23 Linguistic change in grammar

Walter Bisang

23.1 Introduction

That languages change over time is a truism that everybody knows from comparing a currently spoken language with older versions of the same language as it is preserved in written texts or in oral texts of special cultural value. This very simple observation contrasts with the impressive complexity of the processes of linguistic change and the factors that determine them. The evolutionary perspective provides a good framework for modelling linguistic change in general and for integrating a wide range of interacting factors. In this framework, speech communities are the environment that selects the structures of concrete utterances in actual speech situations. While the structures that are selected generally follow known structural patterns, there are sometimes innovations produced by individual speakers in actual discourse. Even though innovations deviate from the rules of a language they do not make a linguistic change. Linguistic change only happens if a given innovation is propagated within a speech community as a whole. This important difference between innovation and propagation as successful diffusion was introduced by Croft (2000) in his Theory of Utterance Selection. In this approach, innovations can have many different motivations that reach from articulation to cognition or needs of discourse and social behaviour, while propagation depends only on social factors. The present chapter will take a different view. If speakers with their specific properties form the selectional environment for linguistic structures in discourse that environment is characterized by the social properties of the speakers involved as well as by the other factors mentioned above (Bisang 2004). For that reason, I assume that innovation and successful change (propagation) depend on the following:

- cognitive factors (e.g. competing motivations of economy versus iconicity);
- communicative factors (e.g. pragmatic inference, information structure);
- Universal Grammar (UG);
- physiological factors (production and perception of sounds);
- sociolinguistic and cultural factors.
The first four factors are language internal, the last factor is language external. Since the physiological factors relevant for linguistic change are treated in Chapter 22, they are not addressed here. The other language internal factors will be the subject of §23.2 on grammaticalization, i.e. on changes in grammar and their relation to factors of cognition and communication as well as to UG. §23.3 on change due to external factors will introduce the relevance of frequency (s-curve model), three sociolinguist models of language change and the effects of contact among speakers of different languages (borrowing, shift, mixed languages, pidgin and creole languages). Since understanding the processes of linguistic change is fundamental for linguistic typology and the discovery of potential universals (Chapter 25), this issue will be briefly discussed in the closing remarks of §23.4.

23.2 Language internal change: grammaticalization

23.2.1 Introduction

The origin of the term ‘grammaticalization’ can be dated back to Meillet (1912), who defines grammaticalization as the transition from autonomous words to grammatical elements. A simple example of this kind of linguistic change is the development of future markers from verbs of volition (cf. English will; Modern Greek θα, derived from the verb θέλω ‘I want’; Chinese 要 ‘want/future marker’). Even though this phenomenon was discussed by historical linguists of the nineteenth century, the credit of giving it a terminological label belongs to Meillet. The existence of this term had no immediate impact on the research agenda in linguistics. It took more than fifty years until Kuryłowicz (1965) offered the following definition, which has become the basis for many later definitions: ‘Grammaticalization consists in the increase of the range of a morpheme advancing from a lexical to a grammatical or from a less grammatical to a more grammatical status’ (Kuryłowicz 1975 [1965]: 52). In the 1970s, Givón (1971, 1979) argued that synchronic linguistic structures can only be understood from their diachronic history. His famous statement ‘Today’s morphology is yesterday’s syntax’ (Givón 1971: 413) summarizes how independent words evolve into dependent grammatical morphemes. Another important pathway leads from discourse structure to morphosyntactic structure in the sense that discourse structure gets fossilized into syntactic and morphological structure. The combination of both developments feeds into a cyclic process that starts out from discourse and ends up in zero marking:

(1) Givón (1979: 209):

\[
\text{discourse} > \text{syntax} > \text{morphology} > \text{morphophonemics} > \text{zero}
\]

Processes like that in (1) are typical of grammaticalization. They are called ‘clines’ or ‘pathways’. Meanwhile, research in grammaticalization has claimed an impressive number of grammaticalization clines, which are listed in Heine and Kuteva (2002). The following cline starts out from nouns that belong to the semantic domain of PERSON (e.g. body parts):

(2) Heine et al. (1991):

\[
\text{person} > \text{object} > \text{activity} > \text{space} > \text{time} > \text{quality}
\]

Examples (3) to (6) below from Thai illustrate this cline from OBJECT > SPACE > TIME > QUALITY. Each of the stages is illustrated by the word nâa ‘face’. In (3), nâa has its concrete
meaning of ‘face’, in (4) it is used in the function of a locative preposition. Its temporal meaning shows up in a number of lexical expressions in (5). By QUALITY, Heine et al. (1991) mean some specific metaphorical meaning. In Thai, nâa is used in the context of being advanced/progressive as in (6).

(3) OBJECT: The noun nâa ‘face’ denoting a body part:
kháw láan nâa.
he wash face
‘He is washing his face.’

(4) SPACE: nâa as a locative preposition:
(khâa ŋ-)nâa bâan
side-face house
‘in front of the house’ / ‘the front-side of the house’.

(5) TIME: nâa as an expression of time:

(6) QUALITY: ‘being advanced, progressive’:

Processes of grammaticalization like (1) and (2) have the following characteristics (for a more extensive description, cf. Bybee et al. 1994: 9–22):

2. Universality: the sequence of the individual stages follows universal clines.
3. Unidirectionality: the grammaticalization clines are not reversible.
4. Source determination: the clines start out from a source concept that determines their further development (e.g. body-part terms, verbs with the meaning of ‘come’, ‘go’, ‘be at’, ‘finish’, etc.; Heine and Kuteva 2002).
5. Retention of earlier meaning: If a pathway develops from meaning A to B, there is an intermediate stage in which a linguistic item can have both meanings: A > {B/A} > B. Thus, nuances of the source concept or the source construction are retained at later stages.
6. As a consequence of (5), processes of grammaticalization are gradual and develop over a certain period of time with different nuances between A and B.
7. Co-evolution of meaning and form: the change from a more concrete to a more abstract grammatical meaning is reflected in the form of the linguistic item involved (§23.2.2).

Grammaticalization as discussed so far is presented in several monographs published in the 1980s and 1990s, which will be presented in §23.2.2 and §23.2.3. Later sections will deal with the difference between grammaticalization and the lexicon (§23.2.4), examples that go against unidirectionality and the question of the linguistic reality of grammaticalization (§23.2.5), the contribution of Construction Grammar to grammaticalization (§23.2.6) and the motivations that drive grammaticalization (§23.2.7).
23.2.2 Loss of autonomy, co-evolution of form and meaning

Most approaches understand grammaticalization as a process in which meaning and form converge. Lehmann (1995 [1982]) describes this correlation very consistently from the perspective of the autonomy of the linguistic sign: ‘The autonomy of a sign is converse to its grammaticality, and grammaticalization detracts from its autonomy. Consequently, if we want to measure the degree to which a sign is grammaticalized, we will determine its degree of autonomy’ (Lehmann 1995: 121–2).

The degree of autonomy can be measured within the three parameters of weight, cohesion and variability:

- **Weight:** a linguistic sign needs a certain prominence in the syntagm. Grammaticalization is associated with the reduction of that prominence.
- **Cohesion:** a linguistic sign needs a certain degree of rigour with which it can contract systematic relations with other signs. Grammaticalization is associated with increasing rigour.
- **Variability:** a linguistic sign needs a certain degree of mobility in order to be autonomous. Grammaticalization is associated with loss of mobility.

Each of the three parameters has its paradigmatic and its syntagmatic side. Thus, Lehmann’s (1995) approach ends up with six parameters for measuring grammaticalization:

<table>
<thead>
<tr>
<th>Parameters of grammaticalization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Syntagmatic</strong></td>
</tr>
<tr>
<td>weight</td>
</tr>
<tr>
<td>variability</td>
</tr>
<tr>
<td>cohesion</td>
</tr>
<tr>
<td><strong>Paradigmatic</strong></td>
</tr>
<tr>
<td>structural scope</td>
</tr>
<tr>
<td>syntagmatic variability</td>
</tr>
<tr>
<td>bondedness</td>
</tr>
<tr>
<td>integrity</td>
</tr>
<tr>
<td>paradigmatic variability</td>
</tr>
<tr>
<td>paradigmaticity</td>
</tr>
</tbody>
</table>

Adapted from Lehmann 1995: 123.

To give an idea of how grammaticalization can be measured, the parameters of integrity, paradigmatic and syntagmatic variability will be briefly addressed. The integrity of a sign is associated with a certain substance that is needed for it to maintain its identity. This substance can be of phonological or semantic nature. In processes of grammaticalization, the loss of phonological integrity is associated with the loss of phonological substance (attrition, erosion), while the loss of semantic integrity is reflected by desemanticization, i.e. by the loss of concrete lexical meaning to the benefit of grammatical meaning.

Paradigmatic variability is defined as

the freedom with which the language user chooses a sign. The principle alternatives to choosing some sign are either choosing another member of the same paradigm or choosing no member of that paradigm, i.e. leaving the whole generic category unspecified.

(Lehmann 1995: 137–8)

A high degree of grammaticalization is typically associated with obligatoriness. A grammatical category (e.g. tense) is obligatory if the speaker is forced to specify that category by one of its subcategories (e.g. present, past, etc.) in an utterance.
Syntagmatic variability measures to what extent a linguistic element can be moved. Typically, word order flexibility gets reduced with increasing grammaticalization.

The co-evolution of meaning and form is taken for granted in many approaches to grammaticalization. Data from East and mainland South-East Asian languages show that the extent to which meaning and form converge in processes of grammaticalization is subject to a certain degree of cross-linguistic and areal variation (Bisang 2008, 2011; also cf. §23.3.3).

### 23.2.3 The role of pragmatics, the cases of subjectification and of reanalysis and analogy

Discourse and pragmatic inference are generally seen as an important factor that motivates or enables processes of grammaticalization (Hopper and Traugott 2003: 71). In Traugott’s (2002) Invited Inference Theory of Semantic Change, grammaticalization begins if a construction occurs in a specific context that invites the listener to draw a particular inference. When this invited inference gets conventionalized in the same context it becomes a generalized invited inference which will be coded as a new grammatical meaning at the final stage of grammaticalization.

An important part of linguistic change takes place in interactions between speakers and addressees and the pragmatic inferences they make. As Traugott (2010) shows, inferences from this situation can become conventionalized and part of grammar in the form of subjectification and intersubjectification. Traugott defines subjectification as ‘a mechanism by which meanings are recruited by the speaker to encode and regulate attitudes and beliefs’ (p. 35). Once they are subjectified, they ‘may be recruited to encode meanings centered on the addressee (intersubjectification)’ (ibid.). Examples of subjectification are the rise of epistemic modals from verbs of volition (English will), the development of concessives from temporals (English while) and focus markers from manner adverbials (Old English anlice ‘simply, especially’ > Modern English only).

Hopper and Traugott (2003) see pragmatic inference as the driving force of two mechanisms of grammaticalization that are frequently discussed in the literature. One of them is analogy, the other one is reanalysis. In Hopper and Traugott’s view, both mechanisms are motivated by two different types of pragmatic inferences. Analogy is based on metaphoric inference, while reanalysis is a consequence of metonymic inference. Metaphors are generally defined in terms of ‘understanding and experiencing one kind of thing in terms of another’ (p. 84). Typically, metaphorical inferencing proceeds across conceptual boundaries as in (2), in which a linguistic item that belongs to the domain of body-parts is associated with the domain of space and later with the domain of time. Thus, the mapping of metaphorical inference follows principles of analogy in the sense of rule extension. There is a category A that is associated with X (A:X). If analogy establishes similarities of A with B, B will also be associated with X (A:X = B:X). While metaphor depends on semantic transfer by a similarity of sense perceptions, metonymy depends on transfer through (morpho)syntactic contiguity. It ‘points to (“indexes”) relations in contexts that include interdependent (morpho)syntactic constituents’ (p. 88). Metonymic inference motivates reanalysis, i.e. the assignment of a new morphosyntactic analysis to a given linguistic structure. Very often, reanalysis can be defined in terms of constituency change or rebracketing. Thus, the sequence nāa bāan [face house] in (4) is first analysed as a noun phrase with the meaning of ‘face/front of the house’. The head of this construction nāa ‘face, front’ is followed by the possessive modifier bāan ‘house’. In the context of localization in space, the same structure...
can be interpreted as a prepositional phrase with *nâa* ‘face’ being the preposition and *bâan* ‘house’ being its complement. This process of reanalysis generates the meaning of ‘in front of the house’.

In Hopper and Traugott’s (2003) approach, reanalysis motivated by metonymy and analogy motivated by metaphor frequently interact cyclically. This will be briefly illustrated by the well-known example of *be going to* and its grammaticalization into a marker of immediate future (pp. 92–3):

(7) a. John is going to visit Bill.
    b. John is going to like Bill.

At stage 1 in Figure 23.1, an example like (7a) is analysed as consisting of two verbs, the directional verb (Vdir) *go* and the dynamic verb (Vdyn) *visit* which are in a semantic relation of purpose: ‘John is going [to some place] with the purpose of visiting Bill’. At stage 2, the same utterance is reanalysed. It is now understood as consisting of only one verb, the verb *visit*, marked by a future marker *be going to*. The future marker *be going to* is not fully productive at this stage. Since the directional verb *go* still retains some of its concrete meaning, only dynamic verbs can take the new future marker. The paradigmatic extension of *be going to* to stative verbs (Vstat) as in (7b) is due to analogy that comes in at stage 3. Finally, the reanalysis of *be going to* as a grammatical marker favours its morphophonological reduction to a single word (*gonna*).

The role of reanalysis and analogy in grammaticalization has been discussed very controversially. There are four main positions (cf. Traugott’s 2011: 22 summary, on which this passage is based): According to the first position, grammaticalization and reanalysis are independent but they intersect. The second position is argued for in approaches based on UG. It sees grammaticalization as a subtype of reanalysis (§23.2.5, §23.2.7). Haspelmath (1998: 315) takes the third position according to which reanalysis is largely irrelevant to grammaticalization. He argues that reanalysis lacks unidirectionality and depends on ambiguous input structures which are not necessary for grammaticalization. Finally, the last position is advocated by Fischer (2007). In her processing-based view, grammaticalization is driven by analogy rather than by reanalysis. Reanalysis may be what linguists see when they compare changes through generations of speakers but it is not what actual speaker-

**Figure 23.1 Reanalysis and analogy**
listeners do when they first produce or process a linguistic innovation. Taking the example of *be going to*, one can argue that its very first use as a future marker was possible because of a category mistake. English already had the two-verb construction *V-to-V* and the auxiliary construction *Aux-V*. Due to analogy, the speaker-listener took *be going to* as an instance of the auxiliary rather than as the first verb in *V-to-V*.

### 23.2.4 Grammaticalization vs lexicalization

The most widely discussed phenomena of lexicalization are fossilization and univerbation (Himmelmann 2004: 26–9). In fossilization, morphologically complex forms become unanalysable wholes. Thus, the Germanic causative form in *-*eja is integrated into monomorphemic stems in modern English (*sit* versus *set* < Proto-Germ *sat-eja* ‘make sit’). The development of frequent collocations of two or more lexemes into single words like cupboard, brainstorm or greenhouse is called univerbation. These examples of lexicalization are the result of conventionalization. Thus, they share important properties with grammaticalization and are not always easy to distinguish from it.

Currently, there are two approaches that contribute considerably to the distinction of grammaticalization from lexicalization. For Himmelmann (2004), the difference lies in the different expansion properties of grammaticalized/lexicalized items undergo, i.e. host-class expansion, expansion of syntactic context and expansion of semantic–pragmatic context. Since host-class expansion is crucial for the grammaticalization/lexicalization-distinction, only this type of expansion will be explained here. It is defined by the number of elements a marker is in construction with and can be illustrated by the example of greenhouse, an instance of univerbation. The adjective green syntactically collocates quite freely with a large number of nouns (*green car*, *green table*, *green cupboard*, *green scarf*, etc.). With products of lexicalization like greenhouse, the host green is compatible only with a single lexical unit to form a new word with a specific meaning. In contrast, a grammaticalized item that expresses a category like tense-aspect or plural collocates with a large number of host elements (verbs or nouns, respectively). Moreover, grammaticalization is characterized by directionality in the sense that the change moves into a specific semantic domain (tense-aspect, plural). This is not the case with lexicalization, which is non-directional.

Boye and Harder’s (2012) criteria for distinguishing grammaticalization from lexicalization are based on the ability of their products to be used in discourse. While lexical meaning can take on primary functions in discourse, grammatical meaning is ‘discursively secondary’ (p. 13). This can be seen from the fact that grammatical expressions cannot occur in contexts of focalization and addresseeion, while lexical expressions can.

(8) Nonfocalizability as a symptom of grammatical status (Boye and Harder 2012: 14): Grammatical expressions cannot be assigned discursively primary status by focalizing expressions.

(9) Nonaddressability as a symptom of grammatical status (Boye and Harder 2012: 14): Grammatical expressions cannot be assigned discursively primary status by being addressed in discourse.
Linguistic change in grammar

The symptom of nonfocalizability can be used for testing whether a linguistic item is the result of grammaticalization in individual languages that have specific means for expressing focus. In the case of English, fully grammaticalized items cannot occur in cleft constructions, pseudo-cleft constructions, narrow-focus stress and with focus particles like only, just and even (ibid.). In contrast, lexical items and results of lexicalization are compatible with all the above focus-tests.

Similarly, the symptom of nonaddressability yields various language-specific tests for deciding whether a given linguistic item is the result of grammaticalization. In English, it is not possible to ask for grammatical expressions independently by wh-words. Grammatical items cannot independently be referred to anaphorically or cataphorically and they cannot be questioned independently by yes/no questions (Boye and Harder 2012: 15). Again, lexical items and results of lexicalization pass these addressability-tests.

23.2.5 Degrammaticalization and problems of consistency

Newmeyer’s (1998: 226) statement that ‘there is no such thing as grammaticalization’ in Chapter 5 of his book Language Form and Language Function produced intensive and controversial reactions. His strong statement was based on two main arguments:

1. Grammaticalization is falsified because there are counterexamples to unidirectionality (Newmeyer 1998: 263–78 offers a list of considerable length).
2. Grammaticalization is not a distinct phenomenon but rather an epiphenomenon of its three component parts with their principles, i.e. reanalysis, phonetic changes and semantic changes.

Researchers on grammaticalization are generally aware that there are instances of degrammaticalization, i.e. processes of change that revert the direction of grammaticalization clines and thus provide evidence against unidirectionality. An example is the development of the Old Swedish inflectional marker –er ‘nominative singular masculine’, which has become a derivational suffix of nominalization in Modern Swedish (Norde 2009: 152). This development goes against the cline from derivational > inflectional. The question is how many counterexamples there are. As is shown by more recent research based on more refined definitions of degrammaticalization (Norde 2009), the number of counterexamples to unidirectionality is much smaller than assumed by Newmeyer (1998), who himself had to admit somewhat later that unidirectionality ‘is not all that false’ (Newmeyer 2001: 213). If there are only a few examples of degrammaticalization, the directionality of grammaticalization needs explanation. It cannot simply be an epiphenomenon of its component parts as claimed in point 2 by Newmeyer (1998). The issue of motivations of grammaticalization will be the topic of §23.2.7. Interestingly enough, there is even a UG-based explanation for unidirectionality.

23.2.6 Constructions

Grammaticalization processes are not limited to the development of individual words in isolation – they take place within a certain syntactic context. Thus, demonstratives do not generally develop into articles (cf. Latin ille [DEM:SG:M] ‘that’ > Italian il [ART:SG:M] ‘the’, etc.), they only do so in the context of adnominal modification. In other syntactic environments, they develop into personal pronouns, complementizers, relative clause...
markers or copulas. Many researchers describe such a context-based divergence of grammaticalization clines in terms of constructions. The grammatical function a lexical item is going to express depends on its constructional environment.

Since the rise of Construction Grammar, this rather informal way of emphasizing the relevance of constructions for grammaticalization has taken on a new dimension in which constructions provide the environment for the grammaticalization of lexical items on the one hand and take on new properties themselves on the other. Moreover, new constructions develop out of older constructions in some instances. These issues will be briefly outlined after a short definition of the notion of construction.

Constructions are defined as ‘learned pairings of form with semantic or discourse function’ (Goldberg 2006: 5). This covers a wide area of phenomena from morphemes, words, idioms, phrasal patterns up to sentences. What is crucial for a linguistic phenomenon to be a construction is that ‘some aspect of its form or function is not strictly predictable from its component parts or from other constructions recognized to exist’ (ibid.). Many constructions are characterized by specific slots for grammatical categories like tense-aspect or causativity.

Constructions are themselves the product of linguistic change. They change their properties over time and may ultimately end up as a completely new construction. Thus, the be going to-construction can be seen as a development from a two-verb construction to a tense-aspect marker. Examples like this are clearly instances of linguistic change. The question is whether they are also instances of grammaticalization. Gisborne and Patten (2011: 98–9) mention six properties of constructional change that are similar to grammaticalization. Four of them will be pointed out here. The first property is directionality.

Both processes are directed towards higher degrees of abstractness and compatibility with more elements (cf. §23.2.4 on host-class extension). In the case of constructions, this process is known in terms of increasing schematicity. Constructions can be situated between the poles of specificity and schematicity. A specific or substantive construction is specified phonologically (e.g. the lexical item tree by [tri:]), while a schematic construction is defined in terms of abstract categories as in the case of be going to, which is an instance of the [tense/aspect V]-construction. In any case, schematicity is always associated with the existence of slots that can be filled by variables and grammatical categories for which these slots stand. In that sense, increasing schematicity runs parallel to increasing abstractness in grammaticalization.

The second property is gradualness. Thus, constructions do not change abruptly, they change in incremental stages. The third and the fourth properties have to do with analogy and reanalysis. Analogy leads to the expansion of the class of elements that can occur in a slot. Thus, the number of lexical items that take the tense/aspect-position in the [tense/aspect V]-construction increases through analogy. Reanalysis can be observed when a given surface structure like the serial verb construction is interpreted in terms of the [tense/aspect V]-construction.

23.2.7 Motivations of grammaticalization

Motivations of grammaticalization have been sought mainly in the competing motivations of economy versus iconicity and in UG. Both motivations will be briefly discussed.

The idea that language structure is driven by the two competing motivations of economy versus iconicity goes back to the nineteenth century and has been discussed prominently by Haiman (1983). Economy reflects the desire of speakers and addressees to perform the least
Linguistic change in grammar

effort or to do things in the simplest way to express a certain concept. Iconicity is based on a certain isomorphism between a concept and the way in which it is formally expressed. Haiman explains the co-evolution of form and meaning by both motivations. The parallel reduction of semantic and phonological content is iconic through the analogy between less (i.e. more abstract) meaning and less form but this development is also supported by economy, which prefers reduction of articulatory effort on the phonological side. This reduction of form is additionally enhanced by the fact that less notional distinctions are needed at higher levels of semantic abstraction. For that reason, the formal cues for abstract categories can be more reduced than for more concrete meanings.

More recent work in the minimalist framework recognizes the relevance of unidirectionality and it even has a UG-based explanation for it (Roberts and Roussou 2003). In the minimalist approach, the development from lexical item to grammatical marker is motivated by the fact that heads with grammatical function are assumed to take higher positions in the tree structure. At an early stage in one generation of speakers, a lexical item that is analysed as a grammatical marker moves from its lower position to the corresponding higher position. If the item is subject to a certain change in form (e.g. attrition, erosion) it will become a cue for a change in parameter setting in the linguistic input to speakers of a next generation. As a consequence, it will be merged directly at the higher position for the corresponding grammatical function. Therefore, grammaticalization is a change from movement to merger.

23.3 Change due to language external factors

23.3.1 Frequency and change: the S-curve

The successful diffusion of innovations follows a pattern of frequency that was introduced by Wang and Cheng (1970) and has been confirmed by numerous studies since then. The initial phase of a linguistic change is characterized by its gradualness and relative slowness and is followed by a very rapid period once the innovation has reached a critical mass of about 20 per cent of frequency of occurrence in the relevant linguistic contexts. After having reached a frequency of about 80 per cent it tails off again until final completion. This frequency pattern yields an s-shaped curve in a diagram like the one in Figure 23.2, hence the name ‘s-curve model’. This model is widely used and discussed in various approaches to linguistic change and it is particularly attractive for UG-based theories of change and their assumption that parameter setting depends on the input children get from their linguistic environment (Lightfoot 1999).

23.3.2 Social models of linguistic change

23.3.2.1 The social-network model

The social-network model explains language change in terms of individual actors and the quality of their relations to other individuals. In the abstract model of network theory, individuals are graphically represented as points, while the relations between them are expressed by lines of different graphic qualities depending on their specific properties. As it turns out, the difference between weak and strong ties as first described in sociology is of particular importance for explaining the successful dissemination of linguistic innovations (Milroy 1992). Strong ties are defined by frequent and reciprocal contacts for a number of different reasons (e.g. sports, friendship, shopping, child care, etc.) as we typically find them.
in communities where everybody knows everybody else. Weak ties are based only on one reason, they are not necessarily reciprocal and they are more frequent because they can be established more easily. The diffusion of linguistic innovations crucially depends on weak ties. It proceeds along the following five stages (pp. 188–91):

1. Individuals of central importance in strong local networks (influentials) are sceptical towards innovations when they first come across them.
2. Networks with weak ties can be established more easily and they are much more frequent than networks with strong ties.
3. As soon as there are enough actors with weak ties who can act as liaisons and who have accepted a given innovation (early adopters) that innovation gets diffused within networks of weak ties.
4. Only after a change has spread through a large enough number of weak networks will it be taken up by local influentials who will integrate it into their strong network structures to keep their position within these structures.
5. Thus, the existence of networks with weak ties is a precondition for an innovation to be adopted throughout a language community as a whole.

23.3.2.2 Leaders of linguistic change
In William Labov’s view, properties of social networks are necessary but not sufficient for understanding the diffusion of linguistic change. For a deeper understanding of the social aspects of change it is necessary to look at those actors who actually lead it. Thus, ‘[t]he social networks effects are not the largest, but they add essential information to the description of the leaders of linguistic change’ (Labov 2001: 341). In his study of linguistic change and variation in the city of Philadelphia, he shows very convincingly that women have a different style of social interaction from men and that it is the style of the former which favours the spreading of linguistic change.

The relevance of analysing individuals saliently involved in the diffusion of change is undeniable and there can be no doubt that Labov’s model is derived from a very sound and thorough case study. The question is whether his model can be claimed to be of universal value or whether one has to reckon with culturally-based differences.

23.3.2.3 The invisible-hand model
The metaphor of the invisible hand as it was first used by Adam Smith in economics tries to describe social structures and phenomena that are produced by humans who did not intend their emergence by their individual actions. More specifically, the invisible-hand model
addresses the problem that the actions of a large enough number of individuals following at least partially similar purposes on a microlevel yield causal consequences at a macrolevel which cannot be predicted from the knowledge of the purpose operating on the microlevel. Keller (1994) adopts the invisible-hand model for linguistics by defining linguistic structures as products of invisible-hand processes. A linguistic structure is the macrolevel result of a large enough number of speakers whose individual acts of speaking follow certain types of maxims of language use at the microlevel. Keller distinguishes two types of maxims. Static maxims ((10) and (11)) guarantee the structural stability of the language, while dynamic maxims (12) are responsible for linguistic change:

(10) Static maxim: Keller’s (1994) phatic maxim:
   a. Talk like others talk.
   b. Talk in such a way that you are not misunderstood.

(11) Static maxim: Strategy of adaptation:
   a. Talk in such a way that you are recognized as belonging to the group you identify with.
   b. Talk in such a way that you do not attract attention.

(12) Some dynamic maxims:
   a. Talk in such a way that you are noticed.
   b. Talk in such a way that you are not recognized as a group member.
   c. Talk in an amusing, witty or facetious way.

Keller’s (1994) invisible-hand model and the previous two models are not fully independent. The density of network structures can well be seen as the product of communicative actions of individuals and with their purposes. The impact of leaders of linguistic change on their environment would be impossible without a large enough number of individuals who want to be identified as belonging to that environment. This behaviour follows the maxim in (11a).

23.3.3 Language contact and structural convergence

Language contact is a very important factor of language change. This section will introduce potential mechanisms that take influence on structural change (§23.3.3.1) and different effects of language contact that reach from its impact on individuals up to large-scale geographical patterns of diffusion and the emergence of new languages (§§23.3.3.2–23.3.3.6).

23.3.3.1 Mechanisms

Contact-induced structural convergence depends on many rather different mechanisms. Thomason (2001: 128–56) discusses seven of them. The following three of them will be presented in this section: code-switching, bilingualism, second language acquisition. Code-switching is a phenomenon of multilingualism that has been subject to different definitions. A comparatively neutral definition is the following by Thomason (2001: 132):

‘Code switching is the use of material from two (or more) languages by a single speaker in the same conversation’. A good illustration of how code-switching works is the title of Poplack’s (1980) scene-setting paper Sometimes I’ll start a sentence in Spanish Y TERMINO
EN ESPAÑOL. Even though code-switching is a well-studied phenomenon it certainly does not apply universally in situations of contact-induced change. This can be seen from the fact that in many bilingual speech communities code-switching does not happen.

Bilinguals apply certain strategies to acquire two languages as their first languages (L1 languages) simultaneously. The work of Silva-Corvalán (1994) on English/Spanish bilinguals in Los Angeles shows some typical effects. Her main hypothesis is ‘that, in language contact situations, bilinguals develop strategies aimed at lightening the cognitive load of having to remember and use two different linguistic systems’ (Silva-Corvalán 1994: 6). This leads to effects like simplification of grammatical categories and lexical oppositions, overgeneralization of forms (often with concomitant regularization patterns) and the development of periphrastic patterns out of semantically less transparent, morphologically bound forms (ibid.).

Second language acquisition (L2 acquisition, cf. Chapter 21) has important consequences for language change if for whatever social reasons L2 speakers take on a role in the dissemination of linguistic structures. From the perspective of UG, learners lose their ability to acquire full competence of a language after a critical age (post-threshold learners). Even though a lot of the details on the critical age and the processes involved are debated controversially it is quite clear that there are structural differences between a language spoken by L1 and L2 speakers.

23.3.3.2 Maintenance/borrowing vs shift
Maintenance/borrowing and shift are two basic types of contact-induced change in the approach of Thomason and Kaufmann (1988) and Thomason (2001). These two types depend on different social situations and they yield partially different structural results. In a situation of borrowing/maintenance, speakers of language A maintain their language but they integrate elements from another language B, the target language. In a shift situation, speakers of language A abandon their language in favour of B. The factors that are relevant for the outcome of these changes are the percentages of L1 and L2 speakers and their availability in a speech community as well as factors that determine the intensity of contact (duration, population size, socio-economic dominance). As for the structural consequences of these two types of contact-induced change, borrowing/maintenance crucially starts out from the lexicon, while shift is initiated at the levels of phonology and syntax. In situations of extreme contact, the effects converge, i.e. we find extensive lexical and structural change in both types.

23.3.3.3 Linguistic areas (Sprachbünde)
Generally speaking, linguistic areas are characterized by structural similarities across a set of geographically adjacent languages which are not due to genetic relatedness. The concept was coined by Trubetzkoy in 1928 (published in Trubetzkoy 1930) and has experienced a lot of different and often divergent definitions since that time. The following definition by Thomason (2001) is relatively neutral and covers various other definitions: ‘A linguistic area is a geographical region containing a group of three or more languages that share some structural features as a result of contact rather than as a result of accident or inheritance from a common ancestor’ (p. 99). Frequently discussed linguistic areas are the Balkan Sprachbund, the Circum-Baltic area, the Ethiopian area, South Asia and East and mainland South-East Asia.
23.3.3.4 Mixed languages
The phenomenon of mixed languages has been introduced by Bakker and Mous (1994). It is broadly defined as ‘a bilingual mixture, with split ancestry’ (Matras and Bakker 2003: 1). Split ancestry can show up in various forms. In the case of Media Lengua (Ecuador), the lexicon is from Spanish and the grammar from Quechua. Thus, the lexical items that are printed in italics in (13) are Spanish, while the elements printed in bold are grammatical markers from Quechua. Word order is SOV as in Quechua.

(13) Media Lengua, Ecuador (Matras and Bakker 2003: 6):

\[\text{Isi-} \text{ga asi nustru barrio-} \text{ga asi kostumbri-n abla-na.}\]
\[\text{This-TOP thus our community-TOP thus accustomed-3 talk-NML}\]

‘In our community we are accustomed to talking this way.’

Mixed languages ‘arise either in communities with mixed households accompanying the formation of new ethnic identities, or through rapid acculturation leading to the adoption of a hybrid group identity, or through continuous socioethnic separateness resisting pressure to assimilate’ (Matras and Bakker 2003: 14).

23.3.3.5 Emergence of new languages: pidgin and creole languages
Pidgins are the result of extreme social conditions of contact among speakers of three or more languages who share no common ground for mutual communication. Depending on the intensity and duration of contact, one can understand different degrees of development. At the lowest end, we find the jargon which is characterized by ad hoc rules based on the different L1 of the speakers involved. More intensive contact generates stable pidgins with their own grammatical rules, which can further develop into expanded pidgins with more elaborate lexicons and grammars (Mühlhäusler 1986). In the classical definition, pidgins are nobody’s mother tongue, while creoles have become mother tongues of a speech community (nativism). Many publications argue that the criterion of becoming a mother tongue is overestimated, for instance if one wants to describe potential structural differences between pidgins and creoles. One of them is Bakker (2008: 130), in whose view ‘the circumstance of languages becoming default languages of daily communication’ shows ‘much stronger effects’. For that reason, he defines an intermediate stage between pidgin and creole, which he calls ‘pidgincreole’ – a language ‘which is the primary language of a speech community, or which has become the native language for only some of its speakers’ (p. 139).

Creoles are often described as having specific structures that distinguish them from other languages (cf. §23.3.3.6). Another question that produced quite a few models of explanation is how creole structures came about. Probably the most well-known and most controversially discussed model is Bickerton’s (1981) Language Bioprogram Hypothesis, which is based on UG and the idea that children in extreme contact situations as we find them in jargons do not get uniform linguistic input and thus have recourse to their innate bioprogram. As a consequence, creoles arise abruptly within a single generation. One criticism against this model is that children lack the social status for being linguistic innovators and that the number of children was small in many colonies, at least in the initial phases of settlement. In more recent studies, creole development takes more than one generation and its result is not exclusively determined by the bioprogram. A good example is Roberts (2000), who integrates very detailed population statistics drawn from sources like old school records and
registers of immigration offices. She argues that the development of Hawaiian Creole English, one of Bickerton’s (1981) model languages, is split into two separate processes, i.e. creolization and nativization. In such a model, other effects of language change like L2 acquisition interact with L1 acquisition and the bioprogram.

Other critical approaches look at how much can be explained without taking recourse to an innate bioprogram. McWhorter (1997: 145) opts for ‘a model of the process of creole genesis which incorporates a number of processes in an empirically constrained fashion, including substrate transfer, structural simplification, and internal diachronic change, as well as a small role of Bickertonian universals’. From an ecological perspective (Mufwene 2001), the bioprogram is irrelevant. In this context, Chaudenson’s (2003) work on the French-based creoles is of particular interest. In his scenario, creole structures are the result of successive approximations of superstrate structures (French) to the substrate structures of the slave populations. At a first stage, a small number of slaves was in intimate contact with francophone speakers. New slave immigrants learnt their creole variety from the first generations of slaves and passed on their language to yet a new wave of immigrants.

### 23.3.3.6 Language contact and complexity

The correlation between complexity and specific sociolinguistic contact situations is discussed from various perspectives. Trudgill (2011) studies it from the perspective of the L1 and L2 learners involved in contact situations. Other studies like the ones on creole languages take a more general typological perspective.

Trudgill (2011) is interested in processes of simplification and complexification and their sociolinguistic motivation in terms of language contact. The features by which he defines simplification vs complexification are the following.

<table>
<thead>
<tr>
<th>Simplification</th>
<th>Complexification</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Regularization of irregularities</td>
<td>Irregularization</td>
</tr>
<tr>
<td>b. Increase in morphological transparency</td>
<td>Increase in opacity</td>
</tr>
<tr>
<td>c. Reduction in syntagmatic redundancy</td>
<td>Increase in syntagmatic redundancy (development of agreement)</td>
</tr>
<tr>
<td>(loss of grammatical agreement)</td>
<td></td>
</tr>
<tr>
<td>d. Loss of morphological categories</td>
<td>Addition of morphological categories</td>
</tr>
</tbody>
</table>

In Trudgill’s (2011) view, complexity and its development in contact crucially depends on the difference between L1 and L2 acquisition: ‘Post-threshold learners have less difficulty in coping with regularity and transparency than irregularity and opacity; and loss of redundancy reduces the burden for learner speakers’ (p. 41). He distinguishes three different scenarios with specific distributions of L1 versus L2 learners. Languages spoken in situations of short-term adult contact are characterized by simplification as a typical phenomenon of L2 acquisition after the post-critical threshold (§23.3.3.1). Creoles typically belong to this type of contact situation. Situations of long-term co-territorial contact with many multilingual L1 speakers add to complexity ‘as the result of transferring features from one language to another’ (p. 27). This type of structure is frequently met in linguistic areas (§23.3.3.3). Finally, low-contact communities are the places in which complexity is not only preserved
but also increased. A good example is the development of two definite articles in Frisian, one referring to proximal unique referents, the other to distal non-unique referents (p. 76).

In creole linguistics, complexity is vividly debated since McWhorter’s (2001) target paper in Linguistic Typology. His basic argument is that the structural properties of creoles are due to their origin from pidgins. Speakers of pidgins tend to avoid any grammatical structures beyond those which are absolutely necessary for communication. Since pidgins form the input to creole development, creoles themselves are characterized by a high degree of simplicity and they did not have enough time in the short period of their existence to accumulate more complex structures as one finds them in older natural languages. More recently, McWhorter (2011) has shifted his focus from this rather controversially discussed hypothesis to the hypothesis that creoles share certain prototypical properties by which it is possible to recognize a creole without even knowing its sociolinguistic history. This new focus is confirmed by the typological study of Bakker et al. (2011), which concludes that creoles differ structurally from non-creoles but not necessarily with regard to complexity.

23.4 Closing remarks

Linguistic change is the result of interactions between language internal and language external processes, both of them characterized by a large number of different factors that may operate in specific combinations in individual instances of change. The present chapter has tried to offer a survey of these factors and some examples of how some of them interact. A comprehensive account of different interaction patterns would not only be beyond an introductory chapter like this one, it would also be beyond what can be said today.

In spite of this, assessing effects of linguistic change is extremely important for research on linguistic universals. If universals reflect language internal motivations like human cognition or basic communicative needs, it is imperative to disentangle language internal from sociocultural language external factors in the linguistic data. For that reason, linguistic typology has developed an elaborate methodology of language sampling (cf. Chapter 25). More recent statistical methods based on evolutionary biology look at linguistic change more directly by calculating the probability with which a language changes from one type to another (e.g. the change from OV to VO word order). This new focus bears the potential of moving typology away from the mere detection of statistical correlations by comparing frequencies of types to actual evidence for a true causal linkage between them across time. If it works, this dynamic approach will offer evidence of how potential universals actually operate in processes of language change and thus channel the evolution of language structures. This is not an easy task and it crucially depends on a sound method of how to empirically estimate transition probabilities. A good survey on the state of the art is given in Linguistic Typology 15 (2011).

This new statistical approach to linguistic typology is very welcome and has the potential to offer new insights. Its success will depend to a considerable extent on the integration of the factors and mechanisms described in this chapter with the statistical methods from evolutionary biology. If this stage is reached there will certainly also be repercussions on models of linguistic change.

Notes

1 Metaphors are frequently understood as semantic in nature. In Hopper and Traugott’s (2003: 84) view, metaphors are not based on truth conditions but rather on communicative use.
2 Of course, the parallel existence of the syntactically productive construction of green house ‘a house that is green’ is not excluded.
3 Notice that individual maxims can have contradictory effects.
4 The other four are code alternation, passive familiarity, negotiation and deliberate decision. Since they are discussed less frequently in the literature on linguistic change, they are not presented in this section.

Further reading
Croft (2000); Hopper and Traugott (2003); Narroq and Heine (2011); Thomason (2001); Trudgill (2011); Winford (2003).

References


