Language contact: bridging the gap between individual interactions and areal patterns

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Language contact

Bridging the gap between individual interactions and areal patterns

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Contents

Chapter 1

Introduction: Bridging the gap between individual interactions and areal patterns

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Contact linguistics is the overarching term for a highly diversified field with branches that connect to such widely divergent areas as historical linguistics, typology, sociolinguistics, psycholinguistics, and grammatical theory. Because of this diversification, there is a risk of fragmentation and lack of interaction between the different subbranches of contact linguistics. Nevertheless, the different approaches share the general goal of accounting for the results of interacting linguistic systems. This common goal opens up possibilities for active communication, cooperation, and coordination between the different branches of contact linguistics. This book, therefore, explores the extent to which contact linguistics can be viewed as a coherent field, and whether the advances achieved in a particular subfield can be translated to others. In this way our aim is to encourage a boundary-free discussion between different types of specialists of contact linguistics, and to stimulate cross-pollination between them.

1 Individual interactions, societal shifts, areal patterns

Contact linguistics, understood here as the study of how language varieties influence each other when their speakers interact, has become an immense and fragmented field with a wide range of research goals, theoretical frameworks, explanatory principles, and methodologies. Subfields of contact linguistics (e.g. code-switching research, pidgin and creole studies, areal linguistics) have evolved from different traditions and into very different directions (for a

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more comprehensive overview of the range of subfields, see Adamou & Matras 2021). As a consequence, interaction between researchers of different subfields of contact linguistics is relatively uncommon. On a basic level, however, all approaches within contact linguistics seek to explain the results of interacting linguistic systems. Contrasting different subfields within contact linguistics highlights where they could complement each other in achieving this common goal.

The present book focuses on two interrelated dimensions along which contact phenomena and subfields of contact linguistics may be positioned: time and social scale. The former refers to the time frame for which the contact effects are observed, ranging from conversations taking place in real time to the deep-time effects found in (ancient) linguistic areas. With social scale we mean group size involved in establishing communicative norms.

The six chapters of the book can be placed at different positions with respect to these two dimensions (see Figure 1). The first two chapters, on linguistic accommodation (Chapter 2) and on code-switching (Chapter 3), are on the one extreme of the social scale (horizontal axis in Figure 1) and of the time scale (the vertical axis). These are subfields of contact linguistics that focus on what happens between speakers with different codes in a real-time conversation. The next two chapters, on language shift (Chapter 4) and contact languages (Chapter 5), represent subfields that move beyond the individual and have a societal focus. They also typically involve a deeper time frame. The last two chapters, on dialect areas and contact dialectology (Chapter 6) and linguistic areas (Chapter 7), have an inter-societal and deep-time focus, as they study the effects of long-term contact-induced convergence between the languages or dialects of different speaker communities.

In this book, based on a unified, recurring chapter structure,[1] specialists of each of the subfields mentioned above give overviews of common practices in their respective fields, thus providing a platform for comparative contact linguistics. The remainder of this introduction is devoted to contextualizing and explaining the approach we take in this book. Section 2 discusses a number of proposals for overarching frameworks for contact linguistics. These proposals highlight potential points of commonality between different contact phenomena, but at the same time, they each give a perspective on contact linguistics that is influenced by a particular subfield. In Section 3, therefore, we propose an alternative approach. In this approach, we take a step back and look at the make-up of different research traditions within the general field of contact linguistics. In Section 4, we

[1] Adamou & Matras (2021) take the same approach, but this publication was not available to us at the time of conception of this book.

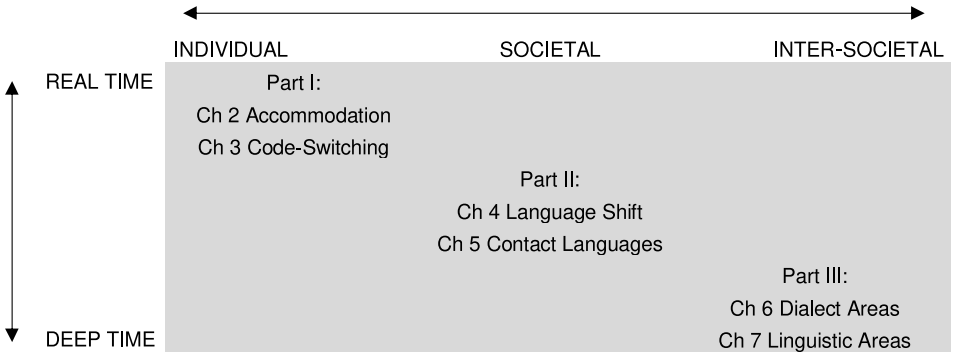

Figure 1: The dimensions of time and social scale and the basic organization of the book

outline the key areas of synergy across the subfields and illustrate some of the most important overlaps among their approaches.

2 Overarching frameworks for contact linguistics

Several authors have proposed generalizations of language contact phenomena across the time scale and/or social scale. These studies form important pieces of the puzzle how the level of the individual in a real-time conversation connects to deep-time and society-wide historical changes due to contact. Without aiming for comprehensiveness, we discuss four illustrative models that highlight different factors in tying together contact phenomena.[2] However, they also make clear that, even if they have areas of overlap, these models regard contact effects from the perspective of a particular subdiscipline.

2.1 Niedzielski & Giles (1996): Language attitudes

The first example is Niedzielski & Giles (1996), which is an attempt to apply the ideas and principles of Communication Accommodation Theory (CAT) to contact linguistics more broadly. CAT focuses on the relationship between language,

[2]These models were chosen because they are relatively recent, and because they contrast in terms of the factors and phenomena that they highlight. Older, highly influential models, like Weinreich (1953), Thomason & Kaufman (1988), and Van Coetsem (1988), are precursors of the models presented here, and as such, their conclusions have been incorporated into the more recent models in many ways.

social interaction, and social evaluation. According to CAT, speakers express social distance or social closeness to an interlocutor by becoming less or more similar in terms of their communicative behavior (divergence vs. convergence). For instance, speakers may start using the same linguistic expressions, adapt their speech rate to match the interlocutor's, or become more similar in their mimicry. CAT was first developed and tested in social psychology, primarily out of an interest in person perception and the dynamics of conversation (for details, see Chapter 2 on accommodation). Over the last decades, sociolinguists have become interested in the theory and used the model to explain linguistic patterns within a conversation (e.g. Coupland 1984).

Niedzielski & Giles (1996) explicitly link phenomena of contact linguistics to CAT, suggesting several ways in which CAT can offer insights for longer-term contact effects. For instance, conversational research suggests that the extent to which L1 interference takes place is influenced by attitudinal factors (Giles 1979). A further application of CAT to contact linguistics discussed by Niedzielski & Giles (1996) are creoles that have developed out of pidgins. According to this idea, creoles may be seen as varieties that arise as a result of repeated mutual accommodation in situations of maximal cultural-linguistic differences between communicating groups. CAT may also contribute to the understanding of how mixed (or intertwined) languages emerge, especially those that constitute secret codes. These varieties may come about as a result of conscious divergence from interlocutors of social out-groups. Finally, CAT can also generate insights on how dialect continua and linguistic areas develop. In areas with frequent contact between speakers of different dialects, dialect features may spread through convergence to speakers of another dialect if attitudinal factors are favorable and if speakers interact often enough. Accommodation research can shed light on the metalinguistic consciousness of specific parts of language, e.g. by investigating which linguistic parts are particularly prone to converge (or to be avoided) in interactions. From this point of view, accommodation research can improve our understanding of which linguistic elements are prone to be adopted by multilingual speakers, and therefore, which elements may spread in linguistic areas.

2.2 Matras & Sakel (2007): Pivot matching and pattern borrowing

The focus of Matras & Sakel (2007) is to identify the mechanism that is responsible for a particular type of contact-induced effect, where "the patterns of distribution, of grammatical and semantic meaning, and of formal-syntactic arrangement at various levels (...) are modelled on an external source" (p. 829–830). In other

words, this type of contact effect does not involve the transfer of form from one language to another, but more abstract organizational and functional principles. They call this type of contact-induced change *pattern borrowing*.

Matras & Sakel (2007) propose what they call *pivot matching* as the mechanism involved in pattern borrowing. They claim that bilinguals recognize a pivotal feature of a construction in a model language and they replicate that in a functionally equivalent construction in the replica language. What the pivot of a construction is can only be established post-hoc: pivots are the elements of a construction that are copied from one language into the other (while using inherited material). Matras & Sakel (2007) present pivot matching as a creative process whereby bilingual speakers exploit their complete bilingual repertoire to create an utterance that is formally fully monolingual, but organizationally contains elements of both languages.

The reason for pivot matching to occur in the first place is, according to Matras & Sakel (2007: 832), that bilingual speakers "relax to some extent the need to distinguish between their two repertoires when planning the utterance". Pivot matching is thus first and foremost an online discourse strategy. However, if the circumstances are favorable, these online strategies may lead to long-term effects, thus connecting conversational contact effects to contact-induced language change and linguistic areas. A requirement for pivot matching to have long-term effects is that the group of learners should be large enough, and the process of acquisition should never be complete. Furthermore, long-term effects of pivot matching are more likely to occur in societies with relatively lax norms when it comes to grammatical rules, so that pivot matching is not corrected.

Social constraints, for instance a social policy against mixing of language matter (phonetic substance), as e.g. in the Vaupés in Amazonia (see Chapter 7) may also facilitate or promote pivot matching, increasing the potential of long-term effects.

Matter borrowing (over pattern borrowing) may also be influenced by structural-linguistic factors. These have to do with the resistance to or unlikelihood of matter borrowing for some highly entrenched linguistic elements such as inflectional morphology. More generally speaking, some constructions favor matter borrowing, others pattern borrowing, and yet others seem to have no clear preference. Linguistic constraints may also be relative, subject to the inventory of linguistic elements in the replica language that can be exploited for pivot matching in a particular construction. Other forces at work mentioned by Matras & Sakel (2007) are the fact that some features of constructions appear to be essential and thus immune to modification, and phonetic similarity.

2.3 Myers-Scotton & Jake (2009): Lexicon versus structure

A different overarching model is presented in Myers-Scotton & Jake (2009). The central assumption of the model, which was originally developed to tackle certain types of code-switching phenomena, is that contact phenomena display non-random patterns in that they follow the *structural patterns* of one language, inserting *content* from other languages into this structural frame (the Uniform Structure Principle). The language that supplies the structure is referred to as the *Matrix Language*, while the language that supplies content material that is inserted into the matrix is referred to as the *Embedded Language*.

The second major part of the model is an elaboration of what is structure and what is content. Four types of morphemes[3] are distinguished:

- Content morphemes: conceptually salient material that receives or assigns thematic roles (i.e. argument roles such as agent, patient, beneficiary, etc.).
- Early system morphemes: conceptually salient building blocks of phrase structures, which do not receive or assign thematic roles (e.g. articles, derivational affixes, verbal particles).
- Bridge late system morphemes: Structurally assigned material that connects (builds bridges between) elements of a constituent and that depends on information within its constituent (e.g. markers of possession, partitive markers, expletives).
- Outsider late system morphemes: Structurally assigned material that depends on information outside of the immediate constituent (e.g. subject-verb agreement, case markers).

The main idea is that the four morpheme types (content morphemes and the three system morpheme types) can be ordered as to how likely it is that they come from the embedded or matrix language in a mixed utterance (see Table 1).

The authors connect this to a psycholinguistic language production model proposed in Levelt (1989) in which, among other things, a distinction is made between selecting items (lemmas with associated forms) from a mental lexicon, and subsequently generating a grammatical context for these items.

[3]The term "morpheme" is used in a generalized sense to refer to abstract entries or features and their surface realizations.

Table 1: Morpheme types and source languages

embedded language			matrix language
content morphemes	early system morphemes	late bridges	late outsiders

Myers-Scotton & Jake's claim is that content morphemes and early system morphemes are part of the mental lexicon, whereas late bridges and late outsiders are generated as part of the grammatical context. In this sense, their model stresses both linguistic structure and language processing as important factors in explaining contact patterns, at least in code-switching.

According to Myers-Scotton (1998: 291), "the same structural processes figure in all forms of bilingual speech, from code switching to interlanguage in second language acquisition, to language attrition, to mixed languages or pidgins and creoles". In other words, Myers-Scotton explicitly links individual, real-time behavior (code-switching) to historical processes at the societal level (language attrition, contact language formation), suggesting that they can be tackled by one and the same model (see e.g. Myers-Scotton 1998 for an elaboration).

2.4 Muysken (2013): Social and linguistic asymmetries

A framework for explaining language contact phenomena based on certain asymmetries between aspects of the first language (L1) and the second languages (L2) of a group of bilinguals is presented in Muysken (2013). He introduces four general bilingual "optimization strategies", which are typically applied by bilingual speakers in different sociolinguistic circumstances. These optimization strategies and their brief descriptions are given in Table 2; the numbers are indices for later referral in the running text.

Table 2: Four bilingual optimization strategies

No.	Shorthand	Description
1	L1	Maximize structural coherence of the first language
2	L2	Maximize structural coherence of the second language
3	L1/L2	Match between L1 and L2 patterns where possible
4	UP	Rely on universal principles of language processing

Muysken (2013) argues that these four generalized strategies are applied in different ways depending on the circumstances, leading to different outcomes, both in conversations and in patterns that are the result of sustained contact over time. Strategy 1 tends to occur in situations where L1 has high prestige and/or speakers of L1 have low proficiency in L2 and/or limited access to L2. Strategy 2 is often employed in opposite circumstances, i.e. where L2 has high prestige and/or proficiency in L2 is high and/or there are large numbers of L2 speakers. Strategy 3 is prototypically connected to situations of low normativity (i.e. where there is more social tolerance for using different structures), but also to situations where L1 and L2 are lexically and/or typologically similar to each other. The final strategy 4 is found in situations where the social and linguistic distance between the L1 and L2 groups is large and/or the contact period brief.

Muysken's model is best illustrated by looking at code-switching, for which it seems to be developed in most detail. Based on earlier work (Muysken 2000), he distinguishes four different patterns in code switching (Table 3).

Table 3: Four bilingual optimization strategies

Type	Description
Insertion	One of the languages (L1) is used as the matrix language, and the other (L2) as the embedded one.
Congruent lexicalization	Elements from either language are used in constructions that are (partly) shared by the languages.
Alternation	Fragments of L1 and L2 are used in succession within a sentence, regulated by universal combinatory possibilities.
Backflagging	Material from the heritage language (L1) is inserted in an otherwise L2 discourse.

Muysken connects each of these strategies to one of the optimization strategies mentioned in Table 2. Insertion is considered to be the result of strategy L1, because it inserts content elements from L2 in an otherwise L1 structural environment. As such, the structural coherence of L1 is maximized (kept intact). Congruent lexicalization results from the L1/L2 strategy, in that it is an attempt to combine elements from both languages that are partly shared. Alternation can be connected to the strategy UP to the extent that the way in which elements from both languages are combined follows universal principles. Backflagging, finally,

results from the L2 strategy, because the structural integrity of L2 is respected, and elements of the heritage language are inserted. This is the mirror image of insertion.

Muysken (2013) explicitly claims that these strategies are responsible for many different contact phenomena at different social scales and time depths. It is beyond the scope of this introduction to discuss this in detail (the reader is referred to Muysken 2013 for this), but the model and its interpretations for other contact phenomena relevant to this book are given in Table 4.

Table 4: Bilingual optimization strategies and contact phenomena

	Code-switching	Contact languages	Contact-induced change
L1	insertion	relexified languages, L1-oriented pidgins	borrowed forms adapt to L1 functionality
L2	backflagging	lexifier-oriented contact languages	transfer, substrate
L1/L2	congruent lexicalization	compromise contact languages	merging aspects from both languages, convergence
UP	alternation	bioprogram	simplification, adopting unmarked structures

Of relevance to the present book is that Muysken identifies a set of factors that are involved in the choice of optimization strategy (Muysken 2013: 726). We come back to the issue of factors in the next section and at various points in the book.

- similarity factors (lexical and typological);
- prestige and status factors;
- proficiency factors;

- contact factors (group size, network type);
- time factors (of contact period);
- attitudinal factors (low normativity, political distance).

2.5 Comparing models

What the models described above have in common is that they point to phenomena that recur in different contact-related situations, from language-mixing patterns in real-time bilingual conversations to deep-time contact effects that have spread through entire communities. They differ in what they see as crucial factors contributing to these recurring patterns. Where Niedzielski and Giles (1996) highlight the importance of attitudinal factors, Matras and Sakel (2007) focus on language processing, Myers-Scotton and Jake's (2009) model gives central stage to linguistic structure and the lexicon-structure distinction, and Muysken's model focuses on optimal communication strategies of bilinguals given certain (a)symmetries in the circumstances (taking into account aspects such as language access, power relations, and typological distance).

These models suggest that contact phenomena from individual conversations to Sprachbund phenomena are connected, but they also highlight that several perspectives on the factors contributing to these connections are possible. This makes it hard to bring all these different perspectives together. One of the reasons for the different focal points may be that the authors in the models presented above look at different contact effects through a particular prism (whether that is an accommodation prism, a code-switching prism, a convergence prism, or a symmetry prism).

3 The approach of the present book

The present book differs from these (and other) approaches in two main respects. First, it is a multi-authored effort that involves specialists from the different subdisciplines that are central to this book. This ensures an even-handed treatment of each subdiscipline. Second, rather than focusing only on what the implications of the results of subdiscipline A are for subdiscipline B, it takes a further step back and compares the research traditions of each subdiscipline.

While Figure 1 suggests that the phenomena described in the book are maximally different from each other, a more detailed overview reveals that each of

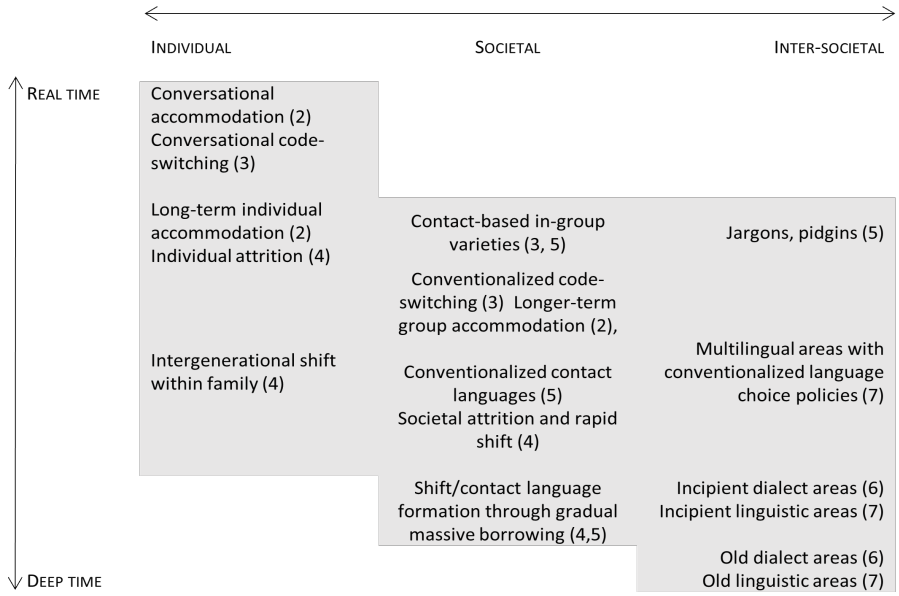

Figure 2: The relationship between each of the book's topics with the two dimensions, time and social scale

the subfields addressed has a broader range and overlaps with neighboring fields, as shown in Figure 2, where numbers between brackets refer to chapters.

These overlaps allow for more in-depth comparisons between different phenomena across the subfields and for a more precise assessment of the effects of time, social scale, and of course research practices.

3.1 Approaches

In the sections entitled Approaches all authors present the ways in which their subfield models its predictions on the basis of empirically available data. This is done explicitly to illustrate the potential for comparison across subfields. Studies concerned with conversational interactions model the effects of short-term contact-induced effects into deeper time, predicting how conversational patterns may lead to contact-induced change (see in particular Niedzielski & Giles 1996 on how patterns of accommodation in conversations may lead to patterns of convergence, or Myers-Scotton 2008 on how patterns found in conversational

code switching recur in all products of language contact). Areal studies often only have the present-day linguistic patterns at their disposal, and therefore their models seek to reconstruct the past scenario(s) that gave rise to the present situation (see e.g. Muysken 2010, Nichols 2003). Modeling in the study of contact varieties and language shift may go both ways: predicting what scenarios will lead to contact varieties or language shift, or filling the gaps of the often incomplete historical record on the basis of synchronic (language) data.

Therefore, a comparison of models and empirical evidence across subfields can be mutually beneficial: interactional research can test their predictions by looking at areal patterns and patterns in contact varieties and language loss, and the study of contact varieties, language shift, and areal linguistics can be informed by accommodation or code-switching studies about possible outcomes of individual interactions.

3.2 Linguistic patterns

All of the subfields discussed in this book are invested in the question "What type of linguistic patterns do we observe?" Because all approaches try to generalize across the different patterns found for the particular phenomenon in question (code-switching patterns, typical creole structure, features prone to diffuse, etc.) they form a basis for direct comparison: to what extent do we find similar patterns in, for instance, code-switching and mixed languages, in contact dialectology and linguistic areas, and in accommodation and language shift? In some subfields of contact linguistics, the linguistic patterns are typically discussed together with the processes that give rise to them. Therefore, three chapters in this book introduce these processes in conjunction with the patterns.

3.3 Factors

Last, all chapters discuss factors that may influence the observed outcomes. Some of these factors relate to characteristics of individuals (e.g. age, attitudes) or the speech situation (e.g. conversational topic), while others relate to the varieties involved (e.g. typological distance), to societal parameters (e.g. subsistence strategies, language ideologies), or to the geographical circumstances (e.g. topographical elements that facilitate or impede contact, travel distance). Despite the fact that conversational approaches put more emphasis on characteristics of the individual and the speech situation, and areal approaches on geographical factors, there is an overlap in particular in the societal and linguistic factors involved, allowing for a relatively direct comparison.

4 Bridging the gap

With this book, we argue that seemingly disparate contact phenomena can be connected by making reference to two dimensions: time and social scale. The maximum contrast spelled out by these dimensions is, on the one hand, between the real-time effects in multilingual conversations as studied by code-switching and accommodation studies, and, on the other hand, the deep-time effects observable in sizable linguistic areas. It goes without saying that contact linguistics operates on many more dimensions than social scale and time depth alone, and in this respect we do not aim for completeness. However, we do want to highlight some further dimensions that play a role in this book, and which for their part allow for other connections between subfields.

An obvious opposition between dialect areas and linguistic areas is genealogical relatedness (which is usually associated with typological similarity). This opposition partly recurs in the opposition between accommodation and code-switching, phenomena that are usually observed between closely related and unrelated or only distantly related languages, respectively.

A second opposition worth mentioning is between contact-induced language birth and language death, Chapters 4 and 5 of this book, respectively. There may be many sociolinguistic processes giving rise to the formation of linguistic areas, including language shift, societal L2 effects, and language mixing, all of which are discussed in the chapters on language shift and contact varieties. The opposition birth vs.death of varieties, finally, may be the societal outcome of accommodation or code-switching.

As a result of the differences in the time-depth and the social scale of the contact phenomena, all subfields deal with varying levels of opacity regarding the linguistic components and their origin. For instance, a loanword that initially entered a language as a recurring element of another language is bound to gradually lose its identifiability as a foreign word as it becomes integrated into the sound system. It is then no longer marked by restricted grammatical and pragmatic contexts, and the semantics that point to an outsider culture become bleached over time. In code-switching (CS) studies, the linguistic elements are evaluated on a CS – borrowing continuum, and this has led to numerous attempts to define and clarify these concepts. At the other end of the scale, in the study of linguistic areas, even the donor language of a feature may remain unknown while its contact-induced origin may be obvious. Overcoming these ambiguities has led to several methodological improvements in the field.

However, opacity does not result from the time and social scale alone. It emerges from the chapters of this book that in describing, explaining, and modeling

language contact all fields deal with three major confounding dimensions: variation, diffusion, and universals. Yet the emphases and thus often implicit understanding of these vary from subfield to subfield.

Variation, especially conditioned by sociolinguistic factors, is at the center of most models and approaches presented in this book. The chapters on accommodation and CS are excellent reminders of the fact that conversational contact phenomena are highly indexical, which may explain why the long-term outcomes of these phenomena are so hard to predict. On the other hand, the chapters on language shift and new languages introduce detailed models on the sociolinguistic factors contributing to community-level phenomena due to the abundance of recent or even real-time cases to be observed. Finally, a more fine-grained understanding of sociolinguistic variation has led to advances in the study of linguistic and contact dialectology, although tying specific sociolinguistic settings to specific types of variables of language change remains one of the most debated issues.

Diffusion forms a significant explanandum in all approaches that deal with at least community-size phenomena. Contact-induced language change is initiated in recurring multilingual interactions. Yet, the areal distribution of contact-induced features within linguistic areas shows that monolingual communication must often be the main channel of their propagation, as these phenomena are also evidenced in historically monolingual areas. Here, the observations regarding closely related varieties in interaction are invaluable in understanding the pathways of the diffusion of innovations.

Universals play different roles in evaluating contact phenomena, depending on the field. The role of universals in the emergence of contact varieties is among the big questions of linguistics of the past decades. In CS studies, universal principles are a built-in factor in some models, but the field has also produced certain robust predictions claimed to hold universally. In the study of linguistic areas, typological universals are an important indicator in deciding the weight of a feature as evidence for a contact area, since implicational typological universals may offer an alternative explanation to an areal bundling of linguistic features.

It is exactly this type of overlap in patterns, factors, and dimensions across fields of contact linguistics that inspired this book. We hope that the following chapters offer the reader similar moments of discovery and illumination as they have for the authors.

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Chapter 2

Linguistic accommodation

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This chapter reviews literature on linguistic accommodation and discusses the role of accommodation in language change. In the first part, theoretical models of accommodation and linguistic change are introduced and discussed. In these models, linguistic accommodation (also convergence or synchronization) between individuals is regarded as an important mechanism of language change at the community level. However, more research is needed to validate theoretical models of accommodation and language change. The second part reviews the common research methods of accommodation studies, with a focus on dialect contact. The reviewed studies on short- and long-term accommodation used a large variety of methods and data, which makes comparisons across different studies and languages difficult. The third part of the chapter briefly reviews patterns and processes of accommodation found in the reviewed literature, to identify – in the fourth part – the most important linguistic and extralinguistic factors involved in accommodation. The chapter concludes by drawing attention to research gaps in the area of linguistic accommodation and language change, and proposing possible and desired directions for future research.

1 Introduction

We define linguistic accommodation as the adjustments speakers make to become linguistically more (convergence) or less (divergence) similar to an interlocutor, or to a social environment. When they occur in a single interaction or experiment over minutes or hours, we will refer to these adjustments as *short-term accommodation. Long-term accommodation* will be used when accommoda-

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tion takes place over weeks or months, for instance after a speaker has moved to a new region or moved in with a new flatmate.[1]

As we will see below, accommodation can be observed at all linguistic levels. It can involve the adoption of single elements such as lexical items (Brennan & Clark 1996), but also more subtle shifts such as a change in speech rate (Putman & Street 1984) or degree of regional accent (Bourhis & Giles 1977). Accommodation can further be observed as categorical switches from one language to another in bilingual speakers (Giles et al. 1973), and is therefore related to language choice and code-switching (see Chapter 3). Given the focus of this book, the present chapter primarily discusses situations involving speakers of different dialects or languages. Nevertheless, research dealing with interlocutors from the same region will be included to shed light on the role of linguistic and extralinguistic factors.

Accommodation can also involve non-verbal communication and other kinds of social behavior (Lakin 2013, Dijksterhuis & Bargh 2001). For this reason, the phenomenon has been studied not only in linguistics, but in a range of other disciplines too. The focus of early research on dyadic communication in psychology was primarily on whether speakers converge, for the purposes of understanding interview dynamics (e.g. Matarazzo et al. 1963), or investigating the relationship between personality and imitative behavior (e.g. Natale 1975). In the 1970s, accommodative processes came to the attention of social psychologists who also investigated the role of language and accent in person perception and inter-group processes.

For linguistics, however, it is crucial to understand *what* linguistic features are subject to the process of accommodation. This issue was soon taken up by sociolinguists, with Coupland (1984) being the first to concentrate on specific linguistic variables. Most of this early sociolinguistic work (e.g. Rickford & McNair-Knox 1994, Coupland 1984, Bell 1984, Selting 1985) aims at understanding style-shifting. Trudgill (1986) is probably the first to apply Communication Accommodation Theory (CAT) to dialect contact and dialect change. He formulated the idea that long-term changes in linguistic behavior (i.e. long-term accommodation) are based on repeated short-term accommodation, and further suggests that accommodation between speakers underlies linguistic change at the community level (see below). Niedzielski & Giles (1996) propose several ways in which CAT

[1]Some authors instead use the term "second dialect acquisition" (Siegel 2010) and prefer this term over long-term accommodation as it denotes permanent changes (Chambers 1992). In this chapter, we will nonetheless refer to long-term accommodation, as one of our main aims is a comparison between long- and short-term accommodation.

could inform our understanding of language contact phenomena, and encourage linguists to integrate CAT into their research.

Apart from sociolinguistics, accommodation has been examined in other fields of linguistics too. In recent years, the phenomenon has been extensively studied in cognitive psychology and psycholinguistics (Garrod & Pickering 2004, Staum Casasanto et al. 2010). This work has mostly used more controlled laboratory settings, and the research aims are mainly oriented toward understanding the mechanisms rather than the social functions of convergence, also referred to as *alignment* or *entrainment*. Although many studies on short-term accommodation take place in socially impoverished settings, these experiments have much to say about the linguistic and cognitive factors favoring or inhibiting accommodation. In interactional linguistics, in contrast, speakers' mutual adjustments are of interest to understanding discourse structure and dynamics as well as identity construction through language (e.g. Chakrani 2015, Nilsson 2015). In these studies, structural patterns are only of secondary interest.

More recently, accommodation has also been studied in applied linguistics and psychology. For instance, accommodation has been used to assess communicative quality in health communication (see Farzadnia & Giles 2015) and it is analyzed to improve human-machine interaction (e.g. Linnemann & Jucks 2016). This work mainly uses holistic or listener-based approaches to quantify accommodation, and does not usually analyze what specific linguistic features speakers accommodate to. In recent years, finally, written computer-mediated communication has also been examined with regard to accommodation (e.g. Danescu-Niculescu-Mizil et al. 2011, Felder 2023).

As outlined above, the idea of relating accommodation research to the study of language contact and change is not new. So far, however, there has not been enough empirical research on this issue. The present chapter reviews empirical research on linguistic accommodation, focusing on those aspects which are relevant to the study of language and dialect contact. Therefore, the emphasis will be on studies involving speakers from different dialects or languages. We will start by discussing theoretical models of the relationship between accommodation and contact-induced language change. We will then review the existing literature on accommodation to address the following questions: First, what are the linguistic patterns resulting from short-term and long-term accommodation? Second, what linguistic and extralinguistic factors favor or mitigate accommodation processes? And third, to what extent are these patterns compatible with the idea that contact-induced language change is initiated in individual interactions? We will conclude by proposing directions for future research and by elaborating

how accommodation research could further inform our understanding of deep time and societal language contact phenomena (see Chapter 1).

1.1 Linguistic accommodation and contact-induced language change

Linguistic accommodation has been a crucial element in models of language change. In what follows, we review two of the most relevant proposals of such models, namely, how individual change turns into societal change and how short-term change becomes lasting change. Lastly, we call attention to several other aspects where the role of accommodation in language change is relevant.

1.1.1 From the individual to the community

It has long been assumed that linguistic innovations spread via face-to-face contact between individual speakers. As early as the 1930s, Bloomfield (1933: 476–477) describes how individual speech habits are shaped by those who the speaker has interacted with before. He also postulates that persons with power and prestige are imitated to a greater extent than socially less influential individuals, and that imitators themselves will become models in later interactions. He further formulates the assumption that, with a few exceptions, "the process does not rise to the level of discussion". Moreover, he argues that not all linguistic forms are equally likely to be imitated: "The adjustments are largely minute and consist in the favoring of speech-forms more often than in the adoption of wholly new ones. A great deal of adjustment probably concerns non-distinctive variants of sound" (Bloomfield 1933: 476–477). Bloomfield thus already describes the general principles of what will later be termed linguistic accommodation, and relates the phenomenon to dialect leveling and linguistic change.

A more detailed model of the relationship between linguistic accommodation and dialect leveling and change is formulated by Trudgill (1986). He draws a link between social psychologists' CAT and the question of linguistic diffusion in space, i.e., the micro and the macro level of dialect contact:

> Clearly, if a linguistic feature has spread from one region to another, it must have spread from one speaker to another, and then on to other speakers and so on. But how exactly are linguistic forms transmitted from one geographical area to another at the level of the individual speaker (Trudgill 1986: 39).

Trudgill suggests that accommodation is the mechanism of diffusion at the micro level, arguing that "if a speaker accommodates frequently enough to a particular accent or dialect [. . .] then the accommodation may in time become

permanent, particularly if attitudinal factors are favorable" (Trudgill 1986: 39). This idea was then taken up by Auer & Hinskens (2005) who refined the so-called change-by-accommodation model. According to their model, short-term shifts may, through repeated interactions, accumulate in long-term accommodation and thus lead to innovation in an individual's speech habit. Given favorable network structures and the critical mass of speakers displaying an innovative feature, the innovation may – again via accommodation – spread to other speakers and lead to linguistic change at the community level.

1.1.2 From short-term to long-term

Although the change-by-accommodation model is widely acknowledged in linguistics, there is a lack of empirical evidence for the idea that repeated short-term accumulates into long-term accommodation. Auer & Hinskens (2005) compare several sociolinguistic case studies on short-term or long-term accommodation, with linguistic change taking place at the community level. Based on these case studies, they conclude that patterns observed in individual speakers do not align with the change described at the community level. As a result, the authors question the change-by-accommodation model. Their evaluation of the model is mainly based on studies of accommodation which used auditory-phonetic methods. It is thus possible that with more sophisticated, acoustic methods, subtler shifts in pronunciation could be observed, or that other linguistic levels, such as morphology or syntax, behave differently from phonology.

To our knowledge, the only study so far that systematically analyzes variability over short and long time periods is Sonderegger et al. (2017). This work investigates phonetic variability for five phonological variables (three vowels, stop aspiration and voicing and /t/-deletion) and compares the variability on a daily basis with the variability on a monthly basis in 12 participants of the TV show *UK Big Brother*. The authors' approach permits studying variability – and accommodation – in a closed communication system where the speakers only communicate among themselves, and with nobody from outside the house. They found that day-to-day variability is very common for all speakers and all five variables they looked into. Some speakers showed a trend over time for some variables (i.e. lowering of F2 over several weeks). For many speakers and many variables, however, day-by-day variability did not accumulate into a stable pattern, and overall, there was no evidence for accommodation despite frequent interaction. The only clear evidence for convergence was found for two individuals who also formed a close social bond. Sonderegger et al. (2017) confirm the effect of linguistic as well as by social factors on time-dependent phonetic variability, but they

also show that, in their data, short-term trends only occasionally accumulate into longer-term changes. The authors speculate that this is the case because individual speakers exhibit considerable differences in terms of pronunciation plasticity. Based on their findings, Sonderegger et al. (2017) speculate that accent change over several years may vary even more between different speakers, because long-term changes themselves are assumed to build upon medium-term changes. The study suggests that, like short-term accommodation, medium-term dynamics of phonetic variables is mediated by social and linguistic factors as well as individual differences. Sonderegger et al. (2017) relate the important individual differences in phonetic plasticity to the different roles individuals may adopt in the spread of sound change (reminiscent of the contrasts between early adopters and innovators, see Milroy & Milroy 1985).

Further indirect evidence for a more complex relationship between short-term and long-term accommodation comes from studies on long-term accommodation (see Ruch et al. 2018). First, most adults hardly ever acquire a second dialect perfectly, even after living in a new social environment for several years (Siegel 2010). And second, there are examples of accent reversal, showing that repeated short-term accommodation does not necessarily accumulate over time and therefore does not necessarily lead to long-term accommodation. For instance, the British journalist and radio presenter Alistair Cooke first converged toward American English after having migrated from the UK to the USA, but shifted back to his British English accent (i.e. reversed his accent) in later life (Reubold & Harrington 2015). Similar findings are reported by Werlen & Schlegel (2006) who investigate how speakers from Valais, a canton in the southern part of Switzerland, change their pronunciation after relocating to Berne. Two years after relocating, five out of 18 participants used *fewer* Bernese variants than shortly after relocation. More longitudinal studies and more research comparing short- and long-term accommodation within individuals are needed to empirically validate this relationship.

1.2 Toward an improved change-by-accommodation model

In this section, we highlight a number of lines of research that have not received as much attention as others, but which seem to us to be of crucial importance to shed light on the role of accommodation in language change. First, it is assumed that long-term accommodation is relevant to understanding contact-induced language change such as, for instance, dialect leveling (Trudgill 1986, see also Chapter 6). If a group of speakers moves from region A to region B, this may eventually lead to innovation or contact-induced change in variety B. However, studies on

long-term accommodation most commonly focus on mobile speakers, that is, on the effects on variety A, and do not usually address linguistic variability within the receiving community, i.e., effects on variety B.

A possible exception is Klee & Caravedo (2006) who study the speech of Andean migrants in Lima and also analyze a control group of lower-class Limeños, the social group most likely to be in contact with the migrant population. Klee & Caravedo (2006) find no evidence of change within the receiving community's variety as a result of contact with migrants. That is, this study does not support the idea that migrants spread linguistic features to a new community. Escobar (2007), on the contrary, suggests that migrant speakers brought Andean Spanish features into *costeño* Spanish spoken in Lima, although she considers this influence to be restricted to syntactic features of low sociolinguistic salience. Ideally, future work would concentrate not only on mobile individuals, but also investigate the possible effects on the variety of the receiving community. We argue that in order to understand contact-induced change, the receiving community is as important as the migrating individuals. Long-term changes in the speech of mobile individuals, on the other hand, provide ideal scenarios for studying dialect attrition within individuals.

Second, although most research on accommodation has dealt with adult speakers, children may be as relevant as adults when it comes to testing and refining the change-by-accommodation model. It is generally acknowledged that children acquire a second dialect more quickly and more easily than adults (Siegel 2010) when moving to a new environment. At the same time, they seem to be quite sensitive to linguistic variation from early on. For instance, Jones et al. (2017) show that even some of the 4–5-year old participants are able to distinguish their own regional variety from other varieties of American English. Khattab (2013) describes how three children between 5 and 10 years of age converge and diverge in the use of local, standard and non-native phonetic features in English when interacting with their mothers. Children might be relevant to dialect leveling and change for several reasons. They may acquire a dialect imperfectly, bringing D1 features into D2, but may also become bidialectal speakers, that is, become fluent in both dialects while still separating them. For instance, they may use D1 at home, and D2 in school and elsewhere. Finally, children may also end up with a mixed variety (Chambers 1992, Tagliamonte & Molfenter 2007), which Klee & Caravedo (2006) regard as a possible source for dialect leveling and change, presupposing a critical mass of speakers.

Third, the model remains rather vague about how exactly contact between speakers takes place, and about the kinds of situations that facilitate either short-

or long-term accommodation. A central question is whether the former or the latter has more impact on a given linguistic variety. More concrete predictions and, ideally, their empirical validation would allow for linking these ideas to issues of areal linguistics (see Chapters 6 and 7). We can think of at least two scenarios leading to the patterns found in areal linguistics. First, speakers are more likely to move to close-by, culturally and linguistically similar areas (e.g. Falck et al. 2016). In this case, linguistic similarity would be induced by the mobile speakers' influence on the local dialect. Alternatively, places within shorter travel distances might favor frequent short-term contacts, for instance, through trading, commuting, etc. In the latter case, dialect change and leveling would take place through repeated short-term accommodation in face-to-face interactions.

2 Approaches

In this section, we present the most common methods used in accommodation research. We will start by presenting the methodological approaches to short-term accommodation and then discuss the most common methods that have been used to study long-term accommodation.

2.1 Short-term accommodation

Studies on short-term accommodation can roughly be divided into two types: dialogue studies and shadowing tasks. Dialogue studies analyze recorded dialogues between speakers, mostly between unacquainted persons. In most study designs, the participants are given a collaborative task such as describing a route on a map to their interactant (i.e. a map task, e.g. Pardo 2006), or finding the differences on otherwise identical pictures (i.e. a diapix task, e.g. Kim 2013). In other work, participants are asked to converse freely (e.g. Schweitzer & Lewandowski 2013). Dialogue studies represent more natural speech situations than shadowing tasks, making them suitable to investigate socio-psychological issues such as the relationship between accommodation and speaker perception.

So-called shadowing tasks (Goldinger 1998, Shockley et al. 2004, Babel 2010), in contrast, involve more controlled situations, which makes them particularly appealing for studying the effect of linguistic factors. The experiments typically comprise three phases: (1) recording the participants' baseline productions, (2) having participants listen to the speech of a model speaker over headphones and (3) recording the participants' post-task speech. Post-task productions are then compared to the baseline productions to see whether the participants became

linguistically more similar, that is, whether they converged towards the model speaker. Variations of the paradigm have been implemented in web-based experiments (Weatherholtz et al. 2014) and in experiments involving nonhuman model speakers (e.g. Beckner et al. 2016). The listening task can consist of isolated words (e.g. Goldinger 1998) or a longer passage (e.g. Yu et al. 2013, Weatherholtz et al. 2014). Sometimes, listeners are asked to repeat each word separately, while in other cases, the listening and speaking tasks are taken in blocks, implying a longer pause between the listening task and the post-task production.

The methods to assess accommodation also vary considerably across studies and subdisciplines. Dialogue studies have often assessed accommodation by asking independent listeners to judge the similarity of dialogue excerpts (Pardo 2006, Kim 2013). This approach has been used in several shadowing tasks too (e.g. Goldinger 1998), turning out to be a very useful method for assessing the global similarity of isolated words. In other phonetically-oriented studies, specific parameters are measured (e.g. Babel 2010, De Looze et al. 2014) which, however, correlated only marginally with perceived similarity as assessed by independent listeners (Pardo et al. 2013, Walker & Campbell-Kibler 2015, Abel & Babel 2016, Pardo et al. 2017). Research on lexical, syntactic, or morphological accommodation usually quantifies the frequency of the linguistic variants under study (e.g. Beckner et al. 2016, Weatherholtz et al. 2014).

These differences in research design as well as in the quantification of accommodation make comparisons across studies difficult. For these reasons, in Section 4, rather than compare the degree of accommodation or other details across studies, we will organize the findings of accommodation according to the research questions outlined in Section 1: What are the linguistic patterns resulting from short- and long-term accommodation? What linguistic and extralinguistic factors favor or mitigate accommodation processes?

2.2 Long-term accommodation

Studies on long-term accommodation typically focus on speakers who have moved from their region of origin to a place where a linguistic variety different from their own is spoken. Studies on long-term accommodation are frequently framed within a sociolinguistic approach. This means that they typically rely on semi-spontaneous speech, often collected by means of sociolinguistic interviews (Shockey 1984, Auer et al. 1998, Romera & Elordieta 2013, among many others). In longitudinal studies, the same speakers are recorded several times after having moved to a new region, which allows tracking an individual's linguistic shifts

over time. Probably because of the considerable logistic effort needed, longitudinal studies are rather rare (but see Shockey 1984, Auer et al. 1998, Reubold & Harrington 2015).

An exception to this, however, are studies on the effect of accommodation on children and youngsters. These are often longitudinal. For instance, Chambers (1992) records his speakers twice in a two-year period, while Tagliamonte & Molfenter (2007) record their participants every weekend starting six months after having moved from Canada to England. The often large time lapses between interviews are due to logistic challenges. In Tagliamonte & Molfenter (2007), however, the subjects are the first author's children, a fact that facilitated data collection. At any rate, the majority of investigations concerned with long-term accommodation rely on data collected once for each subject. Usually, the participants' speech after migrating is then compared to existing, general descriptions of their linguistic variety (Shockey 1984, Trudgill 1986, Molina Martos 2010), or to non-mobile speakers from their place of origin (Palacios Alcaine 2007, Fernández 2013). To investigate the effect of time of exposure on accommodation, time spent in the new environment is usually used as a predictor (Shockey 1984, Romera & Elordieta 2013, Erker & Otheguy 2016), although this parameter of course does not necessarily correlate with the actual amount of linguistic exposure to the new variety. In comparison to short-term studies, which often follow a controlled, experimental protocol, longer-term changes in speech are much more difficult to trace back to specific factors. Some studies have used questionnaires in order to gain additional information about the speakers' social environment or attitudes (e.g. Pesqueira 2008).

3 Patterns and processes

It is useful to distinguish between patterns of accommodation, i.e. its possible outcomes, and the processes whereby accommodation takes place. We discuss both in what follows.

3.1 Patterns

Giles et al. (1991) distinguish between three accommodative patterns: convergence, divergence and maintenance. Convergence describes the situation where speakers become more similar to their dialogue partner or a model speaker. In divergence, individuals become more dissimilar to their conversation partner or to a model speaker. Maintenance, finally, denominates the case where an individual

does not shift toward or away from another speaker, but largely maintains their way of speaking. In dialogues, convergence and divergence can be reciprocal, but also asymmetric in the sense that one, but not the other speaker, converges or diverges. Giles et al. (1991) further note that speakers may converge on some parameters, while diverging on others.

As is apparent from the present chapter and from previous work reviewing accommodation studies (Ruch et al. 2018), convergence seems to occur much more frequently than divergence. One possible explanation for this bias is that alignment is the default pattern and, as a consequence, is observed much more frequently than maintenance or divergence (see Dijksterhuis & Bargh 2001). However, another possible explanation is that, given that convergence is the expected result, divergence is not as thoroughly scrutinized by researchers. It may also simply be that null results or divergence are more difficult to publish. This could have led to a publication bias toward convergence. For syntactic accommodation, divergence indeed seems to receive some support in the literature. In order to actively engage with their interlocutor, speakers seem to use complementary structures rather than repetition (Healey et al. 2014).

Given that analysis and quantification of accommodation differ considerably across studies, it is extremely difficult to describe linguistic patterns in accommodation more generally. As mentioned above, socio-psychological work so far has mainly focused on whether accommodation was observable and has therefore used perceptual, more holistic measures of accommodation. Work within computational linguistics, too, has used holistic measures (Lewandowski 2012, De Looze et al. 2014), however, often without relating them to linguistically interpretable categories. More recent work within linguistics and psycholinguistics has focused on a limited number of specific linguistic features. The features in these studies mostly belong to a single level of linguistic description only, for instance, voiceless stops (Nielsen 2011), vowel quality (Babel 2010), past tense formation (Beckner et al. 2016), or the English dative alternation (Weatherholtz et al. 2014). Most studies involving dialect contact deal with phonetics or phonology. This is the case, perhaps, because in this area, dialectal differences are most obvious and better described than, for instance, in morphology, syntax, or pragmatics. Furthermore, when working with spontaneous or semi-spontaneous speech, it is more feasible to get a sufficient number of tokens for phonetic or phonological features than, for instance, for syntax or lexis.

For these reasons, in Section 4 we will refrain from listing different linguistic phenomena observed in accommodation research. Instead we will group and discuss the observed patterns according to the linguistic and extralinguistic factors that have been shown to favor or inhibit accommodation.

3.2 Processes

The two most influential models dealing with the processes underlying accommodation are the Communication Accommodation Theory (CAT) and the Interactive Alignment Model (IAM). CAT (Giles 1973, Giles et al. 1973, Giles & Powesland 1975) was developed in the field of social psychology and primarily attributes a social function to accommodation. Convergence and divergence are seen as the speakers' communicative strategies to express social closeness or social distance in an interaction (Giles & Ogay 2007: 293). The model thus focuses more on the ultimate function of accommodation, rather than on its underlying mechanisms.

IAM (Pickering & Garrod 2004) has its origins in cognitive psychology and sees convergence as an automatic process, which results from a link between speech perception and speech production. This link is similar to the priming mechanism and is constantly activated during speech processing (Pickering & Garrod 2004). In some cases, it is difficult to separate accommodation from priming. We follow Pickering & Garrod (2004) who regard priming as the underlying mechanism of accommodation, whereas accommodation is the process of mutual linguistic adjustments in its communicative context.

At first sight, the two models might seem conflicting, because a phenomenon which results from an automatic process is not necessarily assumed to have a social function. However, the two models can also be seen as complementary and, as is for instance common practice in biology (Tinbergen 1963), mechanism and function can be studied independently from each other (Ruch et al. 2018).

4 Factors

We will now discuss the findings from the accommodation literature with respect to evidence for linguistic and extralinguistic factors. As much as possible, findings from long-term studies will be compared with those from short-term studies to explore the extent to which short- and long-term accommodation could potentially be based on the same mechanisms and governed by similar constraints.

4.1 Linguistic factors

From a linguistic point of view, accommodation studies seek to answer two important questions. First, what kind of linguistic features are more susceptible to convergence, and second, what factors favor or inhibit this process? A number of studies have highlighted the role of *salience* in long-term accommodation. Salience can be defined as perceptual conspicuousness of a linguistic element

(Lenz 2010). Since it arises in context, it cannot be defined in absolute terms. Salience of a linguistic element is assumed to be affected by acoustic, cognitive and sociolinguistic factors (Auer 2014).[2]

Several studies report more convergence toward a second dialect for salient features of the D2 (Auer et al. 1998, Pesqueira 2008, Wilson 2011, Romera & Elordieta 2013). That is, salient features of a variety seem to be more easily picked up by D1 speakers. However, convergence for salient features does not always occur and seems to be mediated by social attitudes. For instance, it has been noted that while D2 stereotypes are rarely adopted (sometimes they are even diverged from), D1 stereotypes are easily abandoned and, consequently, result more easily in convergence (Trudgill 1986, Erker & Otheguy 2016). Escobar's (2007) finding that only syntactic features with low salience were transferred from (highly stigmatized) Andean Peruvian Spanish to *costeño* Peruvian Spanish, points in the same direction. Research on short-term accommodation is generally consistent with these findings, suggesting that some linguistic features are more easily adopted than others (Babel 2010, Walker & Campbell-Kibler 2015). Babel (2010) argues that New Zealanders possibly converge less toward the Australian KIT and TRAP vowels (/ɘ/ and /ɛ/ in New Zealand, /ɪ̟/ and /æ/ in Australian English) because these are particularly salient Australian features from the perspective of New Zealanders. Similar arguments can be found in Walker & Campbell-Kibler (2015) for the variable imitation of different vowels across varieties of English. However, in none of these publications is salience quantified empirically, and thus the findings remain speculative. A possible exception is MacLeod (2012), a study that explicitly investigated the role of perceptual salience on short-term accommodation. Salience is assessed here by means of a dialect recognition test. Features contributing more to dialect recognition are considered to be more salient. Interestingly, perceptual salience is able to predict the degree but not the direction of accommodation. This seems to depend, instead, on the participants' attitudes toward the interlocutor's dialect and toward the new social environment.

Another important factor seems to be *intelligibility*. D1 phonetic features that frequently cause misunderstandings with D2 speakers are more susceptible to accommodation (Trudgill 1986). Shockey (1984), for instance, observes a greater decrease of /t/-flapping than /d/-flapping in speakers of American English who have moved to Britain. This result might be explained by the low frequency of

[2]Other work has used subjective criteria to operationalize salience (see examples reviewed in Wilson 2011, MacLeod 2015). Criteria based on the researcher's perspective, however, are problematic because they impede comparisons across studies, and because salience as perceived by language users themselves, rather than by the researcher, is arguably more relevant (see MacLeod 2015). See Section 5 for further argumentation and examples.

/t/-flapping, but not /d/-flapping, in British English. Given that /t/-flapping potentially leads to misunderstandings in British English, American speakers seem to accommodate more easily toward British English for this variable. Similarly, the fact that lexical differences are highly salient and can cause severe and obvious comprehension difficulties (Trudgill 1986) might explain why the lexicon is usually the first linguistic level to be affected by accommodation (Bonomi 2010, Chambers 1992). Results from short-term studies are generally consistent with these findings. In a dialogue study, Hwang et al. (2015) find that non-native speakers of English pronounce plosive and vowel contrasts in a more English-like way in words with a phonological competitor. They interpret this result as evidence for accommodation to the pragmatic needs of the listener. A seminal study on functional constraints in short-term accommodation was conducted by Nielsen (2011). She tested the effect of lengthened and shortened voice onset time (VOT; i.e. amount of aspiration or voicing of a plosive) in /p/ on its imitation. Interestingly, participants imitated lengthened, but not shortened VOT. This result is interpreted with the phonological status of VOT in English. While lengthening VOT (i.e. aspiration) does not have phonological consequences, VOT shortening may lead to a confusion of /p/ with /b/ in minimal pairs such as *pan* versus *ban*.

Yet another linguistic variable that favors imitation is *linguistic variability*. In a comparison between mobile and non-mobile adult speakers of American English, Bowie (2000) finds that, in the long term, phonological variables that are currently undergoing linguistic change are more susceptible to adaptation than more stable features. As for short-term accommodation, Watt et al. (2010) observe that an interviewer in the Scottish-English border region is more inclined to converge toward their interviewees for variable than for stable linguistic features. Similar results come from one of the few studies exploring morphological convergence. Using an adapted version of Asch's conformity experiment (1951), Beckner et al. (2016) test whether human participants are influenced by human or robotic peers in their way of forming the English simple past. The participants' morphology is influenced by humans, but not robots. In verbs with variable past tense formation (e.g. *dream - dreamt/dreamed*) the subjects are more likely to imitate the human peer's choice. It has also been claimed that free variation (i.e. altering the pronunciation of one phoneme in every context) is more prone to accommodation than conditioned variation (where the pronunciation of a sound is affected only in some contexts) (Trudgill 1986, Siegel 2010). Chambers (1992) rephrases this constraint by distinguishing between simple and complex phonological rules. Simple rules (such as /t/-voicing in English) are categorical in the sense that they have no exceptions, while complex rules (such as vowel backing in English) do not automatically apply in all contexts. In his study of an-

glophone Canadian youngsters in the south of England, he finds that Canadian /t/-voicing is abandoned faster (implying convergence toward British English) than the British process of vowel backing is acquired. Wilson (2011) finds similar results for speakers of Moravian who had moved to Prague and converged to Common Czech, although he notes that rules are seldom without exception and prefers to use the term "semi-simple rules."

There is also evidence that accommodation is affected by lexical factors. For instance, for Argentinians who had moved to Mexico City, Pesqueira (2008) finds more phonetic accommodation in highly frequent words. This result can be explained by the enhanced degree of exposure for these items. However, in some short-term studies, shadowers are found to converge *less* toward their model speakers with respect to high-frequency words (Goldinger 1998, Goldinger & Azuma 2004, Babel 2010, Nielsen 2011). This apparent contradiction between short- and long-term studies can be resolved by considering high-frequency words in long-term studies as words that are repeated more often and, therefore, provide the speakers with a higher degree of exposure to these words. The results from short-term studies, in contrast, have been explained by the episodic traces left by the tokens heard, which are assumed to be less influential in high- compared to low-frequency words (Goldinger 1998), an interpretation that is in line with Exemplar Theory (Pierrehumbert 2001). However, a recent comprehensive study on short-term accommodation (Pardo et al. 2017) was not able to replicate the main effects of frequency found in earlier work, but instead found an interaction between speaker gender and word frequency (see below).

In long-term studies, D1 phonetic features have been found to be more likely to persist in words where these features were lexicalized (Auer et al. 1998), or in forms which do not exist in D2 at all (Pesqueira 2008). Similarly, words that exclusively exist in D2 seem to facilitate the adoption of D2 phonetic features (Pesqueira 2008). In line with these results, Bonomi (2010) observes that discursive markers and words related to the new cultural reality are adopted first by Spanish-speaking individuals who have migrated from Latin America to Spain and Italy.

In order to become a relevant force in language change, accommodation not only must show some consistency across speakers, but should also generalize across the lexicon and across different syntactic constructions. Some evidence for *generalizability* comes from short-term studies. For instance, in her shadowing task, Nielsen (2011) finds that speakers of American English not only imitate lengthened VOT in items with word-initial /p/, but also generalize this subphonemic specificity to new instances of /p/ and even words with initial /k/. Beckner et al. (2016) find that some of their participants generalized the morphological

pattern heard from the model speaker (regular past tense formation in English) to new verbs.

There is some disagreement on how *linguistic distance* between the systems in contact influences accommodation. Kim et al. (2011) find more convergence between speaker pairs of American English who are from largely the same dialect region than between speaker pairs from different dialect regions. Ruch (2021) found no convergence between speakers from two different regions of Switzerland after they were exposed to each other's speech in a dialogue. In contrast, Babel (2012) finds the most convergence for exactly those vowels and participants who differ most from the model speaker. Large phonetic distance between the participants and the model speaker also favor phonetic convergence in a study by Walker & Campbell-Kibler (2015). The findings mentioned above (Bowie 2000, Watt et al. 2010, Beckner et al. 2016), that synchronic intra-speaker variability favors convergence, offer yet another interpretation: speakers will more readily take up and use a variant that is a plausible token of their own distribution for the same linguistic variable (for evidence from an agent-based model, see Harrington & Schiel 2017).

While the focus of this chapter is on dialect contact, it is worth mentioning that accommodation has also been found to occur between bilingual speakers with varying degrees of L2 proficiency. Over longer time periods, the predominant linguistic environment has been shown to not only affect a speaker's L2, but also her L1. For instance, in a bilingual speaker of Portuguese and English, VOT is longer or shorter after a stay of several months in Brazil or the USA, respectively (Sancier & Fowler 1997). Tobin et al. (2017) partly replicate these findings for a larger set of Spanish-English bilinguals with Spanish as a dominant language. The speakers' VOT in English voiceless stops drifts toward that of the ambient language (Spanish or English), however, no drift is observed for VOT in Spanish, which is the speakers' L1. Chang (2012) studies American English learners of Korean and finds that already after a few weeks in Korea with intensive Korean classes, the English speakers' L1 is phonetically influenced by the L2. In a subsequent study, Chang (2013) shows that the phonetic drift toward L2 is less pronounced in more experienced learners.

An interesting aspect of these findings is that the ambient language not only affects the language currently heard and spoken by the speakers, but also their other, "inactive" language. These effects on the L1 are often considered cases of linguistic attrition (see Chapter 4 for a more general discussion of attrition and shift) and have been shown to affect all linguistic levels, including morphosyntax. Kaufman & Aronoff (1991), for instance, analyze the effect of English on Hebrew in a two-year-old after moving from Israel to the US. Their longitudinal study

shows how Hebrew inflectional and derivational morphology are simplified, resulting in an idiosyncratic mixed variety (Kaufman & Aronoff 1991).

Short-term studies involving conversations between L2 and L1 speakers are to some extent compatible with these findings. Lewandowski (2012) finds mutual phonetic convergence between German speakers and native speakers of English in English conversations. Interestingly, native English speakers converge, even though prior to the dialogue they have been instructed not to do so. In contrast, Kim et al. (2011) find convergence for some pairs and divergence for others, between native and non-native interlocutors of English. The authors argue that the heavily-accented L2 English of most of their non-native speakers might have enhanced the processing load and therefore inhibited convergence (Kim et al. 2011). Berry & Ernestus (2017) analyze two vocalic contrasts in Spanish and Dutch speakers of English. Prior to the dialogue, Spaniards produce the /ɛ/-/æ/, but not the /i/-/ɪ/ contrast, while Dutch participants produce the latter, but not the former phonological contrast. During a conversation in English with a Dutch native speaker, Spaniards converge toward their Dutch confederate by merging /ɛ/-/æ/ and unmerging /i/-/ɪ/.

Taken together, these results suggest that not only categories in an L2 but also in an L1 are more malleable than previously thought. Hwang et al. (2015) analyze two phonological contrasts in conversations between Korean speakers of English in a separate collaborative task with (a) a native speaker of English and (b) a partner who speaks English with a heavy Korean accent. Participants converge toward the English native speaker, but only *after* the latter has produced the phonological contrasts of interest. No convergence toward the Korean confederate is observed, however. Based on their results, the authors conclude that accommodation is better explained as as result of priming, not as a way of affiliating with the conversation partner. Kootstra et al. (2010) find similar results for Dutch-English bilinguals in situations with code-switching. In an experimental setting, they find that the utterances of the confederate have an effect on the speakers' word order in both their L1 and their L2. While Kootstra et al. (2010) interpret their results with the Interactive Alignment Model, they could also be interpreted in terms of CAT (i.e. convergence as an attempt to affiliate with the interlocutor) or in terms of priming.

4.2 Extralinguistic factors

A common finding of most research on accommodation is that there are important differences between individual speakers in the extent, and sometimes also the direction, of accommodation (e.g. Yu 2013, MacLeod 2012, Babel 2012, Werlen

& Schlegel 2006, Evans & Iverson 2007). In some cases, these individual differences can be traced back to individual differences in, for instance, attitudes, personality, or exposure to a new linguistic environment. In other cases, interaction-related variables can explain at least some of the variability. In what follows, we will again compare findings from long-term studies against results from research on short-term accommodation where this is possible. There is some evidence for the role of speaker age in accommodation. When exposed to a new linguistic environment for a longer time period, children acquire a new dialect faster than adults and, in some cases, they acquire it almost completely (Chambers 1992, Siegel 2010, Tagliamonte & Molfenter 2007). Chambers (1992) distinguishes between early and late acquirers. Children younger than seven are typically early acquirers and reach native-like levels in the second dialect, while adolescents older than 14 are typically late acquirers and will not completely acquire the second dialect. In fact, many studies highlight that, similar to second language acquisition, adolescents and adults hardly ever master second dialects (Siegel 2010). For his sample of 39 Moravians living in Prague, Wilson (2011) reports on only two subjects who acquired native-like levels for the phonetic and morphological variables studied. A large majority (36 out of 39) of the participants accommodates to variable extents and one speaker does not accommodate at all, maintaining their native dialect.

These findings are consistent with the differences found between first and second generation migrants in Klee & Caravedo (2006): While Andean migrants who have moved to Lima maintain many of their Andean Spanish features, their Lima-born children are almost indistinguishable from other Limeños (the linguistic effect of having non-native parents, see Payne 1980). Another example for imperfect acquisition comes from intermediate forms. Sometimes, D1 variants change toward intermediate variants between D1 and D2 (so-called inter-dialect forms). For instance, Palacios Alcaine (2007) observes that, after having moved to Madrid, adolescents from Ecuador tend to both abandon the evidential values of their native compound past tenses and to use these tenses more often, as typical for Madrid speech. However, their use still differs from that of Madrid speakers and thus represents a mixed use.

In some long-term studies, hyperdialectalisms are observed, which can be interpreted as a result of overgeneralization (Trudgill 1986). Klee & Caravedo (2006), for instance, find that some Andean migrants show higher frequencies of /s/-aspiration and /s/-elision than native Limeños. In line with these results, migrants are commonly perceived to neither speak D1, nor D2 (Siegel 2010), but an intermediate or mixed dialect. Very few studies so far have been concerned with the relationship between age and short-term accommodation. In line with

the age-effects reported for long-term accommodation, Nielsen (2014) finds that in a shadowing task, children imitate lengthened VOT to a greater extent than adults. However, more research is needed to understand how short-term accommodation evolves across the life-span and, in particular, in childhood.

In the sociolinguistic literature, speaker gender and its relation to linguistic variation has been extensively studied. Women have often been ascribed a crucial role in language change (Labov 1990), and some long-term studies suggest that women are more prone to converge to a new variety than men. For instance, Argentinean women use a higher percentage of Mexican Spanish phonetic forms than men after residing for several years in Mexico City. Pesqueira (2008) and Molina Martos (2010) observe that female Latin-American immigrants in Madrid use more European Spanish courtesy forms than men. In the latter study, however, women also show more negative attitudes toward Madrid speech than their male compatriots. This finding is interpreted as a sign of women attempting to improve their social status by converging toward the local norms.

Gender differences in accommodative behavior have been interpreted in various ways. For instance, Giles et al. (1991: 20–21) look at them in the context of social power relations, similar to the situation that salespersons converge more to their clients than vice-versa. Chambers & Trudgill (1998) hypothesize that women, perhaps as a result of fewer opportunities for occupational achievement (still relevant today), tend to fulfill a higher number of different social roles than men. As a result, women come into contact with more people within more different social environments, and therefore "must master a wider repertoire of linguistic variants than men" (Chambers & Trudgill 1998: 85). Willemyns et al. (1997) suggest that gender differences in accommodative behavior may be related to women being more affective than men, and Namy et al. (2002) relate these differences with gender-related differences in sensitivity to indexical variation, that is, systematic linguistic variation associated with extralinguistic factors such as the social background of the speaker or the social context in which the communication takes place. Namy et al. (2002) assume that differences in sensitivity to indexical variation might themselves be related to social or affiliative motives.

Tagliamonte & Molfenter (2007) also observe gender differences in the acquisition of the British English glottal stop by Canadian youngsters. They also note, however, that these differences parallel the sociolinguistic distribution of the variants in the native population. Rather than seeing an effect of the child's gender, they see their results as an example for how children acquire socio-indexical variation. Two recent, very comprehensive studies (Pardo et al. 2017, 2018), in contrast, are not able to replicate the gender effects reported in earlier studies. Overall, no differences in degree of convergence are observed between women and

men. Interestingly, however, women appear to be slightly more sensitive to factors influencing convergence: In Pardo et al. (2017), speaker gender interacts with lexical frequency, with women being more prone to imitate model speakers in low-frequency words. The authors suspect that gender effects in earlier shadowing tasks might be driven by the use of low-frequency words in some studies or by individual model speakers. In Pardo et al. (2018), which assesses convergence in both shadowing tasks and conversations, women's accommodative behavior is less consistent across tasks than men's. Again, this result suggests that women are more sensitive to factors that seem to mediate linguistic accommodation.

One of the most relevant factors to explain individual variability are speakers' attitudes. Speakers with more favorable attitudes toward a new variety and the receiving community (measured as, for instance, the speakers' willingness to stay or their plans to return) have been found to accommodate to a greater extent than those with less positive attitudes in several long-term studies (Van den Berg 1988, Werlen & Schlegel 2006, Pesqueira 2008, Romera & Elordieta 2013, Mick & Palacios 2013, Reubold & Harrington 2015). Hence attitudes toward one's own and the new linguistic variety seem to play a crucial role in long-term accommodation (see Caravedo 2010). In the first place, they may affect an individual's willingness to integrate in the receiving community and, in addition, these attitudes seem to be related to establishing new social relationships.

Studies on short-term accommodation found comparable results for the role of speakers' attitudes. MacLeod (2012) observes that Argentinian speakers with plans to stay in Madrid are more likely to converge toward a Madrid speaker than those with less-positive attitudes toward their new social environment. However, in this study short-term effects are not easily separable from long-term effects, because at the time of the study, the participants had been living in Madrid for different lengths of time. Similarly, more positive attitudes toward the interlocutor lead to more convergence in a number of other studies (Babel 2010, 2012, Yu et al. 2013, Schweitzer & Lewandowski 2013), or to less divergence in a few others (e.g. Schweitzer & Lewandowski 2014).

4.2.1 Interaction-related factors

Some effects on accommodation have been shown to depend neither on linguistic, nor on speaker-specific factors, but may be better explained by the specific situation in which an interaction takes place. For instance, the way a model speaker is presented (either positively or negatively) affects the extent to which participants imitate the model speaker's long VOT in a shadowing task (Yu et al. 2013).

In an earlier study, however, a similar manipulation did not affect the participants' degree of accommodation (Babel 2010). The findings mentioned above are generally compatible with long-term studies showing that positive attitudes toward the new social environment facilitate convergence toward the new linguistic variety (Werlen & Schlegel 2006, MacLeod 2012, Pardo et al. 2012).

The only investigation so far which directly compares accommodation in shadowing tasks and unguided interactions (Pardo et al. 2018) finds that the degree of convergence (as assessed by independent listeners in a perception task) is very similar across tasks. Overall, degree of convergence between speakers is not correlated across tasks. A weak correlation between degree of convergence in the two types of tasks is found for male, but not for female participants. This finding is important because it suggests that results from non-interactive tasks cannot easily be generalized to speech in more natural, interactive settings (Pardo et al. 2018).

Research on dialogues by Pardo (2006) and Pardo et al. (2013) shows that the specific communicative role an interlocutor has in a conversation can also affect accommodation. If convergence was based on exposure alone, we would expect less active dialogue partners to converge to a lesser degree than participants who speak more. However, Pardo (2006) and Pardo et al. (2013) find that for vowel quality and speech rate, information givers converge more toward information receivers than vice versa. Pardo et al. (2013) explain their findings in terms of social affiliation. Speakers who are more interested in information transfer (i.e. the information givers), are more inclined to affiliate with their dialogue partners and therefore converge more.

A number of phonetic studies suggest that convergence is contingent on cognitive load. Abel & Babel (2016) find that speakers converge only in a simple, but not in a difficult collaborative task. Berry & Ernestus (2017) find more convergence of Spaniards toward Dutch speakers of English in an informal than in a formal situation. Furthermore, convergence is positively correlated with a participant's proficiency in English in this study. These findings suggest that in a situation with lower processing costs, speakers pay more attention to their interaction partner's speech, and therefore are more likely to converge (Yu et al. 2013, Abel et al. 2011, Berry & Ernestus 2017).

5 Discussion and outlook

The main aim of this chapter has been to compare short- and long-term accommodation and to discuss their relevance to the change-by-accommodation model.

We will start by summarizing our findings and then move on to formulating new research questions and highlighting promising areas for future research. Among the linguistic factors mediating accommodation, both intelligibility and linguistic variability show consistent results between long- and short-term studies. According to the reviewed literature, linguistic features that impede intelligibility as well as features that exhibit synchronic variation are accommodated faster than other linguistic features. The effect of lexical factors such as word frequency appeared to differ between long-term and short-term studies. While low-frequency words facilitate convergence in short-term studies, long-term studies find that more frequent words were more prone to converge. As stated earlier in this chapter (see Section 4), this apparent contradiction can be resolved by considering the degree of exposure.

While salience is one of the most-studied factors in the accommodation literature, the many different approaches to the concept prevent a direct comparison between different studies, both across and within long- and short-term accommodation. Auer (2014) distinguishes three types of criteria that contribute to the perceptual salience of a linguistic feature: acoustic-auditory factors, cognitive factors and sociolinguistic factors. Given that these factors are not independent from each other (e.g. a longer, acoustically salient vowel is more prone to acquire sociolinguistic salience), different aspects of salience are hard – if not impossible – to operationalize.

It seems to us that a more fruitful approach to the study of salience would entail a listener-based approach (MacLeod 2015, Ruch 2018). Instead of estimating salience based on theoretical criteria from a researcher's perspective (Auer et al. 1998, Trudgill 1986), listener-based approaches work with experiments or questionnaires. For instance, Ruch (2018) uses a perception experiment to operationalize the salience of phonetic features in two Swiss German dialects. Native listeners of Grison and Zurich German were asked to identify the dialect of spoken isolated words which contained different segmental cues to one of the two dialects. By measuring sensitivity and reaction time it is possible to rank the different segments according to their salience. Ruch (2018) finds that the most salient dialect features are also the ones people from all over German-speaking Switzerland most frequently mention when asked to describe the dialects in an online questionnaire. This suggests that a first and feasible approach to learn about salient features of a variety is by asking (naive) listeners to describe how they recognize speakers of the variety in question.

As discussed in Section 4.2, among the extra-linguistic factors, attitudes and age show the most consistent effects between long- and short-term studies. More positive attitudes toward the contact variety and a younger age seem to facilitate

convergence toward a different dialect. However, more research is needed on the speech of children and adolescents, for whom short-term accommodation is still under-researched.

The role of gender, in contrast, is controversial in accommodation. Some studies find that women converge more than men, in both the short and the long term. However, such gender differences in accommodative behavior surface only in few studies. Furthermore, recent research has not been able to replicate gender differences from earlier research.

The few studies investigating the role of cognitive load so far find that accommodation is more likely to occur when cognitive load is lower. However, more research is needed to confirm these effects. To our knowledge, the role of cognitive load in long-term accommodation has not been studied to date. A possible way to address this issue is through a longitudinal study with several sessions over a longer period of time. In these sessions, participants would be exposed to a model speaker in two different conditions: One in which the participants solve an easy task and another in which they solve a difficult task and therefore have fewer cognitive resources to attend to the model's speech (see Abel 2015). The hypothesis to be tested is that speech heard while solving an easy task will leave more traces over the long-term than speech heard while solving a difficult task.

From our literature review, several gaps within accommodation research have become evident, which open up the way for new research directions. In particular, the relationship between short- and long-term accommodation, as well as their role in models of language change, remain speculative. First, in long-term accommodation the focus so far has been on migrant communities. Nevertheless, in order to shed light on how accommodation may drive linguistic change, studying the receiving community is as essential as investigating migrating individuals. Second, in both short- and long-term studies the focus has been on adults, who typically show an imperfect acquisition of a new variety. The role of children, who are faster and more complete acquirers of new varieties (and languages), deserves more attention too, and should be better integrated in the change-by-accommodation model. Third, to better understand linguistic accommodation, its underlying mechanism and its ultimate social function, a broader set of languages needs to be studied.

As is evident from the current literature review, research on accommodation so far has mostly focused on well-known Indo-European languages and western communities. Similarly, work on accommodation has typically dealt with phonetics and phonology (especially in short-term studies). More research on different linguistic phenomena and, in particular, direct comparisons between different

linguistic levels is crucial to shed light on the mechanisms and constraints of accommodation.

Lastly, the striking methodological differences between short- and long-term studies make a direct comparison difficult. In order to study social factors, short-term accommodation research, which typically relies on experimental settings, could benefit from more interactive settings that facilitate spontaneous speech. This is of particular importance because, as mentioned above, the accommodative behavior of a speaker may vary across tasks (Pardo et al. 2018). Similarly, long-term studies, which so far have mostly relied on sociolinguistic interviews, should use more controlled settings too, to allow for comparability across subjects and with non-migrant control groups.

Finally, longitudinal studies will be crucial to offer a more accurate picture of accommodation over longer periods of time. So far, time of exposure has been studied by comparing different individuals. However, given the large inter-speaker variability that pervades published accommodation research, longitudinal studies with data from the same speakers across time are key to understanding accommodation and, in particular, the role of exposure.

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Chapter 3

Code-switching

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Code-switching (CS) refers to the use of two or more languages in the same interaction. Studies on CS have been abundant since the 1970s, and CS has been approached from several different perspectives, which has led to a scattered field with diverse methodologies and terminological debates. In spite of this, recuring patterns of CS have been identified, and several linguistic and extralinguistic factors have been found to affect the formation and distribution of these patterns. Unlike many other language contact phenomena, CS has been regarded as a mostly synchronic form of language contact, in which the linguistic systems stay separate. Some scholars, such as Muysken (2000, 2013) and Matras (2009), have tried to situate CS in the wider context of language contact phenomena. During the last decade, proponents of the usage-based approach to language contact (such as Backus 2013, 2015) have argued for a view that connects the diachronic and synchronic aspects of CS. Nontheless, a more comprehensive framework is needed.

1 Introduction

The study of code-switching has become a prominent field within contact linguistics during the last forty-five years. Code-switching refers to the use of two or more languages in the same interaction. Researchers working in multilingual communities noticed that monolingual norms previously described in the linguistic literature were not accurate with regard to descriptions of multilingual language use. In the late 1960s and early 1970s, Gumperz and his associates published several articles on CS and bilingual communication in different bilingual communities (Gumperz 1964, 1967, Gumperz & Wilson 1971, Blom & Gumperz 1972). Poplack's multifaceted description of code-switching patterns in the Puerto Rican community in New York was published in 1980 (Poplack 1980), and sparked a

Hanna Lantto. 2023. Code-switching. In Rik van Gijn, Hanna Ruch, Max Wahlström & Anja Hasse (eds.), *Language contact: Bridging the gap between individual interactions and areal patterns*, 49–81. Berlin: Language Science Press. DOI: 10.5281/zenodo.8269230

debate on CS grammar. These works have been followed by thousands of scholars examining structural-linguistic, pragmatic and sociolinguistic aspects of CS.

Code-switching has many dimensions, and the research traditions of these dimensions have remained largely separate. Penelope Gardner-Chloros (Gardner-Chloros 2009) describes the field as akin to the famous poem about an elephant and six blind men who approach the animal from different sides. The first part that they touch – the trunk, the side, the leg – makes them all interpret the form of the elephant from their own point of view. CS studies have been, and still are, a scattered field. One important tradition is the pragmatic tradition that addresses the conversational functions of CS (Gumperz 1982, Auer 1998). The structural-linguistic tradition discusses the grammatical patterns and constraints in CS (Poplack 1980, Myers-Scotton 1997, Muysken 2000), the psycholinguistic tradition focuses on the impact of mixed constituents in the bilingual brain (Gullberg et al. 2009, Parafita Couto et al. 2017). The important insights of linguistic anthropology in the area of language ideologies and attitudes surrounding code-switching (Woolard 1998, 2004, Jaffe 2007) have mostly been neglected thus far by the scholars of other traditions. The patterns and factors found in these different branches of CS will be discussed in the following subsections.

Even though some researchers, such as Myers-Scotton (1993, 1997) and Auer (1988, 1999), have approached CS from different perspectives, in general CS scholars have kept the different traditions separate in their work. Few researchers have tried to draw a more complete picture of CS phenomena: Muysken's model (Muysken 2000, 2013) gathers the results of several previously published studies and builds a comprehensive model of the grammatical outcomes of CS in different types of communities. Matras (2009) situates CS in the context of other language contact phenomena, which he addresses both on an individual and on a community level. Auer (1999) connects the conversation-oriented approach with some grammatical models of CS to illuminate different types of CS according to their relation to language change. Backus approaches the role of CS in linguistic change from a usage-based perspective (Backus 2013), which theoretically addresses CS as a complex, multi-sided phenomenon, yet focuses on its cognitive aspects. Common ground between the different approaches can be found in some instances, such as in the study of discourse markers. (Section 5.1). However, there is a general lack of exchange between the different subfields, which results in difficulties of seeing the research on CS, with its possibilities and limitations, as a whole.

Apart from the scattered nature of the subfields of CS research, the field has been involved in wide terminological debates about the term *code-switching* itself. Within the structural-linguistic tradition, Muysken (2000), for example, pre-

ferred to reserve the term "code-switching" for the types of CS where the two linguistic subsystems stay separate. He proposed *code-mixing* as an umbrella term, which is also apt for types of bilingual speech where the morphosyntactic systems of the languages are intertwined. Poplack & Meechan (1998) have tried to separate "true code-switching" that follows Poplack's grammatical CS constraints from "nonce borrowing", in which an item becomes temporarily part of the recipient system, and which they believe to be a different process altogether. Johanson (2002) has proposed *code-copying* as a wide term that encompasses several language contact phenomena. One solution for the debate, as suggested by Gardner-Chloros (2009), would be to use right-to-left definitions, for example "to call the alternation of two languages in conversation code-switching", as proposed by Janicki (1990). This would make CS a working definition instead of an essentialist definition of what code-switching is and what it cannot be.

Those within the pragmatic tradition have criticized the term *code-switching* since the 1990s (Auer 1998). Researchers focused on conversational approaches to CS have found the term to be misleading and not descriptive of how the speakers actually use their languages in interaction. All back-and-forth mixing between languages of linguistic varieties does not have a conversational function. According to the proponents of the pragmatic tradition, this suggests that the speakers do not treat the varieties as separate codes, for example they do not "switch" a "code", but treat the bilingual variety as one code. A heavily mixed code can also be juxtaposed with a more purist bilingual register (Meeuwis & Blommaert 1998), and the shared code can be the mixed one (Álvarez-Cáccamo 1998). These debates reflect a fundamental difference in the way that researchers of different traditions see the nature of language. The structural-linguistic tradition perceives language as an entity, a coherent inner system that reflects the linguistic competence of an individual, whereas the pragmatic-sociolinguistic tradition considers language to be fundamentally about action, rather a verb than a noun, and that people mainly use their linguistic resources to "language" in interaction with other people.

Many proponents of *translanguaging* (García 2009, Creese & Blackledge 2010, García & Wei 2014), *polylanguaging* (Jørgensen et al. 2011) or *metrolingualism* (Otsuji & Pennycook 2010) approaches want to distance themselves from the term code-switching, arguing either that CS is not a good descriptor of the language use in the communities that they have studied (Jørgensen et al. 2011) or that it is far too marginal a phenomenon to describe the multilayered language use that occurs in the interactions between speakers (García & Wei 2014). However, this terminology was created partly in reaction to CS, so these studies are part of the same debate. The different perspectives – language as interaction, language as

a system – can be combined, though, and I believe that bringing them together might help us to get a better, more comprehensive understanding of multilingual speech phenomena and contact-induced language change. Language is a set of constructions entrenched in the cognitive apparatus of an individual, tendencies and associations that come into being through exchange between speakers in repeated instances of interaction (Beckner et al. 2009, Backus 2013). Individual speakers use their linguistic resources in a way that makes sense in their specific sociolinguistic circumstances (Heller 2007). Without speaker agency and language users' creative power, innovations would not be possible. At the same time, speakers are guided by community norms, and they recreate or reinforce them in each instance of interaction, both in the case of CS and in monolingual interactions.

Another terminological issue that has generated wide debates within the field is the distinction between code-switching and borrowing, as there is no basic consensus when an item has become part of the recipient system. For some scholars, the key to the distinction is morphosyntactic integration (Poplack & Meechan 1998), for others phonological integration (Halmari 1997), frequency (Myers-Scotton 1997), or the degree of entrenchment/conventionalization of the element in the speech patterns of the code-switching individual/community (Backus 2013). Matras (2009) suggests that CS and borrowing exist on a continuum (Table 1), and that there are several criteria for their differentiation: on the borrowing end of the continuum are single lexical items uttered by a monolingual speaker, regular occurrences of structurally integrated items that have become default expressions in the community. Prototypical code-switches, in contrast, are used by bilinguals in the form of elaborate utterances for specific conversa-

Table 1: Code-switching – borrowing continuum according to Matras (2009: 111)

Prototypical CS	↔	Prototypical borrowing
complex utterance	↔	single lexical item
used by bilinguals	↔	used by monolinguals
one-time occurrence	↔	frequent
not integrated	↔	structurally integrated
conversational effect	↔	default expression
core vocabulary	↔	grammatical operations
lexical	↔	para-lexical (unique referent)

tional effects. They are single occurrences and not integrated into the base or matrix language.

The aim of this chapter is to give an overview of the patterns described in earlier code-switching literature and identify the most important factors that lead to these patterns. The research on CS will also be linked to the other subfields of language contact to examine how these phenomena are intertwined. CS is mostly a synchronic, interactional phenomenon, yet it can be linked to historical patterns and to more permanent contact-induced language change. The examples of code-switching in the chapter are mostly from my own Basque-Spanish conversational data, which was recorded between the years 2005 and 2017 in the Basque Autonomous Community.

1.1 Code-switching and contact-induced language change

Contact-induced language change has been seen in terms of long-term effects of language contact, whereas code-switching has been studied from a fundamentally synchronic point of view. It seems reasonable to assume that the individual synchronic interactions set the ultimate stage for language change. Innovations occur in individual interactions, and successful, attractive innovations may get repeated and recycled, which can lead to the conventionalization of these innovations on the community level and, ultimately, to linguistic change.

There is, however, no consensus on the relationship between code-switching and language change. Code-switching has even been considered the type of language contact phenomenon in which the systems of the languages stay separate (Gardner-Chloros 2009), and which does not bring about more permanent change. Thomason (2001) considers CS not to be an important mechanism of structural language change, but an important mechanism of borrowing. Backus (2005) argues that the issue is complex and studies would need to take into account all variation in the monolingual variety to establish if it was indeed only CS that led to change. Cacoullos & Travis (2018) argue that even when code-switching, bilinguals keep the grammars of their languages separate, and that cross-linguistic associations do not equate with cross-language convergence. Permanent structural changes in the recipient system are also the point where it becomes difficult to delimit CS from other language contact phenomena, such as borrowing, loan translations and convergence, so these aspects have been excluded from many CS studies. However, the shift from spontaneous to permanent use can be seen in terms of patterns, individual entrenchment and community-wide conventionalization with various steps in the middle (Backus 2013).

The linguistic changes caused by CS occur at several different levels. Firstly, CS at the synchronic level can already be seen as contact-induced language change, as it is change in language use. When two languages come into contact, monolingual norms no longer prevail. The bilingual variety, the CS variety, has vitality in its own right as a vehicle of identity marking. The code-switches are an added resource for the speakers to organize and stylize the speech event. Communication Accommodation Theory, discussed in Chapter 2, has the convergence of speakers as the object of study and seeks to find out how their speech is altered (Niedzielski & Giles 1996). Studies of language contact, in turn, have been interested in the convergence of linguistic systems. CS is both at once: when a community or a single speaker becomes bilingual, the monolingual order is altered both within the speaker and in their linguistic variety. CS can be seen as accommodation on the level of vocabulary and language use patterns to those (speakers) of the other language. Gardner-Chloros (2009: 78) considers CS to be one of the ways of accommodating one's speech to the interlocutor's linguistic preferences. This may be achieved by a switch in the language of interaction or by creating a bilingual style as a compromise strategy. Other accommodation phenomena, such as phonological or morphosyntactic patterns, can be transferred at the same time, leading to partially shared systems at the moment of interaction. If a person grows up bilingual either in a bilingual family or in a bilingual community, the possible convergence between the systems is located inside individual cognition. Bilinguals can find interlingual connections between constructions of both or all of their languages. Accommodation in individual interactions or inside an individual repertoire may become community-wide if various individuals share the same sociolinguistic conditions and linguistic resources.

Secondly, CS can function as a strategy of language shift (see Chapter 4). In multilingual communities, generational changes in CS patterns often lead toward greater adaptation of the host community's language. Myers-Scotton (1997: 208–228) suggested that shift happens via a matrix-language turnover. In matrix-language turnover, the CS that begins with insertions from the host-community language into the language of the community of origin gradually leads to mixed constituents and relexification. This is followed by a change of the base or matrix language to the host-community language, along with insertions of material from the language of the community of origin. Kovács (2001) modeled the shift as a change from the morphology of the community of origin via bare forms to the morphology of the host-community language, or alternatively, to a new composite matrix. In the Australian Finnish and Australian Hungarian communities she observed, first-generation immigrants overwhelmingly used the morphological

matrix of their L1, whereas there was a clear shift away from the morphology of the heritage language in the language use of the second generation immigrants.

In a situation where a group of speakers moves to a society where the numerically and institutionally dominant group speaks another language, a language shift in a few generations seems to be a common direction. However, code-switching does not necessarily lead to language shift. In situations of long-term contact where whole communities speaking different languages come into contact, one can also expect extended periods of relatively stable bilingualism and/or diglossia. Bilingual registers can function as a strategy of language maintenance (Lantto 2015a, 2016b). The new bilingual varieties have important functions as markers of a community identity that is separate from the identities in monolingual communities (Gumperz 1982: 62, Thomason 2001: 197, Bullock & Toribio 2009: 10). Code-switching may also become crystallized in mixed languages and fused lects (Auer 1999, McConvell & Meakins 2005, Meakins 2011). As a result, the language has certainly changed, but parts of the old system are maintained in the fused variety. Code-switching co-occurs with pidginization and creolization (see Chapter 5) across the world and may share features with creolization, such as an analytic approach to vocabulary and grammatical convergence in the case of bilingual compound verbs (Gardner-Chloros 2009: 33–35).

Auer (1999) suggests that changes in language use at the community level in multilingual communities starts with pragmatically meaningful juxtaposition of the two varieties, which he calls *code-switching*, then develops into *language mixing*, a state of back-and-forth switching in which each switch no longer has a conversational function. This pattern of mixing should then turn into fully or partially established *fused lects* where the participating languages already share resources, and the alternation between material from the participating varieties lacks optionality. Auer argues that the process always proceeds in the same direction, and that shifting back to a state where the languages would re-separate is not possible. However, as Smith-Christmas (2016) shows, patterns may change when sociolinguistic circumstances change, for example due to the language revitalization in regional minority communities, where a step back from language mixing to code-switching can happen, or at least several patterns may co-occur within a community.

The third type of linguistic change that CS may bring about is *structural change* that concerns specific constructions. Clyne (1967, 2003) describes the convergence of closely related languages, which, in bilingual speech production, develop shared structures via trigger words and code-switching. CS most certainly brings about structural convergence at the moment of interaction (Frick 2013, Riionheimo & Frick 2014), yet it is not clear how permanent these changes are.

In my own CS data, CS clearly affects the word order of predicative constructions in the Basque-Spanish language contact situation – monolingual Basque constructions usually maintain Basque word order, and bilingual constructions with a Spanish predicative exhibit Spanish word order. Yet Basque has managed to co-exist with Spanish and its antecedents for two thousand years without total convergence of word orders, and the syntactic properties of bilingual constructions have not had a serious effect on the word order of the monolingual constructions. Backus (2015) has proposed approaching CS and other synchronic language contact phenomena from a usage-based perspective focusing on structural change. In his own work, he has discussed the role of multimorphemic, fixed constructions or chunks in the use of the bilingual repertoire (Backus 2003), while Hakimov (2016) focuses on the role of frequency in the solidification and entrenchment of these multilingual chunks.

CS can also function as a vehicle for lexical change. Thomason (2001) considers CS to be an important strategy for borrowing. If we adopt the point of view that CS and borrowing exist on a continuum, the single occurrences of inserted material can be considered spontaneous code-switches. If they are repeated, however, they become more conventionalized and eventually fully adopted to the recipient variety. On a larger scale, the process of borrowing may lead to relexification. Some categories are more prone to CS than others (Matras 2009: 133). CS of these categories may gradually conventionalize in a way that makes them non-optional, which then leads to the replacement of the previous material. If the categories being replaced are not content words, but grammatical material such as conjunctions, CS can also lead to structural change.

2 Approaches

As noted in Chapter 1, approaches to CS are diverse. The phenomenon has been examined from a very structural-linguistic to a very sociolinguistic point of view. Studies may focus on the cognitive processes regulating CS, on the language ideologies of the bilingual speakers, on the specifics of bilingual morphosyntax, or, in the recent usage-based approach to CS, even on the intersection of all three. Sociolinguists examining CS tend to be relatively averse to models and rely on detailed descriptions of language embedded in its local social context. Therefore, most models and methods examined in this section belong to the syntactic tradition of CS research.

2.1 Models

The scholars who approach CS theory from a structural-linguistic perspective have been the most eager proponents of models for CS. This modelling often focuses on finding constraints for code-switching (Gullberg et al. 2009: 21). Based on her work in the Puerto Rican community of New York, Poplack (1980) developed two constraints that she claimed to be universal: *the bound morpheme constraint*, which predicts that CS cannot occur between a word and a bound morpheme, and *the equivalence constraint*, which predicts that code-switching can only occur at sites where the syntax of the two participating languages is congruent. These constraints have since been tested in numerous multilingual communities. Despite many counterexamples from different language pairs, especially from language pairs where one of the participating languages has rich agglutinative morphology, Poplack has defended her model, naming many of the counterexamples "nonce borrowings", i.e. sporadic loanwords, a category different from CS (Poplack & Meechan 1998). In her *Matrix Language Frame Model*, Myers-Scotton (1997) describes CS in terms of a matrix language that provides the system morphemes, and an embedded language that provides the vocabulary of the mixed stretches. MacSwan (1999) describes CS within the framework of the Chomskyan Minimalist approach, claiming that all rules for code-switching can be derived from the grammars of the two participating languages, and that mixing of grammars is essentially only a union of two lexicons. López (2020), however, calls this view "separationism" and argues for a unified, integrated I-language for bilinguals. According to López, this I-language is not substantially different from monolinguals; there are no two lexicons or PFs, but two systems of exteriorization.

Muysken (2000, 2013) sums up the findings in earlier research literature by creating a model for different types of CS. His model predicts the outcome of the language contact in a given sociolinguistic environment according to several factors of the languages and communities, such as linguistic typology, language dominance, language attitudes and linguistic competence.

The models described above concentrate on the synchronic state of code-switching, but some of the proposed models deal with the development of code-switching patterns and language shift within a community. Myers-Scotton (1997) proposed the *Matrix Language Turnover Hypothesis*, and Auer (1999) predicted that community patterns of multilingual language use follow a certain path. Both of these models were discussed in Section 1.1 in this chapter.

2.2 Methods

The approaches to CS are diverse, so each sub-branch has used different methods to answer their specific research questions. Scholars advocating for a pragmatic tradition in CS research have used conversation analysis as a tool for identifying the conversational functions of bilingual speech (Auer 1988, 1998). These functions will be discussed in Section 3. CS studies that have examined CS syntax from a more generativist (Universal Grammar-based) point of view have attempted to find the rules, or constraints on the points where mixing can and cannot occur in order to find out the structure of the speakers' inner grammar. In this, they have sometimes relied on native speaker judgments, or in this case on the opinions of early "balanced" bilinguals. However, as Gardner-Chloros (2009: 18) notes, CS challenges the whole notion of "native speaker", as the speakers rewrite the expected rules. She suggests that the study of CS should be approached from "outside the box", as most of the research methods in linguistics were developed with the monolingual frame in mind. CS could, thus, serve as a way of testing these methods to see if they can be applied in a multilingual context, a perspective also advocated by López (2020) and Vanden Wyngaerd (2021).

Controlled and experimental methods in CS studies used to be relatively rare, even though in some early studies intuition data was used to find syntactic constraints for CS Gullberg et al. (2009: 22). Starting from the latter half of the 2010s, however, more experimental designs such elicitation tasks, acceptability judgment tasks and measuring event related potentials (ERPs) have been used to test the grammaticality of different types of CS and the models and constraints formulated in CS theory (for examples, see Parafita Couto et al. 2016, 2017, Vaughan-Evans et al. 2020, Bellamy et al. 2022). In another line of experimental studies, psycholinguists have investigated the processing costs and benefits of CS (Tomić & Valdés Kroff 2022).

Most sociolinguistic CS studies have been based on recordings from naturally occurring conversations in bilingual communities, usually conducted by individual researchers. This results in the problem that for several reasons, such as for the privacy of the speakers, competitiveness and fragmented transcriptions, the data is not publicly available for other researchers (Gullberg et al. 2009: 23). During the last decade, however, some larger corpora have been made available to other researchers, such as the Welsh-English database (Deuchar et al. 2014). Despite the abundance of CS data collected in numerous projects and language contact settings around the world, the field has not yet established clear standards for data transcription, and so far, no central resources exist for the researchers to share their data (Gardner-Chloros 2009). This makes comparisons and the devel-

opment of common criteria for analysis very hard. Even researchers working on similar questions often interpret their data in different ways, which highlights the limitations of observational techniques (Gullberg et al. 2009).

Even though the sociolinguistic tradition has combined descriptions of CS at the community level with extensive ethnographic background knowledge (Gardner-Chloros 2009: 18), and information about linguistic ideologies and metalinguistic commentary have been collected using ethnographic methods and semi-structured interviews, studies of attitudes and ideologies toward CS are surprisingly rare (Gardner-Chloros 2009, Garrett 2010). Studies of written CS are also relatively uncommon (see, however, the volume edited by Enghels et al. 2021, which includes several chapters on multilingualism in both literary and journalistic texts). Yet, with the amount of communication occurring via written means on the Internet, one should expect more studies such as Treffers-Daller et al. (2022) in the future. Sebba (2013) proposes a framework to study multilingual texts as multimodal entities. Besides linguistic characteristics, the visual and spatial dimensions of the multilingual texts should also be taken into account.

3 Patterns

In this section, I will describe the patterns that have been found in earlier studies of CS, starting from the conversational patterns that reflect the pragmatic functions of CS. After that, I will briefly go through the patterns of what kind of linguistic material is generally subject to CS, and then focus on the patterns that received the major part of attention in CS studies, namely those that are structural-linguistic in nature. To conclude, I will describe the patterns found in multilingual speech phenomena, many of which are closely linked to CS and exist on the continuum with CS patterns, yet are not fully covered by the term CS and the CS literature.

3.1 Conversational patterns

Milroy & Gordon (2003) distinguish between CS based on the indexical value of the varieties, and CS that is based on exploiting the contrast between the codes for pragmatic functions in a conversation. The same distinction was described by Blom & Gumperz (1972) as metaphorical vs. situational switching. In metaphorical switching, the variety changes according to the social domain under discussion, which seems to bring about CS patterns of certain types of lexical material with a common denominator. Cross-culturally, common domain-related

categories that are subject to CS and borrowing include numerals, taboo words, colloquialisms and other fashionable items, and cultural concepts related to a certain domain, such as agriculture or technology.

The pragmatic tradition of code-switching research has focused on situational switching. In these conversational patterns (pragmatic functions), the contrast of two languages or varieties is used as a conversational resource to provide *contextualization cues* (Gumperz 1982) for the other people present in the interaction. CS often marks sequential contrast, shifts in *footing* (Goffman 1981) or alignment in a conversation, such as openings and closings. When code-switching is used for opening a turn, it functions as an attention-getter. When finishing a turn, code-switching – often with expressions that signal ending, such as *that's it* – is used to indicate that the speaker has said all that they meant to say. Speakers may also use CS to signal the difference between reported speech and the general narrative frame (Alfonzetti 1998), or to distance general comments from personal opinions and side remarks (Gumperz 1982). Example (1) shows how the speaker switches from Basque to Spanish in his narrative to report a conversation. The original conversation occurred in German, and his interlocutor even speaks German. The function of CS here is not to preserve the original language, but to mark the change in footing by creating voices in the narrative.

(1) Eta berak, bera hasten da irakurtzen justo itzuli diot nire amari zer esaten zuen, ba bueno, gutxi gora-behera eta gero tipoa hasten da alemanez, *joder, y que soy de Offenburg, cerca de Freiburg, Baden-Württemberg. Y digo a, pues, mira los de Baden-Württemberg son mucho más majos que los de Baviera y dice sí, pero es verdad, claro, que vas a decirle tú* eta egon gara hizketan.

'And him, he starts reading I just translated to my mother what he said, er well, almost and then the guy starts in German *shit, and I am from Offenburg, that's close to Freiburg, Baden-Württemberg. And I say, oh, well, see those from Baden-Württemberg are a lot nicer than those from Bavaria and he says yes, but that's true, sure, what are you going to say* and we were talking.'

CS is used for interjections, reiterations of what has been said, and for reformulations of the message. CS may be used to topicalize and highlight an element. It can also be used for humor and bonding, and to add expressiveness and language play to the discussion (Gumperz 1982, Auer 1988, Gardner-Chloros 2009: 85).

3.2 Patterns in hierarchy of code-switchability

Scholars of code-switching have found that some categories are more affected by CS than others. Matras (2009: 133) summarizes several earlier studies in relation to the hierarchy of "code-switchability", based on the relative frequency of categories affected by CS. The internal order varies slightly from one contact setting to another, but nouns and noun phrases come on top of all the hierarchies. Pronouns figure low on the hierarchies, whereas the place of verbs, adverbs and conjunctions varies considerably. In the Basque-Spanish case that I am most familiar with, the hierarchy would be starting with the elements most likely to be code-switched and ending with the elements least likely to be affected by CS:

> discourse markers > fixed expressions > bare nouns > noun phrases > adverbs > conjunctions > adjectives > verbs > case markers/prepositions.

3.3 Structural-linguistic patterns

When CS patterns are mentioned, structural patterns are those that are most likely to come to mind, as they have been most thoroughly studied. A basic classification, already used by Poplack (1980), is to divide the occurrences of CS into *intersentential, extrasentential*, and *intrasentential* types of CS. Intersentential switches are those that occur between sentences: one sentence is uttered in one language, the next one in another language. Extrasentential switching, also called *tag-switching* or *emblematic switching*, is switching that, apart from the established morphosyntax of fixed expressions, does not involve syntactic structures of the participating languages or varieties. Discourse markers, tags, interjections, etc. are examples of extrasentential switching. The most studied grammatical CS patterns are the intrasentential patterns. Intersentential and extrasentential switching have been considered less informative, as the language systems in theses types of switching are not intertwined. Scholars have formulated rules and constraints, such as the bound morpheme constraint discussed in Section 2.1, that are thought to govern CS patterns and to reflect the speaker's inner grammars.

The most extensive work examining different types of intrasentential CS patterns has been authored by Muysken (2000, 2013), who developed a model based on the results of earlier CS studies. In *alternational* code-switching, the language systems stay separate. First one is used, then the other, as in the French-Russian case in example 2). In *insertional* code-switching, one of the languages functions as a matrix into which elements of the other language are then inserted. This is shown in the Quechua-Spanish example (3), which presents a nested structure,

in which the words preceding and following the insertions are morphologically linked. *Congruent lexicalization* indicates a high level of convergence between the systems. It can involve both insertions and alternations, and a base language is hard to define. The example of Spanish-English CS (4) shows a high degree of linear equivalence created at the moment of interaction. All the examples below are from Muysken (2000).

(2) Les femmes et le vin, *ne ponimayu*.
'The women and the wine, *I don't understand*.'

(3) Chay-ta *las dos de la noche*-ta chaya-mu-yku
That-ACC ART TWO PREP ART night-ACC arrive-TRANS-1PL
'There at two o'clock at night we arrived.'

(4) Anyway, *yo creo que las personas* who support *todos estos grupos como los* Friends of the Earth *son personas que* are very close to nature.
'Anyway, *I think that the people* who support *all these groups like the* Friends of the Earth *are people who* are very close to nature.'

To these patterns that have been used in CS research for the last almost 25 years, Muysken added the pattern of *backflagging*, in which speakers use elements such as discourse markers from their L1 in their L2. Example (5) is from Muysken (2013) and shows how heritage language (Moroccan Arabic) discourse markers are inserted in L2 (Dutch) discourse.

(5) Ik ben doctor *wella* ik ben ingenieur.
'I am doctor *or* I am engineer.'

In his 2013 article, Muysken connects these subtypes of CS to other forms of language contact, rephrasing insertion as the outcome of language contact where the grammatical and lexical properties of the L1 function as the matrix language. Congruent lexicalization describes structures and words that share properties of both languages. Alternation is about universal combinatory principles independent of the grammars involved, whereas in backflagging, the grammatical and lexical properties of L2 function as the base.

3.4 Multilingual practice patterns

Major terminological debates in the field of CS were briefly discussed in the introduction. In certain types of contact situations, such as relatively stable multilingual communities involving speakers that are fluent in both languages, *code-*

switching might be the most adequate term for what speakers do with their languages. The bilinguals in these communities may use the juxtaposition of the material of two different systems as a conversational resource, and/or they may use the bilingual variety as an identity marker. This is the case, for example, in Basque-Spanish CS, where these CS functions co-occur. Yet the creation of new terms for different types of multilingual language use is usually motivated by the feeling that the existing terminology is insufficient to do justice to the type of multilingual practices found in the data. The preferred terminology seems to reflect the differences in the language contact situation and the data examined in each case. New definitions also bring to the surface differences in the ways that various scholars of multilingualism perceive language.

3.5 Nonce-borrowing or insertional patterns

Insertional patterns of CS differ from borrowing only in terms of entrenchment and frequency. They are observed in the speech off all bilinguals, both those that do not have a high competence of both languages and those who do. They are common in situations of diglossia and unequal power relations between the languages of the society. Bare nouns are easily integrated into existing constructions of the recipient language. Rich inflectional morphology also seems to favor insertional patterns, as there are more possibilities for nested or embedded structures. Poplack & Meechan (1998) have called these patterns "nonce borrowing", a process different from code-switching. These are patterns that exist somewhere on the CS – borrowing continuum.

Researchers of language use in multiethnic youth groups have also rejected the term code-switching. They want to emphasize language use instead of linguistic systems; interaction and social indexicalities of the linguistic resources instead of language structure and boundaries. *Polylinguistic languaging* (Jørgensen et al. 2011) seems to exploit social indexicalities of the linguistic resources associated with particular varieties in a way that is not present in situations of stable language contact. In this formulation, language use is highly innovative and linguistic resources of all types – syntactic, morphological, phonetic – are employed to create group language and to distance members from out-group speakers. This type of languaging has been most thoroughly researched in relation to multiethnic youth groups and globalization (Schoonen & Appel 2005, Lehtonen 2015). Nevertheless, similar examples can be found, for example, in the old Spanish vernacular in the city of Bilbao. The vernacular shows several iconic Basque features, consciously adapted by its speakers to highlight the authentic Bilbao identity of its residents of Basque origin in a situation where large waves of immigrants

from other Spanish provinces arrived to the city due to industrialization in the mid-19th century (Lantto 2016a).

3.6 Translanguaging

Translanguaging, a translation of the Welsh term *trawsieithu*, originally coined by Cen Williams and based on the context of Welsh-English bilingual education in the 1980s, has been adopted by some scholars to address the porosity of language boundaries (García 2009, Creese & Blackledge 2010, García & Wei 2014) Translanguaging proponents generally address conversational functions of language use in immigrant and multilingual communities. Their focus is on the interaction and trespassing of language boundaries to ensure effective communication. Regularities or tendencies in the use of linguistic matter, or patterns, are rarely addressed. The research on translanguaging has been popular among scholars who have examined multilingual language use in classroom contexts.

4 Factors

In this section I will examine what kind of syntactic, lexical and semantic-pragmatic patterns one can expect in a specific interaction embedded in a specific social context according to earlier CS literature. First I will examine the intralinguistic factors that affect the type or amount of code-switching, then I will move on to the extralinguistic factors that have been examined (although these are not always separate from one another).

4.1 Linguistic factors

4.1.1 Typological distance

The typology of the participating languages has probably been the most studied factor in the CS literature. In the beginning, the focus of CS studies was on syntactic competence, deep structures and constraints for CS due to the generativist tradition in which many of the early researchers were trained. What was found is that typological dissimilarity between the languages involved seems to favor alternational patterns, as the structures do not lend themselves to be easily intertwined (Muysken 2000, 2013). Typological dissimilarity may also favor insertional patterns, if one of the languages has rich inflectional morphology. In these cases, insertions are easily formed, as the elements of the donor language are nested within the matrix structure of the recipient language, and the morphosyntactic relationship is asymmetrical. Mixed languages and varieties (see

Chapter 5) typically show insertional patterns in which certain syntactic categories, most typically verbs and nouns, can be drawn from one of the languages and integrated into the other via inflectional morphology. However, the patterns that mixed languages tend to show are more regular and consistent than those usually found in insertional CS (Matras 2009: 290); see also the discussion on contact languages in Chapter 5.

In situations of typological similarity, for example between closely related languages, patterns of congruent lexicalization tend to come about, as many of the linguistic resources are already shared. Shared resources and structures lead to fused lects. Closely related languages are prone to accommodation Chapter 2 and convergence at the moment of interaction (Muysken 2000, 2013, Clyne 2003).

4.1.2 Processing and activation

Multilingual speakers are always situated at a certain point on a continuum between a monolingual and bilingual mode of language production depending on the degree of activation of the languages in their repertoire. The point at the continuum is determined by mostly extralinguistic factors such as interlocutors, topic, and the physical space of the conversation. The more bilingual their mode, the more they switch (Grosjean 1997). In bilingual mode, the elements that are easily accessed and processed are most susceptible to switching. Discourse markers often become part of a mixed variety or are borrowed entirely, because they are treated as gesture-like devices (Matras 2009: 193). Multimorphemic chunks are easily transferred from one language to another (Backus 2003). They are processed as a whole and, therefore, less processing effort is needed. The multimorphemic chunks can be switched as interjections and tags in tag-switching, backflagging, and alternational patterns, but also as noun phrases in insertional patterns.

Matras (2011) suggests that the systems of different languages can merge in the minds of bilinguals for reasons of economy. The elements that are stored closely are easily accessible, and cognates have been shown to trigger CS (Clyne 1967). Words and expressions related to the other-language culture, such as names and concepts, may function as triggers. Sometimes, common words that seem easily translatable on a surface level do not carry all the connotations of their near-equivalents, and are therefore easily code-switched (Backus 2001, Matras 2009: 112). Psycholinguistic processing studies on CS have shown that it is harder for bilinguals to inhibit their L1 than their L2, yet switching back from a non-dominant language is harder than vice versa (Gardner-Chloros 2009: 141, see also Tomić & Valdés Kroff 2022).

4.1.3 Conversational level

There are also factors at the level of individual interactions that may favor CS. If the speakers use codes with juxtapositional value as conversational resources, this may lead to the emergence of pragmatic patterns and to regularities in the way the varieties are used as contextualization cues (as discussed in Section 3). Similar contrasts may also take place between a mixed, bilingual variety and the purist register (Álvarez-Cáccamo 1998, Meeuwis & Blommaert 1998).

The interlocutors' language use and linguistic background are very important factors in the amount of CS that the bilingual uses in conversation. Addressee specification is a common pragmatic function of CS (Gumperz 1982). Accommodation (see Chapter 2) to the speech of the interlocutor may function in both directions, both encouraging or discouraging CS. Code-switching can function as a bridge between the varieties (Gardner-Chloros 2009: 78). The speaker's and the interlocutor's degree of linguistic authority determines whose innovations are code-switched, noticed and recycled.

4.1.4 Attractiveness

There are both semantic and structural motivations for the attractiveness of an element (Johanson 2002). Content words are borrowed much more easily than function words (Backus 2013), and extrasentential material is easy to process and introduce in bilingual conversations. Semantic specificity is a factor for CS, as in many cases there is no direct equivalent for a concept in the recipient-language culture (Backus 2001). Nouns are often labels for unique referents, whereas pronouns are not very prone to switching, as there is no real semantic motivation to switch them (Matras 2009: 133) (though see Treffers-Daller et al. 2022 for counter-evidence). Salience and markedness of the code-switched element may both encourage and discourage CS depending on the speaker's personality. The semantic motivations for attractiveness are clearly connected to the sociolinguistic circumstances. For example, numerals are easily code-switched if the actions of counting are usually performed in contexts like business, trade and education where only one of the languages is used. Cultural concepts related to the introduction of nascent fields with new vocabulary pertain to semantically specific categories. Colloquialisms and fashionable terms are easily borrowed and code-switched, as are taboo words. Throughout history, speakers have borrowed concepts from each other related to agriculture and technology when specific practices were introduced. For example, medical doctors still use terminology based on Latin, which used to be the common language for medical studies and CS scholars often use English concepts even when discussing the phenomenon in their native

languages, since these concepts might not be readily available or be in common use.

4.2 Extralinguistic factors

Linguistic power relations seem to have a direct effect on the CS patterns and on the directionality of switching. The speakers of institutionally less dominant languages are often bilingual, whereas the institutionally powerful stay monolingual. Under these circumstances, the socially less dominant variety may become the "bilingual" variety, as all of its speakers can use the resources of both languages without problems in communication. At the same time, the monolingual speakers of the majority language do not easily tolerate switches to the minority language (Matras 2009). Insertions occur mostly from the dominant variety to the less dominant variety (Muysken 2000). Also, alternations to the dominant variety may occur starting from the less dominant base (Gardner-Chloros 2009: 14). In the Basque case, for example, Aurrekoetxea & Unamuno (2011) observed that even though both the main clause and the subordinate clause could be uttered in both Basque and Spanish, the order was always to start in Basque, and end in Spanish. When most of the processing effort is focused on the beginning of the utterance, the tension may be then released in order to switch to the pragmatically dominant language (Matras 2009).

In stable sociolinguistic situations of relatively equal power distribution, alternational patterns are favored. Also fused lects may emerge, if the languages are typologically similar. Long-term contacts may lead to shared constructions and linguistic convergence, which, in turn, might lead to increased equivalence, congruent lexicalization and fusion (Auer 1999, Muysken 2000, 2013).

Bilingual proficiency has been noted to be a factor affecting the type of CS produced by bilingual speakers. Both Poplack (1980) and Nortier (1990) argued that complex back-and-forth CS requires high bilingual competence. According to Muysken (2000), high proficiency leads to intensive CS of both alternational and congruent lexicalization types. However, proficiency as a factor should be interpreted in the context of community-related questions such as the underlying language ideologies, or who has the *linguistic authority* in a community. Linguistic authority is often granted to the most integrated speakers of a variety, who are seen as the rightful owners of a language. Often these are the "native speakers" (Doerr 2009). Even though research on CS fundamentally questions the native speaker ideology by focusing on questions of bilingualism and on bilingual individuals, these ideologies often seem to be reproduced in the belief

of the superiority of a balanced bilingual who has a similar native-like competence in both or all varieties in which the switching takes place. Muysken (2000: 227) considers the issue of bilingual proficiency to be closely related to network membership or to a generational membership in a migrant community. The social constraints placed upon various types of speakers are different, and those whose language competence goes unquestioned are more free to move between the subsystems in their linguistic repertoire. Both Smith-Christmas (2016) and Lantto (2018), for example, have found very similar differences in CS patterns – intensive intrasentential switching for native speakers, mostly extrasentential for non-native speakers – in communities that are undergoing the process of revitalizing a minority language. The non-native speakers in these cases are subject to more purist constraints, both due to language acquisition in a purist classroom environment and to their limited linguistic authority.

Purist ideologies are also attested in situations of political competition between languages, which may lead to alternational patterns of language separation (Muysken 2013). The contrast between languages leads to the use of CS as a conversational resource (Poplack 1988, Auer 1999) instead of more morphosyntactically intrusive forms of switching. Non-purist attitudes can lead to intrusive types of mixing (Poplack 1988), such as language mixing, and eventually even to fused lects (Auer 1999). Intrusive CS, for example in patterns of convergence and congruent lexicalization, may be attested in closely-knit communities with relaxed linguistic norms (Muysken 2013). The need to keep the languages separate might be particularly strong in minority language settings where purity is seen as essential for language survival (Woolard 1998, Jaffe 2007). The rejection of overt CS and borrowing may lead to more covert patterns of contact-induced language change, such as structural convergence (Aikhenvald 2002: 267).

All types of linguistic change are often seen as a decay, and mixed forms may be considered particularly decadent (Woolard 1998). Even though reactions to CS in communities are often purist in nature, these attitudes might be learned rather than spontaneous (Gardner-Chloros 2009: 81–82). Code-switched varieties may also be seen as the most authentic, natural, unmonitored reflection of a bilingual community (Lantto 2016b) and awarded covert prestige. Covert prestige, in contrast to overt prestige, is the value attached to non-standard varieties as markers of solidarity and group identity. Covert prestige might affect the speaker's actual language use more than the overt prestige attached to standard varieties. Nevertheless, if a purist register or a variety is perceived as a carrier and transmitter of authentic, traditional community values, the quest for authenticity can similarly lead to the *avoidance* of CS. The existence and presence of a monolingual standard variety in both languages helps to reinforce the separation of the languages.

Institutions can create new vocabulary in the minority language, which would make CS and borrowing less necessary. Yet it is up to the speakers to accept these innovations or to prefer the borrowed vocabulary.

The relationship between code-switching patterns and *age/generation* has been the subject of several studies. Adolescents have been reported to engage in CS, and then "grow out of it" when they become adults (Muysken 2000: 22). Most of the generation-related patterns have been observed in immigration contexts, often with an emphasis on language shift (Muysken 2000: 227, Kovács 2001). In the most stereotypical manner, within immigrant communities, the first generation, with the lowest proficiency in the host community language, would use insertional patterns to introduce nouns and noun phrases from the language of the host community (Muysken 2013), whereas the middle and second generation would favor alternational patterns and congruent lexicalization (Muysken 2000). Middle and second generation immigrants might also develop emblematic (identity marker) patterns, combined with possible heritage language loss, in communication with the members of the out-group. This is the type of CS that Muysken (2013) calls *backflagging*, and closely resembles the *polylingual languaging* of multiethnic youth groups (Jørgensen et al. 2011). These multilingual varieties are marked by specific linguistic elements and features instead of longer stretches of language alternation. Multiethnic youth groups are a source of innovations, which might then spread even among the monolingual majority. To name an example, the use of *wallah* from Arabic, 'I swear, I promise', with its loan translations as an emblematic identity marker among youth groups of Muslim origin, has now extended to other speaker groups in several countries of Northern Europe. This, in turn, seems to have provoked changes in the use of structures "I swear" and "I promise", in the youth speech of these communities. (Kallmeyer & Keim 2003, Schoonen & Appel 2005, Svendsen & Røyneland 2008, Lehtonen 2015).

Another extralinguistic factor that can be directly linked to CS are the *social domains* associated with each language. Vocabulary related to certain domains that are linked with a particular language, such as education and work, can lead to lexical pattern in CS if these domains become the topic of the conversation. The effect of such variables as *gender* is not straightforward. Gardner-Chloros (2009: 83) found no significant differences in the amount of CS used by men and women in Greek Cypriot and Punjabi communities in the UK. In Poplack (1980), women in the Puerto Rican community in New York favored intrasentential switching more than men, whereas in the Shipibo community in Lima, men use more Spanish and CS to Spanish than women, who are seen as the guardians of ethnic identity (Zavala & Bariola 2008). All in all, the effect of the different

extralinguistic variables seems to be very much linked to the particularities of a given context of language contact. When a component in the sociolinguistic situation as a whole changes, the outcomes and the types of CS may change as well.

5 Discussion and outlook

In the previous sections, I have summarized the main findings of earlier CS studies with regard to the models proposed, their methods, patterns in the outcomes and some of the factors leading to these patterns. Due to the huge number of studies on CS, much has been left out of the analysis. Nevertheless, I hope to have succeeded in giving the reader a general overview of the field. In the following, I will describe the challenges that CS studies need to respond to, and the future directions that I see as fundamental for their development in the future.

5.1 Comprehensive frameworks

Firstly, what CS studies need in the future are models and theories that attempt to draw a more complete picture of all sides of CS, and to describe the phenomenon as a whole. Tomić & Valdés Kroff (2022) highlight the need to integrate sociolinguistic and corpus-based observations to the experimental studies on CS, and Parafita Couto et al. (2021) advocate multi-method, comparative approaches to observe the patterns that emerge across communities. Muysken's model (Muysken 2000, 2013), discussed in several sections throughout this chapter, is the most ambitious attempt of description (and prediction) of CS thus far. Yet the model is grammar-oriented and barely discusses the impact of conversational or stylistic CS patterns. Muysken does discuss attitudes towards CS, but the importance of language attitudes and ideologies has been neglected in most of the structural CS research. This is one of the lines of research that the CS scholars should focus on in the future. As for now, purism is sometimes mentioned as a factor that limits the speakers' use of their linguistic repertoire as a whole, but the discussion rarely goes beyond noting that these purist tendencies exist. Backus (2013, 2015) has advocated for the creation of a functioning theoretical framework for CS based on the usage-based approaches to language. Yet in these cognitive frameworks, the intralinguistic aspects of CS are often discussed separately from the sociolinguistic make-up of the code-switching individuals and communities. A comprehensive framework should acknowledge all levels – the structural-linguistic, pragmatic, and psycholinguistic aspects of the elements

that are being code-switched, the individual and the community with their ideologies – that are present in the interactions where CS occurs.

For instance, as an example of a multi-sided description of a phenomenon, let us consider the case of discourse markers in the contact situation that I know best, the contact between Basque and Spanish in the city of Bilbao, Basque Country. Code-switched discourse markers have been noted to function as attention-getters in bilingual conversations, so discourse markers have a pragmatic value as contextualization cues (Maschler 1997). In the example below, a non-native Basque speaker is using Spanish discourse markers in her speech in Basque, even though she otherwise tends to avoid CS.

(6) Eta bestea, Ana, Ana zegoen oso oso erreta eta oso oso txarto: *pues es que* hau ez da ona…Eta *joder*, helduak gara, *o sea*.
'And the other one, Ana, Ana was so so frustrated and and so so unwell: *well it's that* this is not right… And *shit*, we are adults, *I mean*.'

In Example (6), the speaker is looking back on a course she and her interlocutor attended. One of the students was very frustrated with the teacher of the class, and was always protesting. The speaker goes on to quote the student's words: she uses the Spanish discourse markers *pues es que* emphatically as a contextualization cue to mark the transition from the narrative frame to the words of the quoted person and to highlight her militant attitude. Then she changes back to the narrative frame to disapprove of the behavior of the student with the mild Spanish swear word *joder*, which also functions as a discourse marker.

Discourse markers are generally extrasentential switches that do not violate the grammatical norms of the languages involved, so they are accessible even for those individuals with a limited bilingual proficiency or for those who are subjected to purist social constraints. In the Basque variety spoken in the area of Bilbao, discourse markers can function as markers of informal authenticity even for the nonnative Basque speakers who do not have the linguistic authority to move freely within their full linguistic repertoire (Lantto 2018). Discourse markers from the surrounding majority language are easily conventionalized as non-optional in bilingual varieties and speech styles (Goss & Salmons 2000, Matras 2009). They are processed as gesture-like devices, which are prone to selection malfunctions (Matras 2009). Even though they would have originated as two different words, such as the Spanish discourse markers *o sea* (conjunction + verbal form), *a ver* (preposition + infinitive), and *en plan* (preposition + noun), they are processed as one multimorphemic item and can be transferred and code-switched as a whole. Just like in example (6), the direction of the switching is

generally from the majority language (here Spanish) to the minority language (here Basque) (Matras 2009). The majority language speakers are often monolingual and do not easily tolerate switches to the minority language (Matras 2009). Processes of fusion often start with this type of relatively unbound element of grammar (Auer 1999).

The conventionalization of discourse markers from the majority language in the informal style of a minority language is, therefore, a case of multiple causation, where the conversational functions of CS, the language ideologies of the moment, linguistic typology, processability of the items and linguistic power relations come together in this specific instance of interaction. Even age-specific patterns can be found in the use of discourse markers by the Basque speakers – all of them use discourse markers of Spanish origin, yet the older generations do not use discourse markers such as *en plan*, widely considered a feature of youth speech.

5.2 From synchrony to diachrony

Another challenge for CS studies is to further explore the relationship between CS and structural change. The studies mentioned in Section 1.1 describe linguistic change in small structural details at the synchronic level, but long-term research within and across communities is needed. The question is far from resolved, and some new studies, such as Cacoullos & Travis (2018), show that even widespread CS in a community does not straightforwardly lead to grammatical convergence. In general, the research field of CS has not yet managed to combine synchronic and diachronic views on CS in a very convincing manner. Perhaps because of its late start, the field has also not yet been able to document how language change may start at the conversational level in individual interactions and then become permanent patterns at the community level, even though Matras (2009) has theorized about this path. As noted in Section 1.1, CS is basically accommodation and convergence of the linguistic subsystems in interaction. All potential linguistic changes initially occur in an individual's cognition, in the rearrangement of the linguistic repertoires of the individual speakers. Bilingual constructions created in individual interactions may gradually become entrenched in the idiolect of one or several speakers. The speakers use their linguistic resources to fit the sociolinguistic contexts (Heller 2007), and when these speakers share the same sociolinguistic contexts, the patterns also become similar. If similar changes happen in several idiolects, they may lead to community-wide conventionalization of new patterns and features, starting with small groups. Over time, these community patterns may become non-optional, and the original material may be

replaced by new items. Yet long-term studies and extensive corpora are needed to document development, and to situate code-switching in the context of the other phenomena that occur simultaneously in situations of language contact.

The classic examples of lexical borrowing are loanword layers, concepts related to new forms of culture. Entire categories can be code-switched: for example, the older generations in the Basque Country tend to use numerals in Spanish, as it was their language of schooling (Lantto 2015b). This pattern, however, has changed as the young people have access to Basque-medium education. Yet without the sociolinguistic change and revitalization, Basque numerals could have been replaced by their Spanish equivalents. Long-term language contact and extensive borrowing may lead to heavy relexification, such as in the case of English, whereas short-term contact more probably leads to language shift over a few generations. The features shared and created in polylingual languaging may lead to innovations and changes of single features of languages and varieties.

CS might also be related to structural changes, for example in the case of conjunctions. Conjunctions are prone to selection errors (Matras 2009). They can become entrenched in a person's idiolect, and later on become conventionalized at the community level. Code-switching conjunctions may bring about far-reaching structural change – for example in Basque the subordinate causative clauses have been traditionally formed adding a causative suffix *-(e)lako* to the finite verb or by adding causative particles to the end of the sentence. In Example 7, however, the speaker uses the Spanish causative conjunction *porque* instead of the Basque causative suffix or particles.

(7) Bizarra moztuko dut orain *porque* bihar... bihar ez
beard.DET cut.FUT AUX.TR.1SG now because tomorrow... tomorrow NEG
dut gogorik izango
AUX.TR.1SG want.PART be.FUT
'I'll shave my beard now, *because* tomorrow I won't feel like it.'

Changing the system of forming subordinate clauses is a significant structural change that affects the very core of Basque grammar. The Spanish conjunction *porque* is not entrenched in all Basque speakers' idiolects, but it is widespread enough in a way that it is no longer a curiosity, a single occurrence. The same process is happening with other subordinate clauses in Basque, as the relativizer suffix *-(e)na* and the complementizer *-(e)la* are often replaced with the Spanish conjunction *que* in bilingual speech. The development is comparable to the large-scale borrowing of conjunctions that has happened in the Finno-Ugric languages throughout the last millennia: Finno-Ugric languages had mostly nonfinite ways

of expressing temporal, causal, etc. relations before the conjunctions were borrowed from Russian and the Germanic languages (Hickey 2010). In some of the languages, such as Finnish and Estonian, the process seems to have been completed, while in others it is still ongoing. The parallel mechanisms working in the synchronic Basque case are visible. Thomason (2001: 62) uses the syntax of subordination as a common example of a snowball effect, where the initial change may trigger several other grammatical changes on the way.

How can one link CS, a spontaneous synchronic phenomenon, back to historical language contact? What connects the modern day innovations and modern day bilingual speech to the historical processes of language contact? I think it is relatively uncontroversial to say that human nature and human cognition have not changed much during the last centuries or millennia, and that the same mechanisms of code-switching and borrowing that were functioning in the past are still functioning in the current situations of language contact. Even though CS is often discussed in relation to globalization, it was a phenomenon that occurred – and was complained about! – also in the multilingual societies of the past (Lantto 2016a). The historical written documents that contain CS demonstrate that CS was used with similar functions and in similar ways as it is used now. The particularities of the features involved in historical change, even across macro-areas, can tell us a tale about the organization of past societies, their hierarchies, ideologies and patterns of language use.

Both long-term studies and studies with wide bilingual corpora would be needed to truly connect CS to patterns of linguistic change. Cacoullos & Travis (2018) is one of the first real attempts to track contact-induced grammatical change in a carefully constructed bilingual corpus of the long-term language contact situation in New Mexico, where Spanish has been spoken for over 400 years and English for over 150 years. However, they find very little evidence that change in grammatical systems has actually occurred. As for the near future in CS studies, I predict wider use of quantitative methods to address patterns in large bilingual corpora, as the monolingual norms of corpus building are finally being broken. However, many existing corpora are not open and lack of accessibility continues to present problems for the researchers interested in more quantitative methods. Another new dimension might be a growing interest toward written CS in social media, text messages and in other corners of the Internet, a very common and multi-faceted phenomenon that has received surprisingly little attention thus far.

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Chapter 4

Language shift

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Language shift has always existed. Conquests were the first historically attested cause of language shifts, then migrations prompted these types of changes, and today it is mainly language diffusion that triggers this language contact phenomenon. There are some promoting and/or impeding factors for shift, but not a single condition evokes the same patterns of language use in all language contact situations. For this reason, and because each language community should thus be considered and analyzed in its own terms, this chapter discusses the most significant approaches, models, methods and examples of possible language choice patterns and trends, and finally, also addresses possible factors that may or may not boost language shift within a particular linguistic community.

1 Introduction

Since *language shift* (LS) is always preceded by language contact or collective multilingualism (Ostler 2011: 320), it is important to include this social phenomenon in the discussions addressed in this book. Even if LS can occur at an individual level (*language attrition* (LA)),[1] it usually refers to the change in usage of a given language community from a language A to a language B in all situations and domains. This change in linguistic practices is usually observable as a bi- or multilingual period within one or across several generations.

LS is often described as a kind of "transitional phenomenon" (Böhm 2010: 33) of changing language contact situations. It refers to a shift away from a "healthy"

[1]LA is about "forgetting" an L1 or an educationally acquired language. It thus describes the loss of language skills by an individual and can in a way be considered as a reversal of language acquisition (Lambert & Freed 1982).

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language state due to a "disorder" or a range of "disorders"[2] of the affected languages. *Language maintenance* (LM), in contrast, describes a relatively stable,[3] language contact situation in which bilingual speakers, speaker groups or an entire linguistic community continue using the minority or heritage language,[4] despite the pressure of the majority and socially dominant language and other influencing factors. Consequently, the mentioned "disorders" can provoke different patterns of language use, which is why each language contact situation must be considered separately. What all the situations have in common, however, is that LS affects only groups and communities which are in contact with

[2]The term "disorder(s)" here refers to the fact that a previously rather stable speech contact situation – described above as "healthy" – can become unstable and cause a "disorder" as a result of various mostly related factors, and therefore change the habitual language use (clearly visible in stage B of Figure 1).

[3]LM is described here as "relatively stable", because long-lasting and intensive language contact can lead to interferences (see the borrowing-scale of Thomason & Kaufman 1988) and further language contact phenomena.

[4]The literature employs various terms such as community language, (im)migrant language, ethnic language, and home language. Among these terms, heritage language is probably the most commonly used (Pauwels 2016: 23). It refers to a language that is passed down or acquired by individuals from their family or ancestral background, and is typically associated with immigrant or minority communities residing in a country where another language dominates. A heritage language carries cultural and emotional significance by reflecting the individual's heritage and ethnic identity.

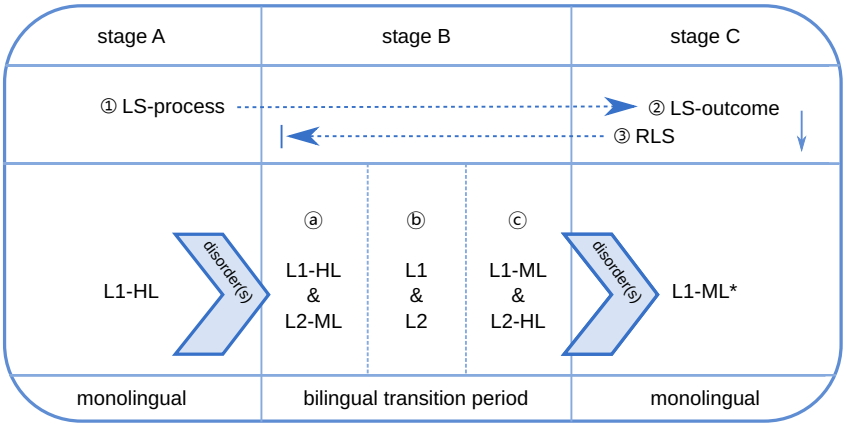

Figure 1: *Language Shift Model*. L1 = first language; L2 = second language; HL = heritage language; ML = majority language; L1-HL = abandoned/heritage language; L1-ML* = target/majority language (can contain phonetic, morphological, syntactic, semantic and prosodic traces from the HL.

a more dominant and more powerful social group. This is why LS is generally understood as "a barometer of inequality between linguistic minorities and the majority" (Heinrich 2015: 613).

LS is not a recent phenomenon, but has occurred throughout history in different societies and in diverse places (Puthuval 2017: 4). Ostler (2011: 326–328) supposes that LS started happening with the Neolithic revolution and the related establishment and settlement of humankind – however, it can be assumed that these processes were already taking place before this period. Between 3000 BC and 1500 AD, dominant languages spread mainly through wars and subsequent conquests of rural societies. Since then, the languages of European conquest have prevailed, e.g. Spanish in Latin America, Portuguese in Brazil or English in the USA. Dominant languages are therefore often associated with overseas explorations, invasions and migrations. Before the 20th century, *migration* was the major factor causing a group to be affected by LS. Nowadays, in contrast, the physical *diffusion*[5] of so-called world languages is playing an increasing role because young people often learn one of these rather than maintain their parents' minority language.

Like in most of the LS literature, this chapter will mainly discuss the language use of minority groups, i.e. migrant communities and territorial linguistic minorities, with a special focus on the former. Therefore the model in Figure 1, which is based on Fishman's (1964) three-generational model, illustrates the different phases typically leading to LS in migrant groups. Likewise Weinreich (1953) assumes that at least three generations are necessary for LS to happen. Ortman & Stevens (2008: 6), in contrast, point out that in many *inter*generational analyses, the so-called "mother tongue shift" occurs mainly in the second and third generations. In this regard, LS can be understood here as a reversible process ③ or as a gradual and progressive process ① of the dynamics of a natural multilingual language community. On the other hand, LS is sometimes also analyzed as an outcome ② of a language contact situation: the use of the languages changes across the three stages in Figure 1. A monolingual stage A is followed by a situation of language contact, caused, for instance, by migration. A bilingual transition pe-

[5] *Language diffusion* (LD) often happens on an individual level and is promoted by *cohabitation* (founding bilingual families) or *recruitment* (new employment, military, etc.) (Ostler 2011: 323–324). In certain domains a LS can then progress quickly and widely. *Linguistic diffusion*, on the other hand, refers to a shift of individual linguistic variants within a language – which can also be caused by language contact – on an individual or social level over a longer period of time. Both speakers and listeners can give different preferences to individual variants or even generate new variants (Gong et al. 2012).

riod then follows, which is often *diglossic*[6] and in which the collective language choice is *variable* (Fasold 1984). This middle stage, which is at the heart of the progressive LS process ①, can last for one or more generations, and may affect an entire language community as follows. Three different types of bilingualism are distinguished for stage B: ⓐ supplementary, ⓑ complementary (see LM), and ⓒ replacive bilingualism (Haugen 1972). Given that the preferred language can influence the language skills of every individual speaker (in LS situations the L1-HL, and in reversed language shift (RLS) situations the L1-ML), the three types of bilingualism can also co-occur within the same community. The bilingualism phase is then followed by another not necessarily purely monolingual stage C, as Fishman (1964) showed in idealized form. The target language can still contain traces of the L1-HL in the form of code mixing or code switching (see *shift variety* in Section 3, and Chapter 3), or even adopt new features from the heritage language and thus end up as a new variety or language (see Chapter 5).

1.1 LS as outcome

Languages are social entities that need an associated society in order for their memory not be lost. This means that if speaker groups or societies, for example migrants, do not live in their home countries and lose contact with them, there is a good chance that they will shift more quickly to the L1-ML. Therefore, a language's survival depends on who speaks what, to whom and when (Fishman 1964).

The *transmission* of an L1-HL to the following generations can be disrupted, impeded, or stopped during the three LS stages (see Figure 1) for various reasons, e.g. if a language community dies out, or if it is conquered by another group that speaks a different language.[7] In cases like the latter, speakers make or are forced to make a "social choice" in order to better integrate themselves (or not) into the new society (Ostler 2011: 325). In other words, the preference for one of two or more contact languages automatically generates social closeness or distance. So if a bilingual speaker chooses the L1-ML, they automatically select social proximity to the out-group and social distance from the in-group – and vice versa. At this

[6] *Diglossia* is a special form of bilingualism of a language community in which a "high" and a "low" variety coexist. While Ferguson (1959) distinguished between two variants of the same language (e.g. the case of German and Swiss German in the German-speaking part of Switzerland), Fishman (1967) extended this definition to language contact situations of unrelated varieties (e.g. Hindi and Tamil in India).

[7] It is important that we take into account here that LS does not end with a person's life or the life of a group, but rather represents a shift or a change from generation to generation (Jagodic 2011: 195).

point in the process, the corresponding L1-HL is threatened if it is not spoken by another group or if it is not used for a specific purpose. In these cases there is a danger for L1-HL to become an *endangered language*.[8] The former mother tongue is then gradually replaced from generation to generation by the L1-ML (*obsolescence* or *language death* at group level and *attrition* at speaker level, e.g. Crystal 1991). According to Nettle & Romaine (2000: 7), more than half of the over 6000 languages spoken in the world are currently at such a stage. The process is mainly affecting small minority languages in Australia, the Pacific and in North and South America. Normally, such an advanced state of LS is irreversible, and has therefore achieved its *morbid endpoint*[9] (Pauwels 2016: 18).

1.2 Reversing LS

If a speech community sees a reason to take active steps to preserve an endangered (heritage) language, and if the language policy of a region or country supports these actions, an *ongoing*[10] LS-process can change direction and be reversed (Reversing Language Shift, RLS), if it has not yet reached the morbid endpoint. The heritage language can be documented by linguists and stored in archives, or get actively preserved and maintained through revitalization (Ostler 2011: 315). This reversal requires a new distribution of power between the language communities, which may lead to a different language policy. The idea of many supporters of minority languages is to teach it to the younger generation in school so as to enable them to use it regularly and pass it on to subsequent generation(s) (Puthuval 2017: 4). If an L1-HL plays a part in defining a sense of identity, if it hosts the community's culture and traditions, and if it is the basis of knowledge and experience, nowadays people or institutions often eagerly try to preserve that language. In this respect, language diversity is still a universal phenomenon, even though LS is the social norm (Pauwels 2016: 84).

[8] Without adequate documentation, frequent use between L1-HL speakers in different situations and domains, and without transmission to the next generation, a language is *endangered* and thus threatened with extinction (see EGIDS, the 13 levels of language endangerment/vitality proposed by Brenzinger et al. 2003: 2 based on Fishman's (1991) 8-level GIDS – see also Section 2).

[9] The difference between a *morbid endpoint* of a language and *language death* is that in the former case a language can still be spoken by other language communities. On the other hand, the term *language death* can be understood conclusively, because in this case a language is not spoken anymore, because it has been forgotten or simply not learned or passed on, and therefore no longer exists.

[10] LS is to be viewed as a process in which different factors come together. This can be extremely dynamic. For this reason, and to be predictable at all, a model must be flexible and able to take account of changing circumstances. Therefore I use the term *ongoing*, like Pauwels (2016: 112).

1.3 LS-process

On the other hand, LS can also be understood as a process, in the sense that the dominant language spreads at the cost of the minority language (Böhm 2010: 31). Language "lives" and is associated with an *ongoing* learning process that can lead to changes such as variant formation (see Chapter 2 on accommodation), speaker-related language mixing (see Chapter 3 on code-switching), new languages or varieties (see Chapter 5 on contact languages) and thus to long-term change (language shift or language change). Due to differences in individual settings, situations, speakers, etc., there is still no uniform and general definition of the LS phenomenon. As Pauwels (2016: 19) explains:

> it may take one or more generations of speakers before the language is entirely abandoned. It also implies that the shifting away from the L1 does not occur simultaneously across all its users or functions and settings. The rate and speed of the shift process will vary from community to community. In some cases the process is relatively swift, within one or two generations, and in other contexts it will take much longer.

The duration of the shift process therefore depends on various influencing factors (see Section 4): While some language communities change their main language within only one generation, for instance, Dutch migrants in New Zealand (see van Rijk 2017), other migrant groups manage to maintain their L1-HL over several decades or centuries, such as the Amish in the USA (see Sağlamel 2013) or the Swiss in Brazil (see Karnopp forthcoming).

Figure 1 represents an overview of the phases typically involved in LS in a bilingual language community with language contact. However, this model does not hold for all settings or all contact situations with LS as an outcome. The transition period between a monolingual setting with language A and a monolingual setting with language B can be more multifaceted than depicted in Figure 1. The transition phase is discussed in more detail in the following subsections. Section 2 discusses the main approaches to LS, presents theoretical models, and summarizes the methods typically used in LS research. Language choice patterns, which are key to the process of LS, will be discussed in Section 3. Section 4 gives an overview of possible factors promoting LS. Finally, Section 5 summarizes the most important conclusions of the chapter and points out promising routes for future research.

2 Approaches, models, and methods

The various approaches to the study of language shift are best understood by observing the transition period from the initial monolingual setting preceding the shift to the final "monolingual" setting following it. As Figure 2 illustrates, the bilingual transition period of an LS involves not only factors regarding an individual speaker, but also often produces a situation where wider social, even societal phenomena become relevant. Furthermore, a finer differentiation between three social levels Ⓐ micro, Ⓑ meso, and Ⓒ macro will be helpful in assessing the approaches, models, and methods presented in this section.

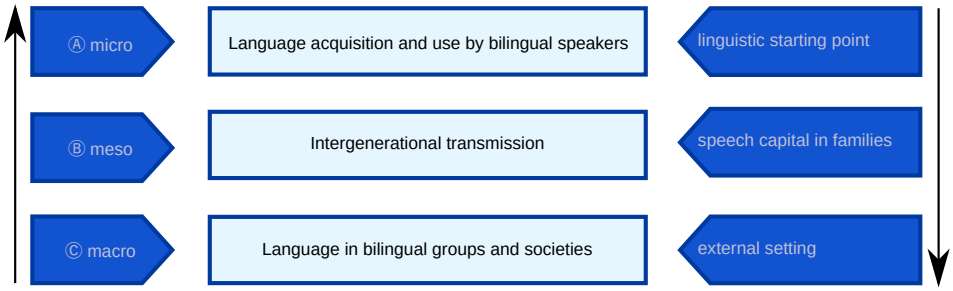

Figure 2: Social model for LS-processes, based on Sasse (1992: 63).

2.1 Approaches and models

LS and its counterpart, LM, both have a multidisciplinary nature. Since the beginning of the 20th century, they have attracted the attention of a number of scholars from a variety of disciplines, including (language) sociology, anthropology, social psychology, sociolinguistics, contact linguistics, demography, politics and history. If a language is to be considered in connection with its speakers and an entire society, this can sometimes lead to an interdisciplinary challenge – because each discipline has its own questions and methods, it may be difficult to make them compatible with each other. Since LM/LS studies are characterized by a wealth of approaches, models, and research methods, only a portion of the most influential ones are introduced in what follows (however, in Section 4 some of these will be taken up with regard to factors that can promote or slow down LS).

Kloss initiated the systematic study of LM for ethnic minorities in Germany. His key text (Kloss 1966) on language choice in correlation with a wide range of

individual and group factors led to the development of a quantitative taxonomic-typological model.[11] This was the first attempt to capture the dynamics of LM and LS. Based on Kloss's work, Haugen (1972) developed his concept of "language ecology"[12] in migrant settings and expanded the field from Europe to North America. His descriptive and explanatory model was the first to take into account the interaction between languages, their speakers, and the social environment. Fishman's (1972) study on "language use patterns" is one of the most important contributions to LMLS research. Using his famous question "who speaks what language to whom, and when", shift processes can now be analyzed across a range of (originally) five main domains: *family, education, employment, friendship*, and *religion* – although these may vary depending on each specific language contact situation. Fishman assumes an ideal language contact situation in which all members are multilingual, regardless of the language competence of its individual speakers. If the analysis of an *intra*group within domains and further factors is extended to an *inter*group situation, language contact can be analyzed not only at the micro level but also at the macro level (Werlen 2004: 335–336, see also Figure 2). The "ethnolinguistic vitality model"[13] of Giles et al. (1977) includes such socio-psychological factors as *status, demography*, and *institutional support*. To analyze the vitality perceptions of languages in contact within and between minority and dominant groups, language identity and language attitudes play a decisive role (see Section 4). The fourth milestone is Gal's (1979) study on language use in bilingual communities at the Austrian-Hungarian border. She was the first to take into account *social and communicative networks*[14] (see also Dorian 1980). Language choice plays a very important role in this. However, if both contact languages are equally appropriate in a network, it is not possible to predict which language bilingual speakers will choose in which communicative situation. With her new qualitative approach in this field Gal was able to show that for certain language groups, at a specific historical moment, language choice can be variable.

Gal's pioneering study was followed by further research and enhanced concepts. For instance, Bourdieu's (1977, 1982) *linguistic markets* – a term that stands

[11] In a taxonomic-typological model, language is named on the basis of types and systematically classified with regard to its structural and functional features.

[12] In his model, Haugen used the ecosystem as a metaphor to show how languages behave in different language contact situations and how endangered languages can be preserved, similar to endangered species.

[13] Giles et al. (1977: 308) understand "ethnolinguistic vitality" to be the distinctive and active collective behavior of a minority group in *inter*group relations.

[14] Gal (1979) understands "social and communicative network" as the environment in which a speaker normally interacts in a given unit of time.

as a metaphor for the places where linguistic exchange occurs and linguistic "capital" can be exchanged; Lieberson's (1980) distinction between *age-grading* (linguistic changes on an individual level) and *age-cohort* (linguistic changes within an age group) analyses; Smolicz's (1980) *core-values* and their relationship to LM, with regard to the most important cultural and social values of a linguistic community; Tajfel's (1981) *social identity theory*, which is intended to explain *inter*group behaviour; Fishman's (1991) discussion of RLS and the necessary redistribution of power within a community, as well as the promotion of the 8-level *Graded Intergenerational Disruption Scale* (GIDS), an evaluative framework for identifying endangered languages; and Edwards' (1992) *typology of language endangerment*, which includes factors for the viability of endangered languages.

Although the approaches and models listed here are fundamental for a better understanding of the dynamics of LS processes, each of them also has individual weaknesses. In addition, they can only shed light on a specific part of the whole phenomenon. For example, Kloss's (1966) clear-cut factors are not necessarily unequivocal indicators of LM for all migrant contexts. On the other hand, additional factors – not taken into account by Kloss – may also lead to the preservation of a heritage language (e.g. Clyne 1991 in his research on migrants in Australia). Fishman's (1972) model is based on a clear domain-by-domain shift, which is nowadays extended to further domains, as each language contact situation is unique and can therefore generate additional "exchange locations". On the other hand, Fishman's domains can be inhibited by other language contact phenomena such as code-mixing and code-switching (see Chapter 3). His proposal is thus better placed within an expanded *domain continuum* – from public to private domains – by taking into account both the LS of a single speaker and the LS within the language community. Smolicz's (1980) core-value theory was also criticized by Clyne (1991) because of its relative simplicity: the definition of "group" is problematic, the model is inapplicable to several group affiliations, and language attitudes can change, even if they are normally considered to be stable over a longer period of time (e.g. RLS). Newer approaches and models aim at *hybridity* and *continuity*, with abstract and episodic-concrete language material being made comparable and tested using various factor combinations. One of the first hybrid models for LS was published by Wei (2002) with his concept of "market, hierarchy, and network" that makes interaction strategies of individual speakers combinable with the community-wide norms and values.

In summary, while in the initial phase of LS research the focus was on universal and abstract variables and systems (© in Figure 2), which were based on top-down approaches and aimed at the development of traditional-generative models at the macro level, Haugen's (1972) descriptive approach paved the way

for research that aims to capture the macro level by defining the micro level (Ⓐ in Figure 2) of a social system. Since then, research approaches within the study of LS has shown a preference for user/agent-based bottom-up models.[15] Even if the meso level (Ⓑ in Figure 2) was not directly addressed here, it is crucial, especially for the preservation of a minority language, since it deals with *inter*generational transmission. If the language is not transmitted to the next generation, it will be forgotten and lost within the language community (e.g. Gal 1979, Brenzinger et al. 2003). Starting from the meso level, LS can be viewed in two different ways: By default, an intergenerational LS is normally assumed, that is, a change between generations or age groups within a language community (see Figure 2 (Ⓑ–Ⓒ), Lieberson 1980). The Lagged Generation Model by Myers et al. (2006, cited in Ortman & Stevens 2008) serves this purpose. However, since LS can also happen within a single speaker (see LA), the *intra*generational change must also be taken into account. Intragenerational change can be analyzed by the Period Cross Section Approach, discussed in Myers, Park & Min (2006, cited in Ortman & Stevens 2008, see Ⓐ–Ⓒ in Figure 2). In this regard, Lutz (2006: 1423–1424) states in her study on Latino youth in the USA that "the shift from Spanish to English as a usual language appears to occur as children progress through the school system".

2.2 Data gathering methods

Language data for LS research can be collected in various ways: through large-scale (macro-level) surveys and census data (see Ⓒ in Figure 2), or through observing language use by individuals through participatory observation, interviews, tests, and experiments (the micro and meso levels Ⓐ–Ⓑ in Figure 2) (Pauwels 2016: 48). A distinction is also made between real-time and apparent-time methods. In a real-time study, the language use of different age groups is observed over a longer period of time. Longitudinal studies can show a possible language change of a community as progress through time. Apparent-time methods, often implemented as a one-shot case study, focus on the speech patterns of different age groups – younger and older speakers – at a specific moment in time and can indicate a language change in progress.

Using a questionnaire is the most commonly applied method for data collection in LMLS investigations. It can be applied to large-field studies, which tend to target quantitative data, or to smaller-field qualitative analyses. A challenge

[15]For differences between generative and usage-based models, see Langacker (2000) and Prochazka & Vogl (2017).

regarding all methods that employ interviews, in addition to the choice of informants, is the interviewer's role. In certain cases a bilingual interviewer or a member of the group under study may be preferred. This helps to ensure the authenticity of the linguistic data, and that trust and solidarity with the informant can be established. The questionnaires themselves vary, featuring e.g. closed-ended questions, multiple-choice questions, point scales, open questions (Pauwels 2016: 53–61).

Surveys and census data are often used in longitudinal studies, providing objective data for comparison. Within the field of LS these data can be used to assess, for instance, number of speakers, geographical distribution, and sociodemographic profiles (Clyne 1991). However, surveys can be expensive and they address only a portion of the targeted group at a time. Censuses, on the other hand, are more exhaustive, but data regarding language use is often inaccurate or even subjective and therefore not especially valuable. Regarding this concern Buda (1992: para. 16) adds that:

> respondents may not be fully conscious of their own language usage patterns, or may wish to portray them in a socially or culturally favorable light. Very often the respondent's assessment of his or her own language ability and usage represents more of what he or she would wish them to be, and less of what they really are.

In the same vain, Pauwels (2016: 66) notes that a self-assessment of language skills is not comparable with accurately measured linguistic proficiency in reliability.

3 Language choice patterns and trends

The Fishman question – who speaks what language to whom, and when – can be further expanded with the question of *how well* a language is spoken. Pivotal for answering these questions is *language choice*, the selection of a language in a given communicative situation. As language choice patterns are variable and often difficult to generalize, LS can be seen as a long-term consequence of language choice (Holmes 2013: 53). Fishman (1965: 68) suggests that language choice must first be analyzed in individual face-to-face meetings before approaching the "problem of the broader, underlying choice determinants on the level of larger group or cultural settings". In this regard, language choice patterns within a stable bilingual setting can be further applied to interpret less stable contact situations (see Figure 1). A domain analysis concerning the three social levels (see

Ⓐ–© Figure 2) is useful to observe some general language choice patterns and trends. In what follows, the expanded Fishman question will be used as a framework for this more encompassing analysis.

3.1 Who?

The question *who* speaks a specific contact language can be viewed, for example, in relation to *age-related* patterns. Many studies (e.g. Gal 1979, Wei 2002, Karnopp forthcoming) show that older speakers would rather maintain an L1-HL, while younger people often shift much faster to an L1-ML. This has to do with the fact that older migrants are usually more dependent on their heritage language. Learning the majority language is often more difficult for them – if they learn it at all – and their *social networks* tend to the in-group. However, the use of L1-ML can also increase for older generations, for instance if they spend a lot of time within the out-group during their working years (see Subsection 3.4). Likewise, younger generations may grow up in an L1-HL environment, but starting with school or earlier – through older siblings or media exposure – they come into contact with the majority language (*speech capital*, Ⓑ in Figure 2). Pauwels (2016: 84–85) notes in this connection that if the second generation does not speak the heritage language as well as the first generation, and, additionally, if their language displays more contact phenomena, such as code-switching (see Chapter 3), LS progresses faster.

On the other hand, *gender-related patterns* can influence language choice, even if researchers do not agree on this. Labov (1990: 213–215) therefore proposed the "gender paradox", which states that women can be both conservative and innovative in language use. But whether the female gender inspires or slows down LS depends on the role relationship and status in a given minority (Pauwels 2016: 86–88). Hence, a monolingual housewife who never obliged or enabled to learn the majority language, and who also cares for her (elderly) parents, rather tends toward LM. In contrast, a bilingual woman who no longer lives in a migrant context may prefer L1-ML, possibly affecting her proficiency in the HL (LA), although a "healthy" bilingualism (LM) cannot be excluded here either.

3.2 To whom?

In addition to the individual circumstances of each bilingual speaker, it is equally important to consider *to whom* someone speaks one of two or more contact languages. Again, this is closely related to a speaker's social network, role relation-

ship and the conversational topics:[16] if a bilingual person works in the countryside and only has contact with members of the in-group, an increased use of the L1-HL and thus LM is more likely. In contrast, a small in-group network and a low common routine can boost LS.

The home domain also helps to show how the role relationship within a family can change over generations, as the home is usually the last location to be affected by LS (Heinrich 2015: 616). If the speech capital[17] in families is low, or parents consider it unfavorable to transmit a language (transmission pattern), this can have a negative effect on the language setting and use. Pauwels (2016: 84–89) emphasizes that in migrant communities it is often the case that parents of the first generation use the L1-HL regularly among themselves, and with others the same age and older. In parent-child conversations there is a continuum of reciprocal to non-reciprocal use of the heritage language. The second generation therefore can learn the heritage language, but use it less and are not as likely to *transmit* it, especially in exogamy families. Nevertheless, the L1-HL can be used again more frequently when children have to look after their parents in old age.

3.3 What language and how well?

A distinction between *inter-* and *intra*individual variation is useful at this point, since nobody speaks the same way all the time, and the speaker's choice among varieties – languages or speech styles (language choice pattern) – is usually linked to the corresponding social context in some way (Gal 1979: 12–17, see also Chapter 2). In any case, bi- or multilingual speakers normally know which of the two or more languages in contact to use with whom, and when (linguistic competence and linguistic performance).[18] Depending on the *speech capital* ® of the parents or older siblings, speakers in minority settings can unconsciously learn several languages simultaneously (bi- or multilingualism) the *competence* of each speaker may differ as follows: Endogamy, a practice of marital union within a particular social, cultural, or ethnic group, influences LM within the family domain.

[16] Along with domain analysis, these are further factors Fishman (1964) considers in order to best determine the language choice within a speech community.

[17] Bourdieu (1977: 18) defined speech capital as the mastery of a language. Speech capital is closely related to cultural capital, since it is not only important to learn grammar and vocabulary, but equally vital for the speaker to identify with the culture's language attitude and prestige.

[18] According to Chomsky (1965: 3) every person has an unconscious grammatical knowledge of a language which is innate and allows them to understand and speak. Within this concept, he makes a fundamental distinction between *competence* – which includes knowledge by the speaker and listener of a language – and *performance* – which describes the actual use of a language in specific conversational situations.

When both parents are bilingual or exclusively speak a common L1-HL, there is an increased tendency toward LM in the home domain (endogamy pattern). Conversely, when couples come from different ethnic backgrounds or one partner is from the majority society (exogamy pattern), the probability of LS is considerably higher (Pauwels 2016: 89). Holmes (2013: 65) thus states that "[m]arriage to a majority group member is the quickest way of ensuring shift to the majority group language for the children". In contrast, an L1-HL can be infrequently spoken and transmitted to the next generation due to, for instance, negative attitude, negative prestige, lack of institutional support, or the dominance of other (world) languages of greater economic interest (diffusion pattern). Often the heritage language is then only hesitantly used due to uncertainty. In an environment with such a low linguistic starting point (Ⓐ in Figure 2), the children may not acquire the full competence in a minority language and thus the performance can contain inaccuracies (see *semi-speaker* in Dorian 1980: 87). According to Wei (2002: 116), such speakers tend to use "linguistic innovations, structural changes, and new varieties of language".

On this account, recent LS studies not only focus on language choice patterns, but also on how languages influence each other within their linguistic levels. This can happen on a lexical as well as on a grammatical level, as Thomason & Kaufman (1988: 35) showed with their "five level scale of borrowing".[19] In their opinion, the *contact-intensity*, and not the *language structures*, determine possible outcomes of language contact. However, later studies also confirm the the influence of the latter (e.g. Treffers-Daller (1999)), because

> speakers in general are able to construct new word formation devices, new syntactic forms and generally are linguistically creative, in the well-documented Chomskyan sense, even if input of a specific structure is slight or lacking. (Gal 2008: 591)

During an *ongoing* shift process, language contact effects usually happen between the middle and the last stage (see Figure 1). In my own research on the Swiss colony called Helvetia in São Paulo (Karnopp forthcoming), where the speakers today are strongly assimilated to the L1-ML, I was still able to identify some *salient patterns*, as some informants showed a different, and for the region rather atypical, pronunciation of some consonants in both contact languages. For

[19] Thomason & Kaufman (1988: 37) define *borrowing* as the "incorporation of foreign features into a group's native language: the native language is maintained but is changed by the addition of the incorporated features".

instance, the common retroflex [ɻ] of the region is hardly used by the older bilingual generation, while the youngest generation uses it more than the surveyed young generation of the out-group, in order to differentiate themselves linguistically. Another finding are neologisms (*word-formation pattern*), such as *xeníssimo* (very beautiful), composed of the Swiss German adjective *scheen* (beautiful) and the Portuguese superlative suffix *-issimo*.

Sometimes even in the third and last LS phase (see Figure 1) there can still be some "remnants" of the former language contact situation. This is the case, for example, when bilinguals "create" new *shift varieties*, recognized and adopted subsequently by the entire language community (see *shift-induced change* in Thomason and Kaufman 1988: 38). In Ireland, for instance, comparatives are double marked in non-standard Irish English, as in "working more harder" (Hickey 2010: 153). According to Hickey, this shift can have two causes: either the form was taken from the Irish comparatives, formed by the particle *níos* 'more' as well as the inflection of the adjective; or it comes from an older form of English, where this *doubling pattern* also occurred.

3.4 When?

For a better understanding of LMLS processes the study of interactional settings are central and imperative. A fundamental distinction is made between public and private domains, which – as I have already mentioned – should be treated as a *continuum*, as they are not always clearly delimitable. For example, if someone teaches at home, this domain becomes both private and public. The *labor market*, on the other hand, is considered to be a public space, although acquaintances and friendships between colleagues or business partners can also be cultivated here, which in turn produces more of a private character. The labor market thus has many facets, of which four possible language contact situations are shown below.

Minority members who work in a family business, for example farmers with a little village shop, may have a smaller social network that is often limited to the in-group. If an L1-HL enjoys positive prestige in such an environment, LM can be expected. However, if a migrant no longer lives within their language community because they moved to the next larger city for professional reasons, the tendency to use L1-ML in everyday life increases drastically. If the use of the heritage language then also decreases within the family domain, attrition (LA) can be the consequence. It becomes even more challenging when a heritage language speaker works in a multi- or international company, where the linguistic exchange takes place exclusively in a *lingua franca*, such as English or Spanish

(diffusion pattern). The probability that a minority language will "survive" under such circumstances is at this point rather low within the labor market but not impossible. Another complex language contact situation occurs on construction sites, where members of different ethnic groups work together. Language contact phenomena such as accommodation (see Chapter 2) or code-switching (see Chapter 3) are common here, since many construction workers have often not (yet) properly learned the majority language. In order to still be able to communicate with each other, the L1-ML is drastically simplified and usually pronounced with a noticeable accent, which leads to this variety being strongly stigmatized (negative *prestige*). For mutual understanding to be possible, only common knowledge of the meaning and application of the words referring to construction are important. Today this "primitive language" is considered a *learner variety* – and not a pidgin, even if there are simplified structures in both of them (see Chapter 5) – of migrant workers (Riehl 2014: 129–135).

Other (rather) public domains proposed by Fishman (1972) are *education* and *religion*. The school is not only a possible pivot point for learning (heritage) languages, but is also crucial for their revitalization and preservation (see RLS, Figure 1). Consequently, it is important to have, for instance, a supportive language policy as well as for the minority group(s) to be interested in preserving and cultivating these languages. For example, the Swiss descendants in Helvetia (Karnopp forthcoming) built their own private school shortly after the foundation of the colony, where their children could learn High German – since this is the official standard language in German-speaking Switzerland – as well as Swiss history and culture. After the nationwide ban on learning and using foreign languages, official German lessons were discontinued.[20] Since the school was nationalized in the 1980s and had to open its doors to non-Swiss descendants, LM was not possible anymore within this domain. Either way, Pauwels (2016: 95–96) points out that when private schools consider the L1-HL of a language community, the programs usually focus only temporarily on bilingualism. Their aim is to prepare the students for linguistic assimilation towards L1-ML. However, in-group children often go to mainstream schools, where they only communicate in the majority language anyway.

On the other hand, the church is an important meeting place for religious (minority) groups. The Helvetians have always been devout Catholics, and therefore they built their own church, and some of them still believe their harvest depends

[20]High German courses were offered in the 1990s and have again been introduced since 2015. However, these efforts are only moderately fruitful and, in my opinion, are not leading to a language revival in Helvetia.

on the good will of Saint Nicholas. Until the ban on foreign languages, the mass was said in High German. To this day, the Helvetians have maintained their tradition of exchanging greetings in front of the church after the official part of the service. However, what has changed is the language: the discussions have shifted from Swiss German to "regional" Portuguese – with very few interferences like *Giotä Sunnti* ('Have a good Sunday').

4 Factors that can promote LS

> Why is it that one minority group assimilates and its language dies, while another one maintains its linguistic and cultural identity? (Bradley 2002 cited in Pauwels 2016: 58)

Most studies on LS have repeatedly focused on identifying causes and factors which can promote or slow down the LS process. On this basis, scholars have tried to generate a *unique set of factors* that make LS predictable within every language community. However, certain factors may achieve differential effects, even in very similar contact situations. Kloss (1966) noticed this early and suggested a typology in which he not only offered a set of *clear-cut* factors (which clearly promote LM), but also *ambivalent* factors (which can promote LM *and* LS). These ambivalent factors are:

- linguistic attitude:[21] speakers with negative feelings towards their L1-HL tend towards LS;
- educational level: speakers with little or no education tend towards LM, which can be ascribed to the fact that their social network is often smaller and more limited to in-group contacts, while a speaker with a higher degree may work outside the community and therefore has more frequent contact with the majority;
- linguistic and cultural similarity: contact languages from the same language family may or may not tend toward LS, depending on whether the desire for assimilation or differentiation is greater;
- numerical strength of the group: language communities with a smaller number of L1-HL speaker tend to be more LS oriented, because they have little common routine;

[21] *Linguistic attitudes* describe a positive or negative evaluation through social status of a language or variety in contact.

- other socio-cultural characteristics such as *role of the family* (if an L1-HL is not used anymore for communication within a family – in other words, low *speech capital* – and is no longer *transmitted* to the next generation, the tendency is towards LS).

Fishman (1972) presented his domain analysis for speech communities. Each of these contains domain-specific factors with regard to *addressee* (to whom a specific language is spoken), *setting* (in which environment a language in contact is used), and *topic* (which subjects promote the language choice) – discussed in greater detail earlier in this section.

Giles et al. (1977) suggested three factors to define a minority group's vitality: *status* (economic, social, socio-historical, and language status), *demography* (distribution and numbers of speakers), and *institutional support* (formal and informal facilities). They explain that minority groups with a higher vitality (*high attitude, high prestige, common routine*, etc.) tend to differentiate themselves from the dominant group, while those with a lower vitality show faster assimilation, and thus a faster LS.

In Gal's (1979) pioneering study, she considered social causes (6) such as *urbanization* (LS often takes longer in rural areas than in cities), *industrialization* (new and better qualified jobs, achievable e.g. through higher education, can also lead to LS), *loss of isolation* (once rural regions have been taken over by political power, LS progresses), and different *social and communicative networks* that can influence language use and language choice. Dorian (1980) adds *migration*, *mobility of people* (the progress of means of transport and communication makes people much more flexible and enables them to move within a short time to another linguistic environment), and *community size* (see *numerical strength of the group* in Kloss (1966) to the list of factors pushing LS.

Smolicz's (1980) core-value theory states that *symbolic group values* – for instance language attitude and prestige, family cohesion, and religious and cultural unity – have a significant influence on LMLS and can thus convey a different identity.[22] For example, if the L1-HL is handled as a *core-value* within a language

[22] *Identity* is a term very difficult to define because it is dynamic and changeable. It stands for, among other things, a correlation between "being me" and "belonging to the group". Every human being has different "identities" which predominate depending on the situation or the people with whom one is interacting. Within language contact research, ethnic/national (group membership, e.g. based on physical, religious or social factors), social (e.g. social stratification), geographical (e.g. language and dialect) and contextual (e.g. secret languages) identities can be relevant (Riehl 2014: 172–173).

community, LM is more likely. In contrast, a negatively assessed heritage language of a single speaker (i.e. attitude) or the majority (i.e. prestige) makes LS more likely.

In more recent case studies and theoretical literature, further factors in analyzing LS stages are proposed (see e.g. Lutz 2006, Ortman & Stevens 2008, Böhm 2010, Jagodic 2011, Ostler 2011, Sağlamel 2013, Heinrich 2015, Pauwels 2016, Perez 2016, Puthuval 2017, van Rijk 2017, and Karnopp forthcoming). These include:

- age: in minority communities older people tend to be bilingual, while younger people sometimes hardly understand or speak the L1-HL;
- gender: gender roles in the society (see Section 3);
- language transmission: if an L1-HL is not passed on to the next generation, younger people no longer speak the heritage language, which provokes LS;
- religion: if in a bilingual colony the sermon is delivered in L1-ML, it is more likely that the majority language will be maintained in conversations after the church service (see Section 3);
- marital status: exogamy usually leads to LS;
- linguistic, social and ethnic identity: identification with a group often supports assimilation, which can promote LS or LM, depending on the situation;
- language prestige: if a bilingual language community has a greater appreciation for the L1-ML, LS is foreseeable;
- literacy: if a contact language is not read or written, there is also a tendency toward LS;
- media:[23] low medial contact with the L1-HL can cause LS.

Holmes (2013) proposes a classification into economic, political, institutional, demographic, attitudinal, educational and socio-cultural factors. For her, these categories are the ones that can be held responsible for the speed of LS within a bilingual community.

[23] By the term *media* I mean not only written sources (newspapers, magazines, etc.), but also digital media such as television and, above all, the internet, computers, smartphones and tablets, which nowadays make contact with the home country easier and more accessible.

As already mentioned above, my current research (Karnopp forthcoming) looks at the language contact situation of the Swiss colony Helvetia in São Paulo, Brazil. Since its foundation in 1888, the *language usage patterns* within the colony have undergone some fundamental changes (see also Section 3). Initially Helvetia was a *language island* and therefore linguistically quite well isolated and shielded. The everyday language was the L1-HL – a Swiss German dialect from the canton of Obwalden – and when communication with the out-group was required, a translator was called in. After the First World War, the colony's own school had to hire Portuguese teachers and introduce the Portuguese language and other subjects related to Brazil like history and geography. Most of the Helvetians slowly became bilingual and could then communicate with the out-group (*outside diglossia*). At the start of the Second World War, all foreign languages were banned in Brazil and everyone who continued to use them risked a fine or even arrest. These circumstances then led to *inner diglossia*, which henceforth favored LS in all domains within the colony. Today only a few of the oldest generation surveyed still speak and understand the old Swiss German dialect – often with a slight accent or interferences from Portuguese (see Section 3) – and with this advanced linguistic assimilation to the Brazilian out-group LS reached its *morbid endpoint* there.

In order to illustrate more precisely which major factors led to this outcome within the Swiss colony in São Paulo, I defined fourteen main social and individual factors on the basis of the proposed social model (see Figure 2):

At the micro level Ⓐ: (1) rapid decrease of L1-HL usage in *all domains* – today the old Swiss German dialect has, even in the *home domain*, a very low *common routine*, (2) *growing language diffusion* among young Helvetians, who would rather learn Spanish or English than High German or the dialect of their ancestors, (3) *low linguistic attitudes and values* toward their heritage language – because it is no longer needed for communication within the community and therefore considered useless.

At the meso level Ⓑ: (4) *lack in transmitting* the L1-HL after the Second World War, (5) *small group size* which is still decreasing today, (6) *increased exogamy*, among other things to avoid hereditary diseases, (7) *little contact with the homeland* because the Swiss relatives rarely speak Portuguese and fewer than 30 Helvetians speak Swiss German or High German.

At the macro level ©: (8) *length of stay since arrival*, because the degree of attachment to Switzerland tended to diminish due to little contact with the

homeland (7) and *low medial contact*, (9) *low geographical concentration* due to resettlement to neighboring bigger cities, which offered more economic opportunities and security, (10) *industrialization* and *career change* away from the peasant lifestyle, (11) lack of *isolation*, especially after the Second World War, due to *political pressure*, (12) *no institutional support* of the L1-HL, (13) *no official written standard*[24] is available for the heritage dialect to date – neither in Switzerland nor in Brazil –, (14) *low language prestige* because older bilinguals often have a (slight) accent probably caused by language contact, and this is often criticized by younger Helvetians and the out-group.

To conclude, I would like to discuss in more detail the factor that is currently considered one of the main causes leading to LS: *language diffusion*. Globalization and the resulting convergence of languages has been increasingly discussed in recent years. Although heritage languages with a larger population can be supported by the language policy of a given region/country, their use in many migrant settings is diminishing. As I have shown above, in some cases, mostly older people continue to speak a heritage language or are at least *semi-speakers* (Dorian 1980), while younger people often have no opportunity to learn it due to insufficient preservation, transmission, institutional support, or desire to ensure revival. Consequently, what can happen is that younger migrants learn other languages – apart from the L1-ML– which, for instance, can help them in economic terms (Holmes 2013). In this regard, India, Pakistan and China show the growing importance of English as a world language. In these countries, speaking English generally increases chances of financial security. Only with competence in this *lingua franca* is it possible to obtain a high rank in the business world, where English determines all financial activities. In contrast to this, Nawaz et al. (2012: 74) explain that in India the less prestigious Punjabi does not guarantee any financial security and is associated with the low and uneducated majority. Lastly, a high bilingualism rate, even if applied in clearly different *domains*, can cause language contact phenomena such as accommodation (see Chapter 2) or code-switching (see Chapter 2). If learning second languages other than the heritage language becomes more important within a bilingual group, individual factors such as attitude, identity, language loyalty,[25] and consequently language prestige also come into play. For example:

[24] Since the standard language in German-speaking Switzerland is High German, it is the language taught in school and used in official contexts (*medial diglossia*, see Glaser (2014)). Moreover, a universal grammar for Swiss German dialects does not exist because there is a dialect continuum.

[25] *Language loyalty* is a term used to describe a speaker's (conscious or unconscious) relationship with her or his mother tongue.

> They [i.e. speakers of a minority language – AK] may feel shame when other people hear their language. They may believe that they can only know one language at a time. They may feel that the national language is the best language for expressing patriotism, the best way to get a job, the best chance at improving their children's future. (SIL 2022)

Lastly, and to return to my current research, even if the Helvetians appreciate their ancestors and their efforts, their L1-HL will probably not experience a revival there because it has lost its vitality and its social network. The Swiss dialect is still considered important for cultural events such as yodeling, but useless in terms of everyday language use, and therefore largely irrelevant within the colony. Consequently, the L1-HL no longer possesses importance as a *core-value* in Helvetia, which is why the LS process will be completed soon.

5 Discussion

From what we have seen so far, it emerges not only that languages are "alive", but also that every language contact situation is *dynamic* and thus *different*. In the scenario of *ongoing* LS, an individual speaker, a group or a whole language community *can choose* between an L1-HL and an L1-ML, although this usually happens unconsciously. Buda (1992: para. 8) confirms this by arguing that "[t]he phenomenon of language shift takes place out of sight and out of mind". RLS, on the other hand, certainly happens much more consciously, since it relies on the *will* of individuals, and of the whole language group, to reintegrate the heritage language into their *social network* for specific purposes (see Figure 1).

LS can also happen when more than just two languages are in contact. In similar settings, Perez (2016) observed that the shift commonly goes towards one of the more prestigious languages. Consequently the *prestige*-factor is certainly one of the important determinants with regard to LMLS. However, in her study of the language contact situation in the Anglo-Paraguayan community New Australia, different circumstances led to the fact that the population did not shift to Spanish, a global language, but rather chose to adopt the indigenous language Guarani.

This chapter highlights the need for approaches, models and methods that can be adapted to exceptional and constantly changing settings, while considering both *inter-* and *intra*group variation. However, it is important to acknowledge that these methodological choices often involve different research goals at the individual, group, and societal levels (see Ⓐ–© in Figure 2). With the inclusion

of my current research, I wish to reaffirm the fact that the dynamics influencing individual and social changes can be very different in each language contact situation. Therefore the tools that need to be developed for the study of LMLS have to be *hybridized*. Ideally, this would be done by designing a framework that includes a universally applicable *continuum*, from which every researcher would take only what they need for their research goal. The right path to designing this framework has already been taken by recognizing that there are *no specific factors* that can be applied to all LMLS situations, because some factors may or may not promote different language-choice patterns. Now it is only a matter of implementation.

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Chapter 5

Contact languages

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This chapter gives an overview of different processes of contact-induced language change that lead to the emergence of new languages. The principal focus lies on the emergence of pidgin and creole varieties. The first section outlines the most prominent theoretical approaches that have guided the field since the early 20th century, showing that very different approaches to contact languages have been proposed, and that only a combination of them may account for all individual cases. The next section focuses on the grammatical processes involved in contact-induced grammaticalization, often referred to as "creolization", and points out that processes of simplification and complexification as well as calquing happen on all levels of grammar. The last part lists the factors that determine the emergence of new languages. They include a wide range of factors, from psycholinguistic conditions of incomplete L2 acquisition to the sociocultural setting. The chapter ends by claiming that within the field of contact linguistics, the study of the emergence of new languages may be the most interdisciplinary one.

1 Introduction

The present chapter outlines the processes triggered by intense and prolonged contact between speakers of different, and usually unrelated, languages that ultimately gives birth to new languages. Newly emerged contact languages can be found all around the globe. Most of the contact languages known today have emerged over the past five centuries as a consequence of the spread of colonizing nations into new territories. They are therefore based on European colonizer languages, though non-Indo-European-lexified contact languages also exist, such as those based on Bantu in Southern Africa (Michaelis et al. 2013). Mesthrie (2017) broadly distinguishes between two different classes of contact languages: koinés,

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or leveled dialects, on the one hand, and pidgins and creoles, on the other. The former arise in colonization settlements involving indentured work where larger and linguistically rather homogeneous communities transplant and restructure their related varieties into a new one. The latter usually emerge when speakers of different languages come into contact and need to find a common code, which often occurred in contexts of slavery or trade. While the former are described in Chapters 2 and 6, the latter are the topic of the present chapter.

The interdisciplinary study of contact languages is a rather new field within linguistics. Until the late 19th century, most linguists studied standard languages from a philological perspective. They saw languages as deteriorating in terms of quality and purity, while only standard forms were considered worthy of retention and study. The pioneer to first look at non-standard varieties was the Austrian Hugo Schuchardt. He noticed that travelers in different corners of the Portuguese-speaking world observed similar non-standard language patterns and sent out questionnaires to inquire about these patterns. His revolutionary interest in contact varieties induced other linguists to pay more attention to the processes triggered by language contact, yet the decades to follow did not bring much innovation to the field. Given the mainly oral character of contact languages and their commonly rather low social status, the first approaches to these language varieties were cautious and descriptive only, and the documentation was slow. In fact, to date the documentation of creole varieties is difficult due to their social marginalization and lack of written records (cf. Garrett 2006).

Contact languages emerge in a wide range of different sociolinguistic contexts with a myriad of different combinations of languages involved. The processes at stake and the linguistic outcome differ from case to case. As a result of this diversity, no unanimously acknowledged typological definition of a pidgin or a creole has so far been proposed, and certain scholars (e.g. Mufwene 2008b) hold that creolization is, in fact, an exclusively social process. In general terms, a pidgin language can be defined as a limited code that has no native speakers because it results from the communication between speakers of different languages in one specific domain only, such as trade. It usually contains lexical elements of all the languages involved, and it is lexically and morphologically limited to the needs of the speakers in this one specific domain. The TMA (Tense-Mood-Aspect) system, for instance, is often based on a low number of individual and invariant markers stemming from adverbs present in any of the involved languages, and the use of prepositions or morphological processes, such as reduplication, is low (Bakker 2008).

As opposed to such reduced codes, creoles are fully developed languages. They are fully functional for their speech community within their respective context

and acquired natively by community members. In many cases, creoles develop out of pidgins as their new native speakers expand them structurally and lexically. Nigerian pidgin, for example, was originally a pidgin and has now evolved into a "pidgincreole" with millions of speakers (Bakker 2008). This pattern, however, does not always apply: some creoles are said to have developed in the opposite direction, i.e. they have become more different from the lexifier over time (Chaudenson et al. 2001). Structurally, creoles display a vast array of different features. This makes it difficult to provide a universal definition. In general, they are rather isolating languages that make use of grammaticalized TMA markers rather than affixation, and they mostly have an SVO word order. The main proportion of their lexicon stems from the lexifier language, while grammatical structures have resulted from different origins and processes of language change (Bakker 2008, Bartens 2013).

In fact, the endeavor of finding a universally applicable synchronic definition of creoles continues to challenge linguists. They seek to classify contact languages on the basis of a feature-based typological comparison. McWhorter (1998, 2005) proposed the "prototypical creole" to be distinguishable from non-creoles on the basis of three coexisting features, namely 1) the lack of inflectional affixation, 2) the lack of tonal distinctions, and 3) the lack of non-compositional derivation. McWhorter (2005: 5) holds that these features are present in all creoles because they are "the world's newest languages" as opposed to "older" languages that have evolved over several millennia and had the time to develop combinations of these features. Along the same lines, Bakker et al. (2013) crystallized four features that seem to set creole languages apart, and Daval-Markussen (2014: 14), in his comparison of creoles with non-creoles proposes 1) an indefinite article based on "one", 2) no tense-aspect inflection, 3) the presence of a negative particle, and 4) the presence of possessive structures based on "have" as the typical creole features. His focus, however, lies on English-based creoles.

Given this structural diversity across creole languages and the unresolved challenge of defining them synchronically, certain linguists claim that it is their social history of language contact, rather than a set of structural features, that defines creole languages as such (cf. Mufwene 2000, Chaudenson et al. 2001, Mufwene 2001, De Graff 2005, Mufwene 2008b).

Bakker (Bakker 2017: 15), however, specifies that "a creole is in principle a language associated with certain sociohistorical events, but if the linguistic structures after such events do not conform to ideas about what a creole language is supposed to be like, we do not call a language a creole". A synchronic typological definition of creoles is thus needed. Yet, as Section 2 will show, the definition, the classification, and at times even the emergence of creoles are far from resolved.

The aim of this chapter is to provide an overview of current trends in the field of creolistics, and to point out their importance within the discipline of contact linguistics. I will first give an overview of the theoretical and methodological approaches to these varieties and present proposals for a universal definition of creole languages in Section 2. In Section 3, I will look at patterns of change and how they have been explained. Section 4 describes the determining linguistic and extralinguistic factors, while the discussion in Section 5 critically looks at possible future directions the field may take.

2 Approaches, models, and methods

The fact that similar features are attested across different contact varieties despite the typological diversity among their input languages is intriguing. Among these similarities are the three general typological features proposed by McWhorter (1998) – see above, in addition to other, more specific ones, such as the presence of independent-locative and TMA markers. It has been argued that these shared features are the result of basic varieties spreading in the course of European colonization. McWhorter's (2000) Afrogenesis Hypothesis, for instance, claims that all Atlantic creoles have one single origin on the West African coast where basic pidgins used by slave traders provided the structural basis for all the future creoles in the region. With regard to English-lexifier creoles, such as West African and Caribbean varieties, he bases his argument on six parallel features found in many Atlantic varieties of English, and he argues that the origin of that basic code was the Cormantin trade fort in Ghana from where its speakers were shipped into the New World. Among these six features is the locative copula *de*, derived from English *there*, which is attested in numerous English-lexifier creoles between Nigeria and Belize. Huber (1999a), however, doubts that the Ghanaian coast was the cradle of Atlantic English-based creoles and suggests a locale in the New World as the point of departure of such an ancestor variety. Along the same lines, Baker (1999) proposes an "embryonic variety" of English to have spread from St Kitts in the Lesser Antilles into the wider region. West African English-lexifier creoles are also claimed to constitute a linguistic area, and their shared structures stem from both a common Krio substrate as well as similar adstrate influences (Yakpo 2017).

Comparable claims of diffusion were also raised about Iberian-lexified contact varieties. Ferraz (1987) argued in favor of the relatedness of the Portuguese-based Gulf of Guinea creoles due to a common origin, and more recently, Hagemeijer (2011) supported Ferraz' assumption claiming that a basic variety spread from

the central administration in São Tomé to other locales in the Gulf of Guinea archipelago. With a wider, cross-Atlantic focus, Jacobs (2009) argues in favor of a Capeverdean origin of Papiamentu on the basis of an analysis of the lexicon; and in fact, Capeverdean creole also seems to have provided some of the core vocabulary of English-lexified Saramaccan in Suriname and Guinea-Bissau Creole Portuguese (Jacobs & Quint 2016). Mello (1996) and Lipski (2005: 29) assume that Brazilian Vernacular Portuguese is likely to have a reduced Portuguese-based code as a substrate that was used in the pan-Atlantic slave trade. And while Lucchesi et al. (2009) contradict this claim holding that creoloid varieties of Afro-Portuguese mushroomed individually in different locales of Brazil, Perez (2015) rather follows the former hypothesis proposing that such a basic contact variety of Portuguese may have been one of the substrates to Afro-Yungueño Spanish spoken in as remote a location as the Bolivian Andes. This shows that the Atlantic, as a linguistic area, provides intriguing evidence to assume the diffusion of stable features over the past five centuries. The particular linguistic outcome in each location, however, differs and depends on the individual history of, and input to, the contact language.

As opposed to such claims of diffusion, the universalist approach proposes that certain patterns found in most creoles are universally human and thus the result of universal processes of language evolution. Bickerton's (1981) seminal *Language Bioprogram Hypothesis* claimed that universal, i.e. innate, processes of language acquisition are at stake in the evolution of pidgins and creole languages. His argument is that the limited input the children receive from their pidgin-speaking parents needs to be expanded, and this expansion follows universal psycholinguistic patterns. This explains, according to Bickerton, why many creoles typically have twelve diagnostic features in common. Even if these features have been declared to be insufficiently diagnostic and Bickerton's Language Bioprogram Hypothesis is rarely adduced in the debates around creole genesis today, it did significantly determine the directions of the field. Also McWhorter (1995) and Parkvall (2000), among others, argue that creoles have emerged from basic pidgins that were expanded by their first generations of native speakers according to universal parameters.

This comparative approach has been fostered by elaborate feature sets that have been made available for comparative studies. Among them, the collection of morphosyntactic structures provided by Holm & Patrick (2007) was pioneering as it compared creole structures across the Atlantic and the Pacific. Their work laid the foundation for the *Atlas of Pidgin and Creole Structures* (APiCS, Michaelis et al. 2013), which describes 130 features in 76 contact languages. This

recent availability of large comparative data sets (also the World Atlas of Language Structures, Dryer & Haspelmath 2013) thanks to documentational efforts, added to the use of computational methods, has made large-scale comparative studies to measure the relative typological distance between varieties possible. Bakker et al. (2013) compared features of 188 languages (153 non-creoles, 34 pidgins and creoles, and the artificial language Esperanto) in a phylogenetic Neighbornet Splitstree diagram. It visualizes how languages cluster according to their typological similarities. They found that creoles cluster as a group, which they take as evidence for seeing creoles as representing their their own typological class, rather than seeing them as an offspring of their lexifiers. They conclude "that creoles (and pidgins, for that matter) are typologically distinct from the languages of the world" (Bakker et al. 2013: 39).

These studies, however, have received considerable resistance. Fon Sing (2017) reevaluates the study by Bakker et al. (2013) and concludes that, depending on the selection of features, creoles do not necessarily cluster. Blasi et al. (2017) hold that overall, European lexifier structures and West African substrate structures are transmitted "robustly" in contact settings, thus suggesting that a previous pidgin state in their history is unlikely, while the transmission of structures existing in the input varieties is stronger. This goes against seeing creole languages as constituting a language class of their own, and it is in line with earlier claims seeing creoles as the continuation of normal processes of language change that all languages undergo (e.g. Mufwene 2008b).

Still, the phylogenetic quantitative comparison of varieties has contributed new and useful insights on the degree of creolization that certain varieties undergo. This, in turn, is useful to determine how languages can be classified either as creoles or dialects of their lexifiers. Perez et al. (2017) compared 24 postcolonial dialects of Spanish, standard Spanish, and contact varieties of Spanish on the basis of 72 features with the goal of classifying Afro-Hispanic varieties. The typological status of Afro-Hispanic varieties as either dialects of Spanish, creoles, or "semi-creoles" (cf. Holm 2004) is still subject to debates, and the authors therefore aimed to determine where these varieties would appear in a Splitstree diagram. The results showed that creoles and dialects of Spanish cluster on the two opposite ends of the diagram, suggesting maximal typological difference between them, while Afro-Hispanic varieties indeed appear somewhere in-between these two clusters. The authors hence conclude that the history of intense language contact is reflected in the typological profile and becomes visible in the Splitstree diagram. Along the same lines, Perez (2017) assesses the status of Afro-Yungueño, an under-researched creoloid variety of Spanish spoken in the Bolivian highlands whose typological status had not yet been determined

unanimously (cf. Perez et al. 2017). This study compares 60 features from APiCS, WALS, and Spanish and Portuguese dialectology in 21 varieties, i.e. Iberoromance-lexified creoles, contact varieties of Spanish and Portuguese, as well as standard Spanish and Portuguese. The goal is to better understand how closely related or distant Afro-Yungueño is from other related varieties, and whether it rather belongs to the creole type or not. Figure 1 shows that that Afro-Yungueño appears in the cluster of creoles on one end, while dialects and contact varieties of Spanish and Portuguese cluster at the opposite end of the diagram. This leads to the conclusion that Afro-Yungueño is typologically as distant from its lexifier as other creoles and should thus be classified as a creole. In general, these feature-based analyses and large-scale comparisons of creole languages with non-creole languages are useful to better understand the typological profile that defines creoles as such.

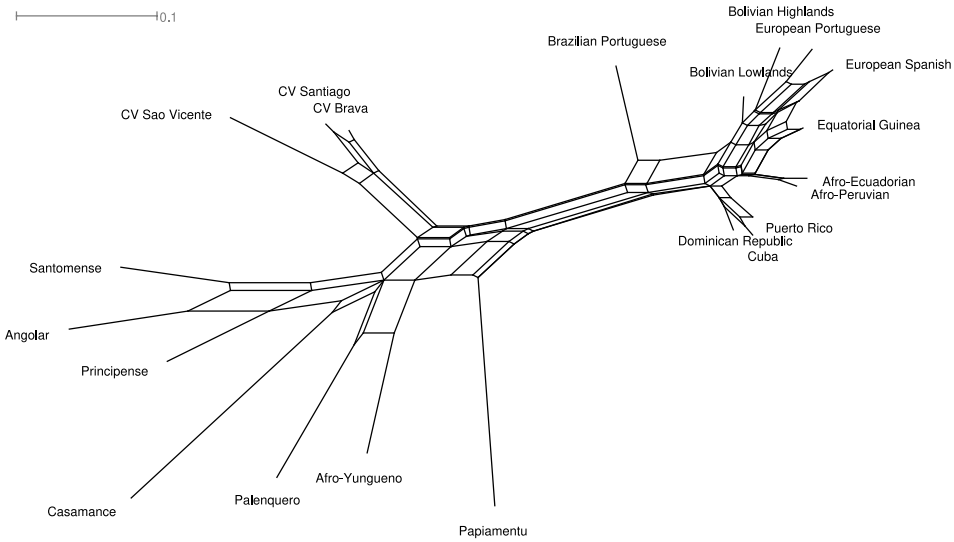

Figure 1: Comparison of Spanish and Portuguese varieties and contact languages on the basis of 60 features

Given that creoles are highly contextualized languages and intimately influenced by the ecology in which they emerge (Jourdan 2008), these large-scale comparisons still heavily rely on in-depth and ethnographically informed data sets.

One of the shortcomings of these comparative studies is that they suggest homogeneous varieties. There is, however, considerable variation found in individual speakers, which challenges the description and classification of creoles. In

most Caribbean societies, for instance, basilectal creoles coexist with their same-lexifier acrolectal standard variety, and speakers switch between the basilect and the acrolect. This situation has provided the foundation for claims holding that speakers and their language use can be located on a continuum between the creole on one end and the acrolect on the other. This model is called the (post)creole continuum (cf. DeCamp 1971). This model was tested on different varieties in a variationist way; Patrick's (1999) variationist study, for instance, explains that speakers are more likely to display the simultaneous use of certain Jamaican Creole features together with Jamaican English features depending on their level of schooling and/or professional status. The presence or absence of creole features in a bilingual individual's speech is thus structured and predictable, which he takes as evidence in favor of such a continuum existing not only in society, but also within individual speakers. Studies like Patrick (1999) also show how useful variationist approaches to creoles are, particularly since creole speakers often display a particularly high level of variation.

Others, however, reject the continuum approach and hold that Caribbean countries rather represent diglossic societies (cf. Ferguson 1959), since the languages involved have different social statuses and fulfill different functions. In these societies, the creoles represent the low variety L, while their superstrate or acrolect – usually the lexifier – represents the high variety H. Full access to the H variety is usually restricted to members of the upper classes (cf. Winford 1985). Speakers thus switch between languages, rather than moving along a continuum of one and the same language between the acrolect and basilect. Devonish (2003) expands the original definition of diglossic societies to what he defines as cases of "conquest diglossia", because a non-native variety is imposed forcefully. Winford (1985) claims that Caribbean creoles and their coexisting standard languages belong to "two conflicting sets of underlying values", because in addition to them being used in different contexts, the values attached to each code are highly controversial. On the one hand, the creoles are still seen as inferior and uncivilized codes, and sometimes even as not being legitimate languages, i.e. they are of low prestige in their respective societies (cf. Rickford & Traugott 1985, Patrick 2008, Kouwenberg et al. 2011). On the other, creoles as the vernaculars spoken by the majority of the population have also been argued to be of covert prestige, because they have a "high affective or solidarity value" (Rickford & Traugott 1985: 259). This means that in formal contexts, in which the use of a standard language may seem more appropriate, creoles can have an "anti-formal effect" that is positively valued (Richard 1996). This was also reported in analyses of style shifts among educated speakers of Jamaican creole and English, for instance, who make use of the two codes as a subtle narrative strategy, e.g. in direct speech, as well as to

express group allegiance (Deuber 2009; cf. also Patrick 2008 and for email data, see Hinrichs 2006).

In fact, LePage & Tabouret-Keller (1985), in their pioneering study on language and identity, claimed that language choice is always socially marked, and that the preference for one language over the other, especially that of a creole over its more prestigious lexifier, constitutes an "act of identity". They argue that language "has the extra dimension in that we can symbolize in a coded way all the other concepts which we use to define ourselves and our society" (LePage & Tabouret-Keller 1985: 247-248). In multilingual societies, such as West Africa (Yakpo 2017) or the Philippines (Lesho & Sippola 2013), however, the case may again be different, since the creole may even be of higher status, as is the case with Chabacano in the Philippines, or the creole may be the only language speakers of different linguistic backgrounds have in common. Creole-speaking societies thus offer fascinating insights into various social aspects of language use, and their study was groundbreaking in many respects and pushed sociolinguistics to explore new areas.

3 Patterns

As seen so far, pidgins and creoles are the result of language change triggered by intense language contact. When a new language emerges as the result of the contact between speakers of languages, each of the input languages plays its own role. The language that is (often forcefully) adopted as the target language is called the lexifier language because it provides most of the lexical material to the new language. The languages originally spoken by first-generation speakers are called substrates, while the languages that coexist alongside the new language are adstrate languages. The superstrate language, finally, is the socially dominant language, which is often the same as the lexifier language, as in Jamaica (Jamaican Creole and English) or Cape Verde (Capeverdean Creole and Portuguese), but it can also be a different language, as in Equatorial Guinea, where Pichi is English-lexified and its superstrate is Spanish (cf. Yakpo 2017). All these languages provide different proportions of grammatical structures to the new language, yet overall, the substrates are most relevant in the early stages when second-language speakers bring in their first-language structures, while adstrates and superstrates determine ongoing change in contact languages after the contact language has been established.

The changes at the root of the emergence of new languages entail grammaticalization patterns that go beyond short-term accommodation, leveling, and new-dialect formation or code-switching (i.e. the adaptation towards the speech of an

interlocutor and other conversation-internal features; see 2), because long-term accommodation may lead to large-scale leveling and the emergence of new forms and norms (cf. e.g. Kerswill 2010). Moreover, while pidgins are always limited to the domain in which they are used, the emergence of a creole, i.e. a new native and fully functional language, often comes along with the loss of the speakers' original L1s and the involved substrate languages (see Chapter 4). Finally, in the case of the movement of larger groups, features and patterns spread geographically from one locale to the next and may come to form a linguistic area (see Chapter 7). The interdisciplinary study of the emergence of new languages, commonly called creolistics, may hence be the discipline that brings all the other branches of language contact together.

Parts of the grammar of a creole are composed of structures that were calqued from the lexifier, the substrate, or an adstrate language, while other structures result from internal processes of innovation and grammaticalization and adult L2 acquisition (Bakker 2008, Bartens 2013). Given the rapid growth of a new system, change in contact languages happens at a high pace. Winford (in Baptista 2017) holds that contact-induced language change is faster than internally-motivated change. The process of the emergence of pidgins and creoles is generally described as creolization. Certain scholars who rather subscribe to the universalist approach holding that creoles stem from pidgins, however, distinguish between pidginization, i.e. the extreme reduction of grammar due to "broken transmission", and creolization, i.e. the subsequent expansion of grammatical structures that comes along with nativization (e.g. Parkvall 2000: 3, 9). The early "reduction" (Bakker 2008) or "simplification" (McWhorter 2011) of a variety to a pidgin includes processes that reduce the morphosyntactic complexity of languages, such as the loss of irregular structures, and an overall trend toward isolating or analytic patterns (Trudgill 2011). This early phase of pidginization is labeled "jargonization" by (Good 2013: 50). Based on the assumption that creoles have developed from early pidgins, creole grammars have been claimed to be overall simpler than non-creole (i.e. older) grammars (McWhorter 2011). Taking this idea as a point of departure, Parkvall (2008) compares the complexity of 155 languages on the basis of 53 features and finds that creoles indeed appear at the end of the complexity scale. He explains that this has to do with their age, because pidgins and expanded pidgins have not yet had the time to develop more complex systems (Parkvall 2008: 283).

It is important to note, however, that by complexity most linguists refer to morphological complexity. On other levels, such as phonology, creoles tend to become more complex than their lexifiers. Perez & Zipp (2019) show that unusual voice patterns, such as breathy voice to convey pragmatic meaning, can emerge

in contact scenarios. Processes of creolization thus affect all levels of linguistic structures.

In general terms, and for the sake of simplicity, creolization can be seen as contact-induced grammaticalization that occurs on all linguistic levels to the degree of typologically removing the new language from all the languages that were originally involved. This means that creolization is large-scale grammaticalization that gives birth to a typologically distinct language. Detges (2000) and Bruyn (2008) claim that creolization is a type of language change that is particular to creoles. In many French-based creoles, for example, an independent marker *fini* (from French *finir* 'to finish') is found, and its meaning today includes the reference to time as *completedness* as well as intensification, in addition to the original meaning of the verb 'to bring to an end', as in Mauritian Creole French in Example (1) and in Haitian Creole French in Example (2):

(1) Mauritian Creole French (Detges 2000: 139)
Mon Dié moi *fini* bête
My God 1SG INT stupid
'My God, I'm *completely* stupid!'

(2) Haitian Creole French (Detges 2000: 140)
M *fini* travay-la
1SG COMPL work-DEF
'I *finished* the job.'

Also frequent collocations can result in new uses and meanings of certain items (Detges 2000). In Afro-Yungueño Spanish, for example, *límpyu* (from Spanish *limpio* 'clean') has come to mean 'all', and it can be combined in bi-morphemic constructions, such as *limpyu kosa* 'all things' meaning 'everything'. This item has changed its original meaning due to the frequent collocation of Spanish *todo limpio* 'all clean' in expressions such as *¡Cosechen todo limpio!* 'Harvest all clean!', which carried the meaning of *todo* to *limpio* (Perez 2015: 322).

Heine & Kuteva (2005) describe the processes involved in contact-induced grammaticalization as the process of linguistic transfer, i.e. the mapping of a source-language structure onto a target language: "Broadly speaking, contact-induced influence manifests itself in the transfer of linguistic material from one language to another" (Heine & Kuteva 2005: 2). They specify that the linguistic material involved can be anything from sounds, forms and structures to meanings and combinations thereof. This means that apart from lexical material, also structures can be borrowed (cf. "matter borrowing" versus "pattern borrowing", Matras & Sakel 2007). This may even affect the suprasegmental phonology of

contact varieties, since various creoles, such as English-based Saramaccan spoken in Suriname (Good 2004) and Pichi in Equatorial Guinea (Yakpo 2018) have been shown to be tone languages due to substrate and adstrate influence from West African tone languages. Also Equatoguinean Spanish and Central African French are said to be tonal (Bordal Steien & Yakpo 2020).

This focus on source-language structures being mapped onto the material of the new language is to a certain extent compatible with the relexification argument, which holds that certain creoles are relexified substrate languages. According to this particular argument, Haitian creole basically consists of Fon transferred onto French lexical material (Lefebvre 1993). In a large-scale comparative study of Atlantic creoles of different lexifiers, however, Parkvall (2000) shows that relatively few of the features found in several Atlantic creoles stem from the substrate languages, thus supporting universal processes of pidginization and subsequent creolization to be more relevant than the transmission and calquing of substrate structures.

Still, some linguists contradict this proposal in that "there are no particular linguistic evolutionary processes likely to yield (prototypical) creoles" (Mufwene 2000: 63). Mufwene (2001) and Mufwene & Vigouroux (2017: 80) hold that it is the individual idiolects, and the cooperation and accommodation between speakers, which ensure constant convergence, thus maintaining stability and uniformity of varieties over time. Accordingly, they follow a rather populational-theoretical approach to language (following Croft 2000) in comparing creolization with processes of competition in living organisms that adapt to the environment in which they are spoken. The process of change is thus determined by the ecological conditions, and Mufwene (2008a) provides the example of Latin's evolution into the modern Romance languages to show that creoles are gradually restructured varieties of their lexifiers. This aligns with the claim that creoles are the result of the gradual basilectalization of the lexifier because the speakers of each generation only acquire an already restructured code and restructure it anew, thus moving it further away from the lexifier in every generation (cf. Chaudenson et al. 2001). The process of change, however, not only occurs vertically from generation to generation, but also horizontally since speakers adjust immediately to new environments and settings (Mufwene 2008a: 19, Clements 2018, cf. also Chapter 2). This implies that the outcome of contact-induced language change is determined by the features present in the initial contact scenario as speakers select one feature over the other. According to this view, creoles and other contact varieties should be studied within the discipline of each language family, rather than a language family of its own.

Mixed (or "intertwined") languages are different. While they also resulted from intense language contact, they are, in fact, less of a melting pot than pidgins and creoles. They usually consist of two source languages and maintain etymologically distinct grammatical categories. The best documented mixed languages are Media Lengua spoken in highland Ecuador and Michif in the area of Winnipeg, Canada (Bakker 1997, Muysken 1997). Media Lengua, as an example, mostly uses Spanish lexemes adapted to Quechuan phonology, and its grammar is Quechuan. Quechua is a concatenating language, and the grammatical categories and suffixes are predominantly taken from Quechua. Example 3 illustrates this (Spanish lexemes in italics):

(3) Media Lengua (Muysken 1997: 384)
   a. *Bos*-mu *da*-ni-mi
      You-to give-1-AFF
      'I give (it) to you.'
   b. Kan-mu ku-ni-mi (Quechua)
   c. Te (lo) doy a vos (Spanish)

Mixed languages are thus new languages with two clearly distinguishable lexifiers, and the grammatical structures can be assigned to the respective lexifier, rather than resulting from other processes of contact and change. They do display, however, a certain degree of morphosyntactic simplification (Mazzoli 2021).

4 Factors

As has become clear throughout the foregoing sections, the processes triggered by language contact are manifold, and any material or structure of a language can be affected by language contact. In fact, given the rapid change that contact languages experience, their evolution is never completed, and different factors may weigh in differently at different points in time. In the emergence of new structures, both intra- as well as extra-linguistic factors are relevant.

From a language-internal perspective, whether and how features are adopted and/or incorporated will mainly be determined by factors such as (non)salience and (non)markedness, because in L2 acquisition, regular and non-salient features are generally more readily adopted and learned than irregular and marked ones. In addition, the frequency of use of features determines their persistence. For example, in the diachrony of a contact language there may be different influences at different stages, which produces the emergence of equivalent forms (Baptista

2017). The resulting presence (or absence) of variation will determine the course of language change, i.e. whether a feature will persist or change its function or meaning over time (Mufwene & Vigouroux 2017: 76). Mufwene's (2001) *Founder Principle* holds that the individual languages in contact provide structural features to a feature pool from which speakers draw structures that are in competition with each other. Aboh & Ansaldo (2006: 50) support this argument holding that the feature pool provides the input for the "recombination" of linguistic features in the newly evolving contact language.

Competition is also acknowledged to determine emerging languages on statistical grounds. Bates & MacWhinney (1987) hold that as a result of analogical reasoning in the speakers' minds, the higher frequency of one variant will favor its realization and establishment in the new code. Plag (2011) partially agrees with this approach, yet he also objects that competition of features alone does not explain why certain structures are ultimately chosen, i.e. it does not address possible constraints on the selection and transmission of features. He stresses, and thus goes back to earlier universalist approaches, the role of second-language acquisition, during which the simplification of complex structures is crucial (cf. also Trudgill 2011). L2 acquisition is undoubtedly a determinant factor in the emergence of these languages because most creoles start as L2 varieties spoken by a community whose members do not share a common language other than the lexifier. Their divergent use of the lexifier then gives rise to the emergence of new structures in the creole. According to Plag (2011: 102), "L2 processing [...] provides a principled explanation for feature selection and feature mixing", because many creole features are also found in early interlanguages (i.e. learner varieties) and thus the result of L2 acquisition by mostly adult speakers. Among the features shared by early interlanguages as well as creoles are, among others, the absence (loss) of contextual inflection (e.g. agreement), the presence of possessive pronouns, SVO or SOV sentence structure, or loss/absence of case marking (Plag 2011: 93). Baptista (2016), however, critiques Plag's suggestion – apart from being based on too small a sample – as too simple in that it mostly focuses on the initial stage of creole genesis without being able to account for what happens at later stages. She supports the position that only a combination of all approaches can ultimately account for the striking similarities as well as differences among creole languages (Baptista 2017: 140).

Similarly, the frequency of features has been shown to favor the adoption of features, i.e. the more frequent a certain feature is, the more likely it is to "pass the bottleneck" and be integrated into the newly emerging code (Good 2013). These structures that emerged in the initial phase of contact may then still be found centuries later, such as the calquing of substrate structures (e.g. Heine & Kuteva

2005). Yakpo (2017) further shows that the presence of adstrates and superstrates continues to exert an influence on contact languages due to extensive bi- and multilingualism, thus predicting that creoles are rather likely to either change toward lexifier-structures, or away from them, according to their contact with them. He looks at structures of causatives in West African and Caribbean English-lexifier creoles and shows that they are more likely to change toward the lexifier when adstrate influence is limited and the lexifier and superstrate overlap.

This indicates that extralinguistic factors are at least as important as language-internal factors in processes of language change in creolization. Yet while there is no consensus on how exactly the selection of these features occurs, most linguists agree that linguistic factors alone do not determine the outcome of language contact. Mesthrie (2017) holds that pidgin and creoles mostly share their emergence in contexts of slavery, e.g. plantation settings or maroon communities (i.e. escaped slaves, such as the Saramaccan- and Sranan-speaking communities in Suriname). Mufwene & Vigouroux (2017) list demography, economic power, population structure, types of social interaction, gender, age, and religion as the most relevant social determinants of language change, and they expand this commonly adduced list with the factor of time and space. Arends (2017) shows that the chronology of contact and the interplay of these factors at different points in time will determine the outcome, e.g. in Suriname, the English and Dutch lexifiers of Sranan had different degrees of influence at different points in time. Sessarego (2017) proposes that the legal situation of the enslaved and settler populations had a significant effect on whether creoles are rather likely or unlikely to emerge, and he specifies that in the Spanish colonies, creoles were less likely to emerge because the population was less stratified and legally separated than in other European colonies. Faraclas (2012) argues that the influence of specific agents, such as certain speaker groups and above all women as the primary transmitters of languages as mothers and caretakers, should be considered in particular, in order to better understand their role in the emergence of creole languages.

Winford (cited in Baptista 2017) also advocates such a holistic approach and adds that psycholinguistic constraints, such as those involved in L2 acquisition, must be considered as well. And once the new code is established, its features may again move geographically along with its speakers. Language change is never completed; rather, it continues as the pidgins and creoles become either stable or develop further into individual languages, such as Nigerian Pidgin English which has become a pidgincreole (cf. Bakker 2008), or they may become highly endangered and disappear, such as Afro-Yungueño Spanish (Perez 2015). Extralinguistic factors are thus as important in the emergence and evolution of new languages as linguistic ones.

Even though ecology is so important in many accounts and stressed by most researchers, above all Mufwene, hardly anybody really describes how the ecology determines language structure in detail. Jourdan (2008) explains how social structures may influence linguistic structures. She holds that while change is never predictable, social conditions will shape the use and need of linguistic features, thus determining their evolution. Among these factors are ecological factors, but also ideological ones. For example, Baker's (1999) Off-Target claim ties in here, in which he reminds us that even in L2 acquisition related to pidgin and creole formation, it is important to consider the target language of the speakers in contact. He holds that the target language is rarely the expected acrolect, either because the acrolect is a non-standard variety itself or because speakers may not aspire to master it. Ghanaian Student Pidgin is an interesting case in point: it emerged rather recently as an L2 variety that is still almost exclusively spoken by male university students who are, in fact, competent speakers of Ghanaian English and whose aim is not to speak a near-standard variety (Huber 1999b, Rupp 2013). Mixed languages with their bi-cultural and bilingual origin are also said to mark both in-group and out-group identity in that their speakers do not want to belong to the mainstream culture, while expressing their mixed in-group identity by using a mixed code (Muysken 1997).

The case of Afro-Yungueño Spanish similarly confirms language attitudes to be relevant since hostility between Aymara speakers and Afro-Bolivians precluded the latter from learning Aymara, which in turn enhanced the isolation of Afro-Bolivians and the independent evolution of their language. Perez (2021) argues that Afro-Yungueño Spanish, which went from initial high-contact conditions during the era of slavery to over 200 years of complete isolation, was strongly determined by social factors and issues of identity and resulted in the influence of Aymara being limited to the lexicon without affecting any structural components. And Perez & Zipp (2019) show that voice patterns express grammatical and pragmatic meaning, such as intensification and complicity, and that this behavior seems to have resulted from slavery when workers were not allowed to speak freely. Cases like these suggest that language ideologies and identity issues determine the emergence of new languages just as much as linguistic factors.

To conclude, it is important to note that unless a language ceases to be spoken, language evolution does not stop. The factors outlined here are likely to weigh in differently at different points in time. In addition, every setting is, after all, an individual experience, and the process of change is relatively unpredictable and can only be understood when the social history as well as the composition and structure of the individual speech community is known.

5 Conclusion and outlook

As has become clear, the study of the emergence and evolution of new languages may boil down to being the most all-encompassing discipline within linguistics. With regard to the chapters of the present volume, creolistics ties in with all the related topics. Creolistics nevertheless faces a number of challenges. The study of the evolution of pidgin and creole languages could certainly benefit from looking at accommodation theory and studies, a field that is still rather neglected and will shed light on the earliest stages of creolization as well as the creole continuum. Similarly, the study of areal patterns, not only as diffusion but also as typologically conditioned due to contact, is rarely considered. Exceptions here are approaches that cover an entire region, such as West Africa, which is considered to be a linguistic area as far as its English-lexifier creoles are concerned, since their common origin (mostly in Krio) and similar contact scenarios have resulted in these varieties displaying many parallel structures (Peter & Wolf 2007, Yakpo 2017).

However, as also pointed out by Baptista (2015, 2017), it is important to not just look at the initial stage of creole genesis. Only a look at the entire social history of creole varieties will explain why and when certain features emerge, and how they persist or change over time. This will also allow us to better understand the coexistence of semantically equivalent forms in certain varieties, how variants change, and to what extent both linguistic convergence and divergence occur. For example, demographic changes as communities open up or make contact will change their evolution, as is the case in Accra where Ghanaian Pidgin is coming into more intense contact with Nigerian Pidgin as a result of the increasing migration of Nigerian Pidgin speakers to Ghana (Bonnie & Perez 2019). A better understanding not only of the genesis but also the subsequent evolution of contact languages will certainly enhance our understanding of the emergence of languages in general. The manifold approaches and discussions held in creole studies have substantially contributed to this issue, as creolistics can be considered the discipline that truly builds bridges between linguistics and many other disciplines, such as history, anthropology, politics, psychology, and linguistic typology. Theoretical issues are still far from resolved, yet all individual approaches do contribute a piece to the overall puzzle. The present chapter has shown that creolistics may be the most interdisciplinary of all areas within contact linguistics.

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Chapter 6

Dialect areas and contact dialectology

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Spatial variation of language has been researched qualitatively and quantitatively for at least 150 years by different sub-disciplines of linguistics, each defining differently what dialects and dialect areas are. Linguists agree, however, that the concept of dialect is vague and the extent of a dialect is fuzzy. With contact being a crucial driver of linguistic change at sub-language levels, we attempt to sketch the perspective that contact dialectology and related sub-disciplines can offer on this fuzziness with regard to the spatial variation of dialects and dialect areas. Thus we address contact processes and patterns characterizing individuals, groups, communities, areas and beyond, at temporal scales spanning from mundane contact through generations to deeper time enough for dialects to diverge and disappear.

1 Introduction

In this chapter, we aim to position research on *dialect areas* within the larger field of language contact studies, and we do so at several scales of space and time, corresponding to the fuzzy extents of dialects and their areas. We cover approaches to dialectology that focus on spatial variation, we review processes leading to the emergent patterns of spatial variation, and we detail factors that drive the processes, without claiming to be comprehensive. Several sub-fields of linguistics investigate language varieties pertaining to different social groups, often independent of spatial context. In this chapter we do not discuss sociolects[1] *per se*, but we do consider the social causes of dialect formation.

[1]In our conception, the term dialect is not used for varieties defined by factors other than spatial ones, such as social dialects (cf. Chambers & Trudgill 2004: 7–9).

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Before all else, we review the key terms and concepts that this chapter focuses on. First, we introduce the notion of *dialect area* as the main topic and specify the aims of the chapter. Second, we further explore the terms *dialect* and *dialect continuum*, and third, we establish that notions of dialect contact need to be investigated in dialectology, as they represent the processes at work within and across dialect areas.

1.1 Dialect areas, dialects, and dialect continua

Dialect areas, dialect continua, and dialects are spatially bound sub-systems of languages. Therefore, when examining them, the geographical component is crucial. The spatial structure of linguistic variation follows the first law of geography: "Everything is related to everything else, but near things are more related than distant things" (Tobler 1970: 236), reformulated by Nerbonne & Kleiweg (2007: 154), who also specified *nearness* to be spatial: "Geographically proximate varieties tend to be more similar than distant ones."

Dialect areas are geographical entities in which, essentially, dialects of a language are spoken. Due to the conceptual vagueness of *dialect*, as we will see later, it is equally difficult to define *dialect areas* (Stoeckle 2014: 514–517). All dialects within a dialect area share a number of linguistic features. Whether all these dialects are still mutually intelligible depends on the spatial granularity taken when defining a dialect area. In a very locally defined dialect area, the chance of mutual intelligibility is higher than in a spatially more extensive dialect area comprising more local dialects. The definition of dialect areas in linguistics differs between various sub-fields and their approaches which range from detecting *isoglosses* to aggregating dialectometrical data, or analyzing speakers' perception of areas and their linguistic features.

Dialect areas can be defined at different spatial granularities (e.g., Montgomery & Stoeckle 2013), forming an embedded, hierarchical system similar to landscape names, which, in turn, often lend their names to dialect areas. For example, the Lötschental is a very local dialect area comprising the closely related varieties of a few villages in a remote valley in the Alps. This dialect area lies within the larger dialect area of Walliser German, spoken in a larger system of valleys which are part of the canton of Valais in Switzerland. This dialect area is, in turn, part of the Highest Alemannic dialect area, located in the Swiss cantons of Fribourg and Valais, parts of the canton of Berne and other alpine areas.

In numerous human phenomena, it is the density of contact within and across areas that shapes the spatial variation (cf. Hägerstrand 1952). The same holds true for dialects and dialect areas: the emergent spatial patterns present in the

investigation of dialects also point towards the crucial role of contact. While these patterns can be observed at the collective level, they result from long-term local interactions between individuals (cf. Beckner et al. 2009). Communication potential and self-identification are both important factors for the processes as well as outcomes of dialect contact, and they are directly reflected in the spatial distribution of linguistic features. Spatial proximity, in turn, is essential for intensive communication and for the formation of common identity. Besides, social networks and a myriad of factors underlie linguistic interactions that form the dialect.

Given that linguistic patterns are not preordained but emergent, resulting from human social interactions at several levels, the spatial patterns we find in the distribution of dialectal variation reflect dynamic changes in the use of varieties (detailed in Section 3.1), ontogenetic developments in child language acquisition, diachronic changes, political, societal and cultural factors, among others.

If dialect areas comprise dialects, we need to clarify what is a dialect. Books could be filled with attempts to define a dialect and to distinguish dialects from languages. The boundary between a dialect and a language can be fuzzy, and varieties can change their perceived or officially recognized status from dialect to language and vice versa (Auer & Hinskens 1996: 12). In this chapter, we cannot offer a complete overview of this terminological issue, but we need to contextualize our notion of *dialect*. We do not regard *every* variety of a language as a dialect, as is often done in the Anglo-American tradition. Instead, we follow the continental European tradition: we define a dialect as a variety spoken at a geographically defined place (Berruto 2010: 230). Remaining in the European tradition, dialects are often characterized as a linguistic variety that has not undergone standardization. It is mainly a spoken variety (mostly in informal situations) with a non-standardized textual form which might show a wide variation when written.

As mentioned, the spatial extent of such a geographically bound variety can be variable. The spatial granularity at which researchers define dialects corresponds to the structural similarity and/or phylogenetical relatedness of the varieties. Revisiting the example above, if we consider all Highest Alemannic varieties to be one dialect, we would see a lower number of shared features across this particular linguistic system than we might find if we consider the varieties spoken in the valley of Lötschental to form one dialect.[2]

[2]The problem of geographical demarcation which becomes apparent in this example is discussed in detail by Lameli (2013: 1–8) under the term *areal-typological complexity* (Germ.: *arealtypologische Komplexität*).

Dialects often form a *continuum* in which differences between neighboring dialects might be small, while distant dialects might no longer be mutually intelligible (cf. Chambers & Trudgill 2004: 5–7).[3] Such a continuum features boundaries between individual dialect areas that are fuzzy, often similar to a gradual transition (Pickl 2016: 5). One such example is the West Germanic varieties spoken between the coast of the North Sea and the Alps (Chambers & Trudgill 2004: 5–7).[4] The differences between dialects are cumulative, as Bloomfield (1933: 51) already noted: "The difference from place to place is small, but, as one travels in any one direction, the differences accumulate, until speakers, say from opposite ends of the country, cannot understand each other, although there is no sharp line of linguistic demarcation between the places where they live." These degrees of cumulative differentiation are often the basis for distinguishing dialect areas within a dialect continuum in a quantitative manner, e.g., in dialectometry.

1.2 Dialect areas and contact linguistics

Dialect contact, that is, communication between speakers of different dialects of a specific language, has a crucial role in shaping areal patterns found in dialect continua because it may cause diffusion of features within and across dialect areas. However, the effects of a high number of shared grammatical features and phylogenetic relatedness, both given between neighboring dialects, are not clear.[5] For instance, structural similarity might take on the role of the facilitator of contact but it can also be the result of contact (Bowern 2013: 417–420). In turn, the intensity of contact depends on the potential for contact, which is higher between certain dialects due to spatial proximity (Thomason & Kaufman 1988: 50; Matras 2007: 31). This spatial proximity is, of course, also a function of speakers' movements. With people becoming more mobile, their contact opportunities also widen, opening new horizons for dialect contact and change.

In dialectology, contact is rather understudied. Traditional dialectology addresses questions about the spatial distribution of linguistic features in dialect areas and, thereby, the characteristics and differences of various dialects. Contact linguistics, especially areal linguistics, on the other hand, often focuses on

[3] Perceptual dialectology emphasizes the role of perceived differences of dialect features as well as perceived dialect boundaries (Niedzielski & Preston 2000, Cramer 2016).

[4] In this particular example, contact occurs across dialects, often termed horizontal contact, and between dialects and various standard varieties, such as Standard German, often termed vertical contact (Auer et al. 2011).

[5] For a discussion about the role of structural compatibility vs. phylogenetic relatedness, see Thomason & Kaufman (1988: chapter 2).

typologically distant and/or phylogenetically non-related languages (for more, see Chapter 7).

Furthermore, when dealing with contact, sociolinguists and dialectologists have typically assumed that contact leads to simplification, while typologists have described the outcomes of contact-induced change as complexification in some cases (Trudgill 2011: 13–23).

In the following sections, we reflect on contact scenarios that are relevant for dialect change, contributing to the spatial variation in dialects. Afterwards, we review the factors essential for understanding dialect contact.

2 Approaches

In this section, we first discuss different approaches within dialectology that focus on geography, that is, the spatial distribution of dialectal features and different ways of detecting and defining dialect areas based on these features. Second, we present approaches that focus on the social aspects of dialect variation and contact, in the spirit of Anglo-American sociolinguistics.

2.1 Geography in focus

In traditional dialectological models (as well as in many modern approaches), geographic space is generally regarded as a physical container in which dialects and languages are situated. According to this approach, the possibility for speakers to move within space, and, thus to be in contact with others, is largely determined by geographic conditions.

Usually, the objects of study are *base dialects*, commonly understood as "the most ancient, rural, conservative dialects" (Auer 2005: 7–8). Thinking in terms of base dialects often means that local speech communities are viewed as homogeneous systems, following the "one place — one variety" principle (Stoeckle 2016: 196). Typical research outcomes were meticulous descriptions of the dialects of single locations in the neogrammarian tradition (in German dialectology called *Ortsgrammatik* or *Ortsmonographie*).[6] This meant, however, a lack of a more holistic view of dialect areas. The compilation of dialect atlases addressed this problem, although maps could only represent individual features rather than grammatical systems and their interaction.

[6] Winteler (1876) authored one of the first books of this kind, setting a model for many other monographs. For an overview of dialect descriptions in the neogrammarian tradition, see Murray (2010).

Traditional dialectology aimed to record and document the most archaic and most typical dialectal forms still viable at a location, usually based on information provided by so-called NORMs (non-mobile, older, rural, male speakers) (Chambers & Trudgill 2004: 29). Despite thoroughly documenting the base dialect, descriptions of individual dialects and dialect atlases hardly considered intra- and inter-speaker variation, atlases visualized variation across locations. Subsequently, contact was only considered between locations and not within communities. In these approaches, dialects were conceptualized as homogeneous systems with villages as their loci. Potential contact between these discrete systems could be traced by single features shared between two or more places (although these similarities can be due to shared ancestors in a dialect area).

Communication potential, shaped by the possibility of transportation and its routes, was seen as a precondition for contact. Therefore, topographic factors, such as mountain ranges or rivers, were always given high relevance (see e.g. Paul 1880/1975: 40–41, Pickl et al. 2014: 29–33), in addition to artificial constructs such as political (especially national) borders, former administrative areas, or older inter-tribal borders (cf. Haag 1898: chap. 2, Derungs et al. 2019)

The spatial distribution of linguistic features was often visualized using boundaries, in the case of individual phenomena, isoglosses. They were usually represented as sharp lines on maps, delineating the areas where a certain variant corresponding to a feature is assumed to dominate. In practice, drawing isoglosses usually entails ignoring sites that would render the resulting areas less homogeneous by corresponding to the opposing variant, and thus being located on the "wrong side" of the theoretical line. Technically, these sites are considered outliers. It is understood that such "smoothing" is in the interest of a meaningful interpretation, needed to identify underlying regional linguistic patterns, and is employed by almost all research in dialectology (Grieve 2014: 82). Importantly, however, isoglosses leave room for misinterpretations about the possible gradual nature of the transition between the usage areas of the abutting variants. Francis (1983: 5) seeks confirmation for the sentiment in the linguistic community that such boundaries do "not mark a sharp switch from one word to the other, but the center of a transitional area where one comes to be somewhat favored over the other."

While isoglosses present the geographic distributions of individual phenomena, a central goal in dialectology is to construct dialect areas based on multiple features. In these regards, Lameli (2019: 191–198) distinguishes between *evaluating* and *quantifying* approaches.

In evaluating approaches, dialect data is interpreted, and variants are selected according to their typicality or their significance in the language system. In some

cases, individual, mostly phonological phenomena are considered so important with respect to the structure of a variety that they are used as references for classifications. An example of this would be the division of German dialects into Low, Central and Upper German based on the High German consonant shift (such as *maken* > *machen* 'to do', *dat* > *das* 'the, that', *Appel* > *Apfel* 'apple', from north to south). In other cases, variants are combined and generalized, often resulting in dialectal core areas and transition zones, as can be seen for example in Wiesinger's (1983) famous classification of German dialects.

In quantifying approaches, the areal nature of variation in dialects is investigated through the aggregation of numerous dialect features. In this field of research, which dates back to Séguy (1971) and became popular through the work and different approaches of Goebl (e.g., 1982) and Nerbonne (e.g., 2009), similarity between locations is computed with respect to a large number of features. Although various methods and computational algorithms have been used to determine similarity, the general outcome of these approaches is groupings of locations. The spatial patterns in these groupings can then be interpreted along the approaches of *dialect areas* and *dialect continua* (cf. Heeringa & Nerbonne 2001). The dialect area approach advocates the presence of clear-cut boundaries, and the dialect continuum approach assumes gradual transitions. Similar to dialect variation becoming apparent when aggregating several linguistic features, one can view gradual dialectal variation also at the level of individual linguistic variables (cf. Pickl 2013b).[7]

Even if the usage of isoglosses means a spotlight on boundaries, most quantitative studies on spatial variation in linguistics focus on the internal homogeneity of their groupings and do not explicitly assess the strength of boundaries between them. As Haas (2010: 664) points out, "the linguistic coherence of a region is more important than its boundary." Although *transition zones* are often described and used in dialectology (e.g. Pickl 2013a, Scholz et al. 2016), the concept itself lacks a clear definition and interdialectal transitions themselves have rarely been investigated quantitatively or placed along a gradual scale (Jeszenszky et al. 2018).

Recognizing continua and transition zones in data directly leads to the intuitive interpretation of the "snapshots" of dialectal landscapes, provided by surveys, as clues about possible ongoing changes. The description of areal patterns in dialects is a difficult task not only because of the continuous change in language but also because of the elusive nature of data that can be obtained. Even the most prudent data collections might not be representative of the whole population of interest, and, in turn, the population of interest varies across studies. In

[7] Pickl (2013b) also provides a historical overview of the topic.

addition, the amount of data collected might be too small and it might be biased towards a certain subset of the population (e.g., NORMs, tech-savvy, extroverts, depending on the study), therefore a comparative data analysis across surveys is not always possible.

2.2 Speaker/hearer in focus

While the approaches discussed so far deal with the spatial aspects of dialects and therefore treat dialect contact as contact between varieties related to geographic locations (such as municipalities or regions), approaches influenced by sociolinguistics focus on the speakers and their behaviour. Although the basic idea of dialects as spatially defined varieties is still valid, researchers have come to view dialectal variation as a more complex phenomenon which manifests itself not only between, but also within communities and within a single speaker, influenced by socio-demographic factors (such as age, profession, education, mobility etc.) (cf. Chambers 2002). Consequently, dialect contact is no longer seen as contact between base dialects, but between all types of varieties. Moreover, in most modern societies, substantial contact-induced changes usually do not emerge primarily between dialects, but between dialects and an overarching standard variety.[8]

The traditional focus on base dialects allows for studying contact and change on the horizontal level, that is, between different locations. The sociolinguistic paradigm following Labov's work (e.g., Labov 1966) brought a new, vertical dimension to this research. This paradigm focuses on the variation and contact across social strata, that is, the variation along the dialect-standard axis or between lower and higher prestige varieties. Some of the main benefits of including socio-demographic factors into dialectology were new possibilities for the "study of [language] change in progress" (Bailey 2002: 312). Following the traditional paradigm, it is extremely difficult for dialectal surveys to investigate the same features decades apart. There are examples of studies comparing results of surveys from different time periods such as Schwarz (2015) or Streck (2012) who contrast maps from the *Sprachatlas des Deutschen Reichs* (Wenker 1888–1923) with material from the *Südwestdeutscher Sprachatlas* (Steger et al. 1989) which was collected about ninety years later. However, these examples are rare and therefore, dialectology has limited "ground truth" with good spatial granularity regarding the adoption rate of new forms.

Based on the assumption that language change becomes apparent not only between different points in time but is – on a smaller scale – also observable

[8] Auer (2005) delivers an overview of different dialect/standard constellations in Europe.

between speakers of different generations, different social backgrounds etc. (see Section 4 for a more detailed overview of the different factors), the *apparent-time model* has gained popularity as a surrogate for real-time evidence for capturing change in language (cf. Labov 1963, Bailey et al. 1991, Cukor-Avila & Bailey 2013). The concept behind the apparent-time model is the assumption that the variety used by a certain individual would signal the state of the language that they have acquired at a young age (Labov 1999, Schilling-Estes 2005), as individual vernaculars are supposed to be less liable to change after adolescence (cf. Bailey 2002: 320). Recordings of people born in different times and surveyed in the same study could feed apparent-time analyses, where the temporal depth is projected from the contemporary recorded state. However, since most studies in the research paradigm of sociolinguistics put their focus on the correlation between linguistic variants and social rather than geographic factors, studies typically took place at one location or city. The amalgamation of the two approaches started only in the 1980s, resulting in a field of research named *socio-dialectology*. In German dialectology, Mattheier (1980) introduced pragmatic and societal aspects as integral parts of dialectology. Apparent time evidence minimizes the variation that might arise from differences in sample populations, in elicitation strategies, and in the recording and presentation of data when evidence from an existing data source is compared to data from a new study (Bailey 2002). These properties brought popularity to the model in dialectology (for a review, see Beaman 2020: 64–65).

Unlike the approaches discussed in Section 2.1 that often treat geography as a constant, more recent research seeks to "un-trivialize […] the connection between language and space" and to take speakers' perceptions and their "construction of language spaces through linguistic place-making activities" into account (Auer 2013: 1). The traditional geolinguistic paradigm is therefore criticized for being too deterministic, neglecting important aspects of linguistic reality such as the mobility of speakers, multi-varietal competences of individuals or the choice and systematic use of certain features to create regionalism. Cognitive aspects, such as salience, are not often considered in such studies.

The idea that speakers' awareness plays a central role with respect to the perpetuation or abandonment of linguistic features in contact situations was already put forward in the early 20th century by Shirmunski (1928/1929).

To date, the concept of *salience* is still controversial. One main question is whether salience can be determined objectively or whether it has to be considered a purely subjective category.[9] Labov (1972) distinguishes between different

[9]For a detailed discussion of the subject, see Christen & Ziegler (2014) and the other contributions in the same journal issue.

degrees of awareness and their role in the process of language change, called indicators, markers, and stereotypes. Building on Silverstein's (2003) concept of "indexical order" and combining it with Labov's approach, Johnstone et al. (2006) assume three orders of indexicality (first-, second- and third-order indexicality; cf. Johnstone et al. 2006: 82). In their research in Pittsburgh/USA, they examine how a set of linguistic features which speakers originally were not aware of (first order indexicality) undergoes a transformation, becomes available to speakers' attention and can be linked with locality (second order indexicality). In the last step, these features function as markers of social affiliation, finally becoming constitutive characteristics of the concept of "Pittsburghese" (third order indexicality). This process is called "enregisterment" by the authors (Johnstone et al. 2006: 77).[10]

A closely related field of research that gained popularity through Dennis Preston's work (see Preston 1989, 2005), known under the umbrella term *perceptual dialectology* or *folk dialectology*, focuses on speaker-related factors and the perception of dialects/languages and their variation. Here, to gain a more thorough understanding of the dialectal variation and change, it is necessary to include ideas and beliefs of the speakers – not only with respect to particular features but also regarding the geospatial structuring of the dialects as well as their evaluation. Contributions within the field of perceptual dialectology acknowledge that functioning communication channels may not be the only driving force in dialect change, but that speakers' perceptions and ideas about dialects and dialect boundaries as well as their evaluations play a crucial role (cf. Auer 2004: 160–161, Kristiansen 2009: 172). A commonly used research method is mental mapping, including dialect maps drawn by informants (for an account of the methodology and its application, see Montgomery & Stoeckle 2013). These hand-drawn maps can deliver insights into categorization principles used by non-experts, and they can provide useful background information for understanding dialect change.

3 Processes and Patterns

In this section, we first focus on contact processes of various intensities (Section 3.1), moving from examples of contact between single speakers (idiolects) to contact between groups of speakers (dialects). Then, we describe spatial patterns that result from these dialect contact processes and the linguistic changes they provoke (Section 3.2).

[10] Although these steps describe a diachronic development, it has to be noted, however, that not all features progress from first order indexicals to second or third order indexicals (Auer 2013: 14).

3.1 Processes

What is considered dialect contact may range from a shop assistant talking to a customer at the counter to different groups of speakers settling in a newly built town. The various dialect contact scenarios can be classified by a number of factors, such as the duration of contact, its intensity, and the number of speakers involved. These three factors (duration, intensity, and number of speakers) can occur in different combinations, resulting in many different contact situations. When dealing with contact-induced change, research focus rather lies on long-term accommodation, which can be defined as "the adjustments speakers make to become linguistically more (convergence) or less (divergence) similar to an interlocutor or to a social environment" (Chapter 2). In this section, therefore, we focus on long-term contact, of various intensities. The number of speakers considered in dialect contact studies varies from single speakers or families (e.g., Ghimenton 2013) to bigger samples, such as Britain and Trudgill's (2005) study on 81 speakers. In addition, we can distinguish between constant and temporary contact situations.

Research on second dialect acquisition is important for understanding the mechanisms of single speakers' long-term accommodation to a majority dialect. Research usually involves individual speakers or small groups of speakers, such as families or speakers matching a set of sociolinguistic features, in constant long-term contact situations (Siegel 2010: 22–51). Speakers who, for instance, move to a place with a differing, yet mutually intelligible dialect, acquire the recipient variety usually incompletely in the first generation. Their linguistic system is shaped by mixing the varieties and by making use of interdialect or compromise forms, forms which are neither found in the recipient nor in the source variety (Trudgill 1986, Wilson 2019: 117).

Single speakers who are *sedentary* (cf. Britain 2016), but commute to another place, find themselves in a somewhat different contact scenario. They are in contact with both speakers of their own dialect and, temporarily, speakers of other dialects. A common consequence of such a contact situation is *dialect leveling* during which highly local forms erode in favor of forms with a wider distribution. In other words: "linguistic variants with a wider socio-spatial currency become more widely adopted at the expense of more locally specific forms" (Britain 2010c: 193). This process is also known as *supralocalization* (Milroy 2002: 8-10), *supraregionalization* (Hickey 2003), or *regional dialect leveling* (Kerswill 2003) and it has been described as the spread of urban dialect features to rural dialects (Britain & Trudgill 2005) and vice versa (Britain 2010b). The tendency of urban forms spreading, often associated with commuting and the patterns observed in the

hierarchy of settlements, is also addressed by Trudgill (1974) in the model of *linguistic gravity*. Often the majority variant supplants other variants. However, other factors such as markedness, social or regional stereotyping, and salience seem to also have an influence on the choice of the variant present in a variety that has undergone leveling (Britain 2010c: 195). It has been suggested that, apart from leading to simplification of the emerging variety, for instance by reducing paradigmatic redundancy, it may also lead to the emergence of new features (Williams & Kerswill 1999: 13).

The so-called *tabula-rasa*-situation is the most extreme form of dialect contact, such as in the case of the colonization of New Zealand (Trudgill 2004), the formation of new towns, for example Milton Keynes (Williams & Kerswill 1999), or the reshaping of previously uninhabitable areas such as the Fens (Britain 1997). Dialects engaged in such contact are often classified as high-contact varieties. Trudgill (2004: 66-67) lists as high-contact varieties of English "colonial and/or urban and/or shift and/or standardized varieties which have a considerable history of dialect and/or language contact, and therefore show very many signs of simplification." In each scenario involving high-contact varieties, the contact situation has changed drastically due to colonization, urbanization, changes of migration and mobility patterns of the speakers or also due to "greater socioeconomic interaction" (Croft 2000: 192). Hence, speakers of various dialects who have previously not or hardly been in contact, suddenly form a speech community and new dialects arise through the process of *new dialect formation* (Britain 2009, Kerswill 2010, Schreier 2017). New dialect formation passes four stages (Trudgill 1986):

1. *leveling* of marked features — markedness can be qualitative, for instance if a feature is stereotyped, or quantitative, for instance if a feature occurs less frequently than the one in whose favor it is leveled
2. *simplification* of the morphological system and of the constraints on variation on all linguistic levels
3. development of *interdialect formation* due to contact between adult speakers of various varieties
4. *reallocation* in which varying forms of one variable are refunctionalized

This process results ultimately in the emergence of a *koine*.[11]

[11]For the differentiation between immigrant and regional koine, see Siegel (2001: 175f.). For more details about koineization, see Chapter 5

Two further contact-scenarios to be discussed are the "casual" contact between neighboring dialects or simply neighboring speakers, and varieties lacking contact, so-called isolated varieties.

Casual contact is not due to any recent changes in the speakers' behaviour, but has been on-going and constant. It is usually not researched by contact dialectology, but by variationist approaches, because it concerns contact between idiolects and not an idealized form of a homogeneous dialect. There are no two identical linguistic systems which are in contact with each other, even if the communication involves two speakers from the same village. Variationists investigate how this contact between individual speakers affects the linguistic systems engaged and its effect on the spread of variants in one idiolect within a dialect or a dialect area. These questions are discussed in modern sociolinguistics under the notion of *transmission*, an "unbroken sequence of native-language acquisition by children" (Labov 2007: 346), in which the differences and similarities of phylogenetically related languages (or dialects) stay stable, and *diffusion*, contact-induced "transfer across branches of the family tree" (Labov 2007: 347).[12] This is strongly related to general theories of language change, such as the two traditional models in historical linguistics: the family tree model, in which linguistic features are transferred down the generations, and the wave model, in which features spread (in the form of innovations) from one variety to the next in space with decreasing intensity. In contact dialectology, this is embedded in the research into accommodation.

An isolated variety is by definition in low or no contact with other varieties.[13]. Trudgill (1992) defines the prototype of an isolated language as a small speech community located in a geographically isolated area, with few L2 speakers and little contact with speakers of surrounding varieties. These communities are characterized by dense social networks, a high social stability and large amounts of communally-shared information (Trudgill 2011: 146). In such communities, Trudgill (1996: 6) expects language change to be slower and due to their lack of contact, less subject to "language change leading to simplification."[14] However, not only is complexity preserved in isolated varieties, but the linguistic system

[12]Labov (2007) elaborates on the linking between transmission and diffusion and the two models of language change in historical linguistics, the family tree and the wave model.

[13]Isolation can be defined spatially, socially, and individually (Schreier 2009, Schreier & Perez-Inofuentes 2014) The overall concept of isolation still lacks an operationalization (Schreier 2017: 353–355) and it needs to take perceived isolation into account. Speakers might perceive their variety as more or less isolated than estimated by a linguist (Montgomery 2000). For more details on isolation, see Sections 3.2.1 and 4.4.

[14]Mańczak (1988: 349) notes that "it always was evident to linguists that dialects spoken in isolated areas like islands, mountains, etc., show an archaic character."

can even be complexified due to the isolation of a variety linked with certain sociolinguistic features like a small community with a dense social network (Trudgill 2009).

3.2 Patterns

Spatial patterns in the dialectal landscape, their presence and changes are indicative of linguistic processes, such as new dialect formation or dialect leveling in progress. As spatial counterparts of the aforementioned processes, areal patterns of dialects can be investigated through static representation of the areas themselves and, conversely, through the characterization of the interfaces between areas, their boundaries.

3.2.1 Spatial patterns of dialect change

Speakers experience variation in language most prominently through differences present in geographic space. This variation emerges as a result of language change processes, and is ubiquitous: language does not converge towards stability or a goal. Thus, the spatial patterns and the perceived state of language are a mere snapshot of a changing linguistic landscape.

More precisely, the perceived spatial patterns of the variation are the distribution of different existing variants, and the dynamic patterns of innovation, which hint at patterns of language variation being strongly related to patterns of contact (cf. Nerbonne & Heeringa 2007, Lee & Hasegawa 2014). Some of the observed spatial patterns and areal constructs in language are more stable and stay around longer while others dissolve more easily in the process of language change. Over time, local dialectal varieties, present in a relatively small area such as a village or a valley, may diverge from surrounding varieties, or they may converge to nearby varieties, a regiolect or the local standard language (cf. Auer & Hinskens 1996).

The *density* of contact is often identified to be the driver of contact-induced language change (cf. Bowern 2013: 414). Thus, at a micro scale, well-connected, central people (with higher prestige) are assumed to drive language and dialect change (e.g., Fagyal et al. 2010, Trudgill 2014, Burridge 2018) and, similarly at a macro scale, central communities, cities with a high contact density across different idiolects drive linguistic change. Linguistic innovations catching on later with individuals who are less central and more isolated are also reflected in the city – hinterland networks with less well-connected, more isolated areas maintaining original variants and adopting innovations later (e.g., Elfdalian in Sweden, cf. Sapir 2005).

The potential for dialect change is often investigated based on the spatial patterns of dialect variation. The presence of a larger amount of variation (heterogeneity) within an area or a speaker's language usage is often regarded as an indicator for dynamism and linguistic change, although longitudinal studies are needed to confirm this connection (cf. Stoeckle 2016). Notably, more dynamism, with certain variables changing faster and the adoption of innovations being quicker, while isolated, mostly rural areas seem conservative. Besides, spatial patterns of the dialect change potential may also depend on the *homogeneity* of the dialects used. Sprawling urban areas with masses moving in from different dialectal areas (including different sociolinguistic varieties) might develop a more heterogeneous local dialect landscape (such as *urban dialects* — Labov 1966, Britain 2012, Pröll et al. 2019), which often acts as the cradle of dialect change and innovations. As a consequence of not being exposed to a colorful variation, rural areas that lack a significant influx (migration or mundane contact through commute) from other areas may stay or become more homogeneous and resistant to change. The presence of more connected or linguistically more isolated regions is also highly dependent on the mobility of the population (Britain 2013). In turn, mobility itself often appears to be a self-reinforcing process based on the spatial patterns of wealth and economic prosperity. The spatial manifestation of these processes leads to the formation and presence of areas more susceptible to language change, and of linguistically conservative dialect "strongholds", sustaining older forms that might be considered archaic elsewhere. Furthermore, state-level language policies (e.g., Valls et al. 2013) and the presence or absence of strong dialect conservation trends might spur areal trends in the general prestige of dialect usage, such as the case of Elfdalian (cf. Sapir 2005) which boasted with a lot of archaisms that Swedish lost a longer time ago.

Relic areas can form at different levels of variation, be it a language, larger scale dialect area or an individual variable. A linguistic variety (e.g. language, dialect) can be present in two or more regions, separated by an area in which a different, or opposing, form dominates. Such a pattern might indicate a late stage in the displacement of a formerly widespread variety following a migration of speakers (e.g., Walser dialects within Alemannic German) or an innovation within a variable (e.g., Lizana et al. 2011).

3.2.2 Areal and linear constructs

Dialect variation displays striking spatial patterns. However, defining areas within the dialectal landscape and drawing the boundaries between areas of different constructs is almost always difficult. The generally transitional nature of

language change contrasts with the picture painted by sharp linear boundaries, often used in dialectology. The need for such classification is fueled by the importance of dialects in group identity formation.[15] One driving force behind linguistic classification, group formation and area definitions appears to be the inherent human need for categorization, which is broadly discussed in cognitive psychology (for a cognitive linguist's overview, see Lakoff 1987).

Areal constructs in dialects are often described (qualitatively and quantitatively) at different levels of granularity, both spatially and in terms of attributes. Spatial patterns are present at attribute levels ranging from individual linguistic characteristics to entire grammatical systems. The number of variants expressing a particular concept may vary depending on the linguistic level, from a few (such as in the case of syntax, e.g., the expression for 'the ice begins to melt' in the Syntactic Atlas of Swiss German Dialects, Bucheli & Glaser (2002)) up to hundreds (such as lexicon, e.g., 'snail' in the Linguistic Atlas of Japan, NLRI, 1966–1974) of dialectal variants. Often, few dominant variants are present in larger areas, while less frequent variants are confined to smaller areas. Areas of main variants often comprise regions where the more frequent variant is used interchangeably with less frequent regional variants that are locally more characteristic.

Spatial boundaries are very often perceived in dialectal variation. As language changes gradually in the temporal dimension, a logical assumption is that it is possible to capture the gradual nature of this change in the spatial dimension as well, within the spatial patterns of the diffusion of innovations. One person might switch to the new form immediately, one might use both variants, and one might not change at all (depending on features of the speaker that are broadly discussed by, e.g., sociolinguistics). Dialect atlases and large scale surveys have attempted to unravel the granularity of spatial variation. Notably, dense networks of survey sites have led to latent fuzzy looking boundaries.

The uncertainty and fuzziness present in the spatial variation within a language spawned a need for defining boundaries quantitatively. Dialectometry often investigates linguistic variables in an aggregated manner, to characterize the multidimensional nature of dialects and describe overall spatial patterns (e.g., Séguy 1971, Goebl 1982, Nerbonne et al. 1999, Szmrecsanyi 2012). Based on the aggregation of dialectal differences across survey sites, researchers established quantitative methods to reveal distinct areas and, conversely, to show their interfaces. Most research, however, has focused on the homogeneity of areas and class

[15]The fact that they are often named after certain areal features (e.g., Wallis German, Gail Valley Slovene or Bergamasque Italian) also shows the spatial nature of dialects and their importance in identity.

affiliations, with boundaries viewed rather as implicit by-products (e.g., Daan & Blok 1969, Heeringa & Nerbonne 2001, Heeringa 2004, Rumpf et al. 2009). At the same time, quantitative characterizations of the strength of such linear constructs are scarce (e.g. Jeszenszky et al. 2018), mostly due to the coarse spatial granularity of the data available.

It is possible to position characterizations of spatial dialectal boundaries between two extremes: watertight, strict, linear boundaries on one end of the scale and completely fluid, fuzzy boundaries of gradual nature on the other, which are more properly regarded as transition zones. Researchers often characterize areas and boundaries in relation to the transitional nature of change. Boundaries at the level of an individual variable are often represented by clear-cut isoglosses, which imply an assumption of homogeneous variant usage at each survey site, thus on the two sides of this isogloss (see Section 2.1). If we consider isoglosses analogously to boundaries in a dialect continuum as *gradual* transitions between two core dialect areas, isoglosses can be viewed as "sharp transitions" between the dominance zones of variants. Often, however, several related variables and their isoglosses (Seiler 2005, Glaser & Frey 2006, Stoeckle 2018, Willis 2019) are aggregated in order to investigate the distribution, transition and different levels of grammaticalization of certain phenomena.

Patterns aggregated from several, coinciding and nearby isoglosses, so-called *isogloss bundles*, were traditionally often used to quantitatively account for dialect areas at different spatial and attribute granularities, by highlighting boundaries between (mostly) homogeneous dialect areas (Händler & Wiegand 1982). It has often been noted, however, that isogloss bundles do not fulfil all expectations as a means of delimiting dialect areas, as individual variables tend to show different patterns of regional variation (Chambers & Trudgill 2004: 94–103).

Any spatial classification and grouping within language by sharp boundaries may be, however, inherently flawed, as we determine boundaries within the construct of a language, which essentially varies on a continuous basis across people and in time. Clear, linear boundaries are useful, however, for the overall visual interpretation, especially at smaller geographic scales. Data in collections is potentially fuzzy due to its sparse and often biased nature, which is partly due to the assumption of local internal homogeneity customary in traditional dialect atlases. Because of this, simplifications like identifying boundaries are often needed to make overall interpretations. Modern dialectometry attempts to resolve the boundary issue by considering as many relevant variables as possible to characterize the spatial patterns within a language area, making it possible to quantitatively warrant clear-cut boundaries or gradual transition (e.g., Séguy 1971, Goebl

1982, Nerbonne et al. 1999, Nerbonne 2009, Burridge 2018). Corpus-based dialectometry usually weighs findings about different phenomena with their relative frequency (relating it to salience in real-life usage) (e.g., Szmrecsanyi 2011, Wolk & Szmrecsanyi 2018).

There is agreement in dialectology, however, that linguistic variation is gradual, not abrupt, despite most discussions of dialectology in textbooks dealing with isoglosses and dialect continua side by side, without addressing their incompatibility (Chambers & Trudgill 2004: 105). Experimental research attests that dialect areas, be it larger-scale areas or areas of abutting variants of a single variable, rarely have clear-cut boundaries and are mostly characterized by a transition towards the dominance zone of neighboring varieties that is gradual to a certain degree (Kessler 1995, Heeringa & Nerbonne 2001, Chambers & Trudgill 2004, Pickl & Rumpf 2012). Where such transitions take place, wider or narrower *transition zones* are found, marked by the mixing of co-occurring variants (see also Section 2.1). Conversely, transition zones are often regarded as zones of ongoing change and indicative of the patterns of contact, also in relation to linguistic features beyond the one that is mapped. Moreover, transition zones can appear as autonomous areas on their own, with the grammaticalization of both variants present, possibly at different stages regarding different contexts (e.g., Seiler 2004, Willis 2017).

Transitional patterns often seem to correspond to further underlying factors hindering or promoting dialect contact across the areas (e.g., geographic factors) and the sociodemographic groups using them. Notably, the simultaneous presence of multiple variants often appears to be associated with groups with different characteristics (age, class, educational background, or dialectal attitude) (Willis 2017).

4 Factors

In this section we discuss the main factors that affect the realization of dialect contact by facilitating or hindering it, thus contributing to dialect change, which in turn may contribute to the modification and formation of dialect areas. We describe factors related to language and the speakers themselves, after which we detail interactional and geographic factors.

4.1 Linguistic factors

Although there is no consensus about this topic, historical linguists have speculated that rates of change are different at various linguistic levels (e.g., Longob-

ardi & Guardiano 2009: 1694–1695) and at finer attribute granularity of structural linguistic features (Dediu & Cysouw 2013), with syntactic variables often changing more slowly as opposed to lexical or phonological ones.

Since dialect contact is ultimately based on face-to-face interactions between speakers of mutually intelligible variants, its fundamental mechanism is accommodation (cf. Trudgill 1986). Ruch & de Benito Moreno (Chapter 2) discuss a number of linguistic factors regarding accommodation. An additional factor relevant to the formation and structure of dialect areas is the varying *degree of relatedness* between different dialects of one language.

Dialects are *per definitionem* related and often grouped based on shared features. Higher structural similarity makes dialects more prone to contact-induced change within their grouping (Trudgill 1983: 74–75). Hence, the observation by Bowern (2013: 413) should be extended to include dialect group boundaries: "We can observe that most linguistic changes spread easily through speech communities, less easily (but still fairly easily) across dialect boundaries where speakers are in contact with one another, and less easily still across language boundaries".

4.2 Speaker-related factors

A central concept for the notion of dialect is geographic space (cf. the definition of "dialect" in Section 1.1). However, the relationship between geographic and social factors regarding the concept of dialect varies according to research tradition. While in the German, Italian or French research context most consideration is given to space, and dialects are defined based on their spatial distribution, in the Anglo-American tradition the social position of the speaker also plays an important role (cf. Mattheier 2005: 1436f.). Besides, in most modern societies a connection is assumed between dialect usage and certain social parameters, and due to their interaction, the two cannot always be separated. For instance, in many languages, speaking a non-standard variety is associated with low prestige and lower social classes. With the increasing number of studies analyzing social influences on dialect use and the necessity of implementation in empirical research, some parameters have emerged which will be discussed below.

4.2.1 Age

Age is commonly regarded as one of the most important factors with respect to language use and change. It is assumed in the apparent time paradigm (cf. Bailey 2002) that language norms and forms are adopted at a relatively young age and, depending on the linguistic level, the rate of change will decline by age.

However, it is assumed that it is not biological age *per se* which is decisive. Mattheier (1994) emphasizes an age-related generation model that is sociologically sensitive to the use of varieties, whereby the age-related change in everyday socio-communicative relationships seems to be responsible for changes in the spectrum of varieties. Important phases are the pre-family phase, which is often characterized by training processes, the (the phase of) entry into professional life. This often coincides with the time when children are raised and is characterized by a tendency towards supra-regional language varieties, and the retirement phase, in which official and formal language contacts decrease.

Age is used as a predictor and indicator against the rates of adoption in studies of ongoing dialect change (e.g., Willis 2017). As younger people are assumed to have more connection with other young people outside their home community, age also tends to indicate spatial patterns of contact and isolation.

4.2.2 Social position

In relation to Labov's (2001) question about the leaders of language change , the *social position* of the individual plays a central role. This can be measured using various parameters that are of different relevance depending on the social profile, often interacting with one another. In the Anglo-American tradition, the concept of *social class* was used, and corresponding varieties were defined as *sociolects* (Dittmar 1997: 190). One problem, however, is that this term has a strongly evaluative character and, moreover, the definition of social classes does not always turn out to be unambiguous, making it difficult to assign individuals to classes. The level of *education* and the type of *profession* have become proven indicators that are more easily implemented in empirical studies.

With regard to profession, Mattheier (1994) differentiates between *script-oriented* and *craft-oriented* professions as well as between those with and without *authority to issue instructions* (Germ.: *Weisungsbefugnis*). Hierarchies can be derived from these parameters that are closely related to the social position of the speaker and thus also to the corresponding social prestige, which can be decisive for accommodation and change in the event of contact.

4.2.3 Religion

While the factor of *religion* or denomination certainly played a more important role in relation to dialect contact in earlier times, in most modern societies it is of secondary importance and is therefore not taken into account in most studies. In principle, religion can play both an isolating and a unifying role. On the one

hand, distinct religious groups may be isolated from one another, based on areas with different predominant religions within a language area, or through the prohibition of intermarriage (e.g., Bucheli Berger & Landolt 2014). On the other hand, religious communities can integrate people using different dialects or languages, catalyzing change. An example of this is Amish Shwitzer, a mixed language spoken by a group of very conservative Amish in Indiana. It has features from both Bernese Swiss German and Pennsylvania Dutch, evolving through intense contact between two groups of the Amish (Hasse & Seiler in press).

The study of Manni et al. (2006: 16) finds that, measured at the level of municipalities in the religiously segregated Netherlands, religion does not correlate with dialectal distribution. Yet indirectly, the influence of this factor is visible today in several contexts, since religious affiliation often corresponded to the extent of rulers' territories or other administrative areas, which are still reflected in political units today and, thus, may influence dialect contact.[16]

4.2.4 Gender

The *gender* factor has often been considered in studies as a factor to explain language variation and change. However, it has been assigned different meanings, which has led to controversial representations of gender-specific language use (Diercks 1986: 228). Labov (2001: 367) states that women orientate themselves more strongly to linguistic norms if these are overtly prescribed than men. Therefore, when new prestige variants spread, these are more likely to be used by women. In other studies, however, it is assumed that women are preservers of the dialect (see, e.g., Sieburg 1991: 299). Overall, there are many indications that gender differences are primarily related to social position and aspirations for social advancement (which vary around the world). Apart from its relevance as a determinant of linguistic variation, gender has been researched in the framework of social constructivism (Queen 2013: 368), and it has been argued that it is not to be seen as a "static social category" (Queen 2013: 383). Because of its controversial status, Mattheier (1994) suggests to leave the gender factor in representative surveys to random distribution.

[16] In the context of complex modern societies, ethnicity and migration, religion certainly plays an important role today as well. These are phenomena of multicultural contact that are primarily important in cities, but in relation to dialect areas they seem to play a subordinate role and are therefore not discussed further here.

4.3 Interactional factors

Interactional factors between individuals have lately attracted more attention in the study of language/dialect contact. One focal approach has been *linguistic accommodation*. The concept was introduced by the work of Giles (e.g., 1973), Giles et al. (1991), Giles (2008) in order to account for the fact that speakers sometimes adapt their way of speaking to their interlocutor in order to gain approval, which is closely connected to the social status of the speakers (Niedzielski & Giles 1996: 335). Trudgill (1986) distinguishes between short-term and long-term accommodation, with the latter potentially leading to modifications or alterations in the speech of a group of speakers. For more details on the effects of accommodation, see Ruch & de Benito Moreno (Chapter 2).

Another, related approach is suggested by Schmidt & Herrgen (2011) in their theory of linguistic dynamics (*Sprachdynamik*). The central idea within this theory is the concept of synchronization, which is defined as "the calibration of competence differences in the performance act, [...] [resulting in a] stabilization and/or modification of the active and passive competencies involved" (Schmidt 2010: 212). They distinguish between three levels of synchronization, with "microsynchronization" referring to the processes taking place in single interactions.[17] In contrast to linguistic accommodation, they assume prestige of a variety or the social status to play only a minor role; it is rather "the desire to be understood, or at least not misunderstood" (Schmidt 2010: 212) which is considered the driving force behind linguistic convergence.

4.4 Geographic factors

Whether considering geography as "geographic distance or as the basis of an areal division among varieties, it certainly should not be understood as a physical influence on language variation, but rather as a useful reification of the chance of social contact" (Nerbonne 2013: 14).

In this subsection we present factors most often investigated in dialectology and dialectometry, along with quantitative methods to measure these factors, where relevant.

[17] The other types which go beyond single communicative events and may potentially result in dialect change are called *meso-* and *macrosynchronization*.

4.4.1 Physical proximity

Physical proximity – at least until the middle of the 20th century – has been the only way to maintain close contact between people.[18] Therefore, geographic factors seem to determine *contact potential*, thus playing a crucial role in the areal structure of dialectal variation and change, by constraining – or conversely, facilitating – people's movement. The connection between the ease or difficulty of transportation and the spread of cultural artifacts (cf. Hägerstrand 1952) has become one of the most important explanations of dialect diversity as well. Analogously, the connection between topography and dialect diversity is often intuitively assumed due to the cultural difference observed in the presence of such topographic features that hinder *transportation*, in the broadest sense, and thereby contact (Nichols 2013: 5). The effect of geographic factors has been quantitatively tested in numerous studies, and has shown a predominant influence on dialect variation in large-scale, quantitative studies (for an overview, see Wieling & Nerbonne 2015: 253–255 and Jeszenszky 2018: 24–26).

4.4.2 Isolating features

Natural isolating features, such as those of a topographic nature, are often thought to pose obstacles for language contact. "Sharp" obstacles, such as mountain ridges and rivers, can be modeled as lines separating groups within a language area, such as the river Lech (Pickl et al. 2014: 29-33) or a range in the Swiss Alps (Jeszenszky et al. 2017). Rugged terrain, dense vegetation and harsh climate conditions can influence contact to a remarkable degree, isolating people living within or separated by such areas. For example, Dogon dialects in Mali are separated by rocky escarpments (Moran & Prokić 2013), the effect of former marshlands in the Fens of Eastern England on dialects can be traced today (Britain 2010a: 218) and impenetrable forests in Amazonia make rivers the main media of communication (Ranacher et al. 2017). Besides, territorial disputes or hostile inhabitants (guerrillas, drug lords) may also render areas difficult to traverse. Anthropogenic modifications of natural pathways, that is, improving transportation infrastructure or, conversely, creating obstacles to the free movement of people (such as national borders) influence contact potential crucially.

4.4.3 Realized contact and its quantification by surrogates

It is not possible to quantify all contact occurring between members of communities. Besides, all factors exert their influence in an overlapping fashion, strength-

[18]The effect of media on everyday language is, in fact, contested (cf., e.g., Trudgill 2014).

ening and weakening each other. To address this difficulty, dialectology attempts to account for the effect of contact by using surrogates for calculating contact potential. It is not straightforward to model spatial artifacts (e.g., areas and linear features that are difficult to traverse) as factors of contact or isolation, because there might be various potential reasons for actually not *wanting* to traverse them. Thus, for the characterization of dialectal variation, it is fruitless to consider *contact potential* without the *realization of contact*.

The motivation for non-sporadic travel over relatively long distances (the concept of "long" distance is, of course, related to infrastructure and has therefore changed throughout history) is, most importantly, the economic or social interest of the traveler. Individual migration and commute is typically driven towards market and school towns, trading hubs and places with abundant working opportunities. Vice versa, the lack of such interests keeps outsiders away from certain places, contributing to potential linguistic isolation. Motivation for contact has also been shown to correlate with actual dialect similarity, through implicitly measuring the motivation for contact by the intensity of trade (Falck et al. 2012, 2016, Lameli et al. 2015).

The most intuitive predictor of potential contact between dialect data points is *Euclidean distance*: the shortest distance between two points, also referred to as geographic distance or linear distance. As it is easily calculated, Euclidean distance has been the predictor variable most often used in dialectometric studies for explaining linguistic distances (e.g., Séguy 1971, Heeringa & Nerbonne 2001, Nerbonne 2010, Hadj 2017).

Travel times and travel distance are assumed to better correspond to the potential of people to meet, as they incorporate the isolating factors and obstacles present in the area of interest. Some studies (Gooskens 2004, Jeszenszky et al. 2017) show a strong correlation between travel times and the spatial distribution of linguistic distances, while others (Van Gemert 2002, Stanford 2012, Szmrecsanyi 2012) do not confirm this hypothesis. Calculations with modern travel times might also be biased, not representing the historical routes of contact that have influenced dialect change for centuries and led to the contemporary state of dialectal variation. Although travel times can be obtained today from open source online routing systems (e.g., *osrm* – Giraud 2019), creating a travel time database, especially a historical one, is a tedious process for most places.

The (historical) potential of contact can be further calculated in *cost models* where different isolating factors (such as topography or boundaries) are represented as weights. Using cost distance models, Haynie (2012) compared California Miwok languages, taking elevation, vegetation, surface water, and watershed boundaries into account. *Hiking distance* approximates the most natural routes

of communication, which therefore usually corresponds to historical routes. It is calculated along least cost paths that are based on a digital elevation model and a travel speed model (e.g., Tobler 1993). Hiking distance is a better predictor only in situations where topography significantly impacts the distributional patterns in dialects and it deserves to be noted that different types of land cover or natural barrier, such as dense vegetation, water bodies, and glaciers have to be taken into account beside an elevation model (cf. Derungs et al. 2019). Especially in larger distances, the role of topography and infrastructure seems to fade away, and in aggregate area studies the explanatory values of the aforementioned distance measures converge towards each other (Jeszenszky et al. 2019), due to the overwhelming proportion of indirect contact.

4.4.4 Commute, mobility, migration

Displacement of people in different contexts impacts dialect contact substantially. Non-sporadic short-term contact, such as commute, depends on the infrastructure, the availability (including physical connections, such as bridges, ferries, or roads), safety and cost of transportation, and the motivation to travel; in short, the mobility of people. Thus, political, economic, and topographic factors play a role in the network formation of potential contact, with self-reinforcing processes often driving infrastructural changes. With the emergence of globalization, people's increasing mobility can be observed throughout the last few generations. With "the normalization of long-distance commuting, labor market flexibility and the consequent geographical elasticity of family ties and other social network links, supralocal functional zones are probably larger than ever before" (Britain 2010b: 20), causing dialectal changes more than ever before (cf. Sayers 2009).

Migration and commute among communities, and therefore, their effect on dialects, are often modelled analogously to gravity (Trudgill 1974), with the weight in the gravity model replaced by some surrogate, such as population, that measures the impact or the (economic) importance of communities. Statistical data on commuter balance, thus, presents itself as a potential metric to which language change can be compared.

Migration (see also Section 3.1) can occur sporadically or *en masse*, with different effects. For example, migration due to marriage is present all over the world, impacting language in a sporadic manner. Since women are more often displaced, and mothers usually have a greater influence on the children's dialect, these displacements may cause sporadic introduction of innovations from the mother's former community into the new one (e.g., Stanford 2012).

Speakers in minority groups and their offspring tend to assimilate to the majority variation in a short time. In contrast, the presence of a critical number of speakers (e.g., through *en masse* immigration) may retain original dialectal variety (Fishman 1966: 22) and might exert a greater influence on the language usage of the majority. Masses migrating to a certain location from multiple different areas and displacement of a critical mass of dialect speakers from one area to another (e.g., due to conflicts) can result in new contact situations with different cross-pollinations taking place between local and incoming variations. When people from a mix of origins (but speaking the same language) suddenly settle at a location, leveling of marked features and ultimately koineization of dialects occurs.[19] Examples include Fiji Hindi (Kerswill 2003), which is formed through the influx of speakers of different Hindi dialects to Fiji, urbanization in the UK as a consequence of the industrial revolution (Britain & Trudgill 1999), bringing rural population to cities, or on Japan's northernmost island, Hokkaido (Kleander 2018), settled by speakers of several different Honshu dialects.

4.4.5 Center vs. fringe situation

If we accept the assumption that linguistic innovations start to spread in high-contact, central population groups, fringe situations can play a role in dialect contact not only in the sociolinguistic but also in a spatial context.

Even if an innovation emerges elsewhere first, it is often larger populations with a lot of contact potential (major cities) that drive large-scale diffusion (Britain 2002: 622–625). At the same time, fringe situations have a significant role in retaining dialectal forms before innovations (Mańczak 1988: 349, Schreier 2009). Examples include Wallis German in Switzerland (topographic fringe: isolated by mountains from other dialects, cf. Moulton 1941: 39), Amish varieties in the US (e.g., Louden 2020: 818–821) and areas with a strong caste system in India (socioeconomic fringe), Elfdalian in Sweden (economic fringe, see Sapir 2005) or the western and northern extremes of Japanese islands (geographic fringe, see Abe et al. 2018), similarly to individuals with less contact in the sociolinguistic model on preserving older forms by Fagyal et al. (2010). It has to be noted that spatial fringe areas may have contact to other languages, introducing a different confounding factor (Steiner et al. 2022).

Fagyal et al. (2010) scaled the gravity effect introduced by Trudgill (1974) down to the personal level, and concluded from their agent-based models that people with many contacts are the drivers of language change. Burridge (2018), using

[19]The process of koineization is detailed in Section 3.1. For pidgins, creoles and the emergence of new languages, see Chapter 5.

an interaction model and based on the laws of surface tension, proved that both wave-like spread and hierarchical diffusion observed by linguists may be understood in a unified way. His model showed that jumps of linguistic forms between cities (representing hierarchical diffusion) are followed by a slower evolution, resembling movements driven by surface tension (representing the wave-like spread of innovations). He also showed how population mixing and long-range interactions can destroy local dialects either by overwhelming local linguistic variants when immigration is above a critical level, or by speakers that are weakly embedded in their social network.

4.4.6 Spatial barriers

Different spatial barriers contribute to several types of isolation between communities. Boundaries in space, similarly to the extents of geographic land coverage, can be investigated at different granularities, for example, a forest posing an obstacle between two villages, or a country border between a majority language and its minority speakers in another country. Gerritsen (1999: 63) concludes that "political factors can have a strong effect on dialect change." Man-made boundaries, although they are often results of arbitrary decisions, often overlap with the natural isolating features mentioned above.

For dialect contact, (historical) permeability of barriers has a high importance. Permeability, that is, the contact potential across the barrier, however, does not always correspond to the realized cross-boundary contact, hampering the quantification of boundaries' role in contact. According to Britain (2010a), the variation of language usage that has patterns in space is the outcome of routine dialect contact. The boundaries may physically be very permeable, but routinized paths might still tend not to lead people to cross them, due to the perceived separation effect or actual large differences regarding political, economic and other factors on the two sides. De Vriend et al. (2008) show how the intelligibility within the dialect continuum of Kleverlandish along the Dutch-German border has decreased significantly despite the border becoming more permeable. These processes also seem self-reinforcing, similarly to the gravity-like effects mentioned in Section 3.1.

Perceived boundaries within countries, such as cultural, religious, denominational and tribal ones, might also often mean a limit to the routinization of movement across them. The historical importance of such boundaries, especially if they become administrative boundaries, may also have a longer lasting perceptual effect on dialect areality, through generating identities, affection, refusal

or prestige (e.g., refusal of a certain dialect, refusal to be associated with a certain area). Derungs et al. (2019) tested the effects of several administrative and denominational boundaries on Swiss German syntax while Valls et al. (2013) investigated border effects on Catalan.

Communities of speakers of the same language are often not only separated by national boundaries, but also speakers of different languages in between (thus forming a *Sprachinsel*), posing a different level of hindrance in the motivational and potential components of dialect contact (e.g., diaspora communities of any language around the world, such as Arabic speakers in Central Asia, see Fischer 1961).

5 Conclusions

The aim of this chapter was to give an overview of the notion of dialect contact within the larger context of language contact. To this end, we addressed the issue of how to define the object of our investigation, i.e. what is a *dialect*, and what is a *dialect area*? Within modern linguistics, the study of dialects is one of the longest-standing traditions, dating back to the second half of the 19th century. Since then, our societies have changed fundamentally, which in turn had a strong impact on the linguistic situation in most countries and speech communities. At the same time, the approaches and methods to study language variation have developed in different research traditions in various ways, referring to different concepts by the term *dialect*. The level of granularity also emerges as a difficulty with respect to the definition of our research object, involving questions around the geographic scope of a dialect, for instance how to draw boundaries between geographically adjacent dialect areas. Considering these difficulties, our chapter followed the Continental European tradition and used a minimalistic definition of dialect as a variety spoken at a geographically defined place.

Dialects are generally regarded as historically closely related varieties of a language, often (but not necessarily) united under a common standard variety, or, at least, a common norm. Although dialect contact can occur between dialects which are geographically distant from each other (e.g., in the case of migration), dialect contact is mostly regarded and treated as contact between geographically close or adjacent varieties. Therefore, contact generally takes place between mutually intelligible varieties, which can lead to very fine-grained modifications in the language systems (also called micro-variation). Since dialects are often ideologically charged, associated with a certain prestige and a common identity, various social or demographic factors can also be included in the investigation of dialect contact and variation.

In order to provide a thorough overview of the field of dialect contact, we discussed different dialectological approaches, including more traditional ones focusing on base dialects, as well as studies following the sociolinguistic paradigm, taking different aspects of modern complex societies into account. We also discussed the processes that may take place in different scenarios of dialect contact, which can be classified by factors such as the duration of the contact, its intensity, and the number of speakers involved. Since dialects can be characterized primarily by their geographic extent, they display certain spatial patterns which may change through contact. A distinction is often made between urban, linguistically heterogeneous, more dynamic regions and rural, linguistically homogeneous, more conservative regions.

This has led to the assumption that cities are the drivers of dialect change and may be regarded as the centers of leveling and diffusion. However, in modern societies where large parts of the population have access to digital communication and media and therefore are able to at least virtually participate in linguistically complex speech communities, the distinction between urbanity and rurality may play a less important role than it used to. Besides, cities may still be cultural melting pots, but migration and mobility are certainly aspects of rural life as well. All in all, there are a lot of linguistic and extra-linguistic factors that may potentially influence dialect contact and its outcome, which we discussed in Section 4.

Contact dialectology, through approximately 150 years of development within different fields of linguistics, has itself undergone various transformations and currently orients itself towards a wide range of related disciplines such as variationist linguistics, comparative linguistics, dialectometry, and natural language processing. An issue of ongoing interest is the definition of the object of study, that is, of the concept of dialect, as well as the classification of varieties or strata within the spectrum between base dialects and standard varieties. As previous research has uncovered many aspects of the structure and classification of traditional dialects, modern studies will keep on focusing on the potential roles, impact, and changes of regionally bound varieties in complex societies and the role of dialects in identity-making.

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Chapter 7

Linguistic areas

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Linguistic area research has received ample attention in the last century. Nevertheless, methodology remains somewhat underdeveloped, and there seem to be few, if any, generalizations about the relation between the processes underlying area formation and their outcomes. The main challenge is that, in most cases, the past is not directly accessible and therefore has to be reconstructed. Linguistic area research, therefore, stands to gain immensely from a firm embedding into a framework that includes both other strands of contact linguistics and extra-linguistic disciplines to complete the picture.

1 Introduction

A linguistic area is a geographical region where several languages are spoken that have become similar to each other as a result of sustained contact between the speech communities. Although this description is intuitively simple, finding a satisfactory definition of what is and what is not a linguistic area is extremely difficult, if it is possible at all (see, e.g., Masica 2001, Stolz 2002, 2006, Campbell 2006, 2017). There are three central problems in defining a linguistic area: the boundary problem, the language problem, and the feature problem.

1. **The boundary problem**: Establishing the geographical boundaries of a linguistic area is often based on the distribution of features. This is problematic because the distributions of different features rarely overlap completely.

2. **The language problem**: There seems to be no non-arbitrary way to determine the minimum number of languages required to speak of a linguistic area.

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3. **The feature problem**: There are no established criteria to determine the diagnostic value of features for particular linguistic areas, nor of the minimum number of features required.

These and other problems have led some researchers to suggest that the term linguistic area should be abandoned, as it is a mental construct rather than a reality (see in particular Stolz 2006, Campbell 2006, 2017). However, linguistics is full of mental constructs (a language is one, to start with) that have still proven their worth as workable concepts. Therefore, the question to answer is whether or not linguistic areas are useful concepts. The concept of linguistic area, in our view, has a number of useful applications.[1]

- They are informative to typologists for sampling purposes (especially larger areas) – see below.
- They are informative to field linguists, providing an expectation pattern for certain grammatical features, and should be part of the preparation of any field project in which they are relevant.
- They are informative to historical linguists, helping them understand contact-induced developments of members of a family that are part of a linguistic area.
- They serve a purpose of their own: they can tell us something about the interaction between geography, human behavior, and language or communication strategies.

1.1 A brief history of the field

The history of the notion of a linguistic area can be traced back to the early 20th century. Linguistics had emerged from the 19th century as an independent field, with one particularly powerful tool: the study of regular sound correspondences to identify genealogical relations between languages. Yet more and more observations were made about similarities among languages that could not be attributed to genealogical relatedness as data on previously undescribed languages and newly discovered language families accumulated.

[1]A separate issue is how we should go about establishing linguistic areas or areal skewing of linguistic features, e.g. top-down versus bottom-up (Muysken et al. 2014, Campbell 2017) linguistics-first or starting from other disciplines (Stolz 2006, Van Gijn 2020). We come back to this issue in Section 2.

In Europe, observations about structural similarities among the distantly related Indo-European languages of the Balkans date back to as early as 1810 (Friedman 2011: 177). At the very beginning of the 20th century, Jan Baudouin de Courtenay (Boduen-de-Kurtenè 1901), with the Balkan languages in mind, proposed an approach to multilateral influences among geographically close varieties that would entail, for instance, the study of societal history. In a similar vein, Kristian Sandfeld (1926: 8) argued for a dedicated field of study and urged linguists to treat the Balkan languages "as one unit and make them into a starting point of a comprehensive study."

In Northern America, the study of the Native American languages showed the limits of explaining similarities with genealogical relatedness (see e.g. Mithun 2017: 881–882). Franz Boas described in 1911 how linguistic structure can diffuse across genealogical boundaries between languages (Boas 1911: 47–53). Later, Boas (1929: 6) described the North Pacific coast as a geographical area where genealogical classifications are not helpful in explaining grammatical similarities among neighboring languages.

An interest in the effect of geography on linguistic structure had also arisen in the Italy-based neolinguistic school of thought, famous for arguing, perhaps less convincingly, against some tenets of the historical-comparative tradition. However, Matteo Bártoli observed the diffusion of innovations in space and considered, for instance, the effect of prestige in the adoption of linguistic features (Hall 1946).

In a timely development, Nikolai Trubetzkoy (1928: 18) proposed the concept *Sprachbund* in the first International Congress of Linguistics in 1928. The German term *Sprachbund* was a subconcept of *Sprachgruppe*, an umbrella term intended to remain agnostic about the origin of the similarities among the observed languages. Sprachbund contrasted with language family (*Sprachfamilie*), and was effectively worded as the absence of the defining criteria for genealogical relatedness. The formulation also made a strong claim about the languages forming a Sprachbund: The languages in such a union greatly resemble each other with regard to syntax and principles of morphological structure, and they share a great number of cultural words, as well as sometimes superficial similarities in sound systems.

Despite a number of discoveries of diffusion of linguistic structures across genealogical borders, the Balkan situation is often argued to have been the model for the delineation of Sprachbünde (see, e.g., Friedman 2011: 276). However, while Trubetzkoy (1923) does mention the Balkans as a "shining example" of a *jazykovoj sojuz* ('language union') in a footnote in an earlier article, this was done in order

to promote his ideas of geographically much larger areas such as the "Mediterranean" and "Ural-Altaic" unions, which comprise several entire language families.

The concept of Sprachbund proved to be popular. As early as 1931, Roman Jakobson (1962) used the term to describe what he called "the Eurasian Sprachbund." This was followed up most notably by Harry Velten (1943: 271), who called the American Northwest a "linguistic area," in a translation of *Sprachbund*, and by Murray Emeneau (1956), introducing the Indian linguistic area. Worth mentioning is also Hans Kurath's concept "area linguistics," figuring in the title of what may be the first textbook on the subject, "Studies in area linguistics" (Kurath 1972). Kurath (1972: 1–23) provides, for instance, methodology and a field work guide for the "area linguist." While Kurath's own research dealt with North American dialects of English and he does not dwell on the definition of a linguistic area, he clearly regards, for instance, Emenau's (1956) work as illustrative of the field.

Meanwhile, the upcoming field of linguistic typology showed a growing interest in areal linguistics. In a seminal paper, Bell (1978) discusses biases in typological samples that can compromise the independence of sample units. One of the biases Bell suggests is areal, because languages that are spoken in each other's vicinity may have influenced each other through contact, calling for integration of insights from areal linguistics into typology. Dryer (1989) makes a concrete proposal for areal stratification in typological samples. He divides the world into five large areas (Africa, Eurasia, Australia-New Guinea, North America, and South America). Dryer argues that these areas can be assumed to be independent from each other, but within each area, contact effects can be expected (see Hammarström & Donohue 2014 for critical discussion).

Nichols (1992) takes the idea of macro areas and the role they play in the distribution of linguistic features over the globe one step further. For her, language diversity patterns are the objects of typological inquiry, and historical processes (e.g. migrations, linguistic diversification, areal contact) the explanations for these patterns. In this approach to typology, then, areal patterns (especially at the macro level) are no longer only relevant for sampling purposes, but they become a research outcome that needs to be explained.

In less than a hundred years, research concerning linguistic areas has grown into a considerable field, with hundreds of proposed linguistic areas of various sizes and time depths, distributed over all continents (see Campbell 2017 for a list). It has established itself as an independent branch of contact linguistics, with its own research agenda. In what follows we will give an overview of the major conceptual and methodological components of this fascinating field.

1.2 Key terms and concepts

The study of linguistic areas typically operates on terminology shared by other subfields of linguistics. There are, however, a few concepts that are specific to, or receive a particular interpretation in, the context of areal linguistics. A key term in connection with linguistic areas is *adstrate* or *adstratum*, which refers to a language that has influenced the language of a neighboring population, without there being clear differences in prestige between the two groups. Of Ascoli's classical sociolinguistic settings for language contact (see Tristram 2007: 195–96), adstrate effects, more often than *substrate* or *superstrate* effects, are seen as the primary mechanism in the formation of linguistic areas (cf., however, Section 3.1; regarding the three terms, see also discussion in Chapter 5).

Another concept central to the study of linguistic areas is *convergence*, which can be described as the historical process by which languages become structurally more similar to each other as the result of prolonged contact. What the term means, however, differs depending on whether one focuses on the larger processes of area formation or on an individual instance of contact-induced language change. Joseph (2010), among others, uses convergence to describe the overall process resulting from multiple instances of contact-induced language change, implying mutual changes toward a common outcome. Yet according to this use of the term, there can be several mechanisms contributing to convergence, including substrate and adstrate effects, pidginization (see Chapter 5), and speaker-to-speaker accommodation (see Chapter 2).

Matras & Sakel (2007) use convergence to describe a particular type of contact-induced language change, characteristic of linguistic areas: convergence is a shift in the meaning and functional distribution of inherited linguistic material, contrasting with grammatical and lexical borrowing. Convergence in this sense coincides closely with what Ross (2007) calls *metatypy*, which in his terminology stands in opposition to calquing. Adstrate and convergence, in the former sense, highlight the common ideas that, first, linguistic areas arise in situations of symmetric relationships between the different ethnolinguistic groups, and, second, that the influence is mutual. We come back to this point in Section 3.2. The resulting situation is sometimes characterized as (*mutual*) *isomorphism*, structural uniformity across languages (see Matras 1998).

Another recurring term is *isogloss*, a line on a map that defines an area in which the languages share a particular feature (or, more rarely, in the case of exclusively structural features *isogrammatism* is also used, see Gołąb 1956). Each isogloss, therefore, describes the distribution of a single feature. In the almost non-existent ideal case, several overlapping isoglosses define the boundaries of a

linguistic area. A related but less commonly used concept is *isopleth* (see Van der Auwera 1998), which is a set of lines on a map grouping languages that display the same number of features from a set of shared features, although these do not have to be the same across the languages. Using isopleths, one can show where most features are shared.

Isoglosses often play an important role in determining the *boundaries* of a linguistic area. As mentioned, boundaries are a problematic part of the study of linguistic areas because there is no unambiguous way to determine them. Two basic approaches to boundaries (see Section 2) are to look for *hard boundaries*, generally based on physical geography, or to allow for *fuzzy boundaries*, where the outer limits of a linguistic area are left partly undefined, but coincide more or less with the areas where the number of shared features dwindles below a certain threshold (Muysken et al. 2014).

1.3 Linguistic areas and contact linguistics

The study of linguistic areas relates to contact linguistics in that it tries to infer the historical contact situations and contact processes that have given rise to a linguistic area from synchronic linguistic data (the distribution of linguistic features) as well as, where possible, data from other disciplines, such as cultural and geographical data. Given its character, the study of linguistic areas may tell us something about the long-term results of sustained contact between groups of people in a particular area. Thus the study of linguistic areas fills two gaps within contact linguistics: it registers results of long-term contact that are generally unavailable to subdisciplines in contact linguistics that target the individual or a specific language community, and it registers the geographical extents of specific features, thus including a spatial dimension. This latter point is shared with the study of dialect areas, but not with more individually- or societally-oriented approaches to contact linguistics. Table 1 indicates the position of areal linguistics within contact linguistics in terms of scale (both temporal and spatial),[2] adapted and expanded from Muysken (2008). Areal linguistics concerns the two bottom rows. Therefore it has its own research questions, methods, and data sources.

Linguistic area studies share with other subdisciplines of contact linguistics an interest in establishing what elements of language are especially sensitive to contact situations. The systematic study of areal features in linguistic areas may reveal not only tendencies in what features are prone to contact-induced change,

[2]Attention in areal linguistics has been heavily tilted toward the spatial scale, largely in the absence of historical data. An interesting exception is Dedio et al. (2019), which traces the development of area formation for the British Isles over a period of about 1300 years.

Table 1: Level of scales in contact linguistics (adapted from Muysken 2008)

Time depth	Space	Sources	Scenarios
Real time	Bilingual individual(s)	Conversation analysis, psycholinguistic experiments	Situational strategies
20–200 years	Bilingual community	Fieldwork	Specific contact scenarios
Ca. 200–1000 years	Geographical region	Comparative data, historical sources	Global contact scenarios
Deep time	Larger areas of the world	Typology, genetics, archaeology	No/vague contact scenarios

but also which foreign linguistic elements become part of languages beyond incidental use (a research goal shared with societal studies such as e.g. the study of contact varieties). Linguistic area studies, moreover, have the potential to go one step further: they can isolate those features that persist in an area over long periods of time, sometimes thousands of years. This latter point is connected to the term 'areal stability', discussed in Nichols (1992) and Nichols (2003). Just as language families can be consistent with respect to a particular linguistic feature in that all or most of its members have it, so can areas. The more consistent an area is with respect to a feature, the more areally stable that feature is.

As mentioned, the spatial aspect of language contact is shared with the study of dialect areas. This shared objective yields some obvious desiderata for cross-pollination between linguistic area research and dialect area research, especially when it comes to integrating geographical models into the study of linguistic areas, where it is an underdeveloped aspect. The contrast between dialect areas and linguistic areas that is most interesting to contact linguistics more generally is the fact that the languages studied in dialect research are very closely related, whereas in linguistic areas they are by default unrelated or very distantly related. This is interesting because of the persistent claim that closely related languages allow for many more cross-overs from one language to another (e.g. Weinreich 1953, Moravcsik 1975, Winford 2005, see Section 4.1 for more discussion).

The overarching goal that drives areal linguistics is to uncover non-accidental signals of similarity that cluster geographically, which can, moreover, be shown to be due to contact between the speakers of languages spoken in that area. A third goal (which is not always pursued) is to establish the type of contact that existed between the speakers of the different languages.

2 Approaches

The main objectives of the study of linguistic areas given above translate into three basic steps a researcher takes to make the case for a linguistic area:

1. Determine the area of interest;
2. Establish distribution patterns of linguistic characteristics in that area;
3. Establish that the distribution patterns are the result of contact.

A fourth step would involve establishing the type of social scenario that gave rise to the linguistic area. This step is often not taken in linguistic area research, but from the perspective of this book, it is a crucial step that allows us to connect linguistic areas to the broader field of contact linguistics. In order to give that question the space it requires in the context of this book, we postpone its discussion to the next section, and focus here on steps 1–3.

2.1 Determining an area of interest

Making the case for a linguistic area starts with an expectation or suspicion that a particular area may be of interest from the perspective of areal diffusion. This expectation may be based on linguistic or extra-linguistic indicators.

2.1.1 Extra-linguistic indicators

Stolz (2006) lists three non-linguistic sources that are potential entry points which may lead to the postulation of a linguistic area:[3] geography, cultural history, and observed communicative practices. Each of these source types has played a role in giving rise to linguistic area hypotheses.

A geography-based approach is proposed in Ranacher et al. (2017), who develop an algorithm that proposes random potential diffusion areas based on the

[3]Stolz believes that none of these three is sufficient by itself to delimit a linguistic area, but one can still regard them as potential starting points (see Van Gijn 2020.)

dense river network of the Amazon, where rivers are generally considered to function as pathways, facilitating contact. In a second step, each proposed area is tested for its likelihood of being an actual diffusion area based on the languages showing non-accidental linguistic similarities. After evaluating all the proposals, the best (i.e. most likely) diffusion areas are selected.

Examples of cultural history-first approaches can be found in the North American tradition of the 1970s, where areal linguistics was profoundly influenced by the anthropological tradition of studying culture areas (Mithun 2017). In a late example of this tradition, Bereznak (1995) argues that the Pueblo region in the American Southwest, a proposed culture area on the basis of ethnographic data, should be regarded as a linguistic area as well.

Direct observations of sociolinguistic communicative dynamics that are responsible for the rise of a linguistic area are not common. The example that comes closest to a communication-first account of a contact zone is arguably Gumperz & Wilson (1971), who explicitly start out with observations about the sociolinguistic dynamics of the Kupwar village (see Subsections 3.1.2 & 3.2.2), and then investigate what effect these have had on the three main languages spoken there.

An approach that combines several types of non-linguistic information to establish areas of interest is proposed by Bickel & Nichols (2006), who introduce so-called *Predictive Areality Theory* (PAT). PAT incorporates information from a range of disciplines such as genetics, archaeology, ecology, demography, and topography (but crucially not linguistics) to establish areas where interethnic contacts can be presumed to have taken place. In a second step, the linguistic area hypothesis is tested by looking at linguistic data. The test consists of showing that the languages within the proposed area are significantly more similar to each other than to languages outside the area. The role of geography (topography) in PAT is interesting in that it sets boundaries for the area (e.g. mountains, seas, oceans), but this does not mean that they expect isoglosses to coincide with those natural boundaries. In fact, they expect spill-over both ways: languages that are similar to the areal profile but are in fact spoken outside it and, contrarily, dissimilar languages that are spoken inside the area. The authors say that this is to be expected as language groups migrate into and out of the areas with some regularity.

2.1.2 Linguistic indicators

Suspicions of linguistic areas also often start with observations of certain linguistic patterns. These can be individual observations by areal specialists of con-

spicuous forms or constructions that are found in different unrelated languages. These observed shared constructions are rare or very specific, so that they warrant further investigation of the area. This is in fact how the idea of the Balkan Sprachbund first developed. Another type of observation that may lead to further inspection of an area is based on global or large areal surveys of distributions of linguistic features, which may highlight certain areas that behave differently from the rest of the survey. Depending on the density of the sample, this procedure is particularly suitable for finding macro areas (see, e.g., Nichols 1992).

2.2 Establishing feature distribution patterns

Once an area of interest has been established, it can be subjected to closer linguistic scrutiny. Again, there are essentially two ways to do this, which have been termed *bottom-up* and *top-down* (Muysken 2008, Muysken et al. 2014).

In a bottom-up approach, one starts with a few observations (see above) and from there one starts investigating the languages more thoroughly, thus collecting a catalog of areally distributed features. The top-down approach essentially refers to what has been termed "areal typology" (Dahl 2001), where the languages of an area are coded for a set of features for which there is no particular *a priori* suspicion of areal diffusion (see Subsection 2.1.1 for *Predictive Areality Theory*).

There are advantages and disadvantages to both approaches. The bottom-up approach is more likely to yield very specific, detailed constructions and patterns, but it is less systematic and more prone to being influenced by the subjectivity of the researcher. The top-down approach may miss some of the more specific patterns that may be crucial to establishing a linguistic area (see, e.g., Friedman 2011: 278–279), but it is less susceptible to cherry-picking, with its subjective overtones, and better suited for quantification (see Muysken et al. 2014).

2.3 Establishing contact-induced origin

Nonrandom areal patterning of a feature may be regarded as a result in itself, yet, as mentioned in Section 1.3, such discoveries are typically followed by an attempt to establish the contact-induced origin of the phenomenon. This is needed mainly to eliminate common inheritance and universal pressures as an explanation.

An idealized procedure to determine the contact-induced origin of a feature is described in Thomason (2010). The steps to be taken are: 1) look at the languages as a whole: if structural interference of some kind has occurred, it is highly unlikely to be an isolated instance; 2) identify the source language and show that the

contact was sufficiently intense; 3) identify shared structural features in the proposed source language and in the receiving language; 4) prove that the feature did not exist in the receiving language prior to the proposed contact, if necessary, by examining the languages related to the recipient language; and 5) prove that the proposed feature was present in the source language before it came into contact with the recipient language.

From the perspective of linguistic areas, the two first steps prove to be particularly problematic. Step 1), while completely logical for establishing individual contact phenomena, leads to circularity with linguistic areas: the presence of other shared features is typically what encourages the examination of a suspected feature in the first place. Step 2) is problematic, since determining the source language is often difficult in situations of areal diffusion. For instance, in the Balkans, most of the classical features must be regarded as innovations vis-à-vis the earlier attested forms of all contributing languages (Lindstedt 2018).

In reality, only under exceptional circumstances can more than two of the five research steps mentioned above be satisfactorily observed in a typical research setting, and other criteria have been used to make a case for a linguistic area. Campbell (1985: 31–36) distinguishes historicist from circumstantialist approaches. The former include a broad range of non-linguistic historical data to back up a claim for a linguistic area, whereas the latter operate only on synchronic typological variables and therefore risk missing alternative explanations, such as "undiscovered genetic relationships, universals, onomatopoeia, parallel or independent development, sheer chance, etc."

Distinguishing between inherited and contact-induced features has been at the core of several debates on linguistic areas and areality. For instance, both Sherzer (1976) and Dixon (2002) were criticized for either overlooking, ignoring, or misrepresenting historical-comparative evidence in their arguments for contact-induced areal phenomena (for the criticism, see Campbell 1985, Evans 2005). Conversely, using typological variables to argue for a genealogical relationship is equally problematic as they are prone to diffusing across genealogical boundaries, as Donohue et al. (2008) demonstrate regarding an alternative family tree of Island Melanesian Papuan languages, which has been proposed by Dunn et al. (2007).

The question of chance or independent parallel development in producing areal patterning is complex. Bickel & Nichols (2006) mention a "sufficiently low [cross-linguistic] frequency" of a variable for it to be used as a diagnostic criterion for an area hypothesis. To exemplify this, they mention variables with the cross-linguistic frequency of one-in-four, arguing that with such a high frequency, in any set of, say, 200 variables, five such random bundlings can be

expected among a handful of unrelated languages. What is implied is that, by cherry-picking the variables, any random set of languages can be said to form a linguistic area. Yet in most descriptions of smaller areas, the analysis is finer-grained and does not rely solely on abstract typological variables. In addition, there may be universal pressures that may give rise to independently developed similarities between languages, making it particularly important to take into account universal preferences in language as well (Bickel 2017).

Finally, in establishing the contact-induced origin of a feature, one needs to weigh its independence from the other area-defining features. For instance, the hypothesized European linguistic area, Standard Average European, as well as the Balkans, is characterized by the reduction of case inflection and the rise of definite and indefinite articles. It appears that there is a cross-linguistically observable inverse correlation between the number of cases and there being an article system, implying an interdependence (Sinnemäki & Wahlström 2018). However, such a statistical universal may only weaken a contact hypothesis relative to the strength of the correlation, and only a strict universal or logical dependency, where the presence of feature X can fully predict the presence of feature Y and vice versa, can reduce the diagnostic value of one of these features to zero for a contact phenomenon.

3 Processes and patterns

As with several other concepts in linguistics, linguistic areas can be interpreted either as mainly describing a particular, synchronically observable situation or the process that gives rise to it, depending on one's point of view. This section assesses the processes of area formation and the resulting patterns separately – in other words, it addresses the question of what happens within linguistic areas and how it happens. Both processes and patterns will be illustrated through the case examples of three relatively different proposed linguistic areas: Vaupés, Kupwar, and the Balkans.

3.1 Processes

Given the inferential character of areal linguistics, there is usually no certainty about what processes give rise to linguistic areas. Matras (2011) suggests that contact-induced language change goes through the same cycle as internal language change:

1. There is a spontaneous innovation in discourse

2. that is propagated in society, and
3. becomes part of the system that first-language learners acquire.

Nevertheless, how this process takes shape in multilingual societies is special in a number of ways, especially in the first step.

Matras (2011) claims that bilingual speakers do not separate the language systems in their head neatly. Selections out of a repertoire of constructions are made according to the social setting. More abstract form–meaning mappings (constructions) are less subject to strict selection constraints than are more concrete and tightly organized form–meaning mappings such as word forms, making it more likely for the former to be generalized across linguistic contexts. Furthermore, at the societal level, successful propagation of these individual innovations requires a particular societal structure in which there are lax norms when it comes to language use, that is, speakers are allowed to vary in their repertoire (Matras 2011: 157). At the same time, contact-induced language change arises in situations where the speech communities make an effort to maintain their respective languages (see Chapter 4), that is, in situations with strict norms (see the Vaupés below). In the latter situation, it is more likely that word forms are seen as emblematic of identity than are abstract organizational principles of constructions (Aikhenvald 2002), leading to convergence at more abstract levels.

In a few cases, we can base at least part of our understanding of the sociolinguistic circumstances that have led to linguistic areas on direct observation (although it must be stressed that there are no cases known to us where we can observe the entire process from discourse innovation to becoming part of the language system – it remains a puzzle with a good number of the pieces missing). Given the importance of the connection between linguistic areas and other subfields of contact linguistics, we will dwell somewhat longer on this topic, briefly discussing three cases in which we are fortunate to have direct observations of the sociolinguistic circumstances responsible for the areal convergence observed in the languages involved: the Vaupés (Brazil/Colombia border area), Kupwar (west-central India), and the Balkans (eastern Europe). These three cases are contrastive in that they illustrate different sociolinguistic circumstances that have all led to convergence between the languages involved. The Vaupés shows the effects of institutionalized exogamy and intensive exchange coupled with strict policies against linguistic mixing, leading to (mostly) unilateral diffusion of abstract structure; Kupwar shows the effects of male-driven labor-related bilingualism, leading to multilateral (though uneven) diffusion of both form and abstract structure; finally, the Balkans, apart from sharing some aspects with the other

two, in addition shows some evidence of language shifts, and displays shared innovations and a preference for analytical constructions.

3.1.1 The Vaupés

The Vaupés linguistic area (e.g., Aikhenvald 2002, 2003, Epps 2007) is situated along the Vaupés River basin on both sides of the Colombian-Brazilian border. Several ethnolinguistic groups are in contact that belong to one of three linguistic families: Tucanoan, Arawakan, and Nadahup (or Makú). Between the Tariana (Arawakan) and several Tucanoan groups, there is obligatory exogamy, which necessarily creates a situation where children are connected to two different languages. The Nadahup, traditionally semi-nomadic hunter-gatherers (unlike the agriculturalist Tariana and Tucanoan groups), have long-standing and active socio-economic relations with the Tucanoans of the area, but do not participate in intermarriage. Epps (2007: 268) describes the relationship of the Hup (the Nadahup group most involved in the contact zone) with the Tucanoan groups of the Vaupés as a patron-client relationship, in which the Hup are temporary servants and laborers, and engage in trade. The Nadahup family shows a pattern of involvement in the contact situation that clearly matches the geographical distance from the Vaupés: Hup > Yuhup > Dâw > Nadëb. Contact between the Tariana and the Nadahup groups is less common, creating a situation whereby two different groups (Tariana and Hup) are both oriented toward the same third group.

What makes the Vaupés particularly fascinating are the strict language policy against language mixing (going against Matras' general characterizations mentioned above) and the intricate rules for choosing a language in a particular context (Aikhenvald 2003). As a rule, one speaks the language of one's mother to one's mother and her relatives, and one's father's language to one's father, his relatives, and to one's siblings. Further, etiquette says it is polite to speak the language of one's guest, or of the majority of people present. Finally, power relations are expressed through language choice, for instance, if a speaker speaks his father's tongue in a situation where this is considered impolite, this is interpreted as an assertion of one's status. Language mixing (using phonetic material from more than one language) is considered a sign of linguistic incompetence. Even though the relations between the Hup-speakers and the Tucano were different than those of the Tariana, language loyalty in the sense of a strong resistance against language mixing was also part of the communicative ethics of the Hup-speakers (Epps 2007). This situation of multilingual interaction has been in place for at least a century (Epps 2007), probably longer (Aikhenvald 2002: 24).

As we will see below in Section 3.2, this situation results in mutual influence between the languages involved, though not in terms of particular lexemes or morphemes, but in terms of abstract structural-linguistic organization.

3.1.2 Kupwar

Kupwar (Gumperz & Wilson 1971) is a small village in west-central India where four languages from two families come together: Kannada and Telugu (both Dravidian), and Urdu and Marathi (both Indo-Aryan). Partly coinciding with these language groups, there are two major social groups: (1) Landowners and cultivators: Kannada-speaking *Jains* and Urdu-speaking Muslims; (2) *Lingayats*: Kannada-speaking craftsmen, Marathi-speaking untouchables and landless laborers.[4]

Bilingualism or multilingualism in Kupwar is the norm for local men, and probably goes back several centuries. Marathi has a special position as the main language of communication in inter-group communication. Marathi is also the dominant language in the geographical surroundings of Kupwar as well as the dominant literary language. Inter-group communication mainly takes place in work environments; private environments are mostly separated along linguistic and social lines. Gumperz & Wilson (1971) argue that the existence of clear niches for each language in the private sphere is the main reason that the languages involved persisted without succumbing to a more dominant one.

The association of each language with kinship and social closeness is also why people use different languages in the workplace when members of one of the socially dominant groups address people from other groups. Addressing them in Kannada or Urdu would imply that the laborers are socially close to the landowners. Since Marathi does not carry this connotation (it is not the home language of a large group of people) it is the preferred language for inter-group communication.

The situation of constant code-switching has led to some significant changes in the varieties of the languages involved, resulting in a high degree of intertranslatability. Gumperz & Wilson (1971: 155) go so far as to claim that the varieties used in multi-group situations share "a single syntactic surface structure."

3.1.3 The Balkans

The main varieties contributing to the Balkan linguistic area are Albanian, Greek, Balkan Romance (Romanian, Aromanian, Megleno-Romanian), and Balkan Slavic

[4]There also is a small group of Telugu-speaking rope makers, but they do not surface in the linguistic analysis in Gumperz & Wilson (1971).

(Bulgarian, Macedonian, transitional varieties spoken in Serbia). The formation of the main shared features of the Balkan linguistic area, the so-called Balkanisms, are estimated to have taken place very roughly between the mid-first and mid-second millennium. Friedman & Joseph (2014) describe the language contact in the Balkans as intense, intimate, and sustained. Lindstedt (2000: 239) further lists the main components of the sociolinguistic situation in the Balkans after the Avar invasion in the 6th century and until as late as the 19th century and the demise of the Ottoman empire: 1) Speakers of different languages live close together, often in the same village. 2) There is no single dominant lingua franca. 3) Speakers of each language have sufficient access to the other languages they need. 4) Native languages are important symbols of group identity.

Most researchers seem to agree on the role that this type of balanced language contact played in the formation of the Balkan linguistic area. Some traces of the presumed historical multilingualism can be still observed, despite a drastic ethnolinguistic reshaping of the region during the 19th and 20th centuries and the creation of nation states with one dominant ethnic group, religion, and language (Makartsev & Wahlström 2016: 4–10). The evidence for the earlier community-level multilingual settings is often indirect, yet it must be assumed that, despite the wide-spread multilingualism, several social factors contributed to its level and intensity. Adult males are likely to have been more multilingual than females and children due to their higher mobility, for instance, as traders and seasonal workers. Also, exogamy between different linguistic communities but within the same religious group is likely to have produced gender- and group-specific patterns of multilingualism (see, e.g., Morozova & Rusakov 2018).

The lack of a lingua franca did not mean that all the contributing languages of the Balkan linguistic area enjoyed the same level of prestige. It has been suggested that occupying a mid-position on the prestige scale would explain why some varieties display more shared areal features. According to Lindstedt (2018), the varieties in the middle of the scale, Macedonian in particular, would have been more frequently exposed to the different types of interference from the other languages: there would be significant numbers of both L2 and L1 speakers for that variety. L2 speakers experience interference from their native languages, whereas L1 speakers also try to accommodate their own language, using structures that they know have analogues in the other languages (see also Joseph 2010: 624–628).

It is crucial to note that, despite the duration and intensity of language contacts and widespread multilingualism, the speech communities of the Balkans successfully maintained their linguistic identity for centuries (see, e.g., Joseph 2010: 625). A social norm that holds languages as important group symbols, in combination

with another norm that values multilingualism,[5] has been an important factor contributing to the linguistic convergence. Yet at least in some cases the areal convergence may also have been sped up by language shifts. One such example is the South Slavic and Aromanian substrate in some varieties of Albanian (Desnickaja 1968: 258–260). Macedonian is also argued to have an Aromanian (Balkan Romance) substrate, having contributed significantly to its "Balkanization" (Gołąb 1997). Yet crucially for the Balkans, these proposed substrata cover only a small, although central, geographical portion of the linguistic area.

3.2 Patterns

The patterns in the focus of the study of linguistic areas range from articulatory commonalities through shared semantic concepts to even beyond the traditional scope of linguistics, such as gesturing (for the latter, see Enfield 2005: 196). Yet some general tendencies regarding the areas of interest can be observed. Trubetzkoy's definition of linguistic areas (see Subsection 1.1), contrasting the areas with language families, emphasizes shared syntactic and morphological patterns, while also mentioning shared cultural words, as well as occasional, superficial similarities in sound systems. This early prediction is reflected in the choices made in later contributions to the field: morphosyntactic patterns dominate the analyses.

The superficiality of similarities pertaining to sound systems in Trubetzkoy's (1928) formulation must not be interpreted as non-pervasiveness. These similarities may contribute to particular contrasts in the respective phonological systems of the constituent languages of a linguistic areas, although they are not describable as systematic sound correspondences as with genealogically related varieties. For instance, in the Indian subcontinent, most languages contrast a set of retroflex consonants with dentals (Emeneau 1956: 7). In the Balkans, in several varieties there is a stressed schwa-like (mid-to-high central) vowel (Asenova 2002: 28–30). Also, the preference for tonality in Southeast Asia results only partially from common inheritance, as Vietnamese demonstrates. It became, unlike the related Khmer, a tone language as a result of language contact (Enfield 2005: 191).[6]

The fact that lexicon, like phonology, has not received as much attention in the study of linguistic areas as morphosyntax is most likely because lexical borrowing can take place even in the most superficial language contacts, not subsuming

[5] This is evidenced, for instance, by the ubiquity of the proverb "languages are wealth" in the Balkans (Friedman 2012: 163).

[6] See Subsection 4.2 for potential substrate explanations.

sustained multilingualism. Loanwords do not, therefore, add much to an area hypothesis. Calquing, on the other hand, presupposes somewhat better knowledge of the source language, and lexical semantic convergence has been studied in connection to areality (see, e.g., Asenova 2002: 48–61 for shared proverbs and patterns of polysemy or colexification in the Balkans; Aikhenvald 2009 for polysemy in New Guinea and Australian languages). A novel approach to colexification and areality is proposed by Gast & Koptjevskaja-Tamm (2018). The authors automatically detect areal clustering of colexification patterns from lexical databases. The areally clustering patterns found (such as "fire"–"tree" or "mountain"–"stone") are then controlled for genealogical relatedness to establish convergence areas.

Yet the existence of a shared structural innovation does not mean that its functions are uniform. This disparity may result from different levels of integration of the feature into a variety, or, in other terminology, its level of grammaticalization. All languages of the Balkan linguistic area display pronominal doubling of direct objects (DOs), yet in some varieties doubling is triggered by all definite direct objects, whereas in others its use depends on less frequent pragmatic contexts. Friedman (2008) establishes a cline from more to less grammaticalized use of the doubling of DOs: the further one moves away from the assumed geographical center of convergence, the less grammatical the feature becomes.

A further question involves the diachrony of the contact-induced convergence. From the perspective of a single language contributing to a linguistic area, a shared feature may be an innovation, but it could also represent the retention of a feature that would have been lost without the contact. Janhunen (2005: 117) presents a matrix of potential diachronic pathways of convergence, see Table 2.

Table 2: Diachronic pathways of convergence (Janhunen 2005: 117)

	Positive	Negative
Active	introduction of a new feature	loss of an old feature
Passive	retention of a feature	non-introduction of a feature

While a positive + active development could be a borrowed feature or a shared innovation, a negative + active development is illustrated by the loss of a feature or category that is not supported by the contacting languages. A positive + passive development, on the other hand, means the retention of a feature due to contact that would be lost otherwise. For instance, the Balkan Romance languages are the only Romance varieties retaining some case inflection, modeled according to a shared Balkan case system (Wahlström 2015: 107). The intuitively most difficult

scenario to grasp, a negative + passive development, would entail a situation in which the diffusion of an innovation within a dialect continuum is prevented in a variety, because the innovation is not supported by its contacting languages. However, while logically possible and credible as scenarios, retention, loss, and especially prevented adoption of a feature can be extremely hard to prove.

In order to show the relation between processes and potential resulting patterns, we briefly zoom in on the patterns found in the three case studies discussed in the previous section (Vaupés, Kupwar, the Balkans).

3.2.1 Vaupés: Unilateral diffusion of abstract patterns

The specific sociolinguistic policies of the Vaupés area have led to numerous shared abstract patterns with very little borrowing of forms from one language to another, across the entire spectrum of language structure (ranging from phonemic contrasts to morphosyntax and discourse structure, see Aikhenvald (2002) for an elaborate overview). Importantly, form (matter) borrowing and changes in word formation processes are hardly attested, both in Tariana and Hup. The contact-induced changes in Hup and Tariana can in many cases be established by comparing their structures to those of related languages that are not (or are less) involved in the exchange system of the Vaupés.

Because of the fact that both the Tariana and Hup speakers are oriented toward the Tucanoans, they have become similar to each other in spite of the lack of intensive contact between them. In other words: the Vaupés linguistic area arose through unilateral, partly parallel influence from Tucanoan into Hup and Tariana. Table 3 shows the contact-induced changes that are shared by (at least) Hup and Tariana.

3.2.2 Kupwar: Multilateral (but uneven) diffusion of matter and patterns

In their description of the contact-induced changes in the varieties involved in the contact situations, Gumperz & Wilson (1971) discuss several areas of grammar where the Kupwar languages, though maintaining their lexical differences, have converged. Changes can be established relatively clearly because all three languages are also spoken in areas that fall outside the Kupwar exchange system proper. Convergence seems mainly to have affected local Urdu, and Kannada to a lesser extent. Their observations are summarized in Table 4. Note the importance of negative categories: these illustrate Janhunen's (2005) negative + active pathway to areal convergence – the loss of an old feature – discussed in Section 3.2. For a more detailed account, the reader is referred to Gumperz & Wilson (1971).

Table 3: Contact-induced changes in the Vaupés languages shared by Hup and Tariana

Grammatical pattern	Affected languages
Nasal spread	Hup, Yuhup, Tariana
Pitch-accent	Hup, Yuhup, Dâw, Tariana
No phonemic oral-nasal contrast	Hup, Tariana
Root-initial allophone [dj] of /j/	Hup, Tariana
Allophone [r] of d in intervocalic position	Hup, Tariana
Mixed nominal classification[a]	Hup, Tariana
Base-five numeral system[b]	Hup, Tariana
Animacy-based split plurality	Hup, Tariana
Elaborate evidential system	Hup, Tariana
Remoteness distinctions in the past	Hup, Yuhup, Tariana
Productive verb-verb compounds	Hup, Tariana
Accusative alignment	Hup, Tariana
Multi-functional object marker	Hup, Tariana
Differential non-subject marking	Hup, Tariana
Morphological passive derivation	Hup, Tariana
Verb-final constituent order	Hup, Tariana
Affixed negation	Hup, Tariana
Inherently negative verb stems	Hup, Tariana

[a]Inanimates are classified according to shape, animates according to gender. In Hup, this classification system is used for a subset of nouns.

[b]This system is based on adding fingers and toes to five, and also includes a calqued term for number four meaning 'having a brother'.

Apart from the more abstract patterns displayed in Table 4, there is also some borrowing of linguistic forms between the languages. Gumperz & Wilson (1971: 161) note that, although all elements can be borrowed, content words are borrowed more frequently than function words (and within the group of function words there is a sub-hierarchy: adverbs > conjunction markers > postpositions > other), and function words are in turn more frequently borrowed than morphologically bound material (where derivation < inflection).

Gumperz & Wilson (1971) conclude that the linguistic patterns that are the result of contact reflect the social and regional situation. Locally, the Kannada speakers form the majority and are the economically dominant group. Local

Table 4: Contact-induced changes in the Kupwar languages

Grammatical pattern	Affected languages	Source languages
Semantically-based gender system	Urdu, Marathi	Kannada
Single agreement in auxiliary constructions	Urdu	Kannada
Complement follows V+AUX complex	Urdu	Kannada, Marathi
Person-based agreement on past auxiliaries	Urdu	Kannada, Marathi
Mono-exponential future markers	Urdu	Kannada
No tense-based alignment split	Urdu	Kannada
No NP-internal agreement	Urdu	Kannada
Underived modifying elements in NP[a]	Kannada	Urdu, Marathi
Dative-marked human objects	Kannada	Urdu/Marathi
No special past non-finite construction for compound verbs[b]	Urdu	Kannada, Marathi
Use of a copula in equative constructions	Kannada	Urdu, Marathi
Order communication verb - quotation	Kannada	Urdu, Marathi
Clause-final question word marks Y/N question	Kannada, Urdu	Marathi
Dative/oblique case to mark purpose clause	Kannada	Urdu, Marathi
Genitive on verbs creates modifiers	Urdu	Kannada
Clusivity	Urdu	Kannada

[a]Kannada has lost the obligatory nominalizing suffixes on pronominally and adjectivally used possessives and demonstratives, like Hindi-Urdu and non-local Marathi.

[b]Local Urdu used to have an exceptional construction for compound verbs in past non-finite contexts, but has extended the use of so-called past non-finite verb forms to include compound verbs, following Kannada and Marathi.

Marathi, in spite of its speakers belonging to a subordinate social group, is protected by the fact that it is the dominant language in the larger region. This leaves local Urdu as the language that has undergone the most changes. The authors also suggest that the resulting intertranslatability is driven by cognitive economy, reducing the need to learn different systems. A further important component, as mentioned, is the fact that each language has its own clear niche in which it is used.

3.2.3 The Balkans: Shared innovations and preference for analytical constructions

The grammatical features shared by the Balkan languages are characteristically constructions consisting of uninflected function words as well as of inflected words that have grammaticalized, for instance, into auxiliaries and articles. In diachronic terms, these so-called Balkanisms represent increasing analyticism, since they replace or compete with strategies relying on inflection. Moreover, the grammatical Balkanisms typically do not give away their origin, but seem to be shared innovations. Judging this is, nevertheless, problematic, since only Greek and Slavic are attested throughout the formation of the linguistic area, whereas the first written sources for Albanian and Balkan Romance surface only by the mid-second millennium, already displaying the grammatical hallmarks of the linguistic area. On the other hand, Balkan Romance, as well as Slavic, has members of the same branch of Indo-European outside the geographical area with a better attested history, allowing for comparison.

Table 5 displays some of the most commonly cited areal features of the Balkans. While shared, for the most part, by all main contributing languages or a number of their varieties, the majority of these are also present to some extent in the varieties of Romani spoken in the Balkans.

However, not all these features form clear-cut, perfectly overlapping isoglosses, delineating the linguistic Balkans. Their integration into the linguistic systems of the respective languages can be assessed along three axes:

1. The Balkan feature may only be a minor pattern in competition with other structures. For instance, while the majority of Greek dialects display the genitive-dative merger, when marking recipients the genitive-dative is in competition with a prepositional construction, pertaining to the other Balkan tendency of favoring analytical constructions.

2. While a certain morphosyntactic pattern may exist, its level of integration into the grammar may vary. Object reduplication is found to some

Table 5: Balkan morphosyntactic features present in the majority of the languages (adapted from Lindstedt 2000)

Grammatical pattern
Enclitic articles
Object reduplication
Prepositions instead of cases
Dative–possessive merger
Goal–location merger
Relativum generale
Aux (+ comp) + finite verb
Volo future
Past future as conditional
Habeo perfect
Evidentials
Analytic comparison

extent in all languages, but its conditioning criteria vary from being obligatory with, for instance, definite and specific objects to being pragmatically conditioned toward the periphery of the Balkan linguistic area (Friedman 2008).

3. The dialectal spread of a feature varies. A Balkan feature may be present in a number of spoken varieties, often in closer proximity to the areas of more intense contacts, but absent in the prestige varieties and the standard language, typically described by reference grammars.

Shared phonological features of the Balkan linguistic area are typically seen as more tenuous than the morphosyntactic. According to Friedman (2011: 278), this is not because there is no convergence on the level of sound systems, but that it is often highly localized. This local convergence attests to intense contacts, but with no all-encompassing, unified results. The best-known candidate for a phonological Balkan feature is a stressed schwa-like (mid-to-high central) vowel, famously lacking in Greek and Macedonian. However, a closer scrutiny reveals that modern Macedonian dialects, not displaying the phoneme, have lost it as a result of phoneme mergers (Koneski 1965: 46–48). Since the phonological convergence of the Balkan languages did not involve all varieties, or, since its results were not necessarily permanent, it is not an area-defining property on par with the shared morphosyntactic features.

4 Factors

In this chapter we introduce factors that have been considered relevant for linguistic area formation. We begin with linguistic factors followed by more numerous non-linguistic factors.

4.1 Linguistic factors

Three types of linguistic factors contributing to area formation have been discussed in the literature. We summarize these as (1) borrowability, (2) typological distance, and (3) complexity.

4.1.1 Borrowability

Linguists interested in the historical development of languages have long noted that not all elements of a language change at the same rate. This is an important insight in historical linguistics where the lexicon is concerned, leading to a list of stable words (Swadesh 1952 and subsequent publications), which proved to be of great importance for establishing relatedness between languages. About the same time as Swadesh introduced his list of stable words, Weinreich (1953) published a similar idea relating to borrowability, making generalizations about the borrowability of linguistic items, including structural elements. Table 6 shows the main conclusions by Weinreich (1953): in terms of formal properties, he concluded that tightly bound forms are less likely to transfer from one language to another than free forms. Likewise, reduced forms and morphemes that show allomorphy are less likely to be transferred. On the content-related side, he deemed obligatory, grammatical, and non-affective forms to be less borrowable than their counterparts.

Table 6: Weinreich's borrowability generalizations, adapted from Wilkins (1996)

Formal properties			**Content-related properties**			
Boundedness	Form	Variance	Use	Function	Meaning	Borrowability
tight	reduced	flexive	obligatory	grammatical	non-affective	low
						⇕
free	robust	non-flexive	optional	lexical	affective	high

Weinreich's seminal work gave rise to many different proposals for borrowing hierarchies (see, e.g., Wilkins 1996 and Curnow 2002: 417–419 for useful

overviews). Although none of these hierarchies has full predictive or implicational power, they still highlight fairly robust tendencies:

1. Content words are generally more easily borrowed than function words.
2. Nouns are generally more easily borrowed than other words.
3. Free elements are generally more easily borrowed than bound elements.
4. Derivational morphology is generally more easily borrowed than inflectional morphology.

These generalizations are, by and large, consistent with many lexical borrowing patterns (see Haspelmath & Tadmor 2009 for the first two generalizations and Gardani et al. 2017 for the last two; see also the lexical borrowing patterns in the Kupwar case described above).

These tendencies, however, apply to the borrowing of formal elements from language A into language B. As we have seen in the three case studies above, contact-induced change in linguistic areas often (perhaps always) involves the borrowing or convergence of abstract patterns. As has been shown by, for instance, Matras & Sakel (2007), borrowing of form (matter in their terminology) is subject to different generalizations than borrowing of patterns. Attempts to come to a borrowing scale for abstract grammatical features have come mainly from typological research, and mainly following the online publication of the World Atlas of Language Structures (Dryer & Haspelmath 2013), in the form of stability measures, which often also include a measure of borrowability. Unfortunately, these proposals, in spite of some promising tendencies across methods (Dediu & Cysouw 2013), have not led to widespread consensus.[7]

4.1.2 Typological distance

It is often assumed that structural similarity between languages facilitates the transfer of linguistic material from one language to another (see, e.g., Bowern 2013 and Seifart 2015 and references therein).[8] This assumption resonates with

[7] In fact, the methods seem to be more successful in determining stability than borrowability. As Dediu & Cysouw (2013: 18) show, not all of the methods they review actually measure borrowability very clearly, and since the effects of language contact are not uniform across social situations, borrowability is hard to measure from a global typological data set.

[8] Note that an opposite line of reasoning is also sometimes mentioned: elements that are "lacking" in language A are more likely to be transferred from language B, in order to fill a functional gap in language A. Since functional gaps are difficult to define (though see Hale 1975 for an attempt), this issue is rarely systematically pursued.

findings in code-switching research, where repeated observations that speakers will switch at points where the languages involved are structurally similar have led to the postulation of the so-called *equivalence constraint* (Poplack 1978, 1980).[9] Nevertheless, several scholars (Thomason & Kaufman 1988, Bowern 2013, Seifart 2015) show or argue that structural similarity plays a role in the background at most, secondary to social factors. The most systematic treatment of this question is arguably Seifart (2015), who looked at affix borrowing in 101 pairs of languages, and related this to typological similarity, based on data from Dryer & Haspelmath (2013). He found no correlation between typological similarity and concludes that "structural-typological similarity plays at best a minor role in constraining or facilitating the borrowability of affixes." Nevertheless, more detailed views (construction-based) on typological or structural similarity are needed to get a clearer view on this question. Also, structural distance as a factor has mainly been taken into consideration with respect to matter borrowing; how pattern borrowing behaves with respect to this parameter is unclear.

4.1.3 Complexity

A controversial topic in contact linguistics is whether language contact leads to simplification in the languages involved. Following up on earlier work, Trudgill (2004) argues, on the basis of phoneme inventories of Austronesian languages, that certain contact situations lead to simplification. Specifically, he claims that "communities involved in large amounts of language contact, to the extent that this is contact between adolescents and adults who are beyond the critical threshold for language acquisition, are likely to demonstrate linguistic pidginization, including simplification, as a result of imperfect language learning" (Trudgill 2004: 306).[10] This claim finds partial support in a large-scale statistical analysis of the morphological complexity and demographic aspects (Lupyan & Dale 2010) of about 2,000 languages, which found a correlation between speech community size and morphological simplicity. Trudgill argues further that a different type of contact situation can lead to *complexification*: a situation with widespread native bilingualism can lead to the expansion of phoneme inventories to allow for pronunciations of loanwords.

[9] The equivalence constraint has also turned out to be a tendency at best, since several cases of violations have been recorded since its first proposal (Matras 2009: 130)

[10] In his phoneme inventory data, such societies tend to have medium-sized phoneme inventories, which minimize complexity in phoneme size on the one hand, such that distinctiveness in the lexicon is maintained.

If Trudgill is right, we can consider complexity as a factor in the sense that complex forms are prime targets of contact-induced change, given the right sociolinguistic circumstances. And indeed, especially if we look at the contact-induced changes in the Kupwar languages discussed in Section 3.2, where much adult second language learning presumably takes place (see Section 3.1), they often seem to involve simplifications (e.g., loss of a tense-based alignment split, loss of multi-exponence, loss of double agreement, loss of intransparencies in the gender system). The Vaupés, on the other hand, where native bilingualism is ubiquitous, seems to involve fewer cases of simplification; indeed they often involve complexification (e.g., creation of allophony, a mixed nominal classification system, remoteness distinctions in the past, elaborate evidential system). Regarding the Balkans, Lindstedt (2018) argues that the bulk of the Balkan contact phenomena are neither clearly simplifying nor complexifying in the sense of Trudgill, but represent a third type that favors explicit analytic grammatical marking that increases direct intertranslatability among the languages.

Nevertheless, Trudgill's claims are controversial (see the debates in the same issue of *Linguistic Typology* in which Trudgill (2004) was published as a target article), and they suffer from two serious shortcomings. The first is that we have little data on historical social situations (see Section 3.1 above), which makes the claim hard to falsify, and the second is that, in spite of a sustained interest in the topic (see e.g. Kusters 2003, Dahl 2004, Miestamo et al. 2008, Baerman et al. 2015), there is no generally agreed-upon theory or even description of complexity.

4.2 Non-linguistic factors

Since non-linguistic factors often have to be reconstructed from the linguistic data in areal linguistics, there is not much firm ground to stand on. This should be kept in mind when reading the following sections.

4.2.1 Speaker-related factors

Very little can be said about speaker-related factors, but we highlight two factors that may play a role in area formation: gender and age.

Gender may play a role in linguistic areas in that, depending on the situation, it may be mainly males or females who promote convergence, for instance when linguistic areas are the result of institutionalized exogamy combined with sex-based post-marital residence patterns. In these cases, it is the mobile group (i.e. the women in patrilocal systems, the men in matrilocal systems) that may drive language change in the societies they are married into (see, e.g., Morozova &

Rusakov 2018, mentioned in Section 3.1). This has been one of the relevant factors in the Vaupés area, especially in Arawakan-Tukanoan contacts (see Aikhenvald 2002, Chacon 2017, Epps 2020, Van Gijn et al. 2022).

Convergence may also be driven by sex-based labor divisions. If, for instance, trade or work migrations contribute to area formation, and are typically male activities (as in the Kupwar case, for instance), males might be the driving force behind convergence. In the case of the Balkans, seasonal work migrations in the Ottoman Empire, called *gurbet*, are considered to be one of the contributing contexts for adult multilingualism (Lindstedt 2018). However, they were predominantly a male activity, with the exception of young, unmarried women (Hristov 2008: 3–5).

Age may be important in that interference from a first language into a second language is more likely if a person learns the second language at a later age. Native, or infant bilingualism, on the other hand, may leave fewer (and different) traces in the languages involved. L2 effects have played a role in the area formation in the Balkans and in the Kupwar case, while early multilingualism seems to have been the standard case for the Tariana in the Vaupés. More generally, it is assumed that adult L2 learning will more often lead to simplification, whereas infant bilingualism is more likely to preserve the intricacies of the linguistic systems involved intact. This latter point is illustrated, for example, by Mithun (2015) for the North American context, where the widespread occurrence of complex bound pronominal systems and large inventories of lexical-like affixes (i.e. affixes with a high semantic load) can partly be attributed to the long-term existence of infant bilingualism and the absence of large-scale adult L2 learning.

4.2.2 Interactional factors

For most linguistic areas, we do not know anything about the conversation practices of the people involved, and so the only clear assumption we can make here is that conversations contain elements from both (or more) languages involved. What exactly these "foreign" elements are depends on the societal norms of language use (see Subsection 4.2.3), but it seems that one of the things that many linguistic areas have in common is the fact that, contrary to "normal" situations of language contact (as for instance portrayed in Thomason & Kaufman 1988), the contact signal in linguistic areas seems to be found in the patterns of grammar.[11] It therefore seems reasonable to assume that conversations between speakers

[11]This is not to say that there can be, or indeed is, no matter borrowing in areal patterns, but most linguistic areas do seem to deviate from the pattern that grammar is affected by contact only after the lexicon has clearly been affected, as argued for in Thomason & Kaufman (1988).

from different ethnolinguistic backgrounds were mixed at more abstract levels of organization (see for this point Matras 2011, discussed in Section 3.1).

4.2.3 (Supra)-societal factors

One reasonable perspective on linguistic areas, present in the view of e.g. Campbell (2006) and Matras (2011), is that they simply represent networks of language communities in contact with each other under similar circumstances, with either one language in contact with several others, or a chain of contacts between geographically neighboring languages. On this view, the question of what societal factors are important for the formation of a contact area is partly a question about what shared or suprasocietal factors are conducive to area formation. Without claiming exhaustivity, the most important (supra)societal factors we see in the literature as facilitating area formation are the following:

4.2.3.1 An incentive for contact

At the very least, there must be a reason for two or more societies to get into contact with each other. There may be many different reasons for contact (trade, expansion/war, broadening the gene pool), which nevertheless can arguably be summarized as increasing the standard of living of at least one of the groups involved; often it is a necessary step for a society to come into contact with another group in order to avoid food shortage (see Nettle 1999, which will be briefly discussed in Section 4.2.4 below).

4.2.3.2 Widespread, intense, and long-term bilingualism or multilingualism

Another necessary societal circumstance is that there is a large portion of people involved in the areal pattern who speak more than one language. The scenario that is often associated with area formation is one of symmetrical, mutual bilingualism (Muysken 2010). In addition, there are other logically possible contact scenarios, resulting in areal convergence. A shared superstrate language could result in areal patterning of linguistic features without horizontal diffusion between the converging varieties. However, much more popular than superstrate explanations are theories about a common substrate language, especially in the past. Yet proving that a particular feature, especially a structural one, results from a substrate is notoriously difficult, and their former popularity may be explained by substrate being perhaps the earliest well-studied type of language contact (see,

e.g., Wahlström 2015: 14–16). Also, it is not clear whether the expected linguistic outcome of extensive adult multilingualism and language shift are necessarily different. Language shift (see Chapter 4) is typically assumed to have been preceded by a period of adult multilingualism. Nevertheless, a number of uncontested features of well-known linguistic areas may well have arisen through the substrate effect rather than by sustained multilingualism. For instance, the retroflex consonants typical of the linguistic area of the Indian subcontinent have been attributed to a Dravidian substrate (Thomason & Kaufman 1988: 39–40).

4.2.3.3 Language loyalty at the societal level

The other side of the coin of multilingualism is that linguistic areas arise in circumstances of predominant language maintenance, i.e. there must be incentives for a group of speakers that is involved in a situation of sustained interethnic contact to maintain their own language. These incentives can be functional-communicative (particular niches exist for the language so that it must be learned by children, e.g. as in the Kupwar case) and/or ideological (as in the Vaupés). This perhaps seems a trivial point to make, but it is a point that is not always made explicit.

4.2.3.4 Lax norms of language use

As was briefly discussed in Section 3.1, in order for innovations to spread through a society, there needs to be some amount of tolerance in the norms of language use. It seems that the type of innovation that can spread through society is determined by these norms of language use. For instance, in the Vaupés, where norms of language use are very strict when it comes to mixing of linguistic matter, permitted variation is limited to more abstract patterns of language use. In the Kupwar situation there seems to be more tolerance for using matter from language B in a language A context. In the Balkans, there seems to be tolerance for the use of innovative, analytical constructions, perhaps related to adult bilingualism or imperfect competence in non-native languages.

4.2.4 Geographical factors

In spite of its obvious connections to geography, geographical factors (beyond the very general "geographical proximity") are not commonly taken into consideration in areal linguistics. However, if we extend our view to approach the more general topic of migration and expansion, we can bring up a number of suggestions for geographical factors that may influence area formation.

Elevation is often regarded as a barrier to language contact, linguistic diffusion, and language expansion (e.g. Nichols 1992, 1997). We mentioned Predictive Areality Theory (Bickel & Nichols 2006), where mountain ranges are taken into consideration as topographical elements impeding spread, and thus as boundaries to the linguistic area. They find that these mountain ranges are indeed good indicators of the limits of the large contact zone (the Circum-Pacific) under consideration. Elevation differences are also taken into account in Van Gijn (2014) and Van Gijn & Muysken (2020), whose results suggests an important role for societies on the mountain slopes in the diffusion of features across elevation differences in the Andean-Amazonian context.

Bodies of water are another factor that has been contemplated in areal linguistics. They have been considered both barriers and facilitators of contact. It has long been claimed that river systems have functioned as important pathways for language spreads and contact in Amazonia (see e.g. Hornborg 2005, Eriksen 2011). Van Gijn et al. (2017) set out to test the role of rivers in the formation of linguistic areas in lowland South America. The results do not clearly support a facilitating role for the river systems, but this may be due to methodological issues, so this needs to be investigated further.

A case in which water seems to function as a separator of sorts is in the historical development of the languages of the British Isles and those in their immediate surroundings (Dedio et al. 2019). In their study, which focuses on reflexivity marking, the authors show that, over the period between 1200 and 1900 in particular, the languages spoken on the isles have become more similar to each other, and that the differences between the languages on the isles, on the one hand, and the languages on the continent, on the other, have grown. The continental languages, finally, have exhibited no significant change in their similarity. This means that the Channel and North Sea have acted, at least in that time period, as a barrier to contact.

Traveling time has been argued to be a superior measure to straight-line distance in explaining dialectal diversity (Gooskens 2005), see also Chapter 6. While (historical) traveling time can be seen as a proxy measure subsuming topography, it is not clear whether it could be feasibly applied to larger linguistic areas, as the effect of traveling time is typically assumed to reflect distances covered regularly by individuals. However, traveling time could be a useful factor in measuring diversity within more compact linguistic areas.

Ecological circumstances are considered in connection to linguistic diversity in Nettle (1999), who sets up a hypothesis that linguistic diversity is driven by the ecological circumstances. In this view, the behavior of speech communities is heavily influenced by "ecological risk" (the risk of food shortage for a given

community). In areas where resources are scarce and agricultural produce inconsistent, people are forced to forge extensive social bonds with other people, in order to increase the land they can draw food from. High-resource areas with constantly favorable climatic conditions allow smaller social groups to provide everything a society needs. Contact areas, in this view, can be the result of a strategy to reduce ecological risk.

Güldemann (2011), considering large contact areas in Africa, claims that geography has played an important role in that areas tend to spread in a general east-west direction (as opposed to north-south). Building on an idea by Diamond (1997), Güldemann connects this tendency to ecological circumstances in that the general climatic and ecological circumstances remain relatively constant in a east-west direction, whereas these circumstances tend to change more from north to south.

5 Conclusions

Linguistic area research, in spite of a number of fundamental difficulties, has enjoyed increasing attention within linguistics in general, and contact linguistics in particular. This has led to numerous proposals for putative linguistic areas all over the world. This steep increase in data over many different contexts, however, has not led to clear conclusions on the processes that lead to areal patterns of similarity. This is undoubtedly due to the fact that linguistic areas can arise under many different circumstances: areal patterns can arise in situations of symmetrical bilingualism, but also in situations where there is a dominant lingua franca; it can arise in situations where societies cooperate to improve their standard of living, but also in circumstances where one group dominates the other; it can involve infant bilingualism or adult bilingualism; it can involve few groups in a small territory, or many groups in a vast territory, to name but a few parameters on which situations can differ.

In order to press forward, therefore, it is vital in each proposed case of a linguistic area to know as much about the social history of the area as we can. In Campbell's (1985) terms: we need to maximize historicism and minimize circumstantialism. Unfortunately, history, in many cases, is unknown. But rather than ignoring the cases where we do not have a historical basis, we need to reconstruct social history as well as we can by taking recourse to other disciplines, such as human ecology, population genetics, archaeology and ethnology (see Van Gijn 2020). This is a big challenge, because it means that we need to build theories of how we can bring the signals from these different sources together in meaningful ways to create a picture that is maximally complete.

In addition, in line with the purpose of this book, linguistic area research would profit from being more intimately integrated within contact linguistics, seeking more systematic comparisons with other subdisciplines of language contact. Following ideas presented in, for instance, Niedzielski & Giles (1996) and Muysken (2013), the study of patterns in bilingual language use (see Chapters 2 and 3) provides an interesting comparative perspective with the areal patterns found in linguistic areas. Society-level studies of language shift (Chapter 4), borrowing (especially pattern borrowing), and the emergence of contact languages (Chapter 5) form a potential bridge between language use patterns on the one hand and deep-time areal patterns on the other (see Muysken 2008). Finally, for the areal aspect, we mentioned that geographical models are hardly used in linguistic area research. In this sense, linguistic area research can profit from the rich tradition of geographical modeling that exists in dialectology (Chapter 6).

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Name index

Language contact

Contact linguistics is the overarching term for a highly diversified field with branches that connect to such widely divergent areas as historical linguistics, typology, sociolinguistics, psycholinguistics, and grammatical theory. Because of this diversification, there is a risk of fragmentation and lack of interaction between the different subbranches of contact linguistics. Nevertheless, the different approaches share the general goal of accounting for the results of interacting linguistic systems. This common goal opens up possibilities for active communication, cooperation, and coordination between the different branches of contact linguistics. This book, therefore, explores the extent to which contact linguistics can be viewed as a coherent field, and whether the advances achieved in a particular subfield can be translated to others. In this way our aim is to encourage a boundary-free discussion between different types of specialists of contact linguistics, and to stimulate cross-pollination between them.