terms of time, money and patience! What these examples also suggest is the fact that interviews and focus groups can come into their own, as useful research methods, when, in Holstein and Gubrium's (1995) terms, we are interested in *what,* as opposed to *how*, questions (see also Smith, 2005). In other words, they can be seen, for the purposes of some research projects, as very useful in examining the content, as opposed to the form of people's talk (but see below). Potter and Hepburn (2005b) have argued that the analysis of what people are *doing*, interactionally, with their discourse should come before any consideration of what they are talking 'about' (see also Wooffitt, 2005) – and it's a point worth considering (not least because our idea of what that something *is* may change as a result). But that doesn't mean that an analysis of the performative dimensions of language displaces or exhausts all issues of 'reference'. Exploring the limits of the 'sayable' in terms of such things as human sexuality (Hollway, 1984), 'race' (Wetherell and Potter, 1992) or feminism (Edley and Wetherell, 2001) is not the same as analysing what people are *doing* via the invocation of those different discourses. As it turns out, interviews and focus groups seem to be well suited to exploring both of these angles. Within Linguistics, some researchers may use interviews and focus groups to investigate the 'what' or content of people's responses or narratives (e.g. Wagner and Wodak, 2006; Anderson, 2008); others will want to explore a web of responses and 'how' these are pursued, grounded, clarified and inter-linked through group interaction (e.g. Petraki, 2005; Tilbury and Colic-Peisker, 2006); and others focus explicitly on the interplay between these aspects (e.g. McEntee-Atalianis and Litosseliti, 2017; Litosseliti, 2006). A final reason for exercising caution over the dismissal of interviews and focus groups centres on the legitimacy of the very distinction between 'natural(istic)' and contrived or 'got up' data. As Susan Speer (2002) has pointed out, discourse analysts have been at the forefront of attempts to highlight the *indexical* or context-specific nature of spoken (and other discourse) data. In studying the 'expression' of attitudes (Potter and Wetherell, 1987), memories (Middleton and Edwards, 1990) and emotions (Edwards, 1997), they have shown how none of these activities involves the simple reporting of some prior state of mind (or

'heart'); but that all such accounts are designed in ways that are sensitive to the contexts in which they make their appearance. In other words, they have shown that all discourse data are 'got up' for something; there is no such thing as a context-free domain; no pure realm in which people simply 'tell it as it is'. According to this view, the discourse stemming from interviews and focus groups is no more contaminated or compromised than any other data set – and, as such, it should continue to be respected.

In summary, it would appear that there are some clear grounds for seeing both interviews and focus groups as legitimate and valuable research tools. On the proviso that they are understood as interactional events (rather than a simple mechanism for 'harvesting' people's ideas and opinions), they can be used as a basis for examining a whole range of issues – from the way that accounts are designed to do a range of social activities to looking at both the shape and limits of people's understandings of the world. Moreover, in coming to terms with the idea of these methods as forms of social interaction, a fresh perspective is opened up regarding the role of the convenor. Instead of conceiving of them as a potential liability and putting into practice all kinds of measures aimed at limiting or nullifying their impact, they become re-specified as another participant whose contributions are also open to analytical scrutiny. In considering Extract Two, for example, there's nothing essentially wrong in the fact that Nigel (as interviewer) queries the valorization of male promiscuity evident in Phil's previous narrative. In no sense is he speaking out of turn. Of course, the fact that the query came from the interviewer – rather than a member of Phil's own peer group – could be significant; that is, it might have an impact upon the shape of the talk that follows. But it doesn't *invalidate* those turns as an object of interest; indeed, it could become the focus of one's analysis. Moreover, as an intervention, it can help us to see other important things – such as the rhetorical resources that may be brought to bear in the defence of what has become here, temporarily at least, a form of 'troubled' identity (see Wetherell and Edley, 1999; Caldas-Coulthard and Iedema, 2007).

Going ahead with interviews and focus groups

Having given them, in effect, the 'green light', it's appropriate now to move on to consider the conducting of both interviews and focus groups.

As we've already mentioned, our intention is not to provide a step-by-step guide to either methodology, rather our aim is to raise some of the issues involved in their use, as well as to highlight some of their particular strengths and weaknesses. As is implied by the very framing of this chapter, interviews and focus groups are seen as closely related. Some researchers maintain that they are similar but nevertheless distinctive (see Dörnyei, 2007), whereas others tend to treat one (i.e. focus groups) as a sub-category of the other (e.g. as in the phrase 'focus group interviews'). To us, they are best thought of as two related forms of practice that often overlap or bleed into each other. In the first section of what follows, we'd like to say a little bit more about the nature of focus groups (as the less well-known-about methodology) and how they might differ, from research interviews. We will then move on to consider the pros and cons of both interviews and focus groups.

A focus on focus groups

The most obvious feature of focus groups is given away by the very name; focus groups always feature multiple respondents (typically 6–10). Interviews, on the other hand, can be one-to-one affairs – although it is by no means unusual for researchers to interview several people at once. The other half of the label – 'focus' – refers to the fact that, in focus groups, talk constitutes a collective activity centred around a small number of issues (such as debating particular questions, reading a text, etc.), but, once again, this tends not to distinguish them too clearly from interviews, particularly those that are topic driven. One of the key claims made about focus groups is that they are genuinely *interactive*, in the sense that a group takes shape by – indeed depends on – the synergistic dynamics of participants responding to and building on others' views. However, it is important to recognize that this is also a feature of many group interviews, where the aim (and hope) is for a dialogue to take off between the participants – instead of every interaction either issuing from or being directed towards the interviewer. What this gives both focus groups and group interviews is a more 'natural' and unpredictable feel, where participants are influencing each other and being influenced by others (Gibbs, 1997; Krueger and Casey, 2015; Morgan, 1997). What this also means, of course, is that, compared to *structured* interviews, the moderator/interviewer in these more group-based settings has less control over the research agenda. The person convening the session may

initiate topics through the provision of specific questions, but the ensuing talk may spiral off in all kinds of directions and down different kinds of avenues. Importantly, this is usually seen as a strength of both focus groups and group-based interviews – particularly within more ethnographic kinds of studies (where a priority is placed upon encouraging the emergence of participants' concerns and issues) and among feminist academics (who have been at the forefront of questioning the power relationships that exist between the researcher and the researched – see, e.g., Wilkinson, 2004, 1999).

One characteristic feature of focus group research is the use of multiple meetings – although, again, this doesn't mark a clear point of distinction from interviews. Typically, each group represents a different or contrasting constituency. For example, in a study on the topic of animals and biotechnology, the researcher may convene one group of farmers, another group of hunters, a third group of pet owners and a fourth of animal rights activists. Through working with these different groups, such a study may be able to shed some light on a 'communication or understanding gap between groups or categories of people' (Krueger, 1994: 44) – as might also be the case, for example, between policymakers and the public, physicians and patients, employers and employees and so on and so forth. To take another example, a study looking at whether minority languages should be used in nursery schools may use contrasting groups: minority-language-speaking parents of children who did/did not attend schools that used the language, nursery school teachers from ethnically mixed/unmixed areas and so on (Wray and Bloomer, 2012). Although less common, it is also not unknown for the 'same' focus group to meet on more than one occasion (i.e. either in terms of actual personnel or in terms of the particular constituency). This may be deemed necessary because the outcome of a single session may not be seen as sufficient or because researchers wish to hear from several such 'representative' users. But, even in such cases, researchers will generally assume (and explicitly acknowledge) the fact that each focus group meeting in a series will vary from the next. One group may turn out to be exciting and energetic, another may be much more quiet or low key, while another may be affected in unexpected ways by a dominant or 'difficult' participant. Experience has shown that it is extremely rare that the same 'topic guide' will lead different focus groups (however defined) down the exact same conversational pathways.

In terms of selecting participants, focus group researchers have generally placed more emphasis than those conducting interviews on finding 'homogeneous, like-minded individuals from the same gendered,

ethnic, sexual, economic or cultural background' (Kitzinger, 1995: 300 – although, as Kitzinger goes on to suggest, it is often beneficial to have participants from diverse backgrounds, to increase the chances of seeing the emergence of and interaction between different perspectives). Of course there will be many subtle distinctions within each 'category' of participants – such as social and occupational status, income, educational level or expertise – and, insofar as they are perceived by participants themselves, these can sometimes make people 'hesitant to share' or 'defer their opinions' to those perceived to be more knowledgeable or influential (Krueger and Casey, 2015). For different reasons, writers of the step-by-step guides sometimes caution against including friends, spouses, relatives and colleagues in the same focus group, as they can affect group cohesion and inhibit other participants by, for example, entering into essentially private conversations (Litosseliti, 2003; Templeton, 1987). Familiarity can both promote and limit self-disclosure and also discourage disagreement, as interaction is likely to rely more on past experiences, shared or assumed knowledge (Myers, 1998).

Finally, as we've already seen, in focus group research, the notion of the 'interviewer' gives way to that of a 'moderator'. Implicit within this role is the idea that the moderator's job is to facilitate and guide the participants' discussion without themselves playing too active a part. It is assumed that a good moderator will keep the discussion 'on track', without inhibiting the flow of ideas, and that they will ensure that all group participants have opportunities to contribute to the discussion. However, as we've also seen, once we re-specify the focus group as a locus of knowledge *creation* or *construction* – rather than as a means of data collection – then the presence and impact of the moderator (on the data) becomes more a matter of academic interest than a 'concern' that has to be acknowledged and 'allowed for'. As mentioned above, it is assumed that the moderator is another participant whose presence, contributions, perceived background, etc. influence the group discussion; and that different data are produced by different degrees of structure and flexibility in moderating (e.g. allowing for topics to be revised and deciding what contributions to pursue in more depth and detail – see also Myers, 2007). Similarly, there are countless other factors that influence the amount, kind and quality of interaction in an interview or focus group: the location, the seating and recording arrangements, the presence of observers, perceptions of confidentiality and other ethical issues (see Litosseliti, 2003, for a discussion).

Interviews and focus groups: Assessing the pros and cons

One of the great advantages of interviews and focus groups is their tremendous flexibility. On the one hand, they can be used as the primary source of data. For instance, Myers and Macnaghten (1998) used focus groups to explore how people talk about environmental sustainability; similarly, Edley and Wetherell (1999) used interviews to look at how young men constructed the role of the father. On the other hand, they can be employed just as easily as *supplementary* sources of data or indeed, in *multi-method* studies (which combine different data gathering methods – see Morgan, 1997), as in Litosseliti's 2002 study of focus group argumentation on the topic of marriage, alongside analysis of relevant debates in the British media.

Within any given study, both focus group and interviews can be useful at different stages of the project. One of the ways in which they can be used is towards the end of a study – in assessing, for example, the development, effectiveness or impact of a programme of activities. However, some academics feel that both methodologies truly come into their own more at the preliminary or exploratory stages of a research project – in the generating of 'hypotheses' (NB loosely defined – see Kitzinger, 1994). For example, Skeggs et al. (1998–2000) conducted focus groups meetings with gay men, lesbians and single women in city and rural areas, to understand these groups' different perceptions of violence and space. The outcome of these meetings didn't, in itself, form the 'findings' of their study; rather, it helped them in formulating and designing a subsequent research programme.

Many of the advantages of both interviews and focus groups – over other research methods – can be gleaned from the paragraphs above. Specifically, they are ways of providing multiple views on any given subject or topic; they encourage the exploration of members' or participants' (i.e. *emic*) own experiences or 'life-world' and, as such they have the potential to generate a sense of *empowerment* for those taking part (Goss and Leinbach, 1996). Typically they can help 'shift the balance of power away from the researcher [and] towards the research participants' (Wilkinson, 1999: 64), in allowing participants to contribute to the research agenda (particularly if they come from minority, under-represented or disadvantaged groups). However, focus groups and interviews can have a range of other, more practical, benefits. For instance, they are useful in obtaining information from illiterate

communities; they can be used to gather data on activities that span many days or weeks; and, in the case of virtual focus groups, they can facilitate the participation of people (e.g. busy professionals, government officials) who are hard to reach or to get together in one place or who are unwilling to contribute in person (e.g. on sensitive or controversial topics).

Alongside the above, there seems to be consensus in key discussions of the merits of both focus groups and interviews (see Krueger and Casey, 2015; Hughes, 1996; Race et al., 1994; Barbour, 2008; Morgan and Krueger, 1993; Powell and Single, 1996; Wray and Bloomer, 2012), that they are particularly useful for:

- Discovering new information and consolidating old or established knowledge
- Obtaining different perspectives on the 'same' topic (sometimes described as multivocality) in participants' own words
- Gaining information on participants' views, attitudes, beliefs, motivations and perceptions on a topic; 'why' people think or feel the way they do
- Examining participants' shared understandings of everyday life, and the everyday use of language and culture of particular groups
- Brainstorming and generating ideas
- Gaining insights into the ways in which individuals are influenced by others in a group situation (group dynamics)
- Generating a sense of rapport between the researcher(s) and the researched

(adapted from Litosseliti, 2003: 18)

Within Linguistics projects and in disciplines where language plays an important role, interviews and focus groups have been used to do all of the above in relation to a range of different topics: people's attitudes towards language in general; people's attitudes towards particular language aspects (e.g. accents and dialects, minority languages, specific language use, language teaching and learning); people's perceptions of a linguistic experience (see, e.g., Kitzinger, 1994, 1995 on audiences' perception of media messages around HIV/AIDS); and people's discursive construction of self and identity (for e.g. gender identity – e.g. McEntee-Atalianis and Litosseliti, 2017, national identity – e.g. Wodak et al., 1999, or ethnic identity – e.g. De Fina, 2007). A common feature of most of these projects is an interest in the way that the groups interact. Group discussions go through stages of 'forming', 'storming', 'norming', 'performing' and 'adjourning' (Tuckman,

1965; Tuckman and Jensen, 1977), during which participants variously negotiate opinions, arguments, responses, consensus and disagreement. In other words, there is a whole range of fairly unpredictable group dynamics. In relation to focus groups, Stewart et al. (2007) argue that the direct, open-response interaction among participants and between the moderator and the participants allows for a whole range and variety of responses, probing, connections between points made, nuances and deeper levels of meaning. So again we can see that interaction in such groups is not just important for what it tells us about people's views (or their language), but also because it involves participants responding to each other, while considering, reconsidering or re-evaluating their own understandings and experiences (Kitzinger, 1994, 1995). Meanings are constantly negotiated, renegotiated and co-constructed in interaction with others in the group. Common sense leads us to imagine that participants will come to such meetings 'armed' (or 'minded' perhaps) with certain opinions; however, experience in conducting both focus groups and (group) interviews reveals that 'opinions' are emergent and dynamic, rather than established and fixed (see Agar and MacDonald, 1995, for an example). While this may prove disconcerting to a researcher determined to 'pin down' what a particular group or individual thinks (NB which is the way that focus groups have been traditionally used within commercial organizations), it will seem a blessing for the linguist who both expects and is interested in those very dynamics. As Myers and Macnaghten (1999) put it (in relation to focus group research):

> Focus groups offer a practical way of eliciting such complex talk, and in analysing the conversation we acknowledge the situatedness of opinion, and recover some of the richness and complexity with which people express, explore and use opinions. […] Focus groups are typically designed to elicit something less fixed, definite and coherent that lies beneath attitudes, something that the researcher may call feelings, or responses, or experiences, or world-views. [They also] provide richer accounts of how people understand particular issues in the context of wider social concerns. […] The great strength of focus groups as a technique is in the liveliness, complexity and unpredictability of the talk, where participants can make sudden connections that confuse the researchers' coding but open up their thinking. (pp. 174–175)

It should go without saying that some of the benefits of interviews and focus groups can be re-construed as weaknesses or problems. As we've just noted, their open-endedness and unpredictability can be a source of dismay, as much as a source of delight. This might be particularly true of

those who see interviews and focus groups as a quick and easy method for testing hypotheses (see Merton, 1987) – a perception that may stem both from the sheer ubiquity of interviews and from the legacy of focus group use in time-intensive marketing or advertising projects. In contrast, however, a considerable amount of time and skill has to go into conducting these types of projects. As Stewart and Shamdasani (1990) point out, rather than being ad hoc or atheoretical exercises, interviews and focus groups should be both theoretically grounded and rigorously planned. Equal care and attention should be dedicated to the actual conducting of these events and to the analysis of any resulting data (see Krueger and Casey (2015), Bloor et al. (2001) and Litosseliti (2003) for a discussion of these stages). That said, as above, it is useful to list some of the more commonly mentioned limitations of interviews and focus groups as they appear in the literature (see Krueger and Casey, 2015; Morgan, 1997, 1993; Gibbs, 1997; Litosseliti, 2003). They include:

- Bias and manipulation, due to the interviewer/moderator leading participants directly in terms of what they say in the meetings, or as a result of participants saying what they think the convenor (or others in the group) want to hear.
- 'False' consensus, which may be the result of some participants with strong personalities and/or similar views dominating the discussion, while others remaining silent.
- Other effects of group dynamics – such as group polarization (see Myers and Lamm, 1976) – where a group may respond collectively in a more exaggerated way than any individual member.
- Problems with making generalizations from these groups to a wider population.
- They are intensive in terms of both time and resources and usually require a high level of commitment from one's participants.

(adapted from Litosseliti, 2003: 21)

Some of these problems are practical issues that can be addressed through careful planning and skilful moderation. For example, to address the issue of dominant and retiring participants, the interviewer/moderator can establish a code of conduct at the start of the discussions, such as asking people not to talk at the same time and to respect each others' views. It is also possible, through the use of eye contact and gentle probing, to minimize the influence of dominating participants and to encourage the other parties. The careful design of the questions and topics to be developed during the discussion will

help the interviewer/moderator to steer clear of leading or loaded questions (e.g. 'yes/no' and 'why' questions) and promote a balance of contributions among the different participants (for discussions of questions, see Litosseliti, 2003; Stewart et al., 2007; Puchta and Potter, 1999). Finally, many social researchers will 'check' their practices and interpretations through the use of pilot groups, an observer or assistant present during their group discussions and/or via post-discussion interviews with the participants themselves.

However, we should emphasize that most of the 'problems' listed above are limitations only if one assumes, in the first place, that it is possible to achieve a veridical or authentic account of a person's opinion (which treats such 'things' as stable or fixed) or that the 'name of the game' is to identify a representative sample of participants whose views can be safely generalized to a wider population. Again, as Silverman (2013) points out, this would be to adopt a 'positivist' approach to one's research data – which stands at odds with the more 'constructionist' framework assumed by many contemporary practitioners (including us), which treats the interview or focus group as a space in which opinions are (re)constituted, rather than simply reported. Contrary to the positivist position, the constructivist researcher uses focus groups and interviews, not to achieve a representative 'sample' of talk, but to create bodies of data that are indicative or illustrative of particular social phenomena. Likewise, in relation to the 'charges' of bias and manipulation, the constructivist researcher sees interviews and focus groups as offering insights into what participants *say* they believe or do – not into what they 'actually' think or do. This is not to imply, however, that there is necessarily a clear distinction between what a person says and thinks – indeed, constructionists have been at the forefront of challenging precisely this divide (see Billig, 1987; Burr, 2003; Edwards, 1997). So while the positivist researcher may fret about participants telling the interviewer/moderator what they think she or he wants to hear or about participants not wanting to disclose certain information about themselves or their lives (because they perceive it to be too personal or embarrassing), this tends not to be such a concern for the constructionist. Many would maintain that there is no 'underlying truth' that may be hidden or concealed. Instead, they'd tend to treat any or all resulting data as designed for the context in which it emerges. In other words, the constructivist researcher *expects* their participants to tailor their discourse in response to the demands of the situation.

As we can see, many of the most commonly understood limitations of interviews and focus groups arise from them being either theorized or implemented in ways that are somehow problematic: by treating the

interviewer/moderator as 'neutral'; by ignoring the many contextual parameters that help to shape any discourse; by taking what people say at face value; by not placing enough emphasis on the interaction and group dynamics; and by generalizing or trying to quantify the data produced. What we are promoting here is a different epistemological warrant for both interview and focus group data, in response to observations (see, e.g., Wilkinson, 1999) that such warranting is often missing from many studies. We will end by quoting Krueger, whose point about focus groups extends just as well to interviews. He states: 'It is important to keep in mind that the[ir] intent […] is not to infer but to understand, not to generalize but to determine the range, not to make statements about the population but to provide insights about how people perceive a situation' (1994: 87). So conceived, they are a positive boon to the field of linguistics.

Transcription notation

This transcription notation represents a simplified version of that developed by Gail Jefferson (see Atkinson and Heritage, 1984)

(1.0)	Timed pause (in tenths of seconds).
(.)	Micropause (i.e. too short to time)
No= =gap	Indicates the absence of a discernible gap between the end of one speaker's utterance and the beginning of the next.
Wh [en] [No]	Marks overlap between speakers. The left bracket indicates the beginning of the overlap while the right bracket indicates its end
[[	Indicates that speakers start a turn simultaneously
No::w	One or more colons indicate the extension of the previous sound
> <	Indicate talk produced more quickly than surrounding talk
<u>text</u>	Word(s) emphasized.
CAPITAL	Noticeably louder talk

°hush°	Noticeably quieter talk
↑↓	Rising and falling intonation
?	Indicates rising inflection (but not necessarily a question)
.	Indicates a stopping fall in tone (but not necessarily the end of a turn)
hh	Indicates an audible out-breath (the more 'h's the longer the breath)
.hh	Indicates an audible intake of breath (the more 'h's the longer the breath)
(())	Non-verbal activity (e.g. Banging)
[text]	Clarificatory information.

Further reading

Barbour (2008); Barbour and Kitzinger (eds.) (1999)
Barbour's 2008 book is a hands-on focus group guide and Barbour and Kitzinger (1999) is a collection of articles on the theory, practice and politics of focus group research. The latter is particularly useful for its critical thinking around participation and community views, its discussion of often neglected areas (e.g. sensitive topics, feminist research) and its perspectives on analysis.

Bloor et al. (2001)
A good starting point for student projects and a basic introduction to the key issues and requirements for planning, conducting and analysing focus groups in the social sciences.

Brinkmann and Kvale (2015)
This is a detailed, but accessible, book on the use of interviews in social research. It considers the philosophical justifications, practical details and common criticism of conducting this kind of research.

Bryman (2012)
The fourth edition of this engaging and student-friendly textbook offers an introduction to social research methodology. It considers various aspects of the research process and a broad range of qualitative and quantitative methods (including internet research). Chapters 9 and 20 deal with interviews and Chapter 21 with focus groups.

Gubrium et al. (2012)
This is a large compendium of chapters covering a wide range of issues – from the history of the interview through to considerations of research ethics and risk assessment. Along the way, it features a chapter (10), by David Morgan, on the focus group interview.

Holstein and Gubrium (1995)
Although in no way a 'how-to-do' guide, this compact book provides an excellent introduction to a constructivist approach to theorizing (and conducting) interviews. It thoroughly unsettles what Silverman (2014 – see below) refers to as the 'positivist' and 'naturalist' interpretations of interview data.

James and Busher (2016)
Nalita James and Hugh Busher have written a whole book about online interviewing (published in 2009), but in this chapter we see a condensed version of their arguments. Here they discuss the advantages and drawbacks involved in working online and take time to explore the complex ethical considerations involved in using devices such as Skype, chatrooms and instant messaging.

Krueger and Casey (2015)
The latest edition of a very informative book on focus group methodology, with useful examples and guidance for developing focus groups (including using them outside marketing research).

Litosseliti (2003)
An accessible overview of focus group methodology and a step-by-step guide to planning and conducting focus groups. Particularly useful for looking at focus groups from a linguistic/discursive perspective. Full of examples throughout and useful tables of different types of questions and different probes (for developing a discussion, for encouraging different viewpoints and for managing particular types of participants).

Rapley (2001)
This is an interesting article that draws attention to the identity-work performed within interviews by both interviewees *and interviewers*.

Seidman (2015)
Seidman outlines a particular, *phenomenological,* approach to interviewing – and is relevant, therefore, in respect of its close consideration of the *experience* of the interaction for both interviewers and interviewees.

Silverman (2014)
Within this broader volume, Silverman offers two consecutive chapters (7 and 8) on interviews and focus groups, respectively. The first of these is particularly strong in drawing attention to the different epistemological frameworks that researchers take to their interview data. As noted above, Silverman has been quite outspoken in his reservations about the overall value of interview-based studies – so he is an important voice to consider.

Wray and Bloomer (2012)
Chapter 14 provides an overview of various research methods – including interviews, focus groups and, indeed, questionnaires. Detailed and practical, this chapter – like ours – underlines the connections between interviews and focus groups, though it sits within a firmly positivist frame.

Online resources

https://www2.open.ac.uk/students/skillsforstudy/conducting-an-interview.php
An Open University study skills page.

http://www.socresonline.org.uk/21/2/12.html
A paper which discusses using Skype for doing qualitative research interviews.

https://www.youtube.com/watch?v=AVnIO4vzXg8

https://www.youtube.com/watch?v=qW_SKXYnhyQ&feature=related

Two videos where David Silverman explores the idea of the 'Interview Society' and contrasts interviews with 'naturally occurring data' for qualitative research.

https://www.youtube.com/watch?v=5xPYGXJ_hM4
An excellent webinar on using focus groups by Rosaline Barbour (*Atlas.ti and International Institute of Qualitative Methodology* (IIQM), 16th April 2013). In addition to raising key issues, it provides many examples of how different research projects have drawn on focus groups to address different questions and the challenges involved.

https://richardakrueger.com/focus-group-interviewing/
Richard A. Krueger's website, which includes handouts for conducting focus group interviews, videos on moderating focus groups and references to his books dealing with different aspects/stages of focus group research.

Discussion questions

1. Consider the key questions and issues that your own research project aims to investigate. Would interviews and/or focus groups allow you to explore these questions and issues? What kinds of answers could they provide?
2. If, as a researcher, you were interested in looking at the issues faced by working-class students entering elite universities (such as Oxford or Cambridge), how might you go about sourcing 'naturalistic' data?
3. An issue of reflexivity: What are the implications for the conduct of interviewers, in the actual context of those interviews, when they fully understand their role in the co-construction of knowledge?
4. Focus groups are often described as useful for investigating topical issues on which people may not have formulated an opinion (Wray and Bloomer, 2012). What are some of the potential benefits and pitfalls in attempting to investigate such topics?

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9

Discourse-Analytic Approaches to Text and Talk

Judith Baxter

Chapter outline

This chapter explores the different ways in which discourse-analytic approaches reveal the 'meaningfulness' of text and talk. It reviews *five diverse* approaches to discourse analysis of particular value for current research in linguistics: conversation analysis (CA), interactional sociolinguistic analysis (ISA), discourse analysis (DA), critical discourse analysis (CDA) and feminist poststructuralist discourse analysis (FPDA). Each approach is examined in terms of its background, motivation, key features, applications and possible strengths and limitations in relation to the field of linguistics. A key way to schematize discourse-analytic methodology is in terms of its relationship between *micro*analytical approaches, which examine the finer detail of linguistic interactions in transcripts and *macro*analytical approaches, which consider how broader social processes work through language (Heller, 2001; 2011). This chapter assesses whether there is a strength in a discourse-analytic approach that aligns itself exclusively with either a micro or macro strategy or whether, as Heller suggests, the field needs to find a way of 'undoing' the micro–macro dichotomy in order to produce richer, more complex insights within linguistic research.

Introduction

In recent years, there has been a sea change in the field of linguistic research. Today, the study of real samples of speech and writing as evidence of the way in which people in the world use language in a range of social contexts is manifestly the business of linguistics. But it wasn't always so.

Historically within linguistic research, the study of 'text' (written discourse) or 'talk' (spoken discourse) was not considered worthy of serious research (Cameron, 2001, 2014). A key strand of linguistic research evolved from the writings of Noam Chomsky (1965), who argued that the goal of linguistics should be to study underlying 'linguistic competence': the rules that inform the production of grammatical sentences. For Chomsky, the focus of study was the abstract system: the underlying structure of language. Linguistic performance – speakers' actual utterances – were regarded as disorderly, chaotic and of no value in offering an understanding of language as a system. A significant challenge to Chomsky's theories was made by the applied linguist, Dell Hymes (1972), who offered the term '*communicative* competence' in deliberate contrast to 'linguistic competence'. As Hymes observes, a person who has only linguistic competence would be quite unable to communicate – a 'social monster' producing grammatical sentences disconnected from the context in which they occurred. This notion of a communicatively competent speaker and writer, who knows the rules of how to communicate appropriately in different social settings, has had a profound effect on linguists with an interest in discourse analysis. For the conversation analyst, Harvey Sacks (1992), ordinary, mundane speech exhibits an exceptional level of orderliness and apparent instances of non-fluency are not viewed as the product of mistakes or speech errors, but have a meaning and a purpose. This chapter will look at the different ways in which discourse-analytic approaches have re-evaluated the 'meaningfulness' of text and talk within linguistics.

In terms of conducting research more broadly, there is a clear distinction between analysing text or talk (hence, 'discourse') as a means to an end and analysing it as an end in itself. Many *non*-linguists – sociologists, psychologists and researchers in organizations, education, cultural studies and media studies – draw upon language as just one of many sources of evidence about their research subjects. Interviews, focus group discussions and observation data all involve verbal interactions that must be transcribed and analysed. In short, many non-linguists view discourse as data. For some,

the language itself becomes a source of fascination, but for others, it is often seen within a 'realist' paradigm as a transparent medium to external reality or as a direct index of subjects' feelings and meanings (see also Edley and Litosseliti, this volume, for a discussion).

Alternatively, many linguists view 'data as discourse' (Cameron, 2001: 145) alongside 'discourse as data'. According to Wooffitt (2005), whenever we produce a description or refer to a place, object, event or state of affairs in the world, we invariably select from a range of possible words and phrases. Consequently it follows that 'discourse can never be taken as simply descriptive of the social action to which it refers, no matter how uniform particular segments of that discourse appear to be' (Gilbert and Mulkay, 1984: 7). Language is not simply a neutral medium for generating subject knowledge, but a form of social practice that acts to *constitute* as much as to reflect social realities (Heller, 2011). Indeed, some post-structuralist linguists (e.g. Barthes, 1977; Norton, 2013; Wetherell, 1998) went further than this in advocating that the language of research is a textualizing practice which requires analysts to be constantly self-reflexive about the constitutive power of their linguistic data.

In line with the post-structuralist view, different discourse-analytic approaches, situated as they are within different epistemological paradigms, are likely to produce varying sets of accounts of the same data. The chapter will review five approaches to discourse analysis considered to be of particular significance for current research in linguistics: conversation analysis (CA), interactional sociolinguistic analysis (ISA), discourse analysis (DA), critical discourse analysis (CDA) and feminist poststructuralist discourse analysis (FPDA). This is just a selection of a rich and diverse range of analytic approaches in the field that also includes speech act theory, ethnography of communication, pragmatics, variation analysis and discursive psychology.

A key way to schematize discourse-analytic methodology is in terms of its relationship between *micro*analytical approaches, which examine the finer detail of linguistic interactions in transcripts and *macro*analytical approaches. The latter considers how broader social processes work through language (Heller, 2001; 2011). The five approaches have been selected here not only because they have become highly influential in the field, but also because they manifest interesting differences and contrasts between microanalytical or 'bottom-up' approaches (CA); macroanalytical or 'top-down' approaches (CDA); and methods that aim to combine (DA; ISA) or indeed challenge aspects of both (FPDA).

Over the years, applied linguists such as Heller (2006; 2011) have suggested that the micro–macro dichotomy may not be the most helpful way in which to understand how the observable dimensions of linguistic interaction are linked to more durable structures that lie beyond the control of individual speakers and writers. Heller's (2006) own work in minority language education leads the way in showing how a 'big picture' approach that aims to identify larger issues can be interwoven with the fine detail of action research data in order to make sense of a significant linguistic problem. This chapter will consider whether there is a strength in a discourse-analytic approach that aligns itself exclusively with either a micro or macro strategy or whether, as Heller suggests, the field needs to find a way of 'undoing' the micro–macro dichotomy in order to produce richer, more complex insights within linguistic research.

Five approaches to discourse analysis

The term 'discourse' is itself a contested term, which has generated a lot of debate among scholars about what it means and how it should be used. The first most straightforward definition – and the one that is still routinely used in linguistics textbooks – is that of 'language above the sentence' and refers to a sequence of sentences or utterances that constitutes a 'text' (Cameron, 2001). The second is its more functional and sociolinguistic definition as 'language in use' or 'language in social context', which is typically the implication of descriptive labels such as 'media discourse', 'legal discourse', 'educational discourse' and so on. This definition seems to cohere with Fairclough's (1992: 3) description of discourse as the 'situational context of language use' involving 'the interaction between reader/writer and text'. Finally, linguists whose work overlaps with post-structuralist and critical theory (as indeed, Fairclough's does) are also likely to understand discourse in the plural – as discours*es*. Such a usage reflects the influence of cultural historian, Michel Foucault, who famously defined discourses as 'practices that systematically form the objects of which they speak' (Foucault, 1972: 42). In simpler terms, discours*es* are more than just linguistic: they are social and ideological practices which can govern the ways in which people think, speak, interact, write and behave. Cameron (2001) gives the example of discourses on drug use, which can take multiple forms as dominant

and resistant social attitudes, ways of speaking, formulaic behaviours, government policies, laws, anti- and pro-drug literature and so on. The three definitions of discourse(s) above will be apparent in the discussion of the five approaches that now follow.

Conversation Analysis (CA)

Of the five approaches to discourse analysis, CA takes the most decisive departure from Chomsky's view that linguistic performance is of little relevance to the linguist. Indeed, proponents of CA would posit the reverse: that 'talk-in-interaction' provides extraordinarily rich evidence of the underlying rules of how everyday language works.

The field of ethno-methodology with its interest in the study of methods used by a group of people is a strong source of inspiration for CA. Its most famous pioneer, the sociologist Harvey Sacks (1992), had been exploring a corpus of phone calls to the Los Angeles Suicide Prevention Centre and noticed that, while members of staff were required to *elicit* callers' names during the course of the conversation, the callers themselves would use a range of strategies to *avoid* revealing their identity. Sacks began to wonder 'where in the course of conversation could you tell that somebody would not give their name' (Sacks, Vol. I: 3). With this examination of talk-in-interaction, Sacks raised the possibility of investigating utterances as social *actions* which speakers use to get things done (or to avoid getting things done) in the course of a conversation with others.

Increasingly linguists and social scientists are recognizing that the social world is pervasively a conversational one in which an overwhelming proportion of the world's activities are conducted through spoken interactions, whether it is taking part in a meeting, teaching students, arranging an appointment, sealing a deal, making a complaint, enjoying a family meal or simply negotiating day-to-day relationships with people. In short, CA considers that ordinary conversations construct social realities. Through the use of audio or video recordings produced as transcripts, analysts can examine directly how talk organizes the world within specific social settings.

So, what are the key features of the CA approach? We shall consider the following:

- *Orderliness in talk-in-interaction*: Ordinary, everyday speech exhibits a high level of regularity or orderliness. This orderliness is not governed

by innate cognitive structures of language (although grammatical features clearly inform the structure of utterances), but reflects a socially organized structure of interpersonal action. This orderliness, known as 'the speech-exchange system' is apparent in the pattern of sequential turn-taking, which, in Sacks et al.'s (1974) view, characterizes most spoken interactions. The following extract involves a conversation between three friends and Deborah Schiffrin, the researcher:

1 Henry:	Y'want a piece of candy?		
2 Irene:	No.		
3 Zelda:	She's not on a diet=		
4 Debby:		= who's not on	[a diet
5 Irene:			[I'm on- I'm on a diet

(Schiffrin, 1994: 62)

Despite the apparent 'messiness' of this snatch of casual conversation, there is, nevertheless, an orderliness conducted by means of 'adjacency pairs': the question-answer sequence in ll.1–2, and the statement-response sequence of ll.3–4 and ll.4–5. In each adjacency pair, the second part of the pair becomes the first part of the next pair of exchanges, which produces a 'chain' of turns. In this way, the answer in line 2 is also the statement to which Zelda orients and responds in line 3 and so on.

- *A data-centred approach:* CA has a primary interest in transcript data and what these data reveal. Cameron (2001: 89) describes CA's microanalytical approach to spoken discourse as 'putting a snowflake under the microscope to examine its complexity and detail'. In order to enhance the quality of microanalysis, Jefferson (1984) evolved a detailed transcription system to help analysts provide a characterization of how meaning is produced through verbal, vocal, prosodic and paralinguistic means. Phonetic aspects of speech are often fully transcribed.
- *A neutral and 'objective' stance:* Analysts are discouraged from bringing any theoretical or philosophical presuppositions to the data, in order to allow these to 'speak for themselves'. *A priori* speculation in terms of speaker 'orientations', motivations, identities, social settings and cultural norms are regarded as distracting and irrelevant. Factors 'external' to the data such as gender inequalities or cultural misunderstandings may be 'made relevant' by the participants in the

transcript data. It is on this basis alone that external factors become available to the analyst for comment and interpretation.

Overall, the quest in most CA studies is to understand how turn-taking within a stretch of talk is negotiated between participants in order to produce some form of social action or 'reality'. The turn-taking system provides a basic framework for the organization of talk, since it allows participants to interact in a coordinated way, rather than simply to make random, disconnected contributions. Interaction is often structured around pairs of adjacent utterances or statement–response structures. Thus, if the first utterance is a question, the next utterance will usually be heard as an answer.

Despite its name, CA does not concern itself only with social conversation. The approach has also been applied to such wide-ranging settings as talk in professional and workplace settings (e.g. Clifton, 2014), masterclasses in opera singing (Atkinson, 2013), psychotherapy (Pain, 2009), media genres such as radio phone-ins (Hutchby, 1996) and conflict resolution (Sikveland and Stokoe, 2016). Drew and Heritage (1992) have argued that there are structural differences between formal and informal settings. For example, within institutional talk, participation is focused on particular tasks and outcomes; the order of participation is more rigid; and the kind of turns expected of participants is relatively limited and to a certain extent, pre-allocated.

In one renowned study, Svennevig (2011) uses CA to analyse how business leaders make various identities relevant through different forms of talk. The author explains that 'this does not mean that [leaders] have to mention explicitly certain social categories but that they will perform certain actions or use a style conventionally associated with a certain type of social group or role, so-called "category-bound activities"' (Svennevig, 2011: 20–21). Interpreting an utterance is not down to the analyst's understanding of a turn, but is guided by interlocutors' *reactions* in subsequent turns of talk, known as 'next turn proof procedure' (Svennevig, 2011). In this extract from a study of management meetings in Malaysia, the business leader Nils asks for a report from the team responsible for conducting tests on a new technology (referred to here as MCI tinting test):

1 Nils:	MCI tist-uh tinting uh test (.) okei we are running that for three
2	months
3	(5.0) (NN: soft laughter)
4 NN:	[huh]? Anything news there?

5 Nils:	[()]
6	(3.0)
7 Nils:	three months without testing?

(Svennevig, 2011: 29)

Svennevig suggests that the long pauses that follow Nils's question in line 1 are interpreted by the leader as signs of trouble. This can be seen from his response to the laughter in line 3 when he asks 'three months without testing'? This diagnosis construes the situation as problematic in that it relates the potential no-news report to the time lapsed: three months is rather long. This and further transcript data is used by Svennevig to suggest that Nils's leadership style is quite unimposing as he does not express his potentially negative evaluations directly. Instead he merely questions, repeats and sums up what his interlocutors appear to say. Nonetheless, Svennevig deduces that Nils uses an effective form of leadership talk as his leadership goals are ultimately achieved through this series of turns.

So, what is the contribution of CA to the field of linguistics? Primarily, the approach continues to demonstrate that fundamental rules govern the patterning of talk-in-interaction. Just as we can theorize the rules that underlie grammatical and syntactical choices, so we can make reasoned predictions – based on our knowledge of turn-taking rules and the ways these are occasionally broken or 'violated' – of the ways in which participants typically construct conversations within given social contexts. Schegloff (1997: 184) has posited that CA satisfies the need for a systematic form of discourse analysis that offers linguists an 'Archimedean point' which is 'internal to the object of analysis itself'. In other words, CA's data-centred approach possesses its own internal rule system, which allows linguistic data to be analysed neutrally and a single, reliable interpretation to be reached. CA focuses on what linguistic data reveal, rather than upon external, sociological theorizing and additionally offers what it regards as a reliable set of instruments by which to describe, analyse and interpret spoken discourse within the field of linguistics. By the same token, CA can be deployed by researchers as an invaluable 'stand-alone' tool in cross-disciplinary studies. For example, Ehrlich (2006) uses CA as her analytical tool to examine question–answer sequences in a US courtroom rape case, to support her broader discussion of gender identities and power. Kitzinger (2015) has also evolved a version of CA known as feminist conversation analysis, whereby the methodology is harnessed to identify exactly how participants 'do' power and powerlessness, oppression and resistance within gendered contexts.

By using methods of microanalysis, working from the bottom-up, CA attaches a very special value to the linguistic data itself and regards itself quasi-scientifically, as a caution against 'the relativisation and perspectivisation of cultural analysis' (Schegloff, 1997: 183). However, not all linguists using discourse analysis would agree that such a quest for neutrality or 'objectivity' is attainable or even desirable, as we shall now see.

Interactional Sociolinguistic Analysis (ISA)

ISA focuses on the analysis of face to face interaction within its wider sociocultural context. Like CA, ISA views the small, verbal and paralinguistic features that people use in speech to be vitally important in signalling their intended meanings. In the following extract from a classic study by Schiffrin (1994: 100), the teacher misreads the pupil's use of rising intonation (indicated by '?'):

Teacher:	James (.) what does this word say?
James:	I don't know?
Teacher:	well (.) if you don't want to try (.) someone else will (1) Freddy?

Schiffrin suggests that the teacher has misread James's rising intonation as evidence that he cannot be bothered to reply, but when the researcher later interviewed the boy, she found that he knew the answer but just wanted more encouragement from his teacher to make a contribution. Being alert to individual speech cues like rising intonation can provide important information about how to respond to people. So, in a professional situation, teachers can learn from ISA that they need to be able to read children's speech cues more carefully, or they might demotivate their pupils.

Unlike CA, ISA values the background knowledge both of the interlocutors themselves and of the analyst to make fuller sense of an interaction. Schiffrin's later interview with the boy provided important supplementary evidence in revealing that he did want to answer the teacher's question. While CA is committed to ascertaining how the sequencing and structuring of conversation achieves given meanings within particular local settings, ISA studies the ways that interaction 'indexes' (or points to) wider social phenomena such as the linguistic styles of a social group, teacher–pupil relations or cross-cultural tensions. Each time a conversation happens, it is helping to constitute, reinforce and at times, challenge wider social styles of communication, norms and relationships.

ISA is a theoretical and methodological perspective on spoken discourse that evolved from a variety of disciplines, including ethnomethodology, ethnography, pragmatics and dialectology. It has its roots in the work of Hymes (1972), Goffman (1981) and particularly Gumperz (1982), who were all interested in studying the connections between 'small-scale interactions' and 'large-scale sociological effects' (Jaquement, 2011: 475). All three linguists were concerned to investigate social problems as speakers were constituting them 'on the ground' at a particular time and place, but it was Gumperz who 'concentrated on concrete evidence of sociolinguistic methodology in action' (Sarangi, 2011: 377). He helped to develop cross-disciplinary methods of using ethnographic research to gather and record rich data sets of authentic, naturally occurring talk and then to subject his transcripts to finely grained analysis. Gumperz's (1982) founding insight for ISA was therefore to take the speech event as the unit of analysis rather than community-wide linguistic and cultural norms, to see that culture did not stand outside talk but was constituted in and through situated speaking practices.

His approach is based on the pragmatics view that when people speak they are unable to say everything they mean explicitly enough. Speakers depend largely on background knowledge to provide the relevant context for interlocutors to understand how their words should be received. Jaspers (2011) gives the example of the well-used phrase 'how are you?' to illustrate how listeners are guided by context to give an appropriate reply. In most Western cultural settings, a speaker would use this as a phatic greeting rather than to elicit a full account of a person's health problems. However, the words themselves are insufficient to denote this conventional meaning; the use of emphasis and a lengthening of the vowel (in a UK setting) might distinguish the routine, polite meaning from a genuine inquiry about health as in 'how are:: you?' Such patterns are often culturally determined. In the latter case, the relevant background information might be that the respondent is being treated for cancer and both parties are aware of this. ISA would acknowledge that such a simple phrase could be delivered in multiple ways according to different cultural variables including the speakers' ethnicities, gender, class, education, local setting, relationships and so on. For ISA, the connections between verbal and non-verbal signs and particular meanings are often complex and ambiguous.

We now consider some of the key concepts and features of the ISA approach as follows:

- *Inference*: If talk is insufficiently explicit, complete or comprehensible, listeners use inference to decode or interpret a speaker's intended meaning. Jaspers (2011: 136) argues that most talk is conventional and that 'it tends to produce typical sequences of words and appropriate contexts for producing them in'. Despite this, talk can often be vague. A statement like 'the phone's ringing' is on the surface a statement of fact unless it is understood within a different context as a command to a listener to pick the phone up. Most people are routinely able to make these inferences as they quickly learn to infer the relevant extra-communicative knowledge.
- *Contextualization cues:* Inference is aided by the ways in which speakers employ multimodal signs or resources to signal their intended meanings in their talk or to make aspects of context available. These 'contextualisation cues' are hints, clues or signals that enable the researcher to place the talk in context or to 'steer the interpretation of the words they accompany' (Auer and Luzio, 1992: 3). These signs can be verbal such as the use of code or style shifting to respond to changing content, mood or audience. Paralinguistic signs are used alongside words and can be prosodic (accent, intonation, pausing, hesitation, volume, etc.) and non-verbal (posture, gesture, eye contact, mimicry, etc.). Contextualization cues often produce a degree of redundancy to facilitate interpretation. For example, a speaker may use deictic words such as 'this', 'that', 'here' or 'later', complemented by hand gestures, such as pointing, to reinforce a statement.
- *Detailed microanalysis of spoken interaction*: ISA examines how participants speak and interact at the microanalytical level of lexical, stylistic and grammatical features, turn-taking, prosody and paralanguage. While CA predominantly studies sequences of turn-taking, ISA adopts a more fluid approach, commenting on any use of linguistic, prosodic or non-verbal feature that serves as a contextualization cue. ISA focuses on producing a finely grained analysis of spoken interactions in relation to its 'situated context': that is, contextual presuppositions or cultural knowledge about the context that participants and analysts may hold.

A central focus in ISA-driven research has been upon the problem of miscommunication between different ethnic groups in Western, urban workplace contexts. Gumperz (1982) investigated 'cross talk' or how systematic differences between certain English varieties and British Asian

varieties may be linked to the perception that there were 'communication problems' between British and Asian speakers in certain work contexts such as job interviews. One difference causing problems was his finding that South Asians have been socialized to enter interview settings as 'hierarchical encounters where candidates are expected to show reluctance to dwell on personal likes or preferences and avoid giving the appearance of being too forward or assertive' (Gumperz 2001: 224). This was often interpreted by white British employers as a failure to use personal reflection to amplify on interview questions, such as why a candidate might want a particular job. Gumperz's research showed that inferences based on talk are inextricably bound up with issues of evaluation, power relations and social identities. The way we speak reflects the complex social variables that constitute us as individuals in the world and which can also maintain inequalities between people from different backgrounds.

Since Gumperz's early research, ISA has evolved to apply to a multitude of contexts. Holmes and her team use ISA to great effect when investigating the social relationships between work colleagues in New Zealand companies, and also in understanding what constitute 'effective' linguistic practices for senior leadership (e.g. Vine et al., 2008: 345). ISA has also been used from an 'appreciative inquiry' perspective, to examine whether gender plays a role in governing how women 'do leadership' in work settings (Holmes and Vine, 2017). Their findings have contributed to the broader debate about why there is just a small minority of women at senior management level (Holmes and Vine, 2017). Several scholars have combined principles and methods from ISA with other approaches (such as linguistic ethnography or social semiotics). These include studies by Sarangi and Roberts (1999) on interactions in medical, mediation and management settings, by Roberts and Campbell (2006) on the role of ethnicity within job interviews and by Iedema (2003) on ways in which people enact change within health organizations. The emergence of critical sociolinguistics in recent years has enabled discourse analysts to study large-scale political issues and social injustice. Duchene, Moyer and Roberts (2013) are among those who use local contexts to analyse the role language plays in the mass migration and mobility of citizens. Rampton (2017: 1) also found ISA to be a valuable tool in considering issues of 'globalised superdiversity', by which he means that people's identities can no longer be categorized according to macro-categories such as race, gender, class or culture. Rather, with the increased movement of people and populations around the world, through business, tourism, migration and displacement, people's social identities have become

more multilingual, fluid, shifting and intersectional. Finally, Angouri (2018) takes a critical sociolinguistic approach using ISA for the analysis of business meetings focusing on the politics of workplace discourse. Angouri argues that ISA provides the necessary tools for connecting the situated moment of interaction to the sociopolitical order. This continues a line of thinking which combines ISA with critical discourse traditions, particularly the discourse historical approach (Angouri, et al., 2017). ISA is an effective method by which to record and capture the multiple ways in which people negotiate their identities in small-scale, localized, everyday activities, which in turn can index larger-scale institutional and social processes.

For the future, Rampton (2017: 11) has suggested that ISA could be usefully applied to study 'the interface between face-to-face and digital interaction together with the implications of new forms of surveillance'. Certainly, this could offer a promising new direction for ISA, which, arguably, is more diverse in its methodology compared to other approaches of discourse analysis represented in this chapter. One scholar who has developed a systematic methodology in her applications of ISA to *digital* work contexts is the sociolinguist, Darics (2015). Her three-stage 'Deanex' method (Deconstruction–Analysis–Explanation) is a shorthand, more user-friendly version of ISA for examining how digital texts use a range of paralinguistic contextualization cues (such as smiley faces) to convey 'complex, digitally mediated meaning-making processes' (Darics, 2015: 258).

So what is the contribution of ISA to the field of linguistics? First, it offers scholars a perspective from which to understand how small, often unnoticeable features of speech contribute to constructing larger discursive phenomena, whether particular speech registers and styles, professional roles, identities and relationships or prejudices and inequalities between individuals and social groups. Rampton (2017: 7) warns of the danger here of either under-interpreting or over-interpreting data at the microanalytical level and suggests an 'ISA mission' to train scholars more formally through 'data sessions'. Second, ISA helps to show how subtle features of interaction can make big differences, sometimes with 'disastrous consequences' such as the loss of a job or the demotivation of a pupil, according to Jaspers (2011). For this reason, ISA has a real-world application; scholars can show through their analysis how and why miscommunication is occurring. Finally, ISA's potential to identify social problems in this way can mean that it provides a vehicle for questioning, challenging established practices, transformation and in the longer term 'contribut[ing] to our understanding of larger social evolutions' (Jaspers, 2011: 13).

Discourse Analysis (DA)

Like CA and ISA, DA has a strong focus on studying language in its own right, although it is often appropriated as an analytic tool by researchers from other disciplines. Like CA, this approach in its diverse strands recognizes that there is an orderliness, logic and meaningfulness to linguistic performance. The hallmark of DA, however, is its recognition of the variability in and the context dependence of participants' discourse, written or spoken. By far the most common sources of data for DA tend to be the accounts drawn from recordings of informal, spoken interviews between researchers and respondents, once making it a popular, qualitative method of data analysis for linguists and social scientists alike (e.g. see Phillips and Jorgensen, 2002; Potter, 2012; Wooffitt, 2005). In the past, DA has been used to analyse a variety of data such as formal academic journal writing (Gilbert and Mulkay, 1984); newspaper reports and media interviews (Potter and Reicher, 1987), and accounts of journalists and politicians during a political controversy (Potter and Edwards, 1990).

Despite its clear focus on language, DA, like CA, has its origins in sociology. Social scientists Gilbert and Mulkay (1984) were investigating the sociology of scientific knowledge following a dispute in the field of biochemistry. Their analytic goal was to discover the systematic features of scientists' discourse, but they came across strongly conflicting descriptions of experience. They had wanted to produce a single, definitive, sociological account of the social processes which were at work in the way this group of scientists resolved their dispute. The pair began to realize that accounts and descriptions cannot be treated as neutral representations of an 'objective' social reality but as linguistic *constructions* of a given experience (see also Edley and Litosseliti, this volume). In other words, they received a variety of different versions of ostensibly the same phenomenon: scientists' discourse in formal academic journals was systematically constituted through an 'empiricist repertoire', indexed by the use of formal language and terminology, a strict adherence to scientific procedure and its role in revealing an 'objective' reality. In contrast, discourse generated in informal interviews was constituted through a 'contingent repertoire', indexed by a more informal tone, biographical detail, personal comment and expression of feeling.

So what are the key features of DA? Four are of interest to us here:

- *Principle of variability:* Language is used for a variety of functions and its use has variable consequences. The same phenomenon (such as a

scientific experiment) can be described in a number of different ways according to audience, purpose and context, and thus there will be considerable variation in accounts. Accordingly, these will be received and interpreted in a range of contrasting but context-appropriate ways.

- *Constructed and constructive nature of language:* According to Gilbert and Mulkay (1984: 7), 'discourse can never be taken as simply descriptive of the social action to which it refers, no matter how uniform particular segments of that discourse appear to be'. Rather, any account of experience is a form of interpretation, constituting a new version of reality. Thus, the kinds of linguistic events that occur in interview data – descriptions, narratives, accounts, comments, jokes – are constructions that depend on the context in which they are produced and the purposes speakers wish them to serve. Indeed, the constructive and flexible ways in which language is used should themselves become a subject for study (Potter and Wetherell, 1987).
- *Interpretative repertoire*: Research accounts often provide evidence of regular, descriptive features or devices. The term 'repertoire' here denotes 'recurrently used systems of terms used for characterizing and evaluating actions, events and other phenomena' (Potter and Wetherell, 1987: 149). Repertoires are often signified by 'a distinctive vocabulary, particular stylistic and grammatical features, and the occurrence of specific features of speech, idiomatic expressions and metaphors' (Wooffitt, 2005). There is some equivalence between the concept of 'repertoires' and the Foucauldian concept of 'discourses'.
- *A combination of micro- and macroanalytical approaches:* Micro and macro-approaches work together to produce an analysis within DA. Its main conceptual tool, interpretative repertoires, are used to identify linguistic features in the data such as idioms, metaphors, figures of speech and institutional jargon, which may identify wider patterns of language use. These in turn provide evidence for speculating about the role of contingent psychological, social or political factors that may inform the speech or writing of research participants. However, unlike CA, DA does not offer the same degree of formal methodological procedure (Wooffitt, 2005).

Overall, DA has principles in common with the Saussurian view that language constructs social realities through its use of culturally agreed sign systems. DA takes issue with the positivist and empiricist basis to

much traditional linguistic research that treats language data as available to 'objective' or indeed, scientific forms of inquiry. Unlike CA, DA works from a hermeneutic, interpretative or social constructionist stance, which challenges the idea that there is a single 'Archimedean point' from which linguistic data can be analysed neutrally and a single, reliable interpretation reached. This positivist principle which underlies CA has been further challenged by the work of discourse analyst, Potter (2012), who argues that ideologies are embodied in and reproduced through everyday discourse practices. In their DA study of the racist discourse of white New Zealanders, Potter and Wetherell (1992) identify the textual evidence for interpretative repertoires which, they argue, signifies the macrostructuring role of dominant ideologies such as racism and unequal class relations.

What is the contribution of DA to the field of linguistics? Certainly, DA has evolved into a theoretical framework that potentially threatens tenets of linguistics as a 'science'. For many applied and sociolinguists working in inter-disciplinary ways with various forms of cultural analysis, DA's social constructionist and interpretative stance is likely to make good epistemological sense. DA combines microanalysis of language with macrolevel discussion about how versions of social reality are constituted and thereafter made resistant to criticism by the use of specific rhetorical strategies. This makes it a particularly effective method for deconstructing the linguistic accounts of political and media figures (e.g. Potter and Edwards, 1990). But Wooffitt (2005) argues that DA is limited by its lack of a formal apparatus by which to conduct such microanalyses and tends to borrow methods eclectically from a range of fields such as speech act theory, literary criticism and indeed, CA. For this reason, Gravells (2017) developed a DA methodology for written texts, which she applied to her media data documenting the BP oil spill on the US coastline in 2010. Recent versions of DA have become more closely associated with DP (e.g. Wetherell and Edley, 2014), which in turn has strong links with CDA (e.g. Wodak and Meyer, 2015).

Critical Discourse Analysis (CDA)

CDA is useful to linguistics scholars because, like the approaches above, it analyses real, and often extended, samples of written and spoken discourse. However, unlike CA in particular, CDA adopts a macroanalytical view of the world in that it takes the notion of discourse in its widest sense to be the essential unit of communication. Thus CDA research specifically considers how language works within institutional and political discourses

(e.g. in education, business, health, media, politics), as well as specific discourses (e.g. around gender, class, race), in order to uncover overt or more often, covert inequalities in social relationships.

CDA does not regard itself as a coherent theory, a sub-discipline of discourse analysis or as a methodological approach like CA, ISA and DA. Rather, it views itself as a 'critical' perspective or programme of scholarship which can be combined with other approaches and commissioned by scholars working in a range of disciplines related both to linguistics and to the social sciences more generally (van Dijk, 2001). CDA evolved formally in the early 1990s as a perspective applied by a network of scholars with shared political concerns about social inequalities in the world but with widely differing interests in areas such as literature, politics, media studies, genre studies and information technology (see below). Since then, various branches of the movement have emerged. Among these, critical linguistics (e.g. Fowler et al., 1979) is the forerunner of CDA and looks closely at how features of grammar work ideologically within individual texts to undermine oppressed groups. French discourse analysis (e.g. Pecheux, 1982) looks at the ideological effects of discursive formations in positioning people as social subjects but does not emphasize practical applications of theory. Social semiotics (e.g. Hodge and Kress, 1988) and multimodal discourse analysis (e.g. Kress and Leeuwen, 2006) explore ways of analysing multi-modal texts and practices of reading and interpreting. Linking human cognition with wider social processes, socio-cognitive studies (e.g. van Dijk, 2008) focus on the importance of understanding (political, social, cultural) context in order to conduct any form of discourse analysis. Lastly, the discourse-historical method aims to 'integrate systematically all available background information in the analysis and interpretation of the many layers of a written or spoken text' (Fairclough and Wodak, 1997: 266). Whether analysts with a critical perspective prefer to focus on microlinguistic features as in the case of social semiotics or macrolinguistic features as in the case of French discourse analysis or combine the two as the discourse-historical approach aims to achieve, a common reference point for all approaches is primarily a linguistic one: that of Halliday's systemic functional grammar. Halliday (1970: 142) stressed the relationship between the grammatical system and personal and social needs that language is required to serve, through three meta-functions of language that are continuously interconnected: the ideational, the interpersonal and the textual. Hence, in Halliday's view as a linguist, text and context are inextricably linked in a dialectically constitutive relationship.

With its historical origins in mind, as well as its theoretical diversity, which key features are central to CDA's 'critical perspective'? The following are suggested here:

- *Language as social practice:* Language use in speech and writing is seen as a social practice, which 'implies a dialectical relationship between a particular discursive event and the situation(s), institution(s), and social structure(s) which frame it' (Fairclough and Wodak, 1997: 258). Thus, in this two-way relationship, discourse is considered to be socially constitutive, as well as socially shaped.
- *Relationship between language and power*: Since discourses are so influential, they can help to produce, reproduce and contest unequal power relations between different ethnicities, social classes, genders, ages and professional groups.
- *A committed, emancipatory agenda*: van Dijk (2001: 96) has used the term 'critical' to mean 'discourse analysis with attitude'. Working from the opposite pole to CA, CDA starts from 'social problems and especially on the role of discourse in the production and reproduction of power abuse or domination. Wherever possible it does so from a perspective that is consistent with the best interests of dominated groups' (van Dijk, 2001: 96).
- *Text and context:* CDA largely draws upon a 'solid linguistic basis' (van Dijk, 2001: 97) in that it examines textual features such as sentence structure, verb tense, syntax, lexical choice, the internal coherence and cohesion of discourse and so on. However, it places such microanalysis first, within a 'critical perspective' and second, within the contextual frame of the 'production' and 'consumption' of discourses. In practice the analyst should consider the ways in which historical and cultural processes and structures give rise to the production of a text and the ways subjects within these processes/structures 'consume' or interact with texts. This implies a dialectical relationship between the reading of a particular text and the context, institution or social structure that frames this reading (Wodak and Meyer, 2015).
- *Self-reflexivity:* Given CDA's commitment to an emancipatory agenda, an important self-correcting principle is that of self-reflexivity: the need for discourse analysts to be explicitly self-referential about their *a priori* assumptions, motivations and value systems in conducting linguistic research. Such value systems are often informed by Marxist critical theory, which in turn is viewed – in a curious reversal of CA

logic – as offering analysts an 'objective' reference point on social reality (Blommaert, 2005).

- *Interdiscursivity/intertextuality:* Interdiscursivity involves the ways in which one discourse is always inscribed and inflected with traces of other discourses. Chouliaraki and Fairclough (1999: 136) give the example of feminist political discourses which have 'internalised Marxist and poststructuralist discourses, incorporating some of their concepts, but appropriating them in ways which accord with their own logic'. Likewise, intertextuality is where one text bears traces of a series of preceding texts, thus reinforcing historical presuppositions. Fairclough (2001: 127) gives the example of a magazine article on a royal wedding, which presupposes reader knowledge about participants, situational context and implicit power relations ('royal family are more important than readers').
- *Deconstruction:* CDA is concerned to unravel exactly how binary power relations constitute identities, subject positions and interactions within discourses and texts, and thus create social inequalities. One example is Wodak's deconstructive analysis of a series of interview narratives with Members of the European Parliament in order to ascertain whether gender mainstreaming policies were genuinely producing structural changes in equalizing gender roles (Wodak, 2005).

With its diverse range of theoretical approaches, no single research study can be considered prototypical of CDA, although common to many studies is an interest in political discourse and the language of the media. However, van Dijk's (2016) study of racism and political discourse contains some useful illustrative elements, showing the integration of micro and macrolinguistic analysis. The topic – racist propaganda in the European parliamentary elections of 2014 – is in keeping with CDA's aim to show how discourse enacts and reproduces the power of dominant groups. In this study, van Dijk's interpretative procedures are fairly typical of the CDA tendency to produce complex, hierarchical models of linguistic analysis. Focusing his application of a 'context model' to a campaign poster for the political party, for the UK political party, UKIP, he first examines discursive-semiotic features such as the strategic use of numbers ('26 million people') and rhetorical questions ('whose jobs are they after?'). He then analyses sociocultural knowledge such as the poster's assumption that people in the UK feel threatened by the arrival of immigrants. Finally, he analyses the societal and political macrostructures assumed by the poster. He describes

these as 'a form of organizational communicative action (propaganda) of a political party, part of a political system, and as part of a state (the UK) and an organization of states (the European Union) and its organization (the European Parliament)' (van Dijk, 2016: 66). He concludes that analysis at the three levels demonstrates an attitude of white dominant racism both in the UK and Europe that instigates a 'politics of fear'.

What is CDA's contribution to the field of linguistics? On the plus side, CDA has been of immense value to researchers looking at institutional discourse, where differentials in power relations are often systemic. As we have seen, different theorists have also provided models of analysis and sets of analytical tools with which to deconstruct public and media discourse. On the negative side, linguists have criticized CDA in terms of the vagueness of its method, methodology and analytical approaches; as well as in terms of 'its biased interpretations of discourse under the guise of critical analysis' (Blommaert, 2005: 31). For those linguists who continue to assess their discipline primarily as a science governed by a positivist model of research, CDA will beg all sorts of questions about 'representativeness, selectivity, partiality, prejudice and voice' (Blommaert, 2005). For those linguists whose research has already embraced hermeneutic, interpretivist or social constructionist principles, CDA will be appreciated for its readiness to declare its principles and to marry ideological commitment to the pursuit of rigorous, replicable and retrievable research methods.

Feminist poststructuralist discourse analysis (FPDA)

Like CDA, FPDA has its roots in DA approaches but more exclusively draws from post-structuralist theory (e.g. Bakhtin, 1981; Barthes, 1977; Derrida, 1987; Foucault, 1972). Rather than taking a 'critical' perspective on the discourse data based on Marxist social theory, it has embraced a 'feminist poststructuralist' perspective influenced by the work of Weedon (1997). FPDA can be defined as

> an approach to analysing intertextualised discourses in spoken interaction and other types of text. It draws upon the poststructuralist principles of complexity, plurality, ambiguity, connection, recognition, diversity, textual playfulness, functionality and transformation.
>
> The *feminist* perspective on poststructuralist discourse analysis considers *gender differentiation* to be a dominant discourse among competing discourses when analysing all types of text.
>
> (Baxter, 2008: 245)

FPDA partly originated from post-structuralist discourse analysis (PDA) (see Angermuller 2014). PDA adopts exactly parallel methods to its partner, but without the focus on a feminist perspective where gender differentiation is key. FPDA originally evolved in response to an ethnographic case study of teenage school children's assessed talk in a British classroom (Baxter, 2003). During the long-term process of observing how these students interacted during a course module on public speaking, I discovered that the ways in which children's talk was assessed as part of their GCSE (16+) examination depended as much on the interplay of four ethnographically identified, dominant 'discourses' – in the widest sense of this term (see above) – as upon any formal assessment criteria. The discourses were labelled *gender differentiation, peer and staff approval, fair play* and a *model of collaborative talk*, which were seen to 'position' individual students in different and competing ways, at times as relatively powerful, and at other times as relatively powerless. Thus, my research evidence revealed that students who were awarded the top 'A' grade were not necessarily the most proficient speakers in the class. Rather, these students were more consistently positioned as powerful subjects among their classmates within and across the four discourses, which in practice meant that they tended to be male, popular with their peers, liked by their teachers, given more turns in class discussions and able to use both presentational and collaborative forms of talk reasonably effectively. These positions of power were inscribed by hegemonic educational and social practices that appear to approve the ascendancy of males, the role of 'high status' students and the abilities of speakers rather than listeners.

FPDA does share with CDA a number of defining features in keeping with their social constructionist origins: the idea of language as social practice; the relation between language and power; the importance of the self-reflexive researcher, the principle of intertextuality; and the role of deconstruction in conducting discourse analysis. However, FPDA is not simply a branch of the multidisciplinary and accommodating CDA, because it operates within a contrasting yet 'supplementary' theoretical paradigm (Derrida, 1987). So, what are the key defining features of FPDA, which distinguish it from CDA? We can summarize these as follows:

- *Not an emancipatory agenda, but a 'transformative quest'*: In line with its post-structuralist origins, FPDA does not support an emancipatory agenda to discourse analysis because this is 'a will to truth' leading to 'a will to power', which will ultimately transmute into its own 'grand narrative' (Foucault, 1972). Alternatively, FPDA supports small-scale,

bottom-up, localized social transformations that are vital in its larger quest to challenge dominant discourses (like gender differentiation, or indeed, an institutionalized approach to discourse analysis such as CDA.)

- *The diversity and multiplicity of speakers' identities*: For FPDA, many power variables construct speakers' identities such as regional background, ethnicity, class, age, though among these, gender is viewed as a significant force. According to context or moment, some of these variables are more or less salient in constructing identities through spoken interaction. (FPDA also has the potential to analyse the multi-voiced dimensions of *written* discourse, but as yet there is little work in the field [for example, see Warhol, 2005; Mackenzie, 2017]).
- *Complexity rather than polarization of subjects of study*: FPDA challenges binary thinking that tends to structure thoughts in oppositional pairs, placing one term over the other. Significantly, it takes issue with CDA's tendency to polarize subjects of study into two categories – the *more* powerful: those (people, groups, systems) who wield power over others, and the *less* powerful, or those who suffer its abuse (Baxter, 2003). So, for example, FPDA argues that most females are *not* helpless victims of patriarchal oppression, but that gender identities are complex, shifting and multiply located, continuously fluctuating between subject positions of powerfulness and powerlessness.
- *An interplay between micro and macroanalysis*: FPDA draws upon both levels of analysis or rather, an interplay between the two. The microlevel looks at the construction of meaning within localized or context-specific settings such as classrooms, board meetings and TV talk shows. Within these, it examines linguistic data in terms of turn-taking, sentence structure, verb tense, lexical choice, the internal coherence and cohesion of discourse – aspects that help analysts to pinpoint the exact moments in discourse when a speaker shifts between states of relative powerfulness and powerlessness. Using these data as evidence in a continuous interplay, dominant discourses are identified synchronically within individual transcripts, and diachronically, over time. Macroanalysis, drawing on the identified, dominant discourses, helps to explain how major or subtle shifts in the power relations occur between speakers within particular interactions and contexts.

What is the contribution of FPDA to the field of linguistics? While it is the newest and least established of the five approaches, FPDA is arguably a necessary antidote to the other four, in that it offers a 'supplementary'

approach, simultaneously complementing yet challenging the 'truth' of other methods. Within linguistics, there is much value to be gained from a *multi-perspectival* approach that combines different methodological tools in a pragmatic way as befits the task in hand. The textual interplay between competing terms, methods and sets of ideas allows for more multiple, open-ended readings of a piece of analysis. Thus while CDA in principle (e.g. van Dijk, 2016) seeks to deconstruct hegemonic power relations inscribed within texts, and in so doing, produces a single, oppositional reading that may eventually become authoritative, a poststructuralist, supplementary approach encourages the possibility of several competing readings, which also can be contested. Innovative work within linguistics has been carried out by scholars prepared to experiment with multi-perspectival and multi-method approaches. For example, Kamada (2010) combines discourse analytic approaches including FPDA with Bourdieu's (1977) theories of cultural analysis to explore the linguistic construction of ethnic identities among six Japanese-Caucasian girlfriends. Baxter and Al A'ali (2016) use FPDA with ISA to analyse the ways in which senior women in both Middle Eastern and Western contexts move between powerful and powerless discursive positions in their attempts to be effective as leaders. Mackenzie (2017) uses FPDA with her own digital-discursive method in order to analyse the ways in which individuals identifying as 'mums' shift between different discursive positions to achieve solidarity with or separateness from other participants on the online discussion board, *Mumsnet*. In sum, it is the quest of FPDA to act as a kind of 'agent provocateur' to other more established approaches to discourse analysis, constantly questioning their status as grand narratives that may serve to impede new ways of thinking.

What are the possible limitations of FPDA? The first may lie in its *warrant* for identifying, naming and analysing significant discourses within classroom and other contexts. There are times when it seems that both CDA and FPDA are capable of randomly generating new discourses to suit their ideological (CDA) or epistemological (FPDA) purposes. CA, in contrast, bases its own warrants on a systematic methodology: any larger patterns it claims to detect in its microanalysis of 'talk-in-interaction' can always be located, turn by turn, within specific speech exchanges. Secondly, FPDA may need to devise more linguistically distinctive methods of analysis in the future. At present, its denotative/connotative approach to analysis relies on eclectic methods more associated with ISA, CA and literary criticism. The attribution of a rigorous and reliable method of analysis – a distinctive brand – still remains the preserve of CA.

Conclusion

This chapter has explored five approaches to analysing discourse that are of particular value to the field of linguistics. First, CA is a microanalytical approach that offers a theoretical framework, a terminology and a systematic modus operandi for analysing spoken discourse in particular. Furthermore, CA is a perfect instrument for linguists of any theoretical persuasion who are looking for a 'stand-alone' set of analytical tools in order to examine spoken interaction according to its clear model of the 'rules' of turn-taking. Secondly, ISA offers analysts a means of examining a whole range of micro-linguistic features, including turn-taking, as indexical of broader social patterns. These in turn provide insight into how sociocultural problems are constructed through language, and eventually, how they may be tackled and resolved. Thirdly, DA offers linguists a bridge between micro and macroanalytical approaches in its key concept of the 'interpretative repertoire'. It works 'above the sentence' in its exploration of how interpretative repertoires, constructed by characteristic stylistic features, help to produce different accounts of social reality. However, DA does not offer such a clear and accessible 'stand-alone' approach as CA (see Gravells, 2017). Fourthly, CDA has always refuted that it is, in fact, a discourse-analytic approach. Linguists attracted to the use of CDA are likely to share the critical perspective that macrosocietal concerns, such as processes of inequality, transcend a scientific interest in 'language for language's sake'. In the last ten years, CDA exponents have done much to counter the charge that their top-down approach fails to 'explain how their perspective might apply to what is happening right now, on the ground, in this very conversation' (Wetherell, 1998: 395). CDA research work still favours higher level modelling of linguistic and social processes in preference to data-centred studies, although this is changing (e.g. see van Dijk, 2016). Finally, FPDA aims to demonstrate that the notion of a contradiction between micro and macroanalysis is irrelevant. It has shown how its approach can 'undo the macro-micro dichotomy' (Heller, 2001), by analysing transcripts microanalytically both within a given time and space, and ethnographically across time. 'Significant moments' in discourse provide evidence for identifying interwoven discourses, which produce constant shifts in the power relations between speakers during any stretch of conversation (Baxter and Al A'ali, 2016).

Overall, linguists have a rich fund of discourse-analytic resources at their disposal, each of which challenges the Chomskyan shibboleth that 'linguistic performance' teaches us nothing about how language works.

Further reading

Baxter and Al A'ali (2016)
This book updates FPDA and applies the methodology to senior management meetings in Middle Eastern and Western contexts.

Blommaert (2005)
This book develops a constructive critique of CDA, which is made relevant to students of linguistics, linguistic anthropology and the sociology of language.

Cameron (2014)
Aimed primarily at students of applied linguistics, this is a useful introduction to the theory and practice of a range of methods for analysing written discourse such as CDA, corpus-based discourse analysis and computer-mediated discourse analysis.

Gravells (2017)
This book develops a working methodology for applying DA to written and multimodal media texts. The method is applied to a range of news texts representing the BP oil spill in 2010.

Wooffitt (2005)
This book systematically analyses the close and complex relationship between CA and DA in academic research, particularly as these methodologies apply to linguistics.

Online resources

Discourse analysis online, Sheffield Hallam University, UK
http://extra.shu.ac.uk/daol/resources/
This site offers access to online publishers, publications and papers; related discussion lists; related web resources and centres; names of researchers; and software resources.

Research and resources in critical discourse studies by Teun van Dijk:
http://www.discourses.org/resources/websites/
This is a gateway to numerous papers, researchers and online resources.

Learning qualitative data analysis on the web
http://onlineqda.hud.ac.uk/resources.php#D
This site offers videos and links to other websites and resources.

Discussion questions

1. Which of the five approaches discussed in this chapter do you consider to be most appropriate for analysing *written* texts and why do you think this?
2. Which of the five approaches is most appropriate for analysing the following types of spoken discourse and why do you think this?
   - Courtroom talk
   - A family argument
   - Teacher–student interaction in a seminar or lesson
   - Political party leaders conducting a TV debate
   - A conversation between a doctor and his/her patient.
3. Consider the strengths and weaknesses of each of the five approaches to discourse analysis for exploring wider social and cultural problems, issues and patterns. Which would best suit your own study/research project and why?

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10

Linguistic Ethnography

Fiona Copland and Angela Creese

Chapter outline

This chapter describes linguistic ethnography and its methodological and analytical contribution to the study of language and social life. It provides examples of its eclectic stance of combining different traditions of discourse analysis with ethnography and debates the opportunities and drawbacks of disciplinary and theoretical diversity. It describes three key issues in linguistic ethnography. The first relates to interdisciplinarity, the second to how linguistic ethnography brings together data sets and the third to topic-oriented studies. Several empirical studies are discussed in order to illustrate linguistic ethnography's application in the study of social contexts. Finally, team ethnography is put forward as a means to introduce voice, diversity and complexity into linguistic ethnographic accounts.

Background

Linguistic ethnography is a theoretical and analytical framework which takes an epistemological position broadly aligned with social constructivist and post-structuralist approaches by critiquing essentialist accounts of social life (Fiona Copland and Angela Creese, 2015; Rampton, 2007; Shaw et al., 2015). It draws widely on work in linguistic anthropology (e.g.

Erickson, 2004; Gumperz, 1982; Heller, 2008; Hornberger, 2003; Silverstein, 2003; Wortham, 2012) and ethnography of communication (e.g. Hymes, 1968). Rampton argues that linguistic ethnography is 'a site of encounter where a number of established lines of research interact, pushed together by circumstance, open to the recognition of new affinities, and sufficiently familiar with one another to treat differences with equanimity' (2007: 585). The mention of old familiarities and new affinities captures well linguistic ethnography's pedigree in anthropological linguistics with which it shares a theoretical base, as well as its more open and utilitarian approach to forging new connections, particularly among scholars in Europe (see Fiona Copland and Angela Creese, 2015).

Oriented towards these particular epistemological and methodological traditions in the study of social life, linguistic ethnography argues that ethnography can benefit from the analytical frameworks provided by linguistics, while linguistics can benefit from the processes of reflexive sensitivity required in ethnography (see following section).

Linguistic ethnography

Linguistic ethnography conjoins two fields of study arguing that there is more to be gained in their unison than in their separation, despite the very real differences that exist between them in both 'method and aspiration' (Rampton et al., 2015: 17). Ethnography is said to be enhanced by the detailed technical analysis of interactional and semiotic data which linguistic analysis brings, while linguistics is enhanced by attention to context, which is never assumed but detailed through ethnographic work. Researchers working within linguistic ethnography believe they offer linguistics a non-deterministic perspective on data, while linguistics offers ethnography a range of established procedures for identifying discursive structures (Rampton et al., 2015). Rampton et al. (2004) argue for 'tying ethnography down and opening linguistics up' (p. 4). According to this argument, ethnography provides linguistics with a close reading of context not necessarily represented in some kinds of interactional analysis (such as conversation analysis [CA] and systemic functional linguistics), while linguistics provides an authoritative analysis of language use not typically available through participant observation and the taking of field notes (p. 6).

The ethnographic approach is one which sees the analysis of small phenomena as set against an analysis of big phenomena and in which 'both levels can only be understood in terms of one another' (Blommaert, 2005: 16). For example, Creese (2005) describes the interactional practices of teachers in multi-adult classrooms and shows how shows how they unwittingly reproduce structural hierarchies in schools. Using linguistic ethnography, she illustrates how facilitation pedagogies best suited for language teaching and learning hold little currency in a context where pedagogies of transmission, for example, in secondary school curriculum-focused subjects such as geography, dominate classroom practices. Creese's study shows how small phenomena, such as the interactional differences between teachers, can only be understood against an analysis of big phenomena: the systemic and structural privileging of curriculum transmission.

A linguistic ethnographic analysis, therefore, attempts to combine close detail of local action and interaction as embedded in a wider social world. A further example of this is Snell's (2015) work on working-class children's speech in the northeast of England. Drawing on analyses of children's talk, recorded during their play, and field notes from participant observation, Snell provides a local description of how children manipulate singular 'us' (for example, in 'give us me shoe' rather than the standard 'give me my shoe') to signal group solidarity. She then shows how this local use 'sheds light on the motivations behind children's continued use of this form despite pressure from their teachers to conform instead to prestige standards' (p. 242) to better understand why non-standard forms persist and why attempts to ban them are unlikely to work. She frames the discussion within current debates in the media around teaching children standard forms, clearly showing the links between the micro (children's playground talk) and the macro (the functioning of language as symbolic capital).

Whether linguistic ethnography can yet be considered a clearly defined approach is still open to debate (see Fiona Copland and Angela Creese, 2015). However, in their recent edited volume, Shaw et al. (2015) have drawn up a list of commonalities shared by linguistic ethnographic studies, namely they:

- adopt an interdisciplinary approach
- use topic-oriented ethnography
- combine linguistics with ethnography
- bring together different sources of data
- aspire to improve social life.

While we cannot in this chapter discuss all five characteristics, interdisciplinarity, different sources of data and topic-oriented ethnography are, in our view, particularly salient in discussions of work aligning with linguistic ethnography. It is to these we now turn.

Questions and key issues in linguistic ethnography

This section will deal with three key issues in linguistic ethnography. The first relates to the interdisciplinarity of linguistic ethnography. For the second issue we explore data in linguistic ethnography and how different data sets can be brought together to provide nuanced understandings of talk in context. We then explore topic-related studies, which have started to characterize linguistic ethnography.

Linguistic ethnography as interdisciplinary research

Linguistic ethnography's interpretive stance is shaped by a disciplinary eclecticism. It is the interdisciplinary nature of linguistic ethnography that allows us to look closely and look locally, while tying observations to broader relations of power and ideology.

Rampton et al. (2015), drawing on Gibbons et al. (1994), explain how interdisciplinarity has shifted in aspect from mode 1 (where a researcher working in one discipline might draw on theories or approaches not usually appropriated in order to open up a new way of thinking about a problem) to mode 2 (where the problem rather than the discipline is the starting point, and the research is designed to solve the problem, drawing on the most appropriate methods, as well as 'non-academic stake holders' [p. 21]). Mode 2 interdisciplinarity acknowledges the affordances that partnerships between academics from different fields and between academics and stake-holders can bring, including, joint planning, question setting and a commitment to bring different expertises, experiences and knowledge. Rampton et al. (2015) suggest that it is 'the multi-dimensional complexity of the problem that motivates the mixing' (p. 21).

Fiona Copland and Angela Creese (2015) provide an example of a project which combines modes 1 and 2 interdisciplinarity: the TLANG (translation and translanguaging) project[1] aims to understand how people communicate multilingually across diverse languages and cultures in the UK in order to promote socially just, publicly aware and ethically responsible practices in relation to language in society.[2] It does so through examining language practices in different sites in four British cities. For the project, partners from very different academic and professional backgrounds have been brought together to engage in question setting, research design, data collection and analysis, including museum directors, law network charities, business organizations and migrant advocacy and advisory groups. As Fiona Copland and Angela Creese (2015) suggest, discussions of emergent themes and outcomes in interdisciplinary projects of this nature have to draw on more creative ways to work together to collect data and analyse findings, for which an openness to and curiosity about other ways of doing things is essential.

Another example discussed by Fiona Copland and Angela Creese (2015) focuses on how different groups could examine school sports from an interdisciplinary perspective. In this scenario, the linguistic ethnographer may be interested in how a sports teacher uses a particular phoneme to develop a shared identity position with a group of students (as in Snell's [2015] study), the sport and exercise academic might be interested in which activities motivate students to do most exercise while the PE teacher might want to find out why some students fail to engage in sports activities in school. In order to work together, the researchers and teacher would need to consider each other's concerns and work out what research approaches might best collect data which could answer all their questions. They may also challenge the fundamental research tools that each would expect to use in a project. The methodology of collecting ongoing audio and video recordings while observing, which would be central to a linguistic ethnographer's practice, might surprise the sport and exercise academic, who may wonder as to both the value and practicality of this approach. For the sports scientist, controlled tests for measuring motivation or engagement might be a usual procedure, which the linguistic ethnographer might see as artificial and limiting. The school teacher might find both approaches new but would bring his/her contextual understandings to bear on the methodological discussions and be able to advise on what was both practical and reasonable for the groups of students taking part. Through discussion and being open to different approaches to working, the research team would need to decide

on a research theme that interests them all (perhaps the role of language in motivation), as well as deciding on a research approach around which they could agree (perhaps recording sports activities and playing videos back to children for their commentary).

As illustrated in these examples, linguistic ethnography does not view different approaches as necessarily in conflict with each other; rather it seeks ways in which they can be complementary. Tusting and Maybin (2007) argue that linguistic ethnography particularly lends itself to interdisciplinary research, because of the increased interest across the social sciences in discourse. Blommaert similarly argues that the autobiographical-epistemic dimension of ethnography lends itself to interdisciplinary engagement and

> allows ethnography to be inserted in all kinds of theoretical endeavors, to the extent of course that such endeavors allow for situatedness, dynamics and interpretive approaches. Thus, there is no reason why ethnography cannot be inserted e.g. in a Marxist theoretical framework, nor in a Weberian one, nor in a Bourdieuan or Giddensian one.
>
> (Blommaert, 2001: 3)

However, just as there are strengths to be gained from disciplinary and theoretical diversity, there are dangers too. In the sports example, the team might be accused of losing focus and academic rigor. Another danger is how such work is perceived in the academy. Cerwonka and Malkii (2007) warn that 'the promiscuousness of interdisciplinary scholars [might be] perceived to be unwise and, for some, dangerous to the academy because their work challenges the established divisions of authority and expertise that disciplinary borders conventionally respect' (p. 9). This seems to be the case with some research that linguistic ethnographers have carried out with medical researchers. Pelletier and Kneedone's 2016 paper 'Learning safely from error? Reconsidering the ethics of simulation-based medical education through ethnography', which used linguistic ethnography to investigate simulations in medical training, was – according to the authors – rejected by a medical journal as being 'far too long' (personal communication). Apparently, the careful description of methods and analytical procedures made the article longer than was usual for medical journal articles. It was published eventually in *Ethnography and Education*. Likewise, Bezemer, who has used multimodal approaches to investigate communication in operating theatres (e.g. 2015), found that surgical journals are unwilling to consider papers focused on detailed analysis of single events or sites (personal communication).

Data in linguistic ethnography

Researchers working in linguistic ethnography collect, bring together and interpret various data sets, including field notes, audio recordings, videos, photographs, transcripts, documents and interview data. Such quantitative fieldwork methods require an interpretive analysis in which analytical categories are induced by the researcher. Rather than imposing outsider categories, the linguistic ethnographer is engaged in nuanced, meticulous and time-consuming analysis of field notes, interview and audio/video transcripts, photographs and other kinds of data. They do this to understand the categories the participants themselves are presupposing as they go about their everyday lives. This is what linguistic ethnography and anthropologists understand when they speak of producing 'emic' research accounts.

However, the status of data sets changes according to the study undertaken, in what Rampton et al. (2004) have called the 'contradictory pulls of linguistics and ethnography' (p. 4). In some, audio of video recordings of talk is considered central with researchers using fine-grained microanalysis to draw out findings, often adopting tools from CA. An example of this approach can be found in Lefstein and Israel (2015). They state that 'linguistic analyses … are largely based upon – and therefore better adapted to – audio and video-recordings of classroom practices … [while] supplementary sources, such as field notes … are typically viewed as secondary' (pp. 200–201). The authors provide an outline of their approach to analysing spoken classroom data which includes interrogation of the context, line-by-line micro-analytic brainstorming of selected moments, weighing emergent interpretations and generalizing beyond the event. It is unclear from this process where or how other data does or could contribute.

In contrast, participant observation with field notes are popular data collection tools in other studies. Tusting (2015) explains how literacy studies do not necessarily draw on audio- or video-recordings in research studies but that texts, field notes and interview data 'can form the central data set' (p. 55). In her 2015 study, Tusting examines the audit culture in two education institutions using observations, field notes, interviews and some recordings 'where possible'. Shaw and Russell (2015) work with interviews, research diaries and policy documents to make the case that healthcare think tanks position themselves publicly as independent research organizations, while at the same time, they promote 'particular interests, gain political power, and ultimately, shape the policy agenda' (p. 130). Shaw and Russell (2015) make the important point that it is not always possible for researchers to collect the data they want and must be satisfied with the data they can get.

For many working within linguistic ethnography, it is the conjoining of data that allows nuanced findings to emerge. Fiona Copland and Angela Creese (2015) provide a number of examples of how researchers do this, turning the spotlight on doing analysis rather than describing it. The value of this work is that it demonstrates to readers the rigorous and detailed work that linguistic ethnographic researchers do in their everyday practices.

As illustrated in these examples, linguistic ethnography does not view different approaches to data as necessarily in conflict with each other; rather it seeks ways in which they can be complementary. However, just as there are strengths to be gained from conjoining data, there are dangers too. A word of caution can be found in Hammersely's (2007) discussion of linguistic ethnography. Hammersely's concern is with what he sees as a trend in the social sciences for 're-branding and relaunching' existing approaches – a kind of 'hyper modernism' attempting to 'colonise intellectual territory' (2007: 690). Blommaert (2007: 685) too is concerned with disturbing long-established pedigrees and traditions in linguistic anthropology. He argues that there is no need in fact to separate linguistics from ethnography only to join them again under a new guise and shows that a long pedigree already exists which conjoins linguistics and 'culture'/ethnography. This lineage links Boas, Sapir, Whorf, Hymes and Silverstein, and their research into language and culture as a single object rather than two distinct phenomena, as suggested by the term 'linguistic ethnography'.

In this important debate, both Hammersley and Blommaert are questioning what is to be gained by conjoining 'linguistics' and 'ethnography' although their concerns are slightly different. Blommaert's position is that linguistic anthropology makes linguistic ethnography superfluous while Hammersley's issue is that in 'relaunching' theory under the new guise of linguistic ethnography, new privileges are given to linguistics over ethnography which he points out are 'reminiscent of critiques of ethnography by conversation analysts' (Hammersley, 2007: 690). In other words, CA and ethnography do not share the same understandings of context, and these might actually clash under the pluralist approach espoused in linguistic ethnography. The term linguistic ethnography implies, according to Hammersley, that 'without linguistics, ethnographic accounts will be speculative' (p. 693); that is, field notes have less authority than electronically produced transcripts. Indeed, Rampton and colleagues seem to endorse this very point: 'The testimony of field notes may sound quite authoritative in reports on exotic locations which few westerners have ever visited, but evidentiary standards tend to be more demanding in social scientific accounts of social processes close to home' (2004: 6).

The evidentiary standards here refer to the confidence of claims made from field note data. The quote suggests that warrants from linguistic data are more secure than those claimed from ethnographic data because field notes cannot capture the complexity of social life and be held accountable in the same way as a linguistic analysis of interactional data can. However, we would argue that it is the very balance of these data methods which defines linguistic ethnography and that retaining the importance of ethnographic field notes as primary (and authoritative) data alongside recordings of interactional data is crucial. Technological advancement for recording linguistic data may have introduced new levels of surveillance which 'have allowed us to transport selected and carefully focused slices of life out of the original nexus of activity for collegial, peer-reviewable examination in richer more multimodal formats' (Scollon and Scollon, 2007: 620), but without a close account of context through the researcher's noticings and field note commentary, we are no longer engaged in linguistic ethnography. Put simply, in linguistic ethnography interpretive assessments are built on locally or context-specific background knowledge recorded in field notes or diaries. For example, in their study of the multilingual practices of young people and teachers in complementary schools in England, Blackledge and Creese (2010) show how study participants move between languages and their varieties to perform different values, affiliations and allegiances. They illustrate through transcripts, field notes and interviews how language use both maps onto existing linguistic hierarchies and challenges them. They also describe how field notes are used to retain context, voice and contradiction; serve to make transparent the construction of arguments and the processes of representation; and provide evidence of theory building from the bottom-up (see examples below).

Topic-oriented studies

Topic-oriented studies have emerged as a characteristic of linguistic ethnography rather than being part of its design. By topic-oriented we mean 'honing in on the institutions and practices that surround us in contemporary life and understanding how they are embedded in wider social contexts and structures' (Shaw et al., 2015: 7). It is noticeable that in *Linguistic Ethnography: Interdisciplinary Explorations* (Snell et al., 2015) at least ten of the fourteen chapters report on topic-focused work. It is rare nowadays for researchers to have the means to carry out fully fledged ethnographic studies (see the section 'Application of methods' for a description of ethnographic practice) as they require substantial investment in terms of time and money,

both of which are in short supply in European academia at least. Instead, researchers tend to focus on specific activities in order to understand how language functions as communicative action within social contexts and particularly in ongoing routines of peoples' daily lives. Examples of topic-oriented studies are many and varied: Lillis's work on the production of academic texts (e.g. 2011); Collins's (2015) study of how environmental features affect patient care in a head and neck cancer outpatients clinic; Van Hout's (2015) study of a press room which investigated how a press release becomes news; and Rock's (2015) investigation of how the formal caution is presented to arrestees are all cases in point.

In addition to limiting the parameters of a study, researchers may also have a (relatively short) time frame within which to carry it out. Pelletier and Kneebone (2016) explain one such project: 'Between January and October 2012, Pelletier sat in on 30 half or whole day courses at four simulation centres in London ….Observing involved mainly sitting at the back … and writing notes on how teaching and learning happened' (p. 270). These field notes, together with the recordings of the simulations, comprised the data from which findings were derived.

Many studies are motivated by the interests of the researchers themselves. For example, Rock's investigation into how police administer the caution to newly arrestees stemmed from an interest she developed in crime following her experiences as a witness. In other studies, however, linguistic ethnographers are invited to research in areas that may be new to them, often in the field of medicine. In these cases, the researchers may develop findings in addition to those that arise from the focus of the study (e.g. Collins, 2015) or that may challenge the activities they have been called in to investigate (e.g. Roberts and Sarangi, 1999). Pelletier and Kneebone (2016) did both. Their study, which began with a focus on how learning and teaching happened in medical simulations, ended by reconceptualizing mistakes in this context and challenging the ethics of simulation-based medical education itself. This paper is an example of how bringing together linguistics and ethnography supports researchers 'to get to parts of the process you study which other approaches couldn't reach' (Shaw et al., 2015).

Application of methods

This section will discuss methods of linguistic ethnography. It will describe 'traditional methods' in ethnography before focusing on team ethnography

as a response to criticisms levelled against ethnography. Such criticisms argue for the need to move away from singular representations of situated contexts which ethnography has traditionally engaged in, and which create a singular 'reality' held up as 'true' (MacLure, 2003).

Traditional approaches in ethnography are summarized below as (Eisenhart, 2001b: 218–219):

- unobtrusive recorders of activity and faithful reporters of characteristic patterns
- being empirical without being positivistic
- offering an objective analysis of subjective meanings
- representing meanings of participants
- treating researchers as active, reflective subjects
- providing first-hand knowledge of others
- deliberately scrutinizing one's own view point in the light of others
- seeing the others' worlds as 'reality'.

Traditionally in ethnography one researcher works alone to collect the data, analyse the results and write up the findings. Analysis of the data focuses on the identification and interpretation of regular patterns of action and talk that characterize a group of people in a social context. This is achieved through participant observation, field notes, ethnographic and open interviews and often recordings/transcripts. Ethnography thus offers descriptions and perspectives which are meaningful not only to the participants themselves, but also to the researcher. The investment of self in the writing of field notes and the centrality of the researcher in ethnography is fundamental. Blommaert argues that fieldwork is more than data collection:

> Ethnography is far more than a set of techniques or methods for field work and description. It cannot be reduced to ways of treating 'data' either, for 'data' in ethnography have a different status than in many other disciplines. Data are chunks of reality that have a (autobiographical) history of being known and interpreted.
>
> (Blommaert, 2001: 3)

But if the ethnographer's role in general and her use of field notes in particular are central in the interpretive processes of ethnography, there is also some criticism that these field notes are often not made explicit in the building up of arguments through the interpretive process. MacLure (2003: 93) urges ethnographers to make 'the machinery' of writing (i.e. how texts are built and developed and the contradictions and power struggles inherent in them) transparent in their ethnographic accounts. This is important

because according to MacLure, realist ethnographic texts (representing reality through the ethnographer's account) are falsely coherent, non-contradictory, stripped of power relations and representing a frozen, dateless 'ethnographic present' (Fabian, 1983). From such accounts readers are invited to judge the 'truth' of the text, but in reality, MacLure describes how the worlds of the ethnographer and participant bleed into one another in the field, betraying the 'unofficial desires and demands' (p. 96) of 'self' in relation to 'other'.

We might consider team linguistic ethnography as one way to respond to these criticisms of ethnography as narrow realist texts presenting single-authored, non-contradictory accounts. Eisenhart (2001a) notes that increasingly, collaborative teams are being used to involve different kinds of people in designing the research process and creating final accounts. This collaboration requires the researchers to disclose more about their own views, commitments and social positions (Eisenhart, 2001b). We illustrate this process of social declaration below through some field note examples from three researchers engaged in team ethnography (Creese et al., 2008, 2009). Each researcher was observing at a Gujarati complementary school in Leicester, UK (Martin et al., 2004), exploring the relationship between schools and community. Complementary schools are also known as community language schools, heritage language schools or supplementary schools. They are voluntary and community run. In this particular school, Gujarati language, 'culture' and 'heritage' were taught, once a week for three hours in the evening, to over 200 students.

In the three sets of field notes which follow from the study, we see the observations of three researchers (AC, AB and PM) in three different classrooms. Each field note text was written independently and shows a developing interest in a key participant, Deepa, the school's headteacher and administrator. In the field notes below, each researcher draws attention to Deepa's use of languages and in particular her English in relation to her Gujarati.

Extract one

> We stop the classes for around 10 minutes – I feel embarrassed by this. I also feel that the teachers might feel that their time with the students is being wasted. Deepa speaks in English throughout. I am not clear if this is for me or because she would usually do this. (AC 11/3)

Extract two

> Deepa walks in with a handful of documents and files. She consults with P (class teacher) and students chatter. Then Deepa asks students whether they

learnt the prayer. She gets the class to recite the prayer. She claps her hands and says: star performers, but sing a little bit louder for the hall. Some of the students get excited and Deepa gives a 'high five' with nearest students. Other students also want to 'high five' with her but Deepa walks out saying 'I will think about it'. The teacher brings the class back to calmness and continues to revise. (AB, 18/3)

Extract three

About 7.45 a whirlwind enters the room in the shape of Deepa. She comes in with a wodge of papers and comments 'Wow, what a lot of letters' referring to the 15 Gujarati letters on the whiteboard. She holds up a chart that she has prepared and asks the children what one or two of the letters are. She then proceeds to pass on some 'paper work' to the class teacher, new lesson plan documents and a number of policy documents (with ref. to discussion at Staff meeting). There are other documents that I cannot get a glimpse of, but one is for 'one minute feedback' on how the teachers thought the lesson went. On the new lesson plan Deepa makes the point that teachers had agreed to write in the additional resources that they use in class. Deepa counts out sheets for the children (number policy doc?) and I am surprised that this is done in English. After Deepa has gone the class returns to its usual quietness. Before break, the class teacher is talking about more letters. (PM, 29/4)

These field note accounts of Deepa raise several issues. The researchers were particularly interested in Deepa's use of English to address the whole class, her compliments in English (star performers) and her use of gesture and signs (high fives) reminiscent of sport and youth contexts beyond the classroom. Her style was often in direct contrast to that of the teachers who were usually speaking Gujarati and attempting to maintain a quiet and calm learning atmosphere. This interest in Deepa's use of English and the register she chooses is recorded across the three sets of field notes, where evidence of an emergent interest in Deepa's use of English and Gujarati can be seen. Also noted by two of the researchers is the contrast in register used by Deepa and by the teachers while in the classroom. Noticing and recording such social practices in field notes created field note accounts which could then be shared with other members of the research team. In this way, the team used field notes to 'close in' on emergent themes and signal to one another a particular phenomenon which later might be developed into published accounts. In this instance, themes developed into our work on 'translanguaging' and 'flexible and dynamic bilingualism' (Creese and Blackledge, 2010, 2011, 2015a). Field notes can be used to open discussion, narrow down the focus, add contextual detail to additional data sources and serve as a primary source of evidence in their own right.

Although the examples of field notes above illustrate a focus in common, at times, they also reveal disagreement and contradiction or simply expose the noticing of entirely different things (Creese et al., 2008, 2009). Ethnographic teams can use such differences as a resource to evidence divergent accounts and take them up for debate. In team ethnography, field notes thus reveal the researchers' different voices and backgrounds, and at the same time they require researchers to look back on their own agendas, observations and representation of the research process and participants (Creese and Blackledge, 2012). A team of ethnographers is forced to do this more explicitly than the sole ethnographer through the buffeting of questionings that come up through sharing field notes in a team. In recent research Creese (2015) describes how the team challenged, refuted, endorsed and refined one another's interpretations, carrying some forward and leaving others behind. There was sometimes consensus in these writings, but there was also contradiction which the team attempted to hold onto rather than erase (and to carry into published accounts). Through the team discussions of (*inter alia*) field notes, some arguments and assertions made their way into different stages of the research and influenced our analysis of other data sets (interactional and interview). In this way, field notes play their part in theory building (Creese, 2015).

A further way in which teams of researchers can be used in linguistic ethnography to counter criticisms of singular texts is the use of 'analytic vignettes' (see Erickson, 1990), to reveal relationships among researchers and research participants (Creese and Blackledge, 2015b). This involves describing aspects of researcher-identity negotiation; that is, how researchers use their linguistic, social and cultural resources to negotiate access and build relationships with participants in the research process and with one another in a research team. The vignettes below illustrate researchers negotiating shifting allegiances in positioning themselves towards research participants in complementary schools (teachers, parents and young people) and towards one another. These short extracts from two individual researcher accounts (by Shahela Hamid and Adrian Blackledge) come from a Bengali case study, one of four studies on complementary schools (Blackledge and Creese, 2010).

> Vignette one: As an insider (from the same ethnic and religious background with proficiency in native language varieties) I was able to gain the trust and confidence of the families. Positioning myself linguistically and culturally as a Bangladeshi woman I was able to understand the norms and expectations of the families with whom I was negotiating. Developing a relationship with parents of key participants and teachers facilitated my status as an insider-

participant observer. However, my insider status carried certain obligations with it. I had to be conscious at all times about the appropriateness of topics so that there was no loss of 'face'. Building a relationship with the participants' families was invaluable in understanding who key participants associated with, their network of friends and family, traditional values etc. [**Field Researcher Shahela Hamid**]

Vignette two: My relationship to the participants in the case study frequently reminded me of the time I spent in the Bangladeshi community in Birmingham ten years ago, during data collection for my PhD thesis. At the same time, it reminded me of the years I spent as a teacher in multicultural, multilingual Birmingham primary schools where the teaching staff were encouraged to visit the pupils' families at home during feasts and festivals. In all of these instances I felt both welcomed, and yet like an intruder, treading in domestic worlds where I was unfamiliar, and with which I was unfamiliar. On this occasion, without the collaboration and lead of my research partner Shahela Hamid, negotiating access to the domestic worlds of our participants would have been much more difficult, or even impossible. [**Field Researcher Adrian Blackledge**]

The researchers' accounts show an interest in the subtleties of the insider/outsider debate and acknowledge how feelings, attitudes and stances towards insider and outsider categories vary. Researchers here negotiate shifting allegiances and priorities in their positionality with research participants, namely the teachers, parents and young people. They also show how the research pair with their different backgrounds comes to rely on one another. The language repertoire of individual researchers and their different linguistic, social and cultural biographies are important aspects of any research project. However, they are crucially relevant when the research focus is the communicative practices of multilingual people. It then becomes necessary to investigate how multilingualism is conceptualized, practised and constructed within the research team itself. The production of knowledge about multilingualism cannot be separated from individual linguistic histories in research we practise.

A team of researchers offers different instantiations of micro experiences resulting in the production of divergent and overlapping views of the social order. We can use these overlapping and divergent accounts in ethnography to reveal not only the different voices of the researchers themselves, but also the interpretive processes that come to position the research participants in particular ways. Through such accounts, it is possible to present healthier, more contested and contradictory ethnography, capturing the complexity of social practices.

In this section, we have argued that team ethnography goes some way towards addressing some of the concerns about realist texts expressed by MacLure (2003) and singular accounts expressed by Eisenhart (2001a, b). Team ethnography brings a variety of different, and often contradictory, voices into the production of ethnographic accounts, refuting clear coherent and non-contradictory accounts of social life. In this way, it can make explicit different views, commitments and social positions not necessarily made evident in the accounts of sole ethnographers. Team ethnography can also involve theory building, in allowing arguments to develop over time in field note accounts (including some being privileged over others) and in influencing what is brought to the analysis of other data sets. However, as Creese et al. (2009: 212) argue, it is important not to over-inflate field notes as interpretive resources; like other data in qualitative research, they are 'ephemeral' 'partial and incomplete', and need 'to be contested' and 'further analysed in relation to other data sets'. Finally, on the issue of data and data sets, it is important to consider Erickson's argument that the corpus of materials collected in the field (notes, videotapes, even interview transcripts) 'are not data themselves, but resources for data', 'documentary materials from which data must be constructed through some formal means of analysis' (1990: 161).

Concluding remarks

While heavily indebted to early work in the ethnography of communication, linguistic ethnography offers a new perspective relevant to researchers working in the social sciences in post modernity. Substantial developments in US linguistic anthropology, and the turn to post-structuralist accounts of discourse and meaning making in the research literature in the UK and Europe (see Fiona Copland and Angela Creese, 2015), have allowed linguistic ethnography to draw on more hybrid literatures in its analytical frameworks than those traditionally associated with the ethnography of communication (Hymes, 1968). Linguistic ethnography argues that the combination of linguistics with ethnography – and their different analytical tools – offers a greater set of resources than each field of study could offer on its own. Rampton et al. (2004) describe the linguistic ethnography endeavour as an 'enabling mechanism' and argue for leaving the intellectual space in linguistic ethnography open in terms of the kind of work which

might emerge. In addition to this enabling potential, the chapter has also outlined dilemmas and criticisms facing ethnography, including the need to move forward methodologically, given the radical changes in key conceptualizations in the field.

The future of linguistic ethnography, a relatively new paradigm, now appears secure as an approach to theorizing language in social life (see also Copland and Creese, 2015). Drawing on the well-established traditions of linguistic anthropology there now exists a community of practice for European linguistic ethnographers who share an interest in the situated discursive and semiotic nature of human relationships and experience. Because of its interdisciplinary orientation, linguistic ethnography is well placed to respond to the thematic calls and intractable challenges outlined by different funding bodies, including research councils, charities and trusts. There is also promise to be found in the growing body of publications and specialist seminars which provide networks of scholarly activity and support for researchers.

Further reading

Fiona Copland and Angela Creese, with Rock, F. and Shaw, S. (2015)

This book describes how to 'do' linguistic ethnography through examining key features of the approach (e.g. theoretical underpinnings, methodological approaches and practicalities of working with data) and through four case studies which set out how individual researchers have conducted their linguistic ethnographic studies.

Rampton, B., Maybin, J. and Roberts, C. (2015)

In this opening chapter to *Linguistic Ethnography: Interdisciplinary Explorations*, the authors offer an in-depth account of linguistic ethnography and provide an historical perspective on it.

Snell, J., Shaw, S. and Copland, F. (2015)

This edited collection includes twelve chapters which provide examples of how researchers conduct linguistic ethnographic studies. A strength of the collection is the range of contexts represented, including education, medicine, journalism and policing.

Online resources

The Linguistic Ethnography Forum (LEF) is a BAAL (British Association of Applied Linguistics) special interest group. It has a website that advertises upcoming events such as the biennial conference (Explorations in Ethnography, Language and Communication) and hosts a yearly e-seminar on topics of interest to the membership. The website also hosts an archive of LEF-related publications. It can be found at: www.lingethnog.org

The King's College, London Centre for Language, Discourse and Communication group supports a series of working papers – Working Papers in Urban Language and Literacies series – many of which take a linguistic ethnographic approach. The working papers can be found here: https://www.kcl.ac.uk/sspp/departments/education/research/Research-Centres/ldc/publications/workingpapers/search.aspxraphic

Likewise, the University of Tilburg hosts working papers in Cultural Studies, a number of which use linguistic ethnography. It can be found here: https://www.tilburguniversity.edu/research/institutes-and-research-groups/babylon/tpcs/

The TLANG, Translation and Translanguaging, project is an interdisciplinary four-year research project in six universities. It aims to develop new understandings of multilingual interaction in cities in the UK, and communicate these to policymakers and communities locally, nationally and internationally. TLANG has a Working Papers series, many of which take a linguistic ethnographic approach. They can be found at: https://bham.academia.edu/TLANGResearchTeam

The Society for Linguistic Anthropology in the United States has a very interesting website with news, advice and a blog, among other resources. It can be accessed at: http://linguisticanthropology.org/

Discussion questions

1. What affordances do you think combining ethnography with linguistics can bring to a study?

2. Usually researchers feel more comfortable with either ethnography or linguistics as a starting point. To what extent is this true for you?
3. Most researchers start work on individual projects, often for doctoral study. What are the advantages and disadvantages of working in teams, do you think?

Notes

1. http://www.birmingham.ac.uk/generic/tlang/about/index.aspx
2. Arts and Humanities Research Council (2014–2018) 'Translation and Translanguaging. Investigating Linguistic and Cultural Transformations in Superdiverse Wards in Four UK Cities' ((AH/L007096/1), 1/4/2014–31/3/2018, £1,973,527), Principal Investigator: Angela Creese and team members: Mike Baynham, Adrian Blackledge, Jessica Bradley, John Callaghan, Lisa Goodson, Ian Grosvenor, Amal Hallak, Jolana Hanusova, Rachel Hu, Agnieszka Lyons, Bharat Malkani, Sarah Martin, Emilee Moore De Luca, Li Wei, Jenny Phillimore, Daria Pytel, Mike Robinson, Frances Rock, James Simpson, Jaspreet Kaur Takhi, Caroline Tagg, Janice Thompson, Kiran Trehan, Piotr Wegorowski and Zhu Hua.

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11

Multimodality: A Guide for Linguists

Jeff Bezemer and Carey Jewitt

Chapter outline

This chapter provides a rationale for a multimodal perspective on meaning, communication and discourse. It draws attention to the range of different modes that people use beyond speech and writing and explores the theoretical and methodological implications of multimodality. The chapter addresses two key questions. First, what is multimodality? Why and how is it relevant to linguistics? Second, how has multimodality been taken up? What questions are addressed, what materials are collected and what methods are used to analyse these materials? Taking one approach – Social Semiotics – and one area of research – online text making – as an example, the chapter defines and illustrates key concepts and steps in multimodal inquiry. It concludes with consideration of future directions.

What is multimodality?

'Multimodality' is a term that is now widely used in the academic world. The number of publication titles featuring the term has grown exponentially since it was first coined in the mid-1990s. Since then, a myriad of conferences,

monographs, edited volumes and other academic discussion forums have been produced that are dedicated to multimodality. Its contributing scholars come from many different disciplines, including linguistics, semiotics, media studies, new literacy studies, education, sociology and psychology.

With the term being used so frequently and widely, it may seem as though these scholars have identified a shared phenomenon of interest, a common object of study. Indeed, we can, in relatively generic terms, describe that phenomenon or object of interest as something like, 'we *make meaning* in a variety of different ways' or 'we *communicate* in a variety of different ways'. Yet we must immediately add to that that 'multimodality' (and related concepts, including 'mode'/'modality', '[semiotic] resource') is differently defined. Exactly how the concept is articulated and 'operationalized' varies widely, both across and within the different disciplines and research traditions in which the term is now commonly used. Therefore, it is very difficult and potentially problematic to talk about multimodality without making explicit one's theoretical and methodological stance.

If a 'means for making meaning' is a 'modality', or 'mode', as it is usually called, then we might say that the term 'multimodality' is a recognition of the fact that people use multiple means of meaning making. But that recognition alone does not accurately describe the notion of multimodality. After all, Saussure, writing in the early twentieth century, already suggested that 'linguistics' was a 'branch' of a more general science he called 'semiology'. Since then the branches of that imaginary science have continued to specialize in the study of one or a small set of means for making meaning: linguistics on speech and writing, semiotics on image and film, musicology on music; and new sub-disciplines have emerged: visual sociology, which is concerned with, for example, photography; visual anthropology, which is concerned with, for example, dress. These (sub-)disciplines focus on the means of meaning making that fall within their 'remit'; they do not systematically investigate synergies between the modes that fall inside and outside that remit.

Multimodality questions that strict 'division of labour' among the disciplines traditionally focused on meaning making on the grounds that *different means of meaning making* are not separated, but almost *always appear together*: image with writing, speech with gesture, maths symbolism with writing and so forth. It is that recognition of the need for studying how different kinds of meaning making are combined into an *integrated, multimodal whole* that scholars called for when they started using the term multimodality in the late 1990s. It was a recognition of the need to

move beyond the empirical boundaries of existing disciplines and develop theories and methods that can account for the ways in which we use gesture, inscription, speech and other means together, to produce meanings that cannot be accounted for by any of the existing disciplines. This fact only became more noticeable with the introduction of digital technologies, which enable people to combine means of making meaning that were more difficult or impossible to disseminate before, for the majority of people anyway (moving image being one pertinent example). So that is how the introduction of the notion of 'multimodality' marks a significant turn in theorizing and analysing meaning.

What the early adopters of the term recognized was not only the need to look at the co-occurrence and interplay of different means of making meaning, but also that each 'mode' offers *distinct possibilities and constraints*. It had often been argued (e.g. by Saussure and Vygotsky) that language has, ultimately, the highest 'reach', that it can serve the widest range of communicative functions or that it enables the highest, most complex forms of thinking and is therefore the 'most important'. In multimodality, the working assumption is that there are *differences* between semiotic resources in terms of the possibilities they offer for making meaning and that it is not the case that one resource has *more or less* potential than the other. Thus multimodality marks a departure from the traditional opposition of 'verbal' and 'non-verbal' communication, which presumes that the verbal is primary and that all other means of making meaning can be dealt with by one and the same term.

Based on these early references, we can formulate three *key premises* of multimodality:

1. Meaning is made with different semiotic resources, each offering distinct potentialities and limitations.
2. Meaning making involves the production of multimodal wholes.
3. If we want to study meaning, we need to attend to all semiotic resources being used to make a complete whole.

We should add some important footnotes to this. First, not everyone working in multimodality uses the notion of 'meaning making'. Depending on their disciplinary background and focus, they might say that they are interested

in 'multimodal *communication*', 'multimodal *discourse*' or 'multimodal *interaction*'. We will use the term 'meaning making' unless we are writing about a specific approach to multimodality. Nor does everyone working in multimodality use the term 'mode': some prefer to talk about 'resource' or 'semiotic resource' and generally avoid to draw strong boundaries between different resources, highlighting instead the significance of the multimodal whole ('Gestalt'). Indeed, some scholars whose work we subsume under the heading of 'multimodality' do not use that term themselves, for that very reason; while otherwise committing to the three key premises we just presented.

Second, scholarly interest in the connections between different means of making meaning does pre-date the notion of multimodality. For instance, the study of gesture and its relation to speech, gaze and the built environment has a long history, in linguistic anthropology, interactional sociology and other disciplines (see, e.g., Mehan, 1980; Goffman, 1981; Kendon, 2004), while the relation between image and writing has been studied in semiotics (e.g. Barthes, 1977/1964). These early contributions have produced important insights in what we now call multimodality. At the same time, we should note that the potential empirical scope of multimodality goes further still. We can see a development from an exclusive interest in language to an interest in language and its relations to other means of making meaning to an interest in making meaning more generally, without a clear base point: language, or any other mode.

Third, while those using the term 'multimodality' generally aim to develop a framework that accounts for the ways in which people combine distinctly different kinds of meaning making, their *epistemological perspectives* (i.e. their perspective on how we can know the world) are different. As we shall see later on in this chapter, in some approaches to multimodality the assumption is that it is possible and indeed necessary to develop an integrated theoretical and methodological framework for *some* kinds of meaning making, for instance for the study of speech, gesture, gaze and the material environment. In other approaches, the assumption is that it is possible and necessary to develop an encompassing theoretical and methodological framework to account for *all* kinds of meaning making – whether in image or in gesture or in writing or any other mode. So researchers who adopt the notion of multimodality (or whose work is treated by others as being part of the field of multimodality) still draw different boundaries around what it is in the empirical world that they aim to account for. This is not a matter of ambition, but a matter of epistemology: some argue that the differences

between, say, image and speech are too great to handle within one and the same framework; others argue that, notwithstanding the differences, it is still possible, at a more general level, to establish common principles of meaning making.

Theories and methods in multimodality

Linguistics has traditionally defined its object of study around two particular modes: speech and writing; and from there some linguists have 'branched out' to explore connections with other modes. Other disciplines, such as psychology, sociology, (social) semiotics and anthropology, had defined their object of study in more general terms, around notions of 'meaning making'. Within linguistics, as indeed in the other disciplines that contribute to the field of multimodality, there's considerable variation in terms of theoretical and methodological outlook. For example, multimodality has been taken up in discourse analysis (DA) (Scollon and Scollon, 2003), conversation analysis (CA) (Streeck et al., 2011), systemic functional linguistics (SFL) (O'Halloran and Lim, 2014) and cognitive linguistics (Forceville, 2006). There's also significant variation in methodology: some studies are in-depth analyses of single cases (e.g. texts or strips of interaction); others draw on large corpora and aim to test hypotheses. In many studies, selected elements of different approaches have been adopted and brought into connection with concepts and methods derived from other disciplines. For instance, eye-tracking technology has been used to 'test' certain concepts proposed in social semiotics (Holsanova, 2012). Other work has attempted to bring together concepts from social semiotics with ethnography (Dicks et al., 2011).

One consequence of this take-up of multimodality is that old names for disciplines have become misnomers. For instance, the terms 'CA' or 'SFL' no longer match the scope of the disciplines they describe. New terms have been suggested to mark the changing scopes of these disciplines ('Multimodal DA', 'Multimodal CA'), but they have not been widely adopted and are unlikely to 'settle'.

Each of these (linguistic) traditions in which multimodality was taken up also has different terminological preferences coupled with different conceptualizations of what we have described so far as 'means for making meaning'. In some traditions, such as social semiotics, the terms 'mode'

and 'semiotic resource' are both used, and definitions have been proposed that make a distinction between the two. In others, such as CA '(semiotic) resource' is used, but 'mode' is not or very rarely; and some attempts at defining '(semiotic) resource' have been made. Yet none of these definitions is (as yet) widely and consistently used beyond those who proposed them.

There is, put simply, much variation in the conceptualization and definition of mode and (semiotic) resource. Gesture and gaze, image and writing seem plausible candidates, but what about colour or layout? And is photography a separate mode? What about facial expression and body posture? Are action and movement modes? You will find different answers to these questions not only between different research publications but also within. To avoid potential confusion, it is important to make a deliberate decision on what categories and terms to use when engaging with multimodal research. It will be helpful to formulate some 'working definitions', drawing on the ones already put forward by the approach you adopt. Even though the working definition is unlikely to be entirely satisfactory, it is important to strive for maximum conceptual clarity and consistency.

In addition to theoretical variation, there are significant differences in epistemological positions. Some 'multimodalists' look at human artefacts – technologies, tools, objects – only insofar as they are being oriented to in observed interactions. So for instance, Charles Goodwin (2000) looked at the 'Munsell chart', a tool used to determine the colour of soil by the archaeologists participating in the interactions he had videotaped. Yet others have studied artefacts away from specific situated interactions. For instance, Bezemer and Kress (2008) studied textbooks. Through close analysis of selected texts, they explored how makers of textbooks – authors, picture editors, graphic designers – use writing, image, layout, etc. to make meaning; they did not look at how these texts were actually interpreted and used by teachers or students in classrooms. Underpinning this difference are quite different ideas about whether and how researchers can 'get at' meanings made.

A multimodal perspective on language

Multimodality challenges the idea – still widespread in linguistics and beyond – that 'language' is the single most powerful mode of communication. Here's how.

Communities and contexts of use shape what modes are used and how

It is tricky to make general claims about what 'people' do with language. We need to ask, for *who*, if at all, is language the most resourceful, widely used and important mode of all and in what *contexts of use*?

Most scholarly work on communication is focused on a very specific community of meaning makers: the hearing community. If we consider signing communities, we can see that gesture can be just as important in a community as speech can be, in that it can be used to serve all social and communicational needs. If we based our account of the significance of language on an inquiry of communication between babies and their parents, or between blind people or between people who do not share a language, we would get an entirely different picture. We could carry on: we could observe the language use of people with aphasia or of people on the autism spectrum; in each case, language plays a different, particular role. And of course, even when considering the hearing and speaking majority, we would find significant variation. People spending a lot of time taking pictures, making music, dancing, painting, pottering, whatever – may well ascribe the highest expressive potential to modes other than language. Put simply, language has a different status in different *communities* and in the *repertoires* of different people.

Language also has differing status in different *contexts of use*. Much, if not most, communication happens without the use of speech (or writing). We only need to walk out into the public space to realize just how much is being communicated without the use of speech and writing. There are, of course, signs (in the everyday sense of the word) placed everywhere, often not featuring any written language, which we may or may not attend to and interpret; and there are signs made (in a semiotic sense) by other users of the public space. When we cross a street, we might momentarily communicate with the driver of a car that is approaching. The driver might use facial expression and gestures to communicate that they give way for you to cross the street. But before that happened, you will have anticipated what the driver is likely to do next on the basis of your recognition and interpretation of changes in speed and direction of the car/driver. On these occasions, gesture, facial expression and other modes fulfil all the social needs of a situation.

The point is that language, like any other mode, is used differently in different activities and artefacts. Of course, if you are drawn to those

activities in which speech and/or writing appear to play a central role, you are likely to be left thinking that language is, overall, the dominant mode in the lives of everybody, always and everywhere.

Another point is that if you are interested in social practices and you use language as a 'way in' to those practices (as, for example, linguistic ethnographers do, see Fiona Copland and Angela Creese, this volume) you need to be aware of what might remain inaccessible to you.

Many 'linguistic' principles are actually general semiotic principles

The claim that language is the most resourceful, important and widely used mode of all is, at the very least, premature. There is a relatively long history of the study of language and much progress has been made in developing means of characterizing language in a highly detailed manner. As long as such sophisticated toolkits do not exist for the description of, say, the resources of gesture, colour, dress or scent, we have no means of 'evidencing' the resourcefulness of such modes. In the meantime, it would be premature to conclude that language has, overall, more meaning potential than other modes.

Indeed, studies in multimodality do suggest that some of the principles and properties traditionally attributed to language can also be found in other modes. For instance, in their study of *image*, Kress and van Leeuwen (2006) showed that image not only has the equivalent of what linguists call lexis, it also has a 'grammar':

> Just as grammars of language describe how words combine in clauses, sentences and texts, so our visual 'grammar' will describe the way in which depicted elements – people, places and things – combine in visual 'statements' of greater or lesser complexity and extension. (p. 1)

We should point out that the risk of linguistics 'branching out' is that the new territory is described in the terms of the originating discipline. Indeed this is a common critique of linguistic perspectives on multimodality. When expanding the traditional scope, it is important to keep a close eye on what is typical of a mode or semiotic resource and what may count as a more general principle of meaning making; and make sure that linguistic categories are not imposed onto other modes. Every time the frame is expanded, old terms and categories need to be revisited and re-evaluated, in the light of the wider

range of empirical cases being considered. So we might ask, 'What would the counterpart be of a verb in image?' Only if we then immediately add: 'Maybe image doesn't have anything like the verb. Maybe it has categories unlike anything language has.'

Each mode offers distinct possibilities and limitations

Language may have unique possibilities, but it also has unique limitations, like any other mode. While this may seem obvious, linguists such as Jerrold Katz have, not so long ago, suggested that one unique property of language is its 'principle of effability': 'There is nothing to indicate that there is any type of information that cannot be communicated by the sentences of a natural language' (Katz, 1972: 19). Let's take a moment to reflect on the implications of this statement. It means that someone being 'lost for words' points to a limitation on the side of the language user, always. It is never a reflection of the limitations of the meaning potential of language. Katz's claim also means that any meaning made in any mode can be *transcribed*, without any significant 'gains' or 'losses' in meaning.

Observation of meaning making suggests otherwise. To give one brief example, surgeons have developed a specialist language for describing the human body. And yet, when you listen to what surgeons say when they operate, you will often hear them referring to 'that stuff' or 'that bit over there' (Bezemer et al., 2014). In spite of a history of anatomical study that began in 1600 BC, language only provides a fraction of the resources required to communicate the information needed in this situation. The pointing gesture cannot, in fact, be transcribed without losing some of its precision. Indeed, social semioticians have argued that any attempt to translate something into words always involves a kind of 'transformation' or 'transduction' (Kress, 2010).

If we want to map the potentialities and limitations of different modes, we need to attend to what modes have in common as much as what is distinct about them. When studying meaning making across different modes, we can identify which semiotic principles are shared and how these principles are realized differently in each mode. This goes back to an ambition formulated by Jakobson, who proposed that semiotics 'deals with those general principles which underlie the structure of all signs whatever and with the character of their utilization within messages, as well as with the specifics of the various sign systems' (1968: 698).

An example of how this ambition is approached in present-day social semiotics is given by Bezemer and Kress (2016):

> All communities need means for expressing/realizing (the general semiotic feature) *intensity*. In the mode of *speech* that is realized by the intensity of sound – 'loudness'; it is also realized lexically, e.g. as 'very'. Lexis is available in the mode of *writing* as well; here intensity can also be indicated by visual prominence, as in the use of a bold **font**, or by CAPITALIZING. In the mode of *gesture* intensity might be realized by the *speed of movement* of the hand, or by the *extent* of the movement. In the mode of *colour* it might be done through degrees of saturation. (17)

In other words, a multimodal perspective draws attention to the *general* and the *particular* in speech and writing, recognizing both what they have in common, with each other and with other modes, and how they are distinctly different. From a multimodal perspective, therefore, speech, or writing, are not 'more' resourceful, but 'differently' resourceful; they do not have more potential, but different potential for making meaning – just like any other mode.

As you are reading this you might be thinking, 'Well, that's all very exciting, but I'd define my interest more narrowly; if there's no or hardly any language involved, it falls outside my area of interest. I'm a linguist, after all.' To this we would say that the meaningful units that people produce are almost always multimodal. In some ways the argument is not unlike that put to medical specialists who lose sight of the whole body when dealing with only a part of it. It is the 'body' that constitutes the meaningful whole – organs are merely constituent, interacting parts of it. In the same way, multimodality encourages us to establish what the contribution is of each to the construction of a meaningful whole – a 'text'.

Social semiotics

To illustrate how multimodality has been taken up and how it can be 'operationalized', we now turn to one specific approach to multimodality: social semiotics (remember that this is just one of many different approaches to multimodality).

The key features of a social semiotic approach to multimodality may be summarized as follows:

- *Aim:* To recognize the agency of social actors and social/power relations between them.
- *History:* Pioneered by Gunther Kress and Bob Hodge in the early 1980s in Australia, building on critical linguistics, SFL, semiotics and social theory. van Leeuwen brought inspiration from music and film studies.
- *Theory of meaning:* Based on the notion of the motivated sign (Kress, 1993), which holds that the relation between 'signifier' and 'signified' is always motivated and never 'arbitrary' as Saussure suggested.
- *Concept of mode:* Central to social semiotic theory. Indeed most theorizing on what counts as mode comes from social semiotics. A short definition would be 'a set of socially and culturally shaped resources for making meaning' that has distinct 'affordances' (cf. Kress, 2010).
- *Empirical focus:* Initially focused on 'artefacts' (especially print media, film and games – both 'professional', e.g. an advert in a magazine; and 'vernacular', e.g. a child's drawing), then also began to account for social interaction recorded on video through fieldwork.
- *Methodology:* Typically detailed analysis of selected small fragments (e.g. one or a small set of drawing(s)), sometimes involving historical comparisons; is often combined with ethnography.
- *Typical research question*: Mavers (2011) looked at a teacher's instructions and the drawings that children made subsequently in a science classroom. As in any social semiotic study, questions she addressed included: How did the sign-makers use the modes available to them (in this case, drawing and writing) to represent the world? What did they attend to? What did they highlight? What was gained and lost in the process of 'translating' from one mode to another?

Social semiotics takes the notion of 'sign' as its starting point. Signs are elements in which the 'signified' (a 'meaning') and the 'signifier' (a material 'form') have been brought together. In our social semiotic take, the 'sign' has three characteristics. First, the relation of form and meaning is 'motivated'; that is, the relation between the two is not an *arbitrary* one (see, e.g., Kress, 1993). What that means is that the form is, in some of its aspects (characteristics, features) taken by the maker of the sign as being 'apt' to serve as the means of expressing the meaning at issue. In research by one of the authors of this chapter (Bezemer et al., 2014), a surgeon was observed making a relatively restricted back-and-forth sideways movement

with an instrument three times in quick succession. This gesture (the short back-and-forth movement with a 'grasper') 'means differently' to, say, a more extended movement, made more slowly and made only once or twice. That is, the characteristics of this gesture are an apt means for what the surgeon wishes to communicate to his audience, namely 'a lack of obstruction'. These motivated relations of form and meaning are shaped by and materialize the 'interest' of the surgeon at the moment of making the sign.

The second characteristic is that the sign is always shaped by the environment in which it is made and its 'place' in that environment. To make their signs, sign-makers choose from a range of modes which are available in their environment (often made available by other people). Each of the modes has distinct and different meaning potentials and therefore offers potentials for signs with different social effects. These potentials are drawn on by the maker of a sign in each specific instance, always in relation to the needs and requirements of that instance.

The third characteristic is that each mode offers certain potentials for making meaning: it has specific *affordances*. Signs are always made in a particular mode. As modes offer different potentials for making meaning, this entails that signs – and their effects – made in one mode differ from signs made in other modes. Sign-makers use existing signifiers in the different modes. In their use of these – always in specific environments – at times these resources are used more closely in line with 'convention' than at other times. For instance, a teacher might pick up a pen to point at a specific area on the whiteboard. The pen was not designed for pointing but, nevertheless, offers that as a potential signifier. The material qualities (and the history of use of this instrument) make it an apt resource for communication in this environment. In some ways this is not all that different to using a very large book as a door-stop: the book's potential in one of its characteristics – as large, heavy, moveable – is recognized for a present and 'unconventional' purpose.

In other words, what is at issue here is a play, a tension, between stability and instability: resources with recognized potentials – whether as mode (e.g. *writing*) or as signifier (e.g. *word* or syntactic form such as a sentence) – are constantly newly drawn into use. In periods of relative stability and in stable settings, this happens in relatively predictable (though nevertheless still always novel) ways. In periods of rapid social change, as in the present era of superdiversity and globalization, and in settings that are in constant flux, uses of modes and of signs do take the

forms and meanings envisaged by their makers, though less constrained and less fixed by convention.

The use of modes and the making of signs in and for specific environments, has to be seen in relation to broad social, geographical and temporal/historical conditions. Signs are made out of the awareness of the maker of the sign of a wide range of factors. The sign-maker's rhetorical assessment of the physical–social site and of the conditions which exist at the moment of the making of the sign all appear in how the sign is made. At the base of this perspective lies an insistence on maintaining the known yet often unrecognized distinction between signifier and sign: as has been pointed out (Scollon and Scollon, 2003), a 'traffic sign', say, one indicating a speed-limit, is actually not a sign in the semiotic sense while it is lying on the back of the truck on which it is being transported to the site where it will be positioned. The seeming difficulty of dealing with the 'meaning of colours' in some semiotically consistent fashion is another instance. How can 'red' mean danger or love or wealth or happiness; or 'white' mean death or joy; and so on. The problem ceases to be one when we recognize that 'a colour' is a signifier, not a sign. As *material* (and *signifier* therefore) the colour 'red' offers a range of potentials for meaning *making*, different ones of which are differently taken up in different cultures and societies.

These two examples can in turn serve as metaphors for the use of specific modes as much as for the making of signs. In a study on changes in textbooks from the 1930s to the year 2004 (Bezemer and Kress, 2008), it is clear that the role, the use, of modes in that particular medium has changed significantly over the last decades. For the first fifty years of that period – broadly speaking – writing had a central function – a *functional specialization*, in terms of 'carrying' the major *functional load* in relation to curricular content. Now modes such as image and layout have taken over some of the functional load previously carried by writing alone and the functional specializations of each of these three modes are undergoing quite significant changes. What looks, seemingly, like merely a quantitative change (more images) is due to (deeper and prior) social and technological changes, which lead to a reshaping of the functions which a mode – writing in this case – will be used to fulfil in specific ensembles of modes in particular settings and media. These social and semiotic changes have profound implications for the conceptualization and investigation of, for example, 'reading' and 'writing' and it is these implications that social semiotics aims to address.

Example: Exploring text making on Facebook

We will now present an example of a social semiotic analysis, one that was aimed at this question of what it means to 'read' and 'write' in online platforms. The example is from Bezemer and Kress (2017). They addressed the following research question: How do young people make multimodal texts for dissemination on Facebook? The focus of the analysis was on posts made by one twelve-year-old Dutch boy, Daan, on Facebook. One of these posts is represented here by Figure 11.1.

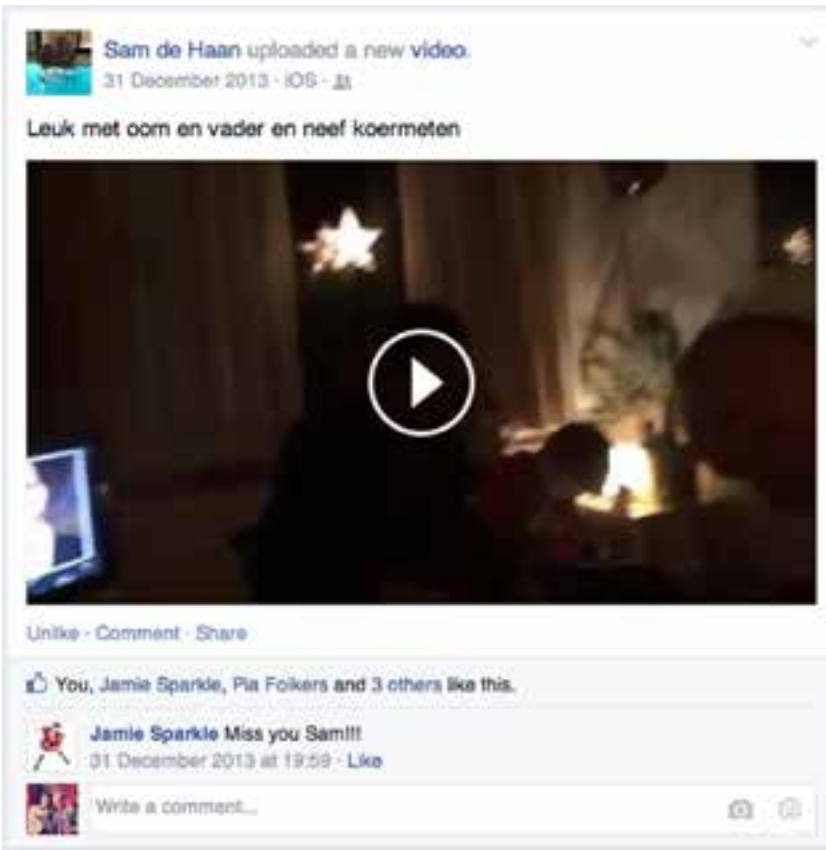

Figure 11.1 Daan's Facebook post.

Exploring the conditions in which the signs were made

Before going into the textual details some preliminary observations are in order. First, we note that these sign-makers do not operate in the same *spatio-temporal frame*: they are in different locations and their sign-making is differently organized temporally. There may, for instance, have been a 'pause' between Daan's post and a 'gap' in response, of an hour, a whole day or even more.

Second, communication in this example is not face to face, but is mediated by an *online platform* (run by a major corporation), which provides a set of resources for making meaning. Third, the platform itself gives rise to, 'facilitates' the use of a certain set of *modes: writing*, for instance, and (*moving) image*. These modes enable sign-makers to communicate across time and space, and to '*edit*'; that is, to review and remake a sign-complex before it is made available to others for interpretation. Fourth, the sign-making realizes a specific social relation: Friend–Friend.

Yet beyond these particularities we can identify common principles of composition and of communication. First, here as in the other cases, sign-makers make sign-complexes with their (imagined) audience in mind; they make signs which they believe are apt for that audience; this shows the sign-maker as rhetor. Second, sign-making can be described in terms of *design*, with sign-makers selecting modes for making signs and sign-complexes which they believe are apt for their rhetorical purposes, given the affordances of the modes chosen. A perspective on the sign-maker as both rhetor and designer highlights the semiotic work of distributing functions across modes or of allocating different 'semiotic tasks' to different modes, much like a composer uses the characteristics of different musical instruments to carry the melody or to provide a particular background.

We then consider the *interest* of the sign-maker (Kress, 2010). 'Interest', in this sense, arises out of the text maker's social, cultural, affective, material experiences and present position in the world, shaping his or her attention to and engagement with the world. Daan's post demonstrates his *interest* in communicating to an audience of his friends and family about a festive occasion which seems to have appealed to him, as the event is unfolding. He selects features to which, given his *interest*, his attention is drawn: selected elements in this event and the social, cultural and material environment in which the event is taking place. We might say that these, with a heightened sense of the event, are the kinds of things that seem to this twelve-year-old's

imagination particularly worth selecting and showing. He, in turn, wishes to draw the attention of his audience to these heightened, defining elements of this occasion.

In this, Daan makes choices about what to select and how best to represent what he wishes to convey, which also includes that this event has 'an atmosphere'. Only what is 'criterial' or essential in terms of his *interest* is represented; other features are left out. Those which are selected are then subject to Daan's design.

In the post, Daan draws on a potential of this platform for this instance; that is, the possibility of sharing (experiences, messages) with people with whom one is connected on the platform. Here, in the case of 'Facebook', the text is in the genre of *status update*. A common version of the genre 'status update' is the *report*, in which authors describe and/or show what they are doing or what they have just done: using the modes of *writing* and *video*.

Daan's post exemplifies the genre. Daan reported on what he was doing on the evening of New Year's Eve 2013. On that evening, Daan was at his uncle's, celebrating with his father, his sister and his two younger brothers, and his two cousins. Central to their celebratory gathering was a type of dining the Dutch call 'gourmetten'. It involves gathering around a dinner table with a raclette at the centre. The raclette comes with several little pans, allowing the guests to prepare their own food, grilling charcuterie and vegetables from platters provided. It is a popular form of dining for special occasions, for instance during the festive season.

This makes the post coherent with its *context of use:* it was posted on New Year's Eve, when people are celebrating, engaging in more or less predictable activities. The date of posting appearing above the *post* (which is automatically generated by Facebook) enables readers to reconstruct the temporal frame, if they don't read the post as it has come in.

From exploring Daan's Facebook 'profile', and from talking to him, we know that his Facebook audience (then) consisted of thirty-three Friends. They included twenty 'peers' (thirteen boys, seven girls), including classmates, friends from the neighbourhood and his sister; three cousins, all above sixteen+; and ten adults, including his mother, six uncles and one aunt, and two female adult friends of the family. Except for three of his uncles and the aunt, all 'Friends' lived in the same city; the majority in the same neighbourhood, where he met them face to face on a daily basis. He himself did not (yet) post frequently on Facebook – twenty-three posts in the first year; but he read what his Friends post every day. Most of the time, he accessed Facebook on his iPhone 5, using the Facebook App.

Exploring the sign-complex

So what sign-complex did Daan design for this audience, what multimodal ensemble did he design, using the modes available to him? His 'report' consists of signs made in *writing*, and in a *video*, with both writing and video presented simultaneously in a single frame.

The *written* element is in Dutch and would, roughly, translate to 'Enjoying dining with uncle and father and cousin' (a word-by-word translation would be, 'Nice with uncle and father and cousin dining'). The adverb in first position, 'Leuk' ('nice'), modifies what follows: 'met oom en vader en neef koermeten', suggesting why that which follows is noteworthy/worth 'sharing': the event affected the sign-maker's mood. The prepositional phrase in second position, 'met oom and vader and neef', *describes* a selection of the people around him. He describes the participants using terms that indicate their family relation, well suited for an audience that is not familiar with the proper names of his relatives. The verb in last position, *koermeten* (spelled as a non-standard variation of 'gourmetten'='dining'), describes the social event well understood by his (predominantly Dutch) friends on Facebook.

The *video* which Daan made using his iPhone is twelve seconds long. The camera work is shaky. The frame moves from right to left and back, a 'pan' giving a 'panoramic', 180 degrees close-up view of the camera holder's surround from a low/eye-level angle. The video *shows* selected elements of the environment: partial shots of some people in a room; where in the room they are; and what they orient to. In the foreground, one adult is shown standing, orienting to an object on the table; a child tries to get in the frame of the camera. In the background, some people are on a sofa. The TV is on. It is night time. Two lights are visible, including one star-shaped light hanging in front of a window. In the dimmed light the people appear as silhouettes; vision is blurry; and as the camera moves quickly it is all the more difficult to identify people and objects. Fragments of speech are audible: one adult refers to food ('shoarma'); a child calls for mama; and there's sizzling of some kind.

Part of the design of any sign-complex is the production of links between its constituent elements. This is about *cohesion*: 'a potential for relating one element in the text to another, wherever they are and without any implication that everything in the text has some part in it.' (Halliday and Hasan, 1976: 27). For instance, in Daan's sign-complex, the writing names an *activity* ('koermeten', i.e., the grilling of food on a raclette) which is coherent with the actions made visible and audible in the video: the sizzling

sound and the spoken reference to 'shoarma' in the video. The writing also introduces *people* – an uncle, father and cousin – some of whom potentially feature in the moving image, which shows an adult and two children.

Cohesion is also produced by the *layout* (i.e. spatial arrangement as mode) of all the elements in the site where they appear; that is, on the 'news feeds' of Daan's Friends. *News feeds* are vertically organized, a column marked by hairlines on either side, with the most recent feeds appearing on top. Readers scroll down to read older feeds, which are separated by horizontal hairlines. In Daan's post, the writing appears *above* the film; so if we follow Facebook's top-down structure, we might say that in Daan's post *writing* appears *before* ('earlier than') the video. This ordering allows for the written element to serve as a frame for the video; a frame which is to be read before the video is watched. In Barthes's (1977) terms, writing here 'anchors' the image; it '*directs* the reader through the signifieds of the image' (p. 40).

How *writing* and *video*, and the signs made in each, operate as a multimodal ensemble and as a sign-complex can also be explored by asking: What if the video was left out or what if readers chose not to play the video? What does the video provide that the written sentence does not? We might say that *writing* is used here to produce an 'abstraction': concrete events are 'transcribed' by means of writing into generic categories, selecting some of the constituent elements of the occasion itself and of the video, while leaving out others. In this case, the writing does not describe many of the specifics of the circumstances, such as features of the setting; or indeed characteristics of the participants: what they look like, how they sound, etc. Above all, it does not give an 'impression' of the atmosphere as the video does (in Kress and Van Leeuwen's (2006) terms as a 'symbolic suggestive process'), depicting a 'generalized essence', the gist rather than the detail, complementing, filling in the sparse description given in writing: 'leuk' ('nice').

The example shows how modes operate in ensembles to serve *complementary functions. Writing* describes the social relations between the sign-maker and the people represented in the written part of the overall text; it names the occasion of the gathering; and it provides an appraisal of the situation from the sign-maker's point of view. None of this information is provided by the *moving image*, by *speech* or other modes in the video. The video shows some of the more specific actions involved in the event and some of the characteristics of the participants not mentioned in the written sentence, including visual and vocal features, giving an impression of 'mood' or 'atmosphere'. Without one or the other, the text would not be the same; the signs are interwoven, mutually modifying.

Exploring responses to the sign-complex

We can consider how a sign-complex can 'prompt' the consecutive making of a sign-complex by the sign-makers who were addressed. It shows responses from some of the 'Friends' who have noticed and interpreted his post: six people responded, all of them 'liking' the post, while one – one of Daan's uncles – 'comments', 'Miss you Daan!!!'

When Friends noticed Daan's post and 're-made' – interpreted – the sign-complex, following their own principles, communication had happened. Whatever else it may be, communication is never a straightforward transmission of messages. Daan's Friends may have chosen not to follow the reading path suggested by the layout of the (visual) elements of the post, and they will have chosen their own degree of commitment for and focus of engagement. The signs made in response to Daan's post give us a glimpse of their engagement. For instance, some signified *affect*, for example, by pressing 'like'.

Conclusion

The example demonstrates that sign-makers are immensely semiotically 'resourceful': using resources creatively to serve their interests. A social semiotic framework aims to be generous in its recognition of those resources and to highlight the full repertoire of semiotic resources that people need to develop in order to participate in seemingly straightforward instances of communication. Daan shows that in order to be successful at 'social networking', writing skills no longer adequately describe the competencies involved in using video, layout, writing (and possibly other resources we may not have attended to) which are made available by a 'platform' for the design of sign-complexes.

The example also illustrates how language becomes part of a bigger whole, namely a 'text' that is made with a number of different modes. If we wanted to analyse what the meaning maker constructed as a meaningful, coherent whole, we would need to treat the entire video as our object of inquiry, not just extract and examine a part (such as the spoken or the written) of that whole. If you want to understand how language is used within that text, you will have to attend to those other modes in the text as well: you can't interpret or analyse what was said or written in isolation.

The example is an instance of communication on social media. It is the case that the texts we find on the internet are almost always multimodal – in fact, the challenge is: find one that is not! Multimodal texts such as these do of course pre-date the internet era, but digital technologies have given a majority access to the resources needed to produce and disseminate multimodal texts at relatively low cost. The new technologies now draw our attention to what had previously been possible to overlook.

We mentioned at the beginning of this chapter that multimodality is a diverse field. Indeed, it remains to be seen whether multimodality will develop into a distinct field or whether, and if so how, theories and methods in multimodality will be integrated in disciplines like applied linguistics. Our prediction is that these two trends will continue in parallel. This means that multimodality will feature quite differently on different research agendas.

For communities that have adopted selected ideas about multimodality, the question will be whether and how these can be reconciled with their current theories and methods. In many disciplines, notably linguistics, the term multimodality is often used to evoke old ideas about the role of the 'non-verbal', rather than as a short-hand term for the far-reaching premises we outlined in this chapter.

The community of researchers 'doing' multimodality will continue to explore principles and means of making meaning across different modes, media and social domains. Work on now relatively well-documented modes, such as image, might focus on testing empirically some of the hypotheses that were proposed in the early days of multimodality, using quantitative methods such as multimodal corpus analysis (Bateman et al., 2017). Yet other work will aim to advance understanding of resources that have until now been largely ignored, such as touch (Jewitt, 2017); or that have been investigated in isolation in experimental rather than naturalistic inquiry, such as gaze and facial expression (Korkiakangas, in press). Exploration of different types of activity – for instance, 'walk-and-talk' (Broth et al. 2013) and play (Cowan, 2014), will continue to advance understanding of meaning making beyond the traditional 'speech event'. For the 'multimodalists', the integration and synthesis of these understandings into encompassing frameworks will remain one of the biggest challenges (Bezemer and Kress, 2016).

Further reading

Bateman, Wildfeuer and Hippala (2017)
Outlines and illustrates different methods for analysing multimodal materials, including diagrams, films, webpages, social media and computer games.

Heath, Luff, and Hindmarsh (2010)
Introduction to a multimodal approach grounded in CA and ethnomethodology, drawing on a range of different studies by the authors.

Jewitt, Bezemer, and O'Halloran (2016)
Outlines, illustrates and compares a range of different approaches to multimodality, including social semiotics, SFL and CA; and discusses how to design a study in multimodality.

Van Leeuwen (2005)
Introduction to social semiotics, outlining semiotic analytical procedures, illustrated (mainly) with paper- and screen-mediated texts and three-dimensional objects.

Online resources

http://www.routledgetextbooks.com/textbooks/9780415639262/
Includes resources for self-study related to *Introducing Multimodality*.

https://mode.ioe.ac.uk/resources/
Includes interviews with key figures in multimodality, glossaries, examples of multimodal transcripts and bibliographies.

Discussion questions

1. How does multimodality challenge previously well-established theories, concepts and terms in linguistics?

2. How might linguists refute the arguments put forward by multimodalists?
3. How would you analyse a how-to video on YouTube (e.g. on how to replace a kitchen tap)?

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12

Case Study Research in Applied Linguistics

Patricia A. Duff

Chapter outline

Case study research has a very important status and role in many disciplines, including (applied) linguistics. By choosing just one or a small number of cases of a phenomenon – typically, in our field, individuals who are using, learning or losing languages – the researcher is able to explore the phenomenon holistically and in context and can examine the complex constellation of factors involved. In this chapter I define case study research, discuss its philosophical underpinnings, give concrete examples from qualitative case study research on language learning, and discuss some of the advantages and disadvantages of using single-case versus multiple-case designs, nested designs and cross-case analysis. Examples are drawn primarily from recent study-abroad research, as one of many areas of linguistic research that now frequently use case studies. Because thematic analysis is often part of case study analysis, on its own or in conjunction with other kinds of analysis, I also explain and illustrate that approach. In addition, I discuss the strengths of longitudinal research, particularly when seeking evidence of development/change in knowledge, performance or participation in certain communities and thus a sense of people's trajectories. The chapter concludes with a discussion of generalizability.

Introduction

Case study research is pervasive in many fields, such as law, business, medicine, nursing, sociology, psychology, social work, anthropology, political science, education and linguistics. Indeed, despite the existence and affordances now of 'big data', many current theories or models within different fields continue to be profoundly informed (even discredited or falsified) by case studies (Duff, 2014). The value of concrete individual cases – whether organizations, interventions, events or humans engaging in particular types of experience such as language learning – has not decreased and, if anything, plays an even bigger role in knowledge generation than ever before. Case studies also are increasingly used in many fields because of their clear heuristic value in education and communication. They provide an in-depth, contextualized, concrete, multi-dimensional exemplification of a subject that can help tell an important story but at the same time vividly encapsulate abstract principles as well. Thus, case studies can be used in both research and teaching. In this chapter, I focus on their use in research.

In linguistics, and particularly applied linguistics, the *case* is typically a language learner or user (speaker, writer, bilingual). The cases documented in many studies in the late twentieth century (see, e.g., Duff, 2008) were often individuals in specific language contact situations (e.g. Khmer first language + English second language) that revealed dimensions of language transfer (cross-linguistic influence), universals, developmental sequences, narrative or information structure and other processes involved in using languages for various pragmatic purposes. However, there was often relatively limited reference to the wider social and ideological worlds of the individuals, their histories or their personal desires, hopes, identities or frustrations – past, present and future.

In contrast, now much more emphasis is being placed on individuals (cases) as multifaceted human beings operating within and across various social configurations: families, peer groups, networks, affinity groups (e.g. sports, arts or virtual cultural groups) or various kinds of informal or formal communities of practice (Lave and Wenger, 1991; Wenger, 1998). The research is often interdisciplinary as a result, drawing on sociology, anthropology, human geography, linguistics and psychology, for example, as well as education. Increasingly, too, the influences of mobility, migration, multilingualism and virtual connectedness through digital media are discussed in studies wherever relevant, as are associated aspects of identity

(Norton, 2013). I have described some of these trends elsewhere (Duff, 2008, 2012, 2014), in relation to language learners and second language(L2) writers (Duff and Anderson, 2016; see Polio and Friedman, 2017, for a recent review of other L2 writing case studies).

Case study research in the twenty-first century, furthermore, reflecting the growing impact of globalization and mobility, includes a wider demographic of learners and linguistic situations than was typically found in earlier generations of research: for example, refugees and other transnational migrants, including 'returnees', study-abroad (SA) students (children and adults), very young learners in foreign- or second-language learning contexts, much older learners (e.g. seniors) learning or forgetting languages, very advanced-proficiency language learners, learners of indigenous languages, heritage-language and generation 1.5 learners and so on. The languages involved have also expanded from European languages primarily to a much more diverse combination of languages (Duff, 2014).

In fact, in some domains of linguistics, such as the study of motivation in L2 learning (e.g. Lamb, 2009; Thompson, 2017; Ushioda, 2009), L2 linguistic development in terms of complexity, accuracy and fluency (e.g. Larsen-Freeman, 2006; Spoelman and Verspoor, 2010) and L2 SA research (e.g. Kinginger, 2008, 2009, 2013), scholars are (re)turning to case study as a way to understand individuals' dynamic socio-affective and cognitive learning processes in ways that larger quantitative studies cannot do as well. One reason for this renewed recognition of the value of case study, and particularly longitudinal studies, is that group averages or aggregated data often obscure important inter- and intra-individual variation – to the point where the reported group trends may not accurately reflect any single participant's own documented experience (Larsen-Freeman, 2006). In addition, the experiences of outliers (atypical participants), such as exceptionally successful or unsuccessful learners, tend to be overlooked when measures of typicality or central tendency are reported, even when standard deviations are reported. Yet they may provide important information about learning processes.

In what follows, I discuss examples primarily from one area of intercultural L2 learning research with an abundance of recent case studies on different aspects of experience: SA. In the past, research in this area, as in others noted above, tended to be heavily quantitative, using measures of pre-tests and post-tests on oral proficiency tests with large groups of students, often in a cohort, to determine the kinds of linguistic and other (e.g. academic) gains made by students taking part in SA sojourns. The time 'away' might

range from a few weeks to a year or more. Sometimes quantitative linguistic comparisons were also made with students who had remained 'at home,' continuing to study the L2 at their American universities instead of going abroad. In other words, the focus tended to be learning *outcomes* rather than the social, culture and linguistic *processes* leading to those outcomes.

Case study in SA, as in other domains of linguistics, is now increasingly used in qualitative studies or in mixed method studies (qualitative + quantitative) with a focus on aspects of language learning of interest not only in SA but in applied linguistics more broadly: for example, pragmatic competence, motivation, social networks, agency, willingness to communicate, identity issues (in terms of race, culture, language, national origins, sexuality) and ideologies or beliefs associated with monolingualism, multilingualism or particular languages and cultures (e.g. global English) in transnational contexts. Sometimes, there is a focus on one linguistic skill area, such as writing, although much of the research examines oral language and interactions, which are foregrounded in SA experience. Increasingly, then, case studies aim to capture sociocultural aspects of SA, their personal investments or desires, as well as a sense of learners' overall trajectories (Jackson, 2017). This case study research on SA and other applied linguistic topics/contexts is published in a wide variety of peer-reviewed journals, including *Applied Linguistics, Canadian Modern Language Review, Journal of Pragmatics, L2 Journal, Modern Language Journal, System, TESOL Quarterly* and many others, as well as in edited books and monographs.

Features of case study

What is a case?

It is not hard to define a case when it is a human being. However, a quick perusal of publications with the term 'case study' reveals that the term is used in many ways, referring to countries, incidents and experiments, for example. Such disparities (or flexibility) in the meanings assigned to the term naturally lead to confusion.

In this chapter, a case refers to a single bounded unit, entity or system that is the focus of inquiry within its wider frame of reference (see Merriam, 2009). As noted earlier, the case is often a learner/user of a language (e.g. on a SA sojourn), but there might also be a nesting of cases, such as (1) a country destination (Russia, Egypt, Spain); (2) a particular type of institution

(school, university, workplace); (3) a class, programme, cohort or activity within that institution (e.g. 'island' programme, meaning one organized by the sending universities, not the host country); and (4) one or more individuals (focal participants, e.g. students or teachers) within that setting. There are, in fact, many possible designs for case study and types of cases, so it is very important to be able to define what the case is. The case normally has intrinsic value as an interesting exemplar of the category from which it is drawn, as well as instrumental value in helping us understand broader issues and experiences (Stake, 1995).

What is case study?

A case is obviously not the same thing as a case study. A case study is an in-depth study of one or more cases. But even once the case is defined in terms of its boundaries (e.g. a person, a school, or a policy or some combination of these), we must explain what it is a *case of*. Is it a case of relationships between motivation and outcomes for one or more language learners? Acculturation processes? Changing beliefs about the value of SA? Manifestations and effects of learner agency? Changes in identity? That is, the subject of the study is the case, but the object of the study is what the researcher is particularly interested in investigating that has theoretical significance, relevance and possibly pedagogical implications as well. Often the case study will answer questions like 'how?' and 'why?'. For example, why are some learners' experiences and outcomes very positive and others much less so? (e.g. Kinginger, 2008). Or, how do students' experiences within homestay families improve their understanding of the local culture, foster meaningful relationships mediated by the L2 and help learners attend to particular target language forms (e.g. marking affective stance, pronominal usage, honorifics, openings, requests), for example, as explored in Shively (2011; 2013) and in other studies?

Research designs and epistemologies in case studies

Designs

Case study can be quantitative and experimental in design (e.g. single-subject experimental designs, which are quite uncommon in our field) or qualitative (most common). However, even qualitative studies might include

some quantification of data (e.g. pre–post-test scores, number of times a linguistic form was produced). Many SA studies report pre–post language scores (e.g. Oral Proficiency Interview, TOEFL, TOEIC, etc.).

For example, Shively (2013) included quantification to report on the corpus of humour sequences she analysed for her single-case study (an American university student named Kyle) in Spain: 'Kyle produced a total of 72 successful [Spanish] humorous utterances (host family, N = 18; friend, N = 54) and 13 attempts at humour that failed (host family, N = 1; friend, N = 12), for 85 total utterances analyzed. The majority of Kyle's humorous utterances (N = 66, 78%) occurred in conversations with his friend' (p. 938). She then examined excerpts in which such utterances had occurred (with or without the intended effect) in interactions either with his host family members or a Puerto Rican Spanish-speaking friend. She also examined how Kyle was being socialized to use – or not use – particular expressions that he felt were humorous (or sarcastic), but his interlocutors did not interpret as intended, through explicit feedback from others.

However, most qualitative case studies rely primarily on the narrative presentation and interpretation of observed patterns of behaviour and other phenomena (perceptions, beliefs and other attributes) and do not involve testing and (inferential) statistics or other quantitative measures. This narrative or expository quality has the potential to make case studies engaging and accessible to readers.

Case studies may occur on their own (which is most common) or as part of mixed method studies. As Kinginger (2008), one of the leading researchers in SA, writes in the first part of her monograph on American students' SA experiences in France, 'Whereas in many studies of language learning abroad, the presentation of assessment results constitutes the end of the story, in this project *the results are taken as one point of departure for further investigation of particular cases*' (p. 32, italics added). Her mixed method study is exemplary in its detail to the typical quantitative aspects of pre–post linguistic development (holistically and in various areas of pragmatics). It is also contextualized well within the larger historical context of Americans studying in France during a particularly contentious political period (the American invasion of Iraq in 2003, which France opposed) and in the thickly described lives of six focal participants from her larger original set of twenty-four.

Ethnographic case studies represent a subset of the larger category of case studies. Those with an ethnographic orientation usually focus on sociocultural dimensions of groups and group members' behaviours,

knowledge and dispositions, and cultural patterns of language use and socialization. The case studies are often conducted by means of participant observation, interviews and other kinds of data gathering, over an extended period of time (often six to eighteen months as part of dissertations). In SA, Wolcott (2013) described his case study (Lola) as ethnographic (from his larger dissertation study); he conducted participant observation and interviews over a fall semester in France and worked as a resident advisor in the dormitories where some students stayed, as well as serving as their programme teaching assistant and researcher and accompanying students on field trips. Sometimes the distinction between what authors describe as 'ethnographic' case study and just 'case study' can be quite blurry, particularly when examining sociocultural aspects of learning in any case.

The main advantages of case study (of all types) are that it can provide a holistic, contextualized, complex description of a situation or person and take into account relationships, dynamic processes and interactions of a number of features simultaneously. It can also look at this interplay along different scales of time and place or space with the case at the centre (Douglas Fir Group, 2016). Not all case study research aims to capture both macro and micro aspects or a wide range of interactions among factors, however. But case studies do normally involve a considerable amount of description. Analysis and interpretation can yield insights and explanations about important theoretical issues, such as why certain students' language might improve in particular ways while others' does not. As Kinginger (2008) writes about her study in France: 'These case histories show that even within the same cohort and at the same historical moment, the study-abroad experience is highly diverse. Members of the same group choose study abroad for different reasons; they greet and cope with new experiences in distinct ways' (p. 14). Examining the highly individual nature of human experience is the essence of case study.

Epistemological approaches

Some case study researchers, even when working in a qualitative paradigm, believe in controlling and isolating variables, to the extent possible, with the aim of ultimately being able to offer not only descriptions and explanations but also predictions. This general epistemological approach is often considered *(post)positivist*; Yin (2014) is a well-known, prolific proponent of this approach. Hypotheses might be stated and tested and replication of case studies is encouraged.

However, case studies in (applied) linguistics and language education tend to be more interpretivist or constructivist, seeking a deeper understanding of phenomena based on data rather than aiming to generate universal truths. Furthermore, there is greater recognition within constructivist approaches that the data themselves (e.g. picture descriptions, personal narratives, interview responses) are discursive constructions that should be interpreted as such through inductive means of identifying meaningful patterns or relationships in data. An oft-cited methodologist in this interpretivist camp is Merriam (2009), whose specialization is adult education. Control and predictability are not the goals of research in this view and, in fact, these aspects may be considered irrelevant and unattainable since social behaviour and learning are understood to be very dynamic, fluid, nonlinear and unpredictable (cf. Douglas Fir Group, 2016). Others who conduct case studies cast their work more as *poststructuralist* (e.g. Norton, 2013), breaking down binaries and other kinds of categories that tend to essentialize individuals' lives, experiences, identities and social reference groups, and the programmes they participate in (e.g. SA). They look closely at how power operates within and across people and encounters, and how learners' identities, for example, are constructed discursively within these larger social structures.

Research focus, domains and insights in case studies

Examples of case study: Study abroad

Table 12.1 contains a sampling of SA case studies from the past decade in different linguistic contexts. Most appeared in mainstream peer-reviewed applied linguistics journals, although two (Anya, 2016; Kinginger, 2008) are book-length accounts. Some are from edited journal special issues or books that contained other case studies not included here. This set is meant to be representative, not comprehensive, showing how, even in one domain of research, case study research designs (number and types of cases), languages involved and theoretical foci and analytic approaches vary. For example, the number of cases ranges from one to several (e.g. 3–7, which is common in multiple-case studies). Target languages include English, French, German, Japanese, Mandarin, Portuguese, Spanish and Russian. The sending country (and institutional affiliation of the researchers and many of the journal

editors) is most often the United States in these studies, although some broach SA from the receiving country perspective (e.g. when Mexican or Japanese students study 'abroad' in Canada).

Table 12.1 Sample case studies on Study Abroad (SA)

Study	Focus
Anderson (2017)	Identities and aspirations of two Chinese doctoral students in Canada as prospective returnees to China ("*haigui*") vs. scholars pursuing academic careers transnationally
Anya (2016)	Four African Americans' racialized identities in SA in Brazil and intersections with other social categories
Bae and Park (2016)	Flexible citizenship, neoliberalism and multilingualism as commodity; L2 learning as investment for global elites – for three transnational Korean families
Brown (2016)	One American learner's experience of social exclusion when learning Korean in Korea; agency and identity; activity theory
Diao (2016);Diao (2017)	Three American students' gender-associated sentence-final affective particles; ideologies of gender in China/Chinese Sociolinguistic aspects of three American students' dialects; accent and identity in Chinese; positioning as heritage speakers or those with ties to dialect speakers in diaspora
Jing-Schmidt et al. (2016)	Four American Chinese students' CoPs, identities, self-categorization
Jochum et al. (2017)	Four Anglo-American teachers' self-efficacy vis-à-vis their Spanish proficiency and instructional practices (pre-, during, post-SA)
Kinginger (2008)	Six American learners' narratives of their French learning, identities, ideologies, pragmatic development; different forms of mediation in SA

Study	Focus
Kobayashi (2016)	One Japanese student's academic English discourse socialization through oral presentation, preparation and engagement
McGregor (2016)	Ideologies of monolingualism vs. diversity (multilingualism); two American students' engagements with German speakers in Germany
Shively (2011; 2013)	Pragmatic development in service encounters for seven American students in Spain Humour, socialization; successful vs. unsuccessful humour utterances (attempts) for one SA student
Umino and Benson (2016)	One Indonesian SA student's social world (CoPs) and socialization in Japan as captured by thousands of photos
Wolcott (2013)	One American student's subjectivities and experiences in SA programme in France; agentively creating and embracing conditions for a French identity
Yang and Kim (2011)	Two Koreans' learning beliefs about benefits of SA and learning actions (e.g. practice speaking; TOEIC prep for receptive list/reading skills); contrasting motivational changes, remediation
Zappa-Hollman and Duff (2015)	Three Mexican students' 'individual networks of practice' across time, space, languages at a Canadian university
Zaykovskaya et al. (2017)	One American student's beliefs regarding SA before, during, after a sojourn in Russia

Theoretical/analytic frameworks include activity theory, identity and agency theory, social network theory, language socialization, communities of practice and others based on L2 pragmatics or post-structural considerations of the multilingual subject, for example. Interestingly, not many of these

studies systematically document precise *linguistic* aspects or outcomes of the students' development and instead focus on sociocultural and affective dimensions, such as identity, agency, beliefs and community engagements or disengagements. Those that do include linguistic descriptions include Diao's (2016, 2017) studies of sentence-final affective stance markers (particles like *a*) in Mandarin; and phonetics connected with the non-standard 'dental/retroflex merger' in Mandarin; Kinginger's (2008) analysis of pronoun use (e.g. *tu* or *vous*) and speech acts in French; and Shively's (2011) analysis of pragmatic routines in Spanish.

This observation that relatively few studies focus on linguistic descriptions and developments is not surprising in research on transnational and intercultural learning experiences where students' experiences and goals often extend well beyond linguistic dimensions. Case studies in other domains of applied linguistics research focus much more closely on linguistic development, as noted earlier, with less discussion of the broader sociopolitical or cultural contexts of learning (e.g. Larsen-Freeman, 2006). In other words, some are framed more in terms of macro-context and micro-features in discourse and interactions, while others focus more on the latter (see Douglas Fir Group, 2016, for a discussion of different scales or levels of analysis in L2 and multilingual research).[1]

Sample research questions from studies listed in Table 12.1 follow. The first pair of questions comes from SA research featuring two Americans in Germany:

1. What are the participants' desires and imagined realities concerning language learning and study abroad? How do they talk about their desires and imaginations while abroad?
2. Do their shifting self-constructions appear to shape/be shaped by recent macro-level discourses regarding language learning and study abroad? If so, how?

(McGregor, 2016, p. 17)

The next pair comes from a single case (selected from a larger study of eleven focal participants) of a Japanese university student in Canada:

1. What are some of the features of a valued (or 'good') oral presentation as perceived by the teachers and students?
2. How do students exercise their agency to undertake their presentation tasks? What are the consequences of these agentive acts?

3. How do the students, through their participation in an academic oral presentation, become prepared for their subsequent participation in similar activities?

(Kobayashi, 2016, p. 100)

These questions illustrate topics that case study researchers investigate in different contexts, ranging from (1) language learners' 'desires and imaginations' regarding their sojourns in the context of broader circulating ideologies to (2) the role of agency in completing particular kinds of academic activities in L2 English.

Research design

Single-case versus multiple-case studies

One of the most important considerations in case study is the number and types of cases and the selection rationale. If just one case is selected, why that particular one? If the case participant is the researcher, the answer may be obvious, as in auto-ethnographic/autobiographic research, life history or narrative inquiry of oneself. But in most single-case studies the main case is not the author, though the author's positionality and role in the study may (and should) be explained. Indeed, many seminal studies in the history of L2 acquisition research (see Duff, 2008, 2014) have featured just one primary case. However, careful contextualization by the author will help give a sense of how and why this case was chosen and what might be unique or exceptional or different about this case. This information can be very important for interpreting the results and considering their wider relevance or implications.

For example, Kobayashi's (2016) article (see research questions above) focused on a Japanese international (SA) student in Canada (Otome), who was one of eleven focal cases in his larger study. Kobayashi described why he singled out Otome for that article: '[She] arguably underwent the most dramatic personal transformation among all the focal students' (p. 100). In other words, she was exceptional within the group. Just how and why she was exceptional is then detailed in the study. Shively (2013), too, featured one case (Kyle), from her larger study of seven cases (Shively, 2011).

Therefore, we need to think about case study design in two ways: (1) What was the design of the larger study (if there was one), in terms of participants, selection criteria/rationale, etc. and (2) what justification is given for selecting just one or a few cases (and these particular ones) from the original study for the purposes of a particular publication? Typically,

larger dissertation-length studies with either single or multiple cases can be written about from different theoretical angles (or in terms of different research questions, analyses, cases, etc.) in articles for different journals. However, some explanation about reasons for the inclusion or exclusion of certain cases is helpful.

Other studies in Table 12.1 with one primary (i.e. single) case include Brown (2016), Wolcott (2013) and Zaykovskaya et al. (2017). The individuals were chosen, according to the authors, due to their unusual circumstances or characteristics (e.g. an older student who didn't fit in with other cohort members or in SA host society in Korea, in the first study, and highly motivated, agentive students in the other two). Umino and Benson (2016) also featured one case: an Indonesian in Japan who had documented his experiences over four years of SA through an archive of more than 12,000 photos, which the researchers analysed retrospectively for the study as their primary database of the man's changing social worlds in Japan.

If more than one case is chosen for the same study or article, what principles guided the selection or sampling? Options include seeking some degree of homogeneity: similarities, representativeness, typicality among cases; or, rather, heterogeneity: featuring contrasts in demographic details, processes or outcomes; extremes; outliers; or entirely different experiences. In some studies, when cases are recruited through snowball sampling or referrals by others participating in the study, the researcher may not set out to seek homogeneous or heterogeneous participants. Duff (2008) describes sampling strategies, trade-offs and recommendations in more detail for studies with one, two or more cases. I note, for example, the benefits of having four to six cases in a larger study such as a doctoral dissertation, which allows for attrition and provides for flexibility in terms of analysis and reporting structure.

Two participants are often selected for articles because they provide clear contrasts between the individuals' characteristics, the contexts (e.g. SA countries) or observed processes and outcomes of sojourns (e.g. McGregor, 2016; and Yang and Kim, 2011, shown in Table 12.1). Anderson (2017) studied two Chinese doctoral students (from his dissertation study of seven Chinese students at a Canadian university). The two described their future planned trajectories as scholars either remaining in the West (one case) or returning to China (the other case). Anderson discussed their histories, perspectives and circumstances within larger circulating ideologies about the status of those who seek careers outside of China or return, as so-called sea turtles (*haigui*), returnees. He also explained that this issue surfaced in

his interview with one of the two focal participants, who had first raised the issue, and then the topic was broached with one other participant as well, who had a completely different perspective and planned scholarly trajectory.

Zappa-Hollman and Duff (2015) described three cases from a larger study of Mexican SA students in Canada (Zappa-Hollman, 2007). The three were chosen to illustrate the authors' theoretical and analytical approach involving dynamic processes in students' 'individual networks of practice'.

Longitudinal designs

Although often called for, most longitudinal case studies in SA and other areas of applied linguistics are conducted either as doctoral dissertations or large, funded studies for which researchers may be able to devote a year or two (or more) to conducting the research. For SA research, the length of a study is often the length of one programme: a summer, a semester or a year. In other kinds of work, sometimes serendipity and enduring friendships allow the researcher to remain involved with the subject over several years (e.g. Lardiere's nearly two-decade-long study of her Chinese-American subject Patty (2007)); Spoelman and Verspoor's (2010) multiyear study of a Dutch learner's acquisition of Finnish over a three-year period; or Kibler and Hardigree's (2017) eight-year study of a Spanish-English bilingual woman's argumentative English writing development across high school and university in the United States). For most research ethics reviews, this longer-term engagement in research requires ongoing (annual) approvals and renegotiations of informed consent (see also Mallinson, this volume).

In the SA research shown in Table 12.1, the lengths of the research design range from several weeks (5 weeks), which is *not* normally considered longitudinal, to 2.5 years (Bae and Park, 2016), which is.

Data generation

As Table 12.2 indicates, a number of elicitation tools can be used, alone or together, to generate data. The use of multiple sources of data is often referred to as triangulation, as they together shed light on the phenomenon. In addition, the participants' and researchers' perspectives may be brought together (and may converge or diverge), which is another means of triangulating data and perspectives.

Once the data exist and have been transcribed, if necessary, or converted into analysable files, the researcher will be able to begin further analysis.

Table 12.2 Elicitation tools and data sources commonly used in linguistic case studies

- Questionnaires
- Language assessments (e.g. tests, scores)
- Learner journals or logs (oral or written)
- Researcher field notes, journals, logs
- Archival data
- Life history, learning autobiographies and other narratives (retrospective/introspective)
- Self-recorded or researcher-recorded audio or video observations of naturally occurring language interactions (e.g. with host family members, in service encounters, with peers) and related behaviours
- Stimulated recall tasks (based on, e.g., video performance); photo-elicitation
- Participant-produced written data (e.g. essays)
- Interviews: L2 proficiency or content-oriented (one-on-one, focus groups, Skype, email, etc.) at different points (e.g. pre-/during/post-sojourn)
- Visualizations of social activity (e.g. networks)
- And others.

Common types of analysis in case studies are shown in Table 12.3, ranging from linguistic to critical social/discursive analyses.

Table 12.3 Common types of analysis in case studies

- Linguistic change (or accuracy) over time (e.g. word, phrase or sentence complexity, case marking, tense-aspect marking, particles, phonetic features, etc.)
- Pragmatic units such as humorous utterances/sequences with different functions
- Thematic analysis of narratives, interviews, critical incidents, documents, field notes, researcher journals
- Interaction analysis of behavioural data
- Discourse analysis (including conversation analysis) of interactions during interviews, conversations involving participants, service encounters, etc.
- Analysis of social networks or participation patterns and trajectories in/across communities
- Macro–micro interfaces (e.g. critical discourse analysis; an examination of circulating ideologies and linguistic forms used)

Chapters in Mackey and Gass's (2012) book, *Research Methods in Second Language Acquisition,* by Baralt (2012) and Friedman (2012) provide a detailed discussion and examples of coding, analysis and the use of computer-assisted qualitative data analysis software (CAQDAS) in qualitative research such as case studies of language learning. A more extensive, transdisciplinary treatment of options for conducting studies and analysing and displaying case study and other qualitative data is found in Miles et al. (2014).

Analytic approaches and procedures

Thematic analysis

One of the most commonly used approaches in qualitative case studies, particularly in non-technical (e.g. non-linguistic) analyses of social or phenomenological experience is *thematic analysis*. Some people confuse content and thematic analysis, conflating the two, but thematic analysis is the approach most suitable to analysing narrative data. Content analysis normally involves quantification of items within a category, whereas thematic analysis may or may not involve counts. Grounded theory (Strauss and Corbin, 1998) is compatible with thematic analysis in that the former is typically an inductive (data-driven or bottom-up) approach to arriving at themes and, ultimately, theoretical insights from data (see Braun and Clarke, 2006).

Thematic analysts look for patterns and meanings (constructs) in the data, often through a process of memoing, coding and developing themes and categories of themes that are increasingly abstract (see Braun and Clarke, 2006, for concrete examples and guidelines). Duff et al. 's (2013) analysis of Anglophones' narratives of Chinese L2 learning found that the verbs *choose (a language), control (situations), seek (high levels of proficiency)* or *demand (corrective feedback)* were related to learners' *motivation* and *agency* in learning. To give another example, learners described themselves as *laowai* ('foreigners'), *outsiders, illiterate, multilingual, female, non-heritage learners*, etc., all of which were coded in connection with *identity* and some of which were also connected to the theme of *community.* The coding took place within-subjects (i.e. for each case) and then across-subjects (i.e. comparing cases, also known as cross-case analysis, discussed further below).

Saldaña (2009), a scholar in theatre/drama education, is one of the most prolific contemporary qualitative researchers on the topic of qualitative data coding and analysis across disciplinary areas. He and his collaborators (Miles et al., 2014) outline many categories of coding and also exemplify first-order and second-order coding. Saldaña (2009) discusses a range of types of codes

one can use. The codes may be deductive, coming from previous studies, for example, based on the author's conceptual framework or they may arise in the course of the study more inductively. These codes, whatever their type or source, then feed into particular patterns that might indicate causes or explanations, relationships among people or concepts, etc. Although it is not common in (interpretive) qualitative case studies to have multiple coders code the same data to establish reliability or consistency in the way it is done in quantitative research, it can be useful for a study to indicate that other coders agreed on classifications or to explore why they did not. For example, Saldana (2009) provides the following example of a piece of textual data related to immigration that might be coded differently by scholars coming from different fields or traditions:

> There's just no place in this country for illegal immigrants. Round them up and send those criminals back to where they came from. (p. 6)

He suggests that a grounded theorist might use NO PLACE as a code, taking a phrase from the text (N Vivo coding), whereas an ethnographer using Descriptive Coding might prefer the code IMMIGRATION ISSUES. In contrast, a critical race theorist might use the code XENOPHOBIA, using Values Coding.

Many authors – perhaps the majority in applied linguistics – who describe their qualitative data analysis in terms of 'thematic analysis' or, alternatively, 'grounded theory' omit from their reported studies the actual codes or themes or types of coding that proved instrumental. Jing-Schmidt et al. (2016) were explicit about the *a priori* themes or 'conceptual categories' they coded for in their study of four Chinese-heritage-background SA students studying in China for a year. These were derived from two different theoretical frameworks that informed the study (a, b and c coming from one; and d, e from the other):

> (a) the motives and learning goals of the participants for their SA, (b) the extent of social participation in the local community throughout the sojourn, and (c) the forms of competence acquired and their impact on the co-evolution of the community and individual identity, which are central in the COP framework [….;] [d] the participants' cognitive level of self-categorization and group perception, and [e] how this correlates with their interaction patterns in the ancestral homeland, and with their SA experience in general. (p. 802)

They then created files from the participants' e-journals, which were analysed as follows:

> All three authors read all 4 datasets at least three times, and independently color-coded the texts for the 5 themes to be analyzed. We then synthesized the initial coding results by identifying and cataloguing the most salient textual elements bearing on the themes in each dataset, in order to sketch out an individual trajectory of identity development for each participant. We then compared the 4 datasets with regard to the 5 themes. (p. 802)

Still, a more specific list of codes used is not provided, apart from the larger set of five thematic categories. (In fairness to the authors, the omission of this information is commonplace in the published literature, including some of my own). It would be helpful for others seeking to do similar studies or to work back from the reported findings to the research questions to have examples of codes/themes that were used.

Cross-case analysis, generalizability and transferability

Some case study researchers claim that generalizability is simply impossible with small n-size studies. Others (e.g. Flyvbjerg, 2006, 2011) argue persuasively that analytic generalization (i.e. to models, principles, theories) is possible and that having multiple carefully selected cases can increase generalizability or external validity. On this point, Miles et al. (2014) assert:

> One advantage of studying cross-case or multiple cases is to increase generalizability, reassuring yourself that the events and processes in one well-described setting are not wholly idiosyncratic. At a deeper level, the purpose is to see processes and outcomes across many cases to understand how they are qualified by local conditions, and thus to develop more sophisticated descriptions and more powerful explanations. (p. 101)

Cross-case analysis and generalizability refer to two different aspects of case study. The former deals with how researchers present and synthesize (compare, contrast) multiple cases, often after having presented analyses of individual cases (Stake, 2006). This stage is very important to help the reader make sense of areas of salient similarity and difference across cases and to consider the theoretical import of the study.

Generalizability refers to the nature of inferences that can then be drawn from the results, often a thorny issue in case study (see Chalhoub-Deville et al., 2006; Duff, 2008). Two important questions should be addressed: (1) On what basis were the cases selected (typicality? atypicality? other kinds of exceptionality? representativeness? convenience? etc.) and from what larger population? (2) Is the desire to (i) draw inferences about a phenomenon to shed light on concepts (theories, models, understandings

of a phenomenon) or (ii) draw inferences that can be applied to the population from which cases were sampled? Normally, if case study researchers aim to generalize at all (and often they do not and should not), they must clarify how representative the small sample of cases is; even then, normally, the aim is analytic generalization: to theory rather than populations.

Some would dismiss the generalizability question entirely and leave it up to readers to glean, transfer or mobilize useful insights from one context and apply them to other contexts when it seems reasonable to do so. This process is known as transferability. Simply stated, transferability puts the onus on readers to consider the extent to which findings from one setting might apply to others (see Merriam, 2009, Chapter 9).

Ethical issues in case study

Ethical issues arise in case study research particularly when the identity of the case participant(s) (whether a person or an institution) might become apparent, despite pseudonyms and other attempts to remove unique identifiers from published accounts. Thus, whereas the strength of case studies is precisely their detailed, contextualized portrayals, these same characteristics can make it difficult to truly anonymize people, programmes and locations (see Duff, 2008, for a fuller discussion). This poses something of a paradox for case study researchers. In much case study research, the risks of identification might be truly minimal; however, in work dealing with vulnerable populations (e.g. migrants whose legal status in a country might be in question), it is incumbent on researchers to not just heed the guidelines and advice of their institutional review boards that oversee ethical reviews of research, but to also consider ways of presenting cases in such a way as to avoid breaching assurances of confidentiality (see also Mallinson, this volume).

Criteria for evaluating case studies

Evaluating case studies typically involves a combination of the readability and interestingness of the final written account, sufficient discussion of theoretical frameworks and methods that were used, including details pertaining to analysis and interpretation, disclosures (usually) of the researcher's own positionality (history, interest, relationship, stake) in relation to the case or the topic and then sufficient exemplification and

elaboration of the findings (Duff, 2008). Tracy (2010, p. 837) conceptualizes these criteria in terms of 'eight key markers of quality' (in qualitative research): '(a) worthy topic, (b) rich rigor, (c) sincerity, (d) credibility, (e) resonance, (f) significant contribution, (g) ethics, and (h) meaningful coherence' (p. 837).

Conclusion

Case study research has gained considerable ground in applied linguistic research in the past decade, as exemplified by studies in this chapter. There is now also greater attention paid to issues such as case selection (sampling strategies), theorization and contextualization, the provision of a sufficient 'audit' or data trail (warrants or evidence for claims that are made) and exploration into different kinds of experience (linguistic, social, cultural) by different kinds of learners than have traditionally been considered in different transnational and intercultural contexts. Thus, case study offers excellent possibilities for course assignments, theses and dissertations, articles and full-length books and will continue to push our field forward into fruitful new directions in the future.

Further reading

Duff (2008)
This book presents a brief history of case study research in the social sciences and then discusses many examples of case study research in second language acquisition (SLA) from the 1970s to the mid-2000s. It includes two chapters on how to conduct case studies and a chapter on how to write up case study research.

Duff (2014)
This review article provides updates to Duff (2008) by including a wider range of populations, contexts and issues in SLA case study.

Merriam (2009)
A very accessible introduction to qualitative research (with a focus on qualitative case study specifically in Chapter 3)

Miles et al. (2014)
A valuable resource for qualitative researchers from the start of a project to the end. Of particular interest are ways of coding, conceptualizing, analysing and displaying findings visually.

Saldaña (2009)
Detailed, well-illustrated, step-by-step guidance about coding data.

Yin (2014)
A very clear overview of case study research with helpful examples and appendices from different disciplines.

Online resources

CAQDAS Introduction (NVivo):

1.5 hour lecture and demonstration sponsored by Stanford University Lane Medical Library (with speaker from QSR International, which developed NVivo): https://www.youtube.com/watch?v=0YyVySrV2cM

A much shorter tutorial (6 min.) demonstrates NVivo 10 coding, in particular https://www.youtube.com/watch?v=4crQbeHKhtk. This and other tutorials by Professor Deborah Wells Rowe (Vanderbilt University) can be found on her YouTube channel: http://www.youtube.com/user/DWRowe1?feature=watch

Forum: Qualitative Social Research (FQS). This open-access website hosts a peer-reviewed online journal with articles and resources related to case study and other qualitative research approaches: http://www.qualitative-research.net/index.php/fqs Other peer-reviewed journals with online interfaces and a focus on qualitative research methods exist but may not be open access (e.g. *International Journal of Qualitative Studies in Education, Qualitative Research, Qualitative Inquiry*).

Qualitative research and mixed methods video by Dr. John W. Creswell (University of Nebraska): https://www.youtube.com/watch?v=l5e7kVzMIfs (7 min.)

Discussion questions

1. If you were to pursue a linguistic case study based on your own research interests, what would the focus be and how might you frame the main research question(s)? How many cases would you aim to include? What would be the basis for your sampling or selection? Would you aim to focus primarily on language development (or linguistic aspects of learners' competence or performance), or sociocultural processes or both? Why? What approach to coding might you use (if any) or might you take a more narrative approach to describing the case(s)?
2. How feasible in your area of interest would it be to conduct mixed method research, involving both quantitative measures and qualitative analysis? Consider which of the methods/techniques in Tables 12.2 and 12.3 you might want to use.
3. Assume you were interested in people who are multilingual in many languages and how and why they have become multilingual, and how that knowledge and ability relates to their identities, friendships and activities. How might you design a case study on this topic?

Note

1. Technology and online learning do not feature as prominently in the studies in Table 12.1 as they might in other kinds of linguistic research, since the learners have *physically* moved to other countries in order to be immersed in the L2 (it is assumed), making online networking for that purpose less necessary or salient.

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Glossary of Key Terms

Adjacency pairs In Conversation Analysis, adjacency pairs are common structures found in talk; pairs of things that go together, such as questions and answers, greetings and return greetings and accusations and denials.

Alignment software Software integrating, within the same interface, an audio or a video player and a writing tool, allowing the researcher to temporally associate details of the video and details of the transcript, within aligned transcripts, annotations and codings.

Annotation The process of adding additional information to corpora, usually in the form of codes or tags which are attached to words. Additionally, texts themselves can be annotated with information pertaining to author, genre, date of publication etc.

Case A 'thing' that is part of a larger group of 'things', forming part of a *sample*. For example, a sample might consist of a group of speakers, with each speaker being a particular case.

Case study An approach to research that focuses on one or more entities (bounded systems) in order to understand a phenomenon of theoretical interest holistically and in context.

Categorical variable A variable that can have one of a closed set of discrete, non-overlapping values; also known as a discrete variable or a nominal variable.

Categorization Use of a category to identify and describe an event, an action, a person or a linguistic form.

Chi-square test An inferential statistical test to determine whether a relationship can be said to exist between two categorical variables.

Coding Assignment of a particular numerical value to the variable outcome of a case in preparation for statistical processing. For example, for the variable *word class*, outcomes could be assigned 1 = noun, 2 = verb etc.

Collocation The phenomenon of two words regularly appearing next to or near one another, usually more often than would be expected due to chance.

Collocational network A visual representation showing relationships between multiple collocates.

Comparative research question An RQ asked in conjunction with an experimental research design, e.g. when there are one or more independent variables (e.g. textbook and/or teacher) and a dependent variable (e.g. class size), to be compared, e.g. 'Do test results after use of [textbook X] vary with class size?'.

Concordance A table containing all of the citations of a linguistic feature (such as a word or phrase) that appear in a corpus, with a few words of context appearing to the left and right of each case.

Confidentiality A principle in research ethics that includes the obligation on the part of the researcher to protect participants' data or information collected from them from being subjected to unauthorized access or use.

Continuous variable A variable that can have an infinite number of possible numerical value, where values are mathematically meaningful; also known as an interval variable.

Contributory research question An RQ which needs to be answered before another, e.g. 'If so, …?', can be answered.

Conversation analysis (CA) CA has a focus on verbal, prosodic and non-verbal features of everyday speech. It studies how orderliness is created in such naturally occurring interactions within both informal and institutional speech contexts.

Corpus A collection of texts stored in electronic form, usually sampled and balanced in order to be representative of a particular language or language variety. Plural *corpora***.**

Corpus linguistics A discipline within linguistics which involves the analysis of large collections of electronically stored texts via specialist computer software which carries out statistical tests and presents information visually, enabling patterns to be identified by human analysts.

Critical discourse analysis (CDA) CDA studies how language works within media, political and other institutional contexts in order to uncover overt, or more often, covert inequalities of gender, race and class in social relationships.

Cross-case analysis The comparison, contrast and synthesis of analyses of different cases in a study**.**

Deductive research Research that is based on proving/disproving a particular *hypothesis* or set of hypotheses. Opposite of inductive research.

Dependent variable A variable property of interest in a particular statistical calculation; the outcome or response variable that the statistical test is attempting to model.

Descriptive statistics Summary statistics that describe the size, shape or central location of a data distribution.

Discourse(s) This is a much contested term across the social sciences, but within linguistics, there are three meanings. The first is that of 'language above the sentence' and refers to a sequence of sentences or utterances that constitutes a 'text'. The second is its more functional definition as 'language in use', or 'language in social context', which is found in labels such as 'spoken discourse', 'media discourse' and 'educational discourse'. Third, the plural term, 'discourses' are more than just linguistic: they are social

and ideological practices which can govern the ways in which people think, speak, interact, write and behave (see Foucault 1972).

Discourse analysis Discourse analysis is the generic term applied to any form of analysis of spoken or written discourse. Specifically, it refers to the branch of discourse analysis (DA) that studies the variability in and the context dependence of participants' discourse, written or spoken, with a focus on the concept of interpretative repertoires.

Emic A view from *inside* a particular culture or system, foregrounding the meanings and understandings of 'indigenous' members or participants (as opposed to an 'etic' perspective – or view from *outside*).

Empirical research question An RQ concerned to establish a finding through systematic data collection and analysis.

Ethnography The study of human groups through a detailed and in-depth description of everyday life and practices. In recent times, ethnographies have tended to make the familiar strange rather than the strange familiar as they focus on research sites with which the researcher often has some relationship.

Expected values table Part of the calculation of a chi-square statistics, the expected values table reflects the expected distribution of a given sample if the null hypothesis were true.

Experimental hypothesis Also known as the alternative hypothesis, it is the converse of the null hypothesis and normally takes the form of assuming a relationship between a set of dependent and independent variables.

Eye dialect Non-standard spelling of words, attempting to represent specific ways of pronouncing them.

Feminist poststructuralist discourse analysis (FPDA) FPDA applies a feminist focus to the study of the ways in which individuals position themselves or are positioned by competing discourses within an interaction that may render them powerful at certain moments, and powerless within others.

Field notes Notes made to record what the researcher observers when he/she is at the research site. During the observations the researcher may write brief 'scribbles' as a reminder of what has been viewed but field notes are usually constructed shortly after the observations have been made and after the researcher has left the research site.

Focus group moderator Person facilitating a focus group; not necessarily the researcher or person designing and interpreting the research.

Focus group topic guide A discussion guide prepared in advance of a focus group, with predetermined questions/ topics to be covered, unscripted probes and sometimes visual aids or materials.

Generalizability The ability to draw inferences about the results of a study either (1) to the larger population from which a sample (case) was

drawn (known as statistical generalization) or (2) to theories, models or understandings of a phenomenon (analytical generalization). Case study is more associated with the latter form of generalization.

Glosses Grammatical annotations of a transcript, indicating the morphological categories of each word or part of a word. The Leipzig Glossing Rules are a standard reference for transcriptions.

Holistic research An attempt to go beyond the quantitative/qualitative/mixed methods framing of research. Often associated with the ethnographic paradigm and critical approaches.

Human subjects research Research procedures that involve collecting data or personally identifiable information and/or interacting with individuals in order to collect data or personal information from them.

Hypothesis A statement of fact that can be shown to be either true or false (but not both at the same time), using *quantitative* methods.

Immutable mobile A notion introduced by Latour (1986) to characterize the double nature of inscriptions, which are both stabilized and fixed representations (immutable) and able to travel across different contexts of use (mobile).

Independent variable Parameters that are hypothesized to affect the value of the dependent variable; inferential statistics are designed to examine the relationship between independent and dependent variables.

Inductive research The research approach that starts with the data and through analysing data develops theories. Opposite of deductive research.

Inferential statistics The class of statistical procedures that examine the likelihood of obtaining an observed data set if the null hypothesis were true; also known as null hypothesis significance testing.

Informed consent Refers to the ethical principle and process by which an individual gives permission to take part in a research study, with full knowledge of its purpose, benefits and risks.

Inscription A notion introduced by Latour (1986) referring to the practice and result of inscribing descriptions and findings in a textual or visual form in order to give them a precise form and to stabilize them**.**

Interactional sociolinguistics This approach studies the ways in which speakers' use of 'contextualization cues' can index wider social and cultural patterns such as miscommunication between speakers from different backgrounds.

Interdisciplinarity The exploration of a question or challenge through research methodologies that bring together a range of academic disciplines and stakeholders to offer new insights and solutions to intractable problems and other phenomena.

International Phonetic Alphabet (IPA) The notational system elaborated since the late nineteenth century associating a set of sounds with corresponding symbols.

Keyword A word which appears relatively more often in one corpus (usually with statistical significance) when compared against a second corpus which acts as a reference.

Linguistic anthropology The study of how language influences social life. It is closely allied to linguistic ethnography but tends to attract American scholars while European scholars tend to affiliate with LE.

Linguistic ethnography The study of language in social life and social life in language. Linguistic ethnography studies the changing nature of human experiences in socially and historically shaped contexts. It pays close attention to how participants interact to produce and reproduce discourses, beliefs, values and identities.

Longitudinal research Research that is designed on a temporal scale to show development, change, maturation or emerging patterns in observed phenomena. The length of time needed to qualify as 'longitudinal' depends on the nature of the study, although a common benchmark in applied linguistics is 6–12 months at a minimum. Longitudinal research is often contrasted with *cross-sectional research*, which occurs within a shorter duration of time (i.e. synchronically) within or across cases.

Macroanalysis This studies the broader contexts in which spoken and written discourse occur. An understanding of social, political or professional context may help the analyst to interpret samples of spoken and written data.

Main research question Obviously there are different meanings of 'main' (e.g. 'primary'), but it can also mean a question which cannot be addressed until a prior, contributory RQ has been asked and answered (see above).

Mean The mathematical centre of a numerical data set.

Median The observed middle of a numerical data set.

Methodological research question An RQ concerning the value/effectiveness of data collection or analysis rather than findings, e.g. about a new method of data collection for a particular field, or a new or adapted analytical framework.

Microanalysis This is the finely grained analysis of small features of spoken and written discourse, such as the use of lexis, grammar, turn-taking, prosody and body language, to understand the internal workings of naturally occurring speech.

Mode Modes are semiotic resources that provide distinct possibilities for human expression, meaning making and communication.

Multimodality A field of study that aims to explore, theorize and explain human expression, meaning making and communication in all its manifestations. Multimodal approaches recognize that communication is the result of a combination of resources, including visual, textual and aural.

Multiple-case study Case study research with more than one focal case.

Multi-transcription A practice consisting in indicating several possibilities for transcribing the same string of sounds.

Null hypothesis The hypothesis that there is no relationship between dependent and independent variables; the null hypothesis is what is tested in most standard inferential statistical tests.

Operationalization The 'translation' of (physical) properties of a case into a numerical value, ultimately used for coding and subsequent numerical analysis.

Operationalizability A test of whether a given RQ can be answered, e.g. 'Are all the terms in the RQ clearly defined and "recognizable" in the data?', 'Can the needed data be collected or generated? Can it be analysed?'

Overarching research question An RQ which may not be operationalizable in itself but which can be addressed/operationalized by two or more subordinate RQs.

Participant A person who takes part in a research study; other terms include informant, consultant or subject.

Participant-generated research question An RQ requested or suggested by participants; if the research project claims to be research 'with' or even 'for' the participants, such RQs should ideally be incorporated into the research project.

Population A collection of *cases* which share the same or very similar characteristics, e.g. learners of English as a foreign language whose first language is Arabic. In the vast majority of research projects, we focus on samples, which are made up of individual *cases*.

Positivism A philosophy that sees the world as so many objects and events that can be discovered (and, therefore, definitively known) through the rigorous application of the scientific method.

Primary research question An RQ which is more important than a(n explicitly stated) secondary RQ.

p-value Probability value associated with the result of an inferential statistical test; expresses the probability that the patterns in a given data set would be obtained if the null hypothesis were true.

Qualitative data Data that consists of, broadly speaking, 'texts': writings, interview data, etc., which can be used for qualitative analysis.

Qualitative research Typically an inductive and interpretive approach to data that relies on description rather than measurement in order to understand phenomena and patterns in a contextualized way. The term can be seen as over extended or too narrow as it often covers a wide spectrum of studies ranging from ethnographic work to research on textual data. Studies aligning with the principles of social constructionism (see below) often take a 'qualitative approach'.

Quantitative data Numerical data (numbers, figures) used for statistical analysis.

Quantitative research Typically a deductive approach to data that uses numerical methods (see *statistics*) to investigate whether a particular

hypothesis is true or false. Often associated with the positivist and post-positivist paradigm according to which objective truth can be, at least to some extent, captured and reported. Generalizability is one of the core ideals under this umbrella term.

Reliability A concept that relates to whether a particular method repeatedly, and hence reliably, measures the same thing.

Research design The overall framework that defines the structure and approach of the research.

Sample A collection of *cases* that present a snapshot or cross-section of a wider *population*.

Secondary research question An RQ which is less important (e.g. in terms of amount of data) than a primary RQ.

Sign The outcome of the semiotic act of making a connection between a signifier ('form') and signified ('meaning').

Single-case study Case study research with one (primary) focal case.

Social constructionism A philosophical challenge to the doctrine of positivism (see above) which treats knowledge as a social creation, or construction, rather than as something forced or determined by the 'facts of the matter' or nature of the world. Constructionism questions given assumptions about the world and focuses on the subjective nature of reality which is seen as a situated and dynamic construct.

Social semiotics The study of sign making and multimodality.

Spatialization Visual disposition and layout of a text or another type of inscription in which spatial relations are meaningfully exploited. Transcripts are characterized by the spatialization of the representation of time.

Speculative research question A 'Why?' RQ which cannot be answered by data (as is almost always the case), but for which possible answers can be proposed and their merits evaluated.

Statistical significance The finding that a pattern in a data set deviates substantially from what would be expected due to random chance; statistical significance is demonstrated via inferential statistical testing; in the social sciences, a p-value of $p \leq 0.05$ is normally considered the threshold for significance.

Statistics A set of tools used to analyse numbers. This can be anything from simply counting things or ordering numbers, to more complex mathematical operations.

Subordinate research question An RQ which needs to be answered (hence operationalizable) in order to answer an overarching RQ.

Team ethnography Team ethnography acknowledges that different researcher biographies, trajectories and histories shape what is noticed and recorded in the field and aims to make these explicit.

Thematic analysis An approach to analysis that relies on coding and the generation of themes that capture the essence of data.

Theoretical research question An RQ which aims to contribute to theory, e.g. to develop current understandings of a particular theoretical concept.

Topic ethnography Topic ethnography hones in on the institutions and contexts that surround us in contemporary life with a view to understanding how practices are enacted and how the sites are embedded in wider social structures.

Transcribing vs. describing A distinction introduced by Jefferson (1985) that contrasts the description of a conduct (e.g. 'laughter') and its transcription preserving its relevant details (e.g. 'hehhh a h "he:h" heh').

Transcription convention A set of conventions for representing well-defined phenomena of speech, talk and embodiment. Conventions are aimed at securing the precision, coherence, robustness and univocity of the annotations.

t-test An inferential statistical test to determine whether a relationship can be said to exist between a continuous dependent variable and a categorical independent variable.

Validity A concept that relates to whether a particular method of measurement measures what it is supposed to measure.

Variable A characteristic of a particular case, whereby any single case can only take on one value for this characteristic. For example, the word 'donkey' in English belongs into the word class of nouns (and only nouns).

Vignettes A short piece of writing, music, acting, etc. that clearly expresses the typical characteristics of something or someone. Vignettes are descriptive and reflexive written or visual accounts which aim to distil the typical features or characteristics of an aspect of the research.

Word list A list of all of the word types in a corpus, along with their frequencies, which can usually be sorted according to alphabetical order or frequency.

Workplace discourse or workplace socio/applied linguistics A relatively new but established field of study. The workplace, broadly defined, constitutes a site, context and focus of research. Over the years, work has addressed individual/collective identities, team processes and organizational practices.

Written language bias This expression, introduced by Linell (2004), refers to the omnipresence of written norms in linguists' conceptions of language. He shows that even when the primacy of spoken language is claimed in theory, methods that are best suited for written language are still used in practice for studying orality.

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