

Diasystematic Construction Grammar at work

The need for a non-modular, data-driven approach to multilingual grammar

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This paper presents the various arguments in favor of a non-modular, data-driven approach to language contact phenomena. Based on a review of modular approaches to studying language contact, the paper shows how Diasystematic Construction Grammar (a usage-based approach) allows for a different way of studying language contact phenomena that implements the constructional commitment to account for all kinds of linguistic phenomena as long as they involve form-function pairs.

Keywords: Language contact, language change, multilingualism, Diasystematic Construction Grammar, usage-based

1. Introduction

In a series of publications, Höder (2012; 2014a; 2018; 2019) proposes an innovative approach to investigating multilingual language phenomena¹ that has become known as Diasystematic Construction Grammar (DCxG). This approach builds on the core insights of constructional research since the late 1980s, for example

1. As Grant (2019) points out, the term language contact generally refers to an outcome of a process (often called contact-induced linguistic change) rather than to the process(es) by which this outcome occurs. Note that this paper focuses primarily on the structural outcomes of language contact and not on any broader societal issues (even though they play a major role). The last two decades have seen an increasing focus on the study of multilingualism, particularly in the context of globalization, migration, and language policy. The development of digital technologies has also created new opportunities for language contact studies, with researchers using corpus linguistics and other computational methods to study language change and variation. For a more complete overview of contact-induced language change, see Grant (2019).

that all of language consists of constructions (pairings of form with meaning/function), language is non-modular, there are no different levels of representation, and a commitment to the usage-based approach (Bybee, 2013; Backus, 2020). One of the main concepts of DCxG is that multilingual speakers store, process, and use two different types of constructions, namely diaconstructions (those that are shared by two (or more) languages) and idioconstructions (those that exist only in one language).

To illustrate the difference between diaconstructions and idioconstructions, consider a set of examples discussed by Zenner, Heylen & Van de Velde (2018), who study a set of structurally parallel multi-word units found in exclamatory contexts as used by bilingual speakers of Dutch and English, including in otherwise monolingually Dutch utterances:

- (1) English
the hottest summer ever!
- (2) Dutch
 - a. *de warmste zomer ooit!*
 - b. *de warmste zomer ever!*
the hottest summer ever

From a traditional perspective, one would have to assume at least two separate constructions to account for these units, one for English ([*the* ADJ-*est* N *ever*]) and one for Dutch ([*de* ADJ-*ste* N *ooit*]), along with lexical constructions for all of the words and categories needed to fill the constructional slots (e.g. Dutch *zomer* and *ooit*, English *hot* and *ever*). Moreover, the use of *ever* in a Dutch context would then have to be analyzed as either a borrowing (i.e. the outcome of an earlier contact-related change) or an ad hoc insertion (i.e. an instance of code-switching). In DCxG, in contrast, language-specificity is an optional property of constructions. Even for English-Dutch bilinguals, *zomer* is a Dutch word, normally restricted to Dutch contexts, in contrast to English-only *summer*; these words are idioconstructions. However, *ever* can no longer be considered language-specific within this speaker group (2b) but rather represents a possible diaconstruction. The same holds true for the schematic pattern [DET ADJ_{sup} N X], with x being a shorthand notation that covers both the English word *ever* and the Dutch word *ooit* ('ever'). This pattern is shared by both languages and can be filled with language-specific words (e.g. *ooit*) or shared lexical material (e.g. *ever*), as illustrated in Figure 1.

Since its inception a decade ago, DCxG has grown and evolved in a number of interesting directions. While Höder's (2012) initial research focused on contact-related change in Old Swedish, subsequent research expanded DCxG to other Germanic languages (see the contributions in Boas & Höder, 2018) and to other

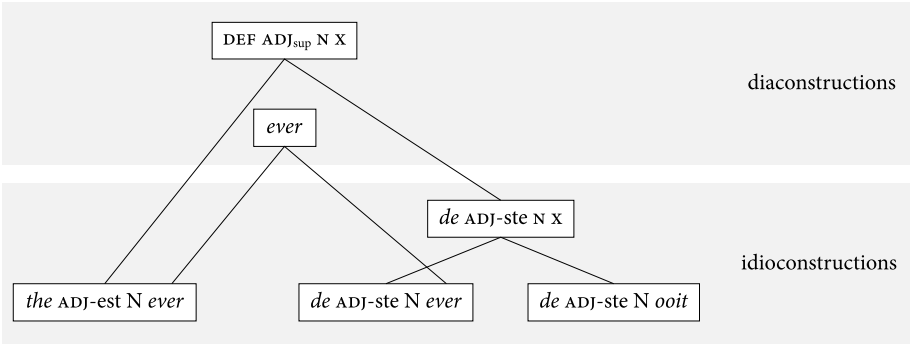


Figure 1. Multilingual network of constructions

multilingual phenomena (see the contributions in Boas & Höder, 2021). With an ever-growing interest in DCxG, we thought that now would be an opportune time to take stock of how far the development of this alternative approach to language contact phenomena has come over the past ten years, to discuss how it ties in with current thinking both in Construction Grammar and in contact linguistics, and to illustrate how DCxG analyses can be combined with a constructicographic approach to provide a more complete picture of the way linguistic knowledge is organized in multilingual speakers and communities.

To this end, we first provide in Section 2 a sketch of how language contact research has evolved over the past 150+ years, from the Neogrammarians’ views of language contact, different types of language contact studies in North America during the 20th century, and, finally, more cognitively oriented approaches such as Cognitive Contact Linguistics (Zenner, Backus & Winter-Froemel, 2019) to the development of DCxG. In Section 3, we both discuss the relevance of a non-modular, data-driven approach to the study of multilingual grammar and propose a constructicographic approach. Finally, Section 4 summarizes this chapter and provides suggestions for further research in DCxG specifically, and contact linguistics more generally.

2. DCxG as a contact linguistic approach

The goal of this section is to show how the focus of research on language contact changed from the late 19th to the early 21st century and how DCxG fits in with the development of usage-based contact linguistics.

2.1 19th and 20th century

Contact-induced language change had already been of interest to 19th century historical linguists such as Hesselning (1899; 1905) and Schuchardt (1884; 1914), who argued that when two or more languages come into contact, they do not simply mix together or become simplified, as some linguists at the time believed. Schuchardt argued that language contact results in a complex process of linguistic borrowing, adaptation, and re-creation. In this view, speakers who come into contact with a new language have to learn the syntax and vocabulary of that language, but they also bring their own linguistic resources to bear on the task. As a result, the newly emerging contact language is a hybrid of the two original languages, with features from both.

In North America, Whitney (1881), Sapir (1921), and Bloomfield (1933) also discussed language contact from the perspective of one language system influencing another one. For example, Bloomfield (1933) suggested a tripartite division between what he called cultural, intimate, and dialect borrowing. In Bloomfield's view, language contact was primarily a surface-level phenomenon that did not have a significant impact on the underlying structure of the language. He argued that language contact could lead to borrowing of words and grammatical constructions, but that these borrowings were usually limited and did not fundamentally alter the structure of the language. According to Bloomfield (1933), the structural features of a language were determined by its inherent system of rules and patterns, rather than by external factors such as language contact. Bloomfield's views on language contact can be viewed as problematic, because more recent research suggests that language contact can have a significant impact on the structure of languages, leading to the emergence of new grammatical constructions and language varieties.

During the 1950s, there was a growing interest in language contact studies as is evidenced by, for example, Haugen (1953) and Weinreich (1953). Haugen's (1953) seminal work on the Norwegian language in North America was the first in-depth study focusing on a broader variety of language contact issues. Haugen (1953) showed that many second-generation immigrants in Minnesota were no longer speaking Norwegian, and that the Norwegian language was gradually being replaced by English. Haugen found that this language shift was caused by various factors, including social and economic pressures, education, and inter-marriage with speakers of English. Haugen's study was one of the first to document the phenomenon of language shift in a systematic way, and it helped to establish the field of language contact studies. His research also highlighted the importance of social and cultural factors in shaping language use and language

change, and it contributed to a growing awareness of the diversity of languages spoken in the United States.

Weinreich's (1953) study presented a more elaborate view of language contact (including its effects on syntax, lexicon, and phonology), drawing on a variety of data from different language contact situations around the world. Weinreich showed that when speakers of different languages borrow words and phrases from one another, then this process can lead to the creation of new vocabulary and idioms. Weinreich also found that language contact can result in syntactic changes, as speakers adapt to the patterns and structures of the other language(s) they come into contact with. Besides his focus on structural aspects of language contact, Weinreich (1953, p.86) also highlighted the importance of analyzing the social and cultural contexts in which language contact occurs: "To predict typical forms of interference from the sociolinguistic description of a bilingual community and a structural description of its languages is the ultimate goal of interference studies." In other words, Weinreich regarded language contact not just as a structural phenomenon, but he also paid attention to the influence of factors such as social class, ethnicity, and cultural identity. Weinreich (1953, p.44) articulated a vision of an integrated theoretical framework of language contact including linguistic, sociolinguistic, and psycholinguistic components and set the stage for future language contact studies.

The 1960s and 1970s saw the emergence of pidgin and creole studies, with Hymes (1971) presenting an important collection of papers that also discussed what is now known under the term mixed languages.² Hymes proposed that pidgin languages are simplified languages that emerge when speakers of different languages need to communicate but do not have a shared language. On this view, creole languages emerge from pidgin languages when they become the primary means of communication for a community over several generations. Various papers in Hymes (1971) argued that creole languages typically have more complex grammars and vocabularies than pidgin languages and have developed their own unique linguistic features.

In contrast to the views on pidgins and creoles proposed in the various papers in Hymes (1971) and thereafter, Bickerton's (1984) bioprogram hypothesis proposes a very different view. According to Bickerton, the structure of creole languages reflects a universal grammar innate to humans, and the structural features of creole languages are not the result of a mixture of the languages from which they are derived, but rather the product of an innate "bioprogram" in the human

2. For a discussion of the influence of Weinreich, Labov & Herzog (1968) on studies of language contact and language change, see Traugott (2019), Joseph (2019), Labov (2019), and Thomason (2019).

brain that governs language acquisition. According to Bickerton, the bioprogram consists of a basic set of rules that allow for the creation of a rudimentary grammar, also known as “pidgin-creole grammar”. This grammar is used as a template for the development of creole languages, which evolve over time through the process of creolization.

In contrast to Bickerton’s bioprogram hypothesis, other researchers have argued that the structural similarities between creole languages are better explained by the influence of the languages from which they are derived. For example, DeGraff (2001) and McWhorter (2005) argue that the similarities between creole languages can be better explained by the influence of the substrate languages, rather than a biologically determined innate grammar. They propose that the similarities between creole languages can be accounted for by the fact that they are derived from similar substrates. In a similar vein, Mufwene (2001) suggests that the bioprogram hypothesis is based on flawed assumptions about the nature of language acquisition. He argues that the bioprogram hypothesis overemphasizes the role of innate grammatical rules in language acquisition, and overlooks the role of social and cultural factors in shaping language development. Finally, Labov (2001b) criticizes the bioprogram hypothesis for being too deterministic, arguing that it fails to account for the fact that language change is often the result of social and cultural factors, rather than innate grammatical rules. On this view, languages are not a direct reflection of the bioprogram, but rather a product of complex social and historical factors. To that end, Labov proposes that creole languages are created in situations of extreme language contact and social upheaval, where speakers are forced to adapt to new linguistic and social circumstances. According to Labov, the features of creole languages can be better explained by the influence of the substrate languages and the social and cultural factors that shaped their development.³

The study of language contact continued to expand in the latter half of the 20th century, with scholars exploring topics such as language borrowing, code-switching, and language shift. In the 1960s and 1970s, sociolinguistics emerged as a subfield of linguistics, which focused on the relationship between language and society, including issues of language contact. Labov’s (1966) study of linguistic variation in New York City was groundbreaking because it challenged traditional views of language as a fixed and stable system. He showed that language was not a homogeneous entity, but a dynamic and complex system that was shaped by social, historical, and cultural factors. Labov’s insights helped to establish sociolinguistics as a new field of study that focused on the social and cultural dimensions of language, including language contact in multilingual communities,

3. For a discussion of mixed languages, see Smith (2019).

where people often use multiple languages and language varieties and where language use can vary depending on the social context and audience (Trudgill, 1986, Thomason, 2003). Starting in the 1990s, research in multilingual communities analyzed, among other things, how social factors such as identity and power influence language choice and use (Labov, 2001a; 2011).⁴ For a discussion of contact-induced change within the broader field of sociolinguistics, see Bayley et al. (2013).

Another important aspect of language contact is its influence on language change, as it often leads to borrowing, mixing, and innovation in language use (as already pointed out by Schuchardt; see above). To this end, both Van Coetsem (1988) and Thomason & Kaufmann (1988) propose that contact-induced language change is a major driver of language change. For example, Thomason & Kaufmann (1988) show that in situations of full bilingualism, imperfect language learning does not appear to play a role in the process by which linguistic features are transferred from one language to another (so-called “borrowings”).⁵ The linguistic prediction in such language contact situations, according to Thomason (2019, p. 116), is “that non-basic lexicon will be borrowed first and structural features will be borrowed later, if at all.” In contrast, in language contact situations with imperfect learning of an L2 we find a different outcome, with a shift of one group of people to the language of another group of people taking place. In this so-called “shift-induced interference” the “most prominent and numerous transferred features are in the phonology and the syntax; lexical transfer lags behind these structural subsystems” (Thomason 2019, p. 117).⁶ The differences between borrowing and shift-induced interference show that “language contact is a social phenomenon with linguistic consequence” (Thomason 2019, p. 116).

Based on a variety of different data sets, Thomason & Kaufmann (1988) offer the following definition of borrowing: “The incorporation of foreign features into a group’s native language by speakers of that language: the native language is maintained but is changed by the addition of the incorporated features.”⁷ They also propose a borrowing scale of different levels, each representing an increasing

4. In this connection, see Sankoff (2019) on individual trajectories in real time and individual trajectories in language change.

5. Borrowings are regarded as distinct from code-switching, which is a temporary switch between two languages or language varieties. For different approaches to code-switching, see Sankoff (1980), Myers-Scotton (1993), Poplack & Meechan (1998), Auer (1998), and Clyne (2003).

6. For a more detailed discussion of shift-induced interference, see Thomason (2019, pp. 118–119).

7. For a critical assessment of Thomason & Kaufmann (1988), see Winford (2019).

intensity of contact as well as an increasing typological distance. Probably the two most important social features of their borrowing scale are intensity of contact and cultural pressure, as shown in the following abridged version of Thomason & Kaufmann's (1988) scale by Winford (2003, p. 30).

Table 1. Thomason & Kaufmann's (1988) borrowing scale (Winford, 2003, p. 30)

Stage		Features
1	Casual contact	Lexical borrowing only
2	Slightly more intense contact	Slight structural borrowing; conjunctions and adverbial particles
3	More intense contact	Slightly more structural borrowing; adpositions, derivational affixes
4	Strong cultural pressure	Moderate structural borrowing (major structural features that cause relatively little typological change)
5	Very strong cultural pressure	Heavy structural borrowing (major structural features that cause significant typological disruption)

Stage 1 of Thomason & Kaufmann's borrowing scale is probably the most widespread scenario, where there is only marginal contact with another language and individual words are borrowed. Speakers of the recipient language typically do not achieve fluency in the donor language and they integrate borrowed words phonetically and morpho-syntactically. The introduction of English loanwords such as *bat* and *song* into Japanese beginning in the mid-nineteenth century are an example of Stage 1, according to Winford (2003, pp. 30–31).

Stage 2 typically involves the languages of immigrant groups and ethnic minorities, which are often absorbed into a larger host community. In this scenario, some degree of bilingualism in the recipient language community plays a crucial role as the recipient language is particularly open to borrowings from the dominant language. An example of Stage 2 borrowing is Texas German as spoken during the first half of the 20th century (see Boas, 2009a). During this period, the Texas German community was becoming bilingual while at the same time borrowing more and more words such as *die Electricity*, *die Creek*, *phonen*, *deep*, and *anyhow* from English into Texas German. This ongoing language shift went further during the second half of the 20th century with almost all of the speakers shifting entirely to the donor language, i.e. English (Boas & Pierce, 2011).

Stage 3 involves more intense contact situations (more bilinguals, attitudes favoring borrowings, etc.) in which both basic and non-basic vocabulary is borrowed. According to Thomason (2001, p. 70), some structural features are also borrowed at stage 3, but typically without significant typological change in the

recipient language. An example of stage 3 is the borrowing of the progressive *-ing* aspect marking strategy that some speakers of Texas German adopted from English, according to Guion (1996) (see also Blevins, 2018).

Stage 4 of Thomason & Kaufmann's borrowing scale is indicative of intense language contact situations in which bilingualism is the norm among speakers of the borrowing language. According to Winford (2003, p. 30), strong cultural pressures promote the borrowing process, leading to lexical borrowings in all sections of the lexicon as well as moderate structural borrowings, which can lead to minor typological changes in the recipient language. Texas German as spoken in the first quarter of the 21st century also falls into this category, as it exhibits loss of case marking, resulting in a two case system (and numerous instances of no clear case marking at all anymore) and a less flexible word order (see Boas, 2009a; 2009b). Grant (2019, p. 2) calls languages that are so strongly influenced by other languages heavy-borrowing languages and offers a comparison of different transferred linguistic features in heavy-borrowing languages (Grant, 2019, pp. 22–27).⁸

Stage 5, according to Winford (2003, p. 30), takes place under very strong cultural pressure, which leads to heavy structural borrowing together with eventual typological disruptions in the recipient language.⁹ Trudgill (2011) integrates scenarios of heavy structural borrowing as well as scenarios characterized by massive (imperfect) L2 acquisition into his approach to sociolinguistic typology, which focuses on correlations between the size of speaker communities, the density of their network, and the degree of contact of individual languages on the one hand and complexification and simplification mechanisms on the other hand.

Mott & Laso (2019) offer a related, but different type of view of outcomes of language contact relations. As can be seen in Figure 2, their tree-like classification of contact phenomena is structured in terms of how they affect the lexicon, leading to a dichotomy between loan creations and lexical borrowings, where the latter term serves as the superordinate category for different types of lexical borrowings, including different categories of loanwords and different categories of loanshifts.

This brief overview of some of the main issues in language contact research during the 19th and 20th centuries has touched primarily on structural outcomes of language contact. There is, however, also a significant amount of research on

8. See Haspelmath & Tadmor (2009) for an overview of the different proportions of loan words in the general vocabulary of languages.

9. See Muysken (1981) for a hierarchy of borrowability that captures the general observation that open-class items such as nouns and verbs are more easily borrowed than closed-class items such as pronouns and subordinating conjunctions (see also Poplack et al., 1988, and Poplack & Meechan, 1998, on this point).

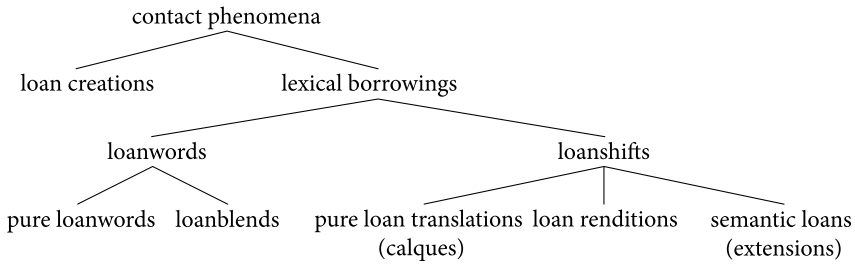


Figure 2. Contact relations in tree form (Mott & Laso, 2019)

non-structural issues surrounding language contact and change (for initial discussions, see Weinreich, Labov & Herzog, 1968). For example, language ecology (Haugen, 1971) emphasizes the study of language in its social and ecological context, as well as the importance of language maintenance and revitalization (for an overview, see Coupland, 2010; Eliasson, 2013). One of its foci is the study of linguistic diversity, including the causes of language endangerment and language death, and the ways in which language communities can work to preserve and promote their languages (see Mühlhäusler, 1996; Crystal, 2000, Brenzinger, 2007).

Language ecology also examines the role of language in shaping cultural identity, social hierarchies, and power relations, as well as the effects of globalization and migration on language use and change (Shohamy, 2009). Finally, language ecology also encompasses the study of language policy and planning, which involves the formulation and implementation of policies and strategies for the promotion and preservation of languages. This includes the development of language education programs, the creation of language planning agencies, and the establishment of language rights (see also Fishman, 2001; Mufwene, 2001; Skutnabb-Kangas & Philipson, 2011).¹⁰

With this brief overview of some language contact studies during the 19th and 20th centuries, we now turn to language contact studies in the 21st century. In this

10. Another (non-structural) aspect of contact-induced language change is the way that bilingual speakers process language. One common processing model of bilinguals is the Bilingual Interactive Activation (BIA) model, which was first proposed by van Heuven et al. (1998). The BIA model posits that bilingual individuals have two separate mental lexicons, one for each of their languages, but that these lexicons are connected through a shared conceptual system. When a bilingual individual encounters a word in one of their languages, the BIA model predicts that activation will spread to related concepts in both languages, as well as to phonological and syntactic information associated with each language. This parallel activation of both languages is thought to be responsible for some of the unique processing challenges faced by bilinguals, such as interference between languages and cross-linguistic priming effects. See also Dijkstra et al. (1999), van Hell & Dijkstra (2002), Costa & Ivanova (2006), and van Heuven & Dijkstra (2010).

context, two disclaimers are important. First, in the following subsections we primarily focus on structural issues of language contact while leaving non-structural issues on the side. Second, because of space constraints, our discussion will not and cannot provide an exhaustive overview of all of the various approaches.¹¹ Instead, we focus first on Clyne's (2003) notion of transference, which seeks to capture all types of structural influences from one language onto another. Then, we discuss how the field of Cognitive Linguistics (Langacker, 1987; Croft & Cruse, 2004) has influenced language contact studies in the past decade. Finally, we summarize the key concepts and ideas underlying Diasystematic Construction Grammar (DCxG) and discuss how it can be applied to analyze a broad variety of language contact phenomena.

2.2 Language contact studies in the 21st century: Structural issues

Clyne (2003) proposes an alternative approach to language contact phenomena by characterizing all types of structural influences from one language onto another in terms of transference. On this view, contact effects with different degrees of structural complexity are conceptualized as a continuum rather than in discrete categories, levels, or modules (cf. the distinction between matter and pattern loans proposed by Sakel, 2007). Clyne's (2003, pp. 76–79) proposal for a comprehensive (descriptive) terminology for different types of contact phenomena (in his terms, 'transference'), as also indicated by some of his labels, is summarized in Table 2.

Boas & Höder (2018, p. 10) point out that this continuum covers both formal and functional/semantic aspects (except for phonological/phonetic transference, which can normally be understood as lacking semantics) as well as different degrees of structural schematicity. Most approaches discussed so far focus either on structural outcomes of language contact or on non-structural issues surrounding language contact, or, a combination of both. However, most of these approaches have not paid adequate attention to cognitive factors involved in language contact. To overcome this issue, several language contact studies over the past ten years or so have thus integrated insights from cognitive linguistics (Lakoff, 1987; Langacker, 1987; Talmy, 2000; Croft & Cruse, 2004) into their analyses. Cognitive Linguistics emphasizes the role of cognition, meaning, and communication in the structure and use of language and views language as an

11. See Muysken (2000) on the notion of code-mixing, Johanson (2002) on the concept of code copying, and Muysken (2013) for a sketch of a comprehensive framework for analyzing language contact phenomena that focuses on speakers' multilingual optimization strategies in language contact situations.

Table 2. Different types of transference phenomena according to Clyne (2003)

Label	Transference of ...
lexical transference	lexical items in form and content
multiple transference	a number of collocated lexical items
morphemic transference	bound morphemes
morphological transference	morphological patterns
semantic transference	meanings from lexical items in one language to formally or semantically similar items in another language
syntactic transference	syntactic patterns
lexicosyntactic transference	one or more lexical items and corresponding syntactic constructions
semanticsyntactic transference	meaning and syntactic construction of idiomatic expressions
pragmatic transference	pragmatic patterns
[phonological/phonetic transference]	phones, phonemes, phonological processes, phoneme-grapheme relations, prosodic features, ...

integral part of human cognition and communication, and seeks to explain how language is processed, learned, and used in real-world situations (Lakoff & Johnson, 1980; Fillmore, 1982; Talmy, 1985; Fauconnier & Turner, 2002).

On this view, language is not just a set of arbitrary symbols or rules as in many formalist approaches to language (Chomsky, 1965; 1981; Bresnan, 1982; Pollard & Sag, 1994), but rather a system that is shaped by the way we perceive and conceptualize the world around us. In other words, language reflects our cognitive abilities and processes, and the way we use language reflects our underlying conceptual structures. Cognitive linguistics also emphasizes the role of meaning in language, and views meaning as a fundamental aspect of language structure and use. It emphasizes the importance of studying how words and grammar are used to convey meaning, and how meaning is shaped by the context in which language is used (“usage-based”) (Barlow & Kemmer, 2000; Tomasello, 2003; Díaz-Campos & Balasch, 2023). It emphasizes the importance of studying language in context, and seeks to explain how language is used to achieve communicative goals in social interaction (Johnson, 1987; Langacker, 1987).

Cognitive Contact Linguistics (Zenner, Backus & Winter-Froemel, 2019) examines how language contact affects the way that speakers conceptualize and

use language.¹² It emphasizes the role of cognitive factors in shaping language change, such as the cognitive processes involved in language acquisition, language processing, and language use. One key aspect of Cognitive Contact Linguistics is the study of linguistic borrowing and the cognitive processes involved in the transfer of linguistic features from one language to another. Researchers in this field explore how linguistic features are selected, integrated, and adapted during the process of borrowing, and how these features are processed and represented in the minds of bilingual and multilingual speakers (see, e.g., Onysko, 2019).¹³ Another important area of research in Cognitive Contact Linguistics is the study of language convergence and the cognitive processes involved in the development of mixed languages and creoles. Researchers in this field explore how speakers of different languages converge on a common linguistic system, and how this convergence is shaped by cognitive factors such as perception, memory, and attention.

2.3 Diasystematic Construction Grammar

Diasystematic Construction Grammar (DCxG; for a comprehensive overview see Höder, 2018; cf. also Höder, 2012; 2019; Höder, Prentice & Tingsell, 2021) is a constructionist approach to language contact phenomena. It aims to combine current insights from contact linguistics with mainstream, usage-based Construction Grammar without adding any unnecessary theoretical or formal machinery of its own. In extending the ice cream metaphor coined by Croft (2005, p.277), who describes Radical Construction Grammar as “[v]anilla construction grammar, with no toppings”, DCxG should be seen as an attempt to formulate a constructionist approach that does away with the ‘monolingual corset’ formed by the *a priori* assumption that linguistic knowledge is organized into distinct languages (Höder, 2018, pp.45–46). As a consequence, concepts specific to DCxG are understood as inevitable implications of the application of Construction Grammar to multilingual speakers’ linguistic knowledge and language contact phenomena in a socio-cognitively realistic way.

As in usage-based Construction Grammar in general, constructions are hence seen as emergent symbolic units that are acquired, processed, and stored according to domain-general cognitive abilities and mechanisms (Bybee, 2012; Ibbotson, 2020). They form a schematicity continuum – ranging from the lexicon to syn-

12. For related work on Cognitive Sociolinguistics, see Croft (2009) and Geeraerts, Kristiansen & Peirsman (2010).

13. A closely-related sub-field of Cognitive Contact Linguistics is Usage-based Contact Linguistics, which seeks to highlight the cognitive mechanisms that are involved in contact phenomena (see Quick & Verschik, 2021; Backus, 2020; and Hakimov & Backus, 2021).

tactic patterns and beyond – and form a dynamic network (Diessel, 2019; 2023), whose internal structure is motivated by speakers' communicative practice in social interaction in addition to general cognitive principles (Boas, 2013, pp.242–244). Furthermore, constructions are (more or less) entrenched and, as far as they are shared by speaker communities, conventionalized; note, however, that although entrenchment and conventionalization are interrelated and often co-occurring processes, they are conceptually independent of each other (Schmid, 2020).

A starting point of DCxG is the proposal in Construction Grammar that both individual speakers' linguistic knowledge and the linguistic conventions shared by a speaker community can be captured *in its entirety* in terms of constructions and interconstructional links; as Goldberg (2006, p.18) puts it, it is “constructions all the way down”. This implies a claim that Construction Grammar must, in principle at least, be able to cover linguistic phenomena that have traditionally been thought of as rather peripheral in order to live up to its own aspirations; in Boogart, Coleman & Rutten's (2014) wording, it is “constructions all the way everywhere”.

It follows from this *constructionist argument* that the constructicon at the disposal of multilingual speakers and communities must contain all the constructions that are needed for all of the languages involved, since – unlike in more traditional approaches – the notion of ‘languages’ does not have any *a priori* status, i.e. the constructicon cannot be divided into two or more language-specific networks. Rather, it is assumed that one constructicon represents the entire linguistic repertoire (Matras, 2020, pp.340–341; this view also echoes earlier ideas such as *multicompetence*, cf. Cook & Li Wei, 2016), from which speakers choose the constructions that are appropriate in a given communicative situation. However, multilinguals do not choose constructions randomly, but usually follow social conventions on the association of specific constructions with specific communicative contexts, such as discourse topics, interlocutor constellations, or – more broadly – communicative domains. As a consequence, constructions often carry a type of pragmatic meaning that simultaneously marks the current communication (or utterance, or part of an utterance) as belonging to a specific context or set of contexts and restricts its use to this context or set of contexts.

For example, a bilingual family – i.e. a small, but stable-ish multilingual community (cf. Höder, 2018, p.42) – might use language A in contexts that involve informal communication at home and language B in more formal settings related to work or school. In DCxG, this would correspond to a functional differentiation between two sets of constructions carrying different socio-pragmatic information. For a bilingual family whose members use, say, German in informal contexts at home and American English in other situations, the words *Fußball* and *soccer*

would be referentially synonymous, but pragmatically different in that the use of *Fußball* would mark the current conversation as being informal and intrafamilial, while the use of *soccer* would similarly mark the communicative situation as belonging to a different set of contexts. In DCxG, this type of pragmatic meaning is usually formalized as $\langle C_{\text{context}} \rangle$: The lexical *Fußball* construction would thus be marked as $\langle C_{\text{intrafamilial}} \rangle$, while the lexical *soccer* construction would be $\langle C_{\text{extrafamilial}} \rangle$. Insofar as the associations between languages and contexts are fixed and known, the shorthand notation as $\langle C_{\text{glottonym}} \rangle$ is used as well ($\langle C_{\text{English}} \rangle$ vs. $\langle C_{\text{German}} \rangle$).

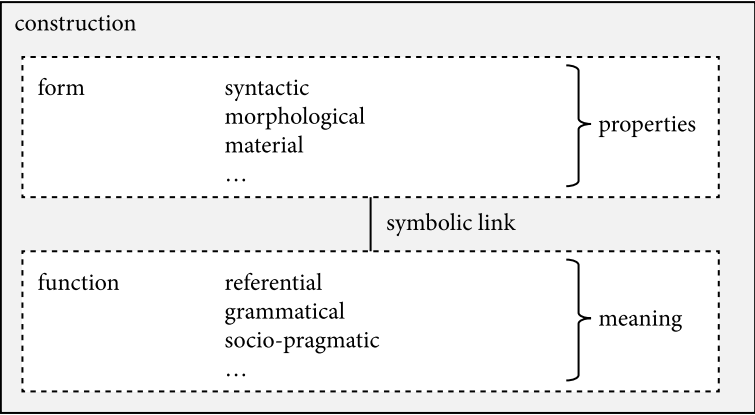


Figure 3. Constructions as form-function pairs

However, not all constructions are of this language-specific type (called *idio-constructions* in DCxG), as language-specificity is considered an optional property of constructions. The word *football*, in contrast, referring to American football, would not carry the same kind of pragmatic information, since the sport is called the same in German. For German-American English bilinguals, then, *football* is a language-unspecific lexical construction (called a *diaconstruction* in DCxG).¹⁴

Note that while CxG has traditionally focused on referential and grammatical aspects of constructional meaning, and while some approaches consider pragmatic functions as categorically different from referential semantics (e.g. Schmid, 2020, pp. 45–48), others emphasize the need to include pragmatic aspects on the functional side of constructions. Goldberg (2019, p. 7), for instance, defines constructions as “emergent clusters of lossy memory traces that are aligned within

14. Note that the situation would get a bit more complicated in the case of bilinguals with German and British English. In British English, the term *football* refers to (American English) soccer, while (American English) football is called *American football* in British English.

our [...] conceptional space on the basis of shared form, function, *and contextual dimensions*” [emphasis ours], and Cappelle (2017) argues more specifically for including conventional pragmatics on the functional side of constructions (for similar views, cf. Fischer, 2015, and Czulo, Ziem & Torrent, 2020). The integrative view also ties in with the idea that the constructional organization of linguistic knowledge is guided by the Principle of No Synonymy (Goldberg, 1995, p.67) or, perhaps more to the point, the Principle of No Equivalence as formulated by Leclercq & Morin (2023, p.10):

If two competing constructions differ in form (i.e. phonologically, morpho-syntactically or even orthographically), they must be semantically, pragmatically and/or socially distinct.

From the perspective of DCxG, then, multilingual speakers and communities organize their linguistic knowledge into a constructicon that is multilingual in its entirety, but consists of constructions that are either language-specific or language-unspecific. The existence, proportion, and communicative role of language-specific constructions within the constructicon is, in this view, an open and empirical question rather than a theoretical prerequisite. This also implies that while multilingual speakers may produce the same (types of) utterances in a specific language as monolingual speakers of the same languages, the cognitive representation of the grammatical structures involved may differ radically. While this is crucial for our understanding of multilingual knowledge, even monolinguals may have rather different cognitive representations of their language’s grammar, as findings by, among others, Dąbrowska (2019; 2020), De Smet (2020), and Anthonissen (2020) suggest and as is argued for more generally by Sabino (2018, pp.75–99).

As constructions in general, both dia- and idioconstructions come in different degrees of schematicity. For example, within the Danish-German bilingual community in South Schleswig (the northernmost part of Germany, located near the Danish border), different idioconstructions are needed to account for word order patterns in subordinate clauses, which are marked by clause-final finite verbs (v_{fin}) in German as opposed to Danish word order, with sentence adverbials (SADVL) preceding the finite verb:

- (3) a. [... SUBJ¹ SADVL² v_{fin}³ ... <C_{Danish}>]¹⁵
hvis vi ikke havde læst lingvistik
 if we not had studied linguistics
- b. [... v_{fin}^{final} <C_{German}>]
wenn wir nicht Linguistik studiert hätten
 if we not linguistics studied had
 ‘if we hadn’t studied linguistics’

In contrast, both declarative clauses and polar questions are marked by the same word order pattern in both languages, viz. verb-second word order, with topics (TOP) preceding the finite verb, in declaratives and clause-initial finite verbs in polar questions, with subjects (SUBJ) following the finite verb. This can be captured by a single diaconstruction combined with lexical material from either language:

- (4) [TOP¹ v_{fin}² ...]
 a. Danish
De fleste mennesker er flersprogede.
 the most humans are multilingual
- b. German
Die meisten Menschen sind mehrsprachig.
 the most humans are multilingual
 ‘Most people are multilingual.’
- (5) [v_{fin}¹ SUBJ² ...]
 a. Danish
Er etsprogethed sjælden?
 is monolingualism rare
- b. German
Ist Einsprachigkeit selten?
 is monolingualism rare
 ‘Is monolingualism rare?’

While the existence of (fully) schematic diaconstructions may be most obvious, partially or completely filled constructions can also be language-unspecific. For

15. At this point, we use a shorthand notation that specifies form and pragmatic meaning (<C_{glottonym}>) in square brackets, but for the sake of brevity excludes other functional aspects. For a more detailed description of constructions, including both form and function, see Section 3.3 below. – Lexical material is *italicized*. Slots are marked by SMALL CAPITALS. Ellipses (...) indicate that the construction includes additional components that are not relevant to the discussion here. Superscript numbers and words (¹, ², ^{final}) indicate the relative order of individual components.

instance, both in Danish and in German, *-er* is a productive suffix used to form deverbal agentive nouns (as in Danish *ryger/forsvarer/spiller*, German *Raucher/Verteidiger/Spieler*, from *ryg-/rauch-* ‘smoke’, *forsvar-/verteidig-* ‘defend’, *spill-/spiel-* ‘play’, respectively). This can be captured by a partially schematic diaconstruction ([v-*er*]). Similarly, the word [k^hafə] ‘coffee’ (spelled *Kaffee* in Standard German and *kaffe* in Standard Danish orthography) can be considered a lexical diaconstruction.¹⁶

Diaconstructions and idioconstructions are jointly instantiated in both monolingual and multilingual utterances produced by multilingual speakers.¹⁷ For example, in the utterances in (6), Danish and German idioconstructions fill slots in as well as instantiate a diaconstruction (cf. the illustration in Figure 4):

- (6) a. German
 Träumt ihr schon?
 dream you.PL already?
- b. Danish
 Drømmer I allerede?
 dream you.PL already
 ‘Are you already dreaming?’

More specifically, German *träumt* and Danish *drømmer* are instances of partially schematic morphological idioconstructions that specify how verb stems and inflectional suffixes are combined (a fusional 2nd-person plural indicative present suffix *-t* in German as opposed to a present tense suffix *-er* in Danish), with German *träum-* and Danish *drøm(m)-* filling the stem slot in the [v-*t*] and [v-*er*] schemas. Both morphological idioconstructions fill the finite slot in the schematic [v_{fin}¹ SUBJ² ...] polar question diaconstruction.

Besides the polar question diaconstruction and the morphological and lexical idioconstructions shown in Figure 4, it can also be argued for additional diaconstructions that are involved, for instance, a lexical argument structure diaconstruction (specifying that the experiencer in interlingually equivalent DREAM verbs is expressed as a nominative noun phrase), or a morphological finite verb construction that specifies that finite verb forms are expressed through suffixes in both languages. Whether or not such constructions are necessary (in a tech-

16. Note that this regional, language-unspecific pronunciation differs from both Standard Danish ([k^hüfə]) and Standard German ([k^hafe:]).

17. At this point, diaconstructions and idioconstructions are identified manually, which is quite labor intensive. We hope that in the future, we will be able to use quantitative approaches to automatically assess degrees of similarity and difference across languages. One possible point of departure is the research by Dunn (2017) on computational CxG.

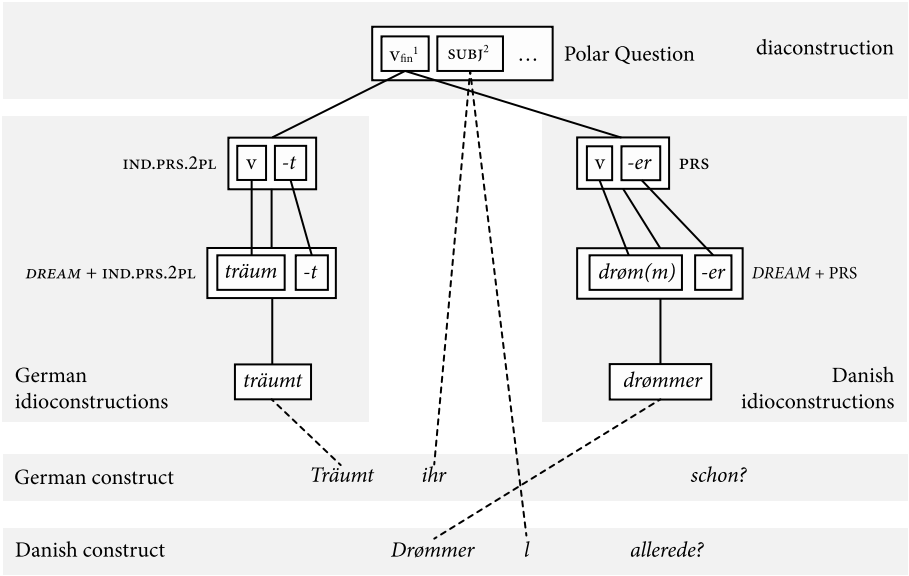


Figure 4. Interplay in instantiation

nical sense) or plausible (in a socio-cognitive sense) is an empirical and as yet largely undecided question that DCxG shares with highly schematic constructions in monolingual contexts (cf. the contributions in Hilpert, 2019b).

A multilingual constructicon can contain larger or smaller proportions of diaconstructions. The *degree of diasystematicity* is influenced, but not wholly determined, by the structural similarity of the languages used. However, while it is evident that formal and/or functional similarity strongly facilitates the cognitive representation of recurring patterns in different languages in terms of diaconstructions, it should be pointed out that the establishment of diaconstruction depends on the *perception* of interlingual similarity by multilingual speakers rather than objective criteria (cf. Höder, 2018, pp.63–64), even if contrastive analyses can help to assess the *diasystematic potential* of a pair (or set) of languages.¹⁸

In addition to the *constructionist argument* (‘It’s constructions all the way down/everywhere’) discussed above, a number of other arguments have been put forward to motivate why language contact phenomena must not be ignored in a usage-based approach, but on the contrary should play a central role. They include the following:

18. The process by which diaconstructions become established in such cases is driven by interlingual identification.

1. The *factual argument* ('Language contact is everywhere') says that, measured on a global and historical scale, most speakers and communities around the world are multilingual at least to some extent (de Bot, 2019; Matras, 2020; Pavlenko, 2023). Hence, multilingual knowledge and the use of different languages within the same individual or community are the rule rather than an exception, and usage-based approaches cannot exclude multilingualism or view it as somehow peripheral.
2. The *variability argument* ('We don't even know what a language is') says that, even if we were to doubt the ubiquity of language contact, there are no objective criteria by which we could distinguish between languages and varieties such as dialects or standards. Weinreich's (1945, p.13) oft-quoted "a shprakh iz a dialekt mit an armey un flot [a language is a dialect with an army and a navy]" illustrates that languagehood is based on extralinguistic rather than structural aspects, and multilingualism cannot be delimited from multilectalism, i.e. the use of different (geographical, social, situational) varieties (Höder, 2018, p.43). Hence, multilingualism should be modeled in a way that can also be applied to intralingual variation.
3. The *historical argument* ('Language contact changes grammar') says that languages that are used in multilingual communities tend to undergo changes that typically lead to gradual structural convergence of the languages involved, potentially resulting in (or at least approximating) construction-per-construction translatability. Such changes suggests a cognitive preference for similarity (cf. Aikhenvald, 2007, pp.26–36; Grant, 2020; Matras, 2022).
4. The *cognitive argument* ('Languages interact in multilingual speakers' cognition') says that multilingual speakers' linguistic knowledge is organized in a way that allows for all their languages to be activated jointly. As Grosjean (1989, p.4) famously puts it, "the bilingual is not two monolinguals in one person". Individual languages are neither stored or processed in isolation from each other, but interact cognitively (cf. Bialystok et al., 2009, pp.92–97; Kroll et al., 2015, pp.380–382; Del Maschio & Abutalebi, 2019). Hence, usage-based approaches must allow for and cover such cognitive interaction.
5. The *sociolinguistic argument* ('Multilingualism is functional') says that different languages tend to be associated conventionally for different purposes in multilingual communities rather than be chosen freely, ranging from conventions for large-scale communities as in societal diglossia to familial language policies. This reflects the Complementarity Principle introduced by Grosjean (2008, pp.22–34). As a consequence, the choice of language in individual conversations, utterances, sentences, phrases, words, and submorphemic elements must be assumed to be pragmatically meaningful in usage-based approaches.

So far, DCxG has been used to study a range of different settings and language contact scenarios, including historical contact-induced change, contemporary multilingual practices, and additional language acquisition; moreover, it has been included in an introductory textbook on Construction Grammar (Hilpert, 2019a, pp. 234–241).¹⁹

2.4 DCxG as a tool for linguistic analysis

DCxG not only offers a contact linguistic and linguistic-theoretical view of the linguistic knowledge of multilingual speakers and communities, but can also be used as a tool for linguistic analysis of all kinds of transference phenomena (to use Clyne's [2003] terminology) found in multilingual communication. This section shows how this can be done for different types of transference, roughly ordered according to the degree of schematicity of the constructions involved. However, the following examples also illustrate a fundamental caveat that has to be taken seriously: Isolated utterances do not provide any indication as to whether a particular language is (still) linked to a particular pragmatic function in the respective community. In contrast to, as it were, a 'linguocentric' analysis, socio-cognitively realistic analyses depend on the availability of more detailed sociolinguistic background information.

A relatively straightforward example of lexical transference (i.e. the transference of lexemes including both form and meaning) is the following Texas German utterance:

19. For example, historical contact-induced change is studied by Höder (2012; Old Swedish and Latin), Höder (2014a; High German and Low German), McColm (2019; Dutch, German, and English), Odden (2019; Scandinavian languages), Höder (2021; Low German and Danish), Lepic (2021; American Sign Language and English), Namboodiripad (2021; Malayalam and non-Dravidian languages), van Rooy (2021; Afrikaans and English), Rottet (2021; Welsh and English). Contemporary multilingual practices are discussed by Dux (2020; German and English), Bourgeois (2021; Cajun French and English), Rabé (2021; Afrikaans and Dutch), Urban (2021; English and Scandinavian languages), Barking, Backus & Mos (2022; German and Dutch), De Pascale et al. (2022; Dutch and English), Goll (forthc.; Danish and German), Järvinen & Lyngfelt (2024; Finnish and Swedish). Additional language acquisition is tackled by Hendriks (2019), Günther (2020), Höder, Prentice & Tingsell (2021), Jach (2021), Koch & Günther (2021), Van Goethem & Hendriks (2021), Freitas Junior et al. (2022). Höder (2014b; 2019) and Hagel (2020) apply DCxG to the analysis of phonological form in interlingual communication.

- (7) Texas German (Dux, 2020, p. 55)
Die hat in einundfünfzig gegraduate.
 she has in fifty-one graduated
 ‘She graduated in 1951.’

Here, an originally English lexical element, *graduate*, is combined with etymologically German material; more specifically, it fills a slot in a morphological construction [*ge-v(-(e)t*] (*C_{Texas German}*) used to form the past participle, which in turn forms part of a perfect tense construction [*HABEN*, *v_{past.participle}* (*C_{Texas German}*)].²⁰ Graduation from school, as a concept, is specific to American culture and has no exact equivalent in the German-speaking countries in Europe. From a code-switching perspective, this suggests that the choice of the English *graduate* instead of a German expression (e.g. *ihren Abschluss machen* ‘make her degree’) might be motivated by its association with American culture and fill a lexical gap in the linguistic knowledge of Texas German speakers (Dux, 2017, pp. 395–404; 2020, pp. 55–56). In DCxG, this would correspond to the assumption that the use of *graduate* in an otherwise German-based context carries pragmatic meaning by specifically referring to mainstream American culture, i.e. a lexical construction [*graduate* (*C_{American}*)].

Another possibility, however, is that *graduate* has lost this type of pragmatic marking through what is called *pro-diasystematic change* (Höder, 2018, pp. 59–62), i.e. a kind of constructional change that results in an overall simplification of the multilingual constructicon: *Graduate* has simply become a lexical diaconstruction ([*graduate*]) that is available to Texas German speakers in any context, including when they use Texas German. Irrespective of this, the example also shows that speakers treat both Texas German and English verbs as members of the same language-unspecific class. In constructional terms, this implies a word-class diaconstruction [V], as opposed to idioconstructional morphological schemas such as [*ge-v(-(e)t*] (*C_{Texas German}*).

A connection between language choice and communicative context is much less conceivable with utterances such as (8):

- (8) Texas German (Dux, 2017, p. 399)
Aber die Touristen thinken das ja.
 but the tourists think that yes
 ‘But the tourists think that.’

20. In Standard German, past participles are always marked by a suffix (*-(e)t* or *-en*); however, loss of *-(e)t* after stem-final apical stops (as in *graduate-*) is common in many non-standard varieties including Texas German.

Since English *think* and Texas German *denken* are semantically equivalent, it is likely that *think* has pro-diasystematically changed from an idioconstruction into a pragmatically unmarked diaconstruction ($[think \langle C_{\text{English}} \rangle] > [think]$) that can be combined with both English and Texas German constructions.

Similar cases include the one in (9) where an etymologically English numeral is used in an otherwise Welsh utterance:

- (9) Welsh (Grey, 2019, p. 254)
Ma' 'na twenty-two o fedrws yn y tŷ i gyd
 be+PL there of bedrooms in the house whole
 'There are twenty-two bedrooms in the whole house.'

This is part of a larger pattern reported by Grey (2019, p. 254) from the 1970s where numbers were expressed using the English system even by competent speakers of Welsh. This appears to reflect a whole word class that has undergone pro-diasystematic change ($[NUMERAL \langle C_{\text{English}} \rangle] > [NUMERAL]$) at least for part of the then Welsh-speaking community.

Multi-word units are found with the same patterns as single-word constructions, in particular collocated lexical items (cf. Clyne's [2003, p. 76] definition of multiple transference), as in (10):

- (10) Texas Spanish (Pfaff, 1979, p. 296)
Yo anduve in a state of shock por dos dias.
 I walked for two days
 'I went around in a state of shock for two days.'

From a constructional perspective, this collocation can be treated the same way as a word, i.e. as a multi-word lexical construction. Hence, *in a state of shock* might be an idiomatic expression that is associated more with the sphere of public life than with informal communication at home; this would correspond to an idioconstruction $[in a state of shock \langle C_{\text{English}} \rangle]$. Alternatively, it might reflect the result of pro-diasystematic change, i.e. a diaconstruction ($[in a state of shock]$). Neither interpretation of this expression has any implications for the status of its (Standard) Spanish equivalent *en estado de choque* (or *shock*), which could, for instance, coexist in the multilingual construction of Texas Spanish speakers as an idioconstruction ($[en estado de choque/shock \langle C_{\text{Texas Spanish}} \rangle]$). Furthermore, the example illustrates that *in a state of shock* is treated as a Texas Spanish adverbial. This implies that there is a language-unspecific [ADVERBIAL] construction that can be filled with lexical material from either language and fills adverbial slots in clausal constructions.

From a constructionist perspective, semantic transference such as in (11) is particularly interesting because it involves both formal and functional aspects:

- (11) Wisconsin German (Dux, 2020, p. 59)
dass es wieder arbeiten kennt
that it again work could
‘so that it could work again’

In this Wisconsin German example, *arbeiten* is used in the sense of ‘function properly’, whereas *arbeiten* in German means ‘do work’. According to Dux’s (2020, pp. 61–62) analysis, this use can be explained as a loan translation based on the polysemy of the English verb *work*, with language-specific semantic differences between functionally near-equivalent words being leveled. From a DCxG perspective, this suggests that bilingual speakers entrench (and possibly conventionalize) *work* and *arbeiten* as interlingual equivalents of each other, i.e. as formal variants of a *schematic lexical diaconstruction* [___ ‘do work; function properly’], and associate the polysemy network with that diaconstruction rather than one of its idioconstructional daughters. Figure 5 illustrates this polysemy-based loan translation from a constructional perspective.

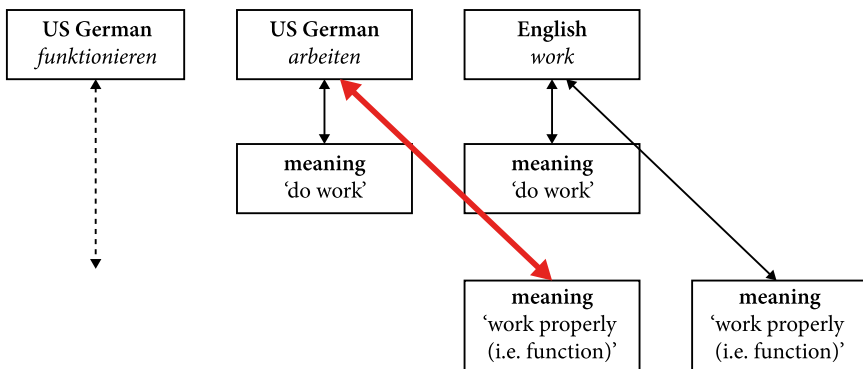


Figure 5. Polysemy-based loan translation in U.S. German dialects
(Dux 2020, p. 62, based on Figure 7)

In Figure 5, we can see three different lexical constructions for *funktionieren* (‘function’), *arbeiten* (‘work’), and *work*. Instead of associating the meaning ‘work properly’ with the lexical item *funktionieren*, as in continental German dialects, Texas German associates the meaning side of *funktionieren* with *arbeiten*, thereby giving rise to its use in (11).

This represents a specific type of pro-diasystematic change called *diaconstructionalization* (Höder, 2021, p. 22), which entails a reorganization of constructions or interconstructional links within the multilingual construction that reduces the proportion of language-specific information. A related type of change is illustrated in (12):

- (12) Texas German (Dux, 2017, p. 410)
Gleichen Sie Kochkäse?
 like you cook-cheese
 ‘Do you like cooked cheese?’

The conventional use of *gleichen* in the sense of ‘be fond of’, which is not limited to Texas German, but has been attested for other American varieties of German as well (Dux, 2017, pp. 385, 418), as opposed to its Standard German meaning ‘be similar to’, can also be explained as an instance of pro-diasystematic change. However, this change is not related to verbal polysemy, but to a set of formal and functional similarity relations between inter- as well as intralingual elements: Firstly, in English, the verb *like* ‘be fond of’ (*like*_{be-fond-of}) is homophonous with the adjective, noun, preposition, and conjunction *like*, all of which evoke the concept of ‘similarity’ (*like*_{resemble}). Secondly, this *like*_{resemble} functionally overlaps with the German adjective *gleich* ‘identical, similar’ and the verb *gleichen* ‘resemble’. Thirdly, *like*_{resemble} [laɪk] and *gleich* [ɡlaɪç] are phonetically similar (and indeed cognates). These similarity relations form the basis for, among other things, a schematic lexical diaconstruction that captures the interlingual equivalence of *like*_{be-fond-of} and *gleichen* [____ ‘like’].

Cases of morphological and syntactic transference can be analyzed much in the same way, as different degrees of schematicity are not assumed to entail categorical differences between, say, grammatical and lexical constructions. This becomes clear in, for example, the analysis of syntactic transference as in (13):

- (13) American Icelandic (Arnbjörnsdóttir, 2015, p. 89)
Dolly stundum talar íslensku.
 Dolly sometimes speaks Icelandic
 ‘Dolly sometimes speaks Icelandic.’

In this American Icelandic example, the sentence adverbial *stundum* is placed before the finite verb, whereas it would have to be placed after the finite verb in Icelandic main clauses (*Dolly talar stundum íslensku*). The use of this word order pattern in American Icelandic can be explained as a pro-diasystematic innovation (whether conventionalized or not), where the originally English construction that licenses sentence adverbials in preverbal position ([... SADVL¹ V² ...]) loses its pragmatic restriction and can be used with Icelandic lexical material.

Another example of syntactic transference is found in (14):

- (14) American Norwegian (Westergaard & Anderssen, 2015, p. 39)
Når jeg var en lærer
 when I was a teacher
 ‘when I was a teacher’

While Norwegian as spoken in Norway uses a particular copula construction with article-less predicative noun phrases (including bare nouns) to refer to professions ([*VÆRE*, SUBJ, *PRED_{profession}*]; e.g. *når jeg var lærer* ‘when I was [a] teacher’), English uses the default copula construction in such contexts as well ([*BE*, SUBJ, *PRED*]), which is structurally parallel to the general Norwegian copula construction ([*VÆRE*, SUBJ, *PRED*]; e.g. *jeg er en idiot* ‘I am a fool’). Bilingual communities are thus highly likely to store a generalized copula diaconstruction ([*COPULA*, SUBJ, *PRED*]).

The use of the general copula construction to refer to professions could be explained by the loss of the Norwegian idioconstruction in bilingual speakers. This, in turn, could result from competition between the default copula diaconstruction and the more specific profession construction: The default construction (whether as a diaconstruction or as a Norwegian idioconstruction) licenses utterances such as in (14), but competes with the more specific [*VÆRE*, SUBJ, *PRED_{profession}* (*C_{Norwegian}*)] construction. In a monolingual context, one would expect the more specific construction to win that competition whenever applicable (*statistical preemption*; Goldberg, 2016). However, this competition presents itself differently in a bilingual setting, where speakers experience less consistency in the use of the two constructions, with English utterances using the default copula construction where Norwegian would use the profession construction.

Transference of morphosyntactic patterns pose more complex problems, as in (15):

- (15) American Icelandic (Arnbjörnsdóttir & Þráinsson, 2018, p. 247)
Ég hélt að það var miklu kaldara.
 I thought that it was much colder
 ‘I thought that it was much colder.’

The complement clause in (15) contains a finite verb in the past indicative (*var*), in agreement with the past indicative in the matrix clause (*hélt*). This is structurally parallel to the use of the English past tense in reported speech. In Iceland Icelandic, however, there is a contrast between different degrees of factivity that are marked by different mood constructions; non-factives like *halda* ‘think’ take the subjunctive instead of the indicative (... *að það væri miklu kaldara*) (Sigurðsson, 2010, pp. 43–48). The use of the past indicative suggests that, for American Icelandic speakers, the originally English reported speech construction that only involves tense agreement between the finite verbs in the matrix clause and the embedded clause has undergone pro-diasystematic change and is used as a diaconstruction, potentially coexisting with the structurally similar original Icelandic construction that additionally stipulates that the finite verb in the embedded clause should be in the subjunctive mood if combined with non-factive matrix verbs.

Similar levels of schematicity can also be observed in utterances such as in (16):

- (16) Channel Island English (Jones, 2022, p. 649)
There's ten years I'm a farmer.
 'I have been a farmer for ten years.'

This utterance instantiates a construction that can be formalized as [*there's* TIMESPAN (*that*) CLAUSE_{present}], which indicates that the state or event expressed in the clause has been going on for the indicated timespan. This construction is commonly used in Channel Island English and can be traced back to a structurally parallel Insular Norman construction [*y'a* TIMESPAN *qué* CLAUSE_{present}] (e.g. *y'a dgiex ans qué j'sis fermyi*; Jones, 2022, p. 649; cf. Standard French *il y a dix ans que je suis agriculteur*). This construction contains the subjunction *que*, which is likely to have been identified as the interlingual equivalent of the (omittable) English complementizer *that*, and also the element *y'a*, which is also used in the existential construction [*y'a* NP] and, hence, likely to have been identified with English *there is*. These lexical correspondences can be captured by lexical diaconstructions ([EXISTENTIAL], [COMPLEMENTIZER]). On this basis, it can be assumed that the original Insular Norman [*y'a* TIMESPAN *qué* CLAUSE_{present}] was diaconstructionalized into [EXISTENTIAL TIMESPAN COMPLEMENTIZER CLAUSE_{present}], which could also be combined with lexical material from Channel Island English. With this overview of how DCxG accounts for different types of language contact phenomena, we now turn to some current and future challenges for DCxG, as well as their possible solutions.

3. Towards a constructicographic approach in DCxG

3.1 Community-specific grammar

Most models that deal with language contact phenomena tend to approach multilingual speakers' linguistic behavior from a 'linguocentric' point of view: Different languages are treated as constituting separate linguistic systems that interact (or interfere) with each other in multilingual communication (cf. Gardner-Chloros, 2009, pp. 112–113). DCxG, in contrast, follows a holistic approach that puts multilinguals center stage: It aims to model multilingual communication in a socio-cognitively realistic way that is consistent with what is known about multilingual speakers and communities from research in contact linguistics, sociolinguistics, and usage-based linguistics. In doing so, DCxG not only represents the application of CxG to language contact situations (cf. Section 2.3), but can also be considered an attempt to formalize (in constructionist terms) central insights of more general usage-based contact linguistics.

From a usage-based perspective, linguistic structure is seen as emergent, both (a) in terms of the cognitive organization of linguistic knowledge and the gradual entrenchment of linguistic units at the individual level and (b) in terms of the establishment of social conventions on language use. If we choose to interpret this in terms of more or less coherent ‘languages’, as is the rule in traditional frameworks, we must bear in mind that this is not necessarily a socio-cognitively realistic notion, but – in particular for multilingual contexts – represents an abstract idealization. While a ‘language’ could, for monolingual contexts, be defined as the set of structures shared by its speech community, the same definition when applied to multilingual speech communities rather matches their entire (multilingual) repertoire, within which ‘languages’ can be defined as intersecting subsets (Höder, 2019, pp.339–340).

As a consequence, what is usually referred to as the same ‘language’ in everyday parlance and in the linguistic literature can be rather drastically different entities from a usage-based view: English, for instance, as represented in the linguistic knowledge of bilingual Texas German speakers and the social conventions of their community is different from what represents English in the knowledge and conventions of monolingual speakers. From a usage-based perspective, then, there is no such thing as ‘the grammar of English’. Rather, there are – presumably strikingly different – grammars of different English-speaking communities (cf. Höder, 2018: “Grammar is community-specific”), some of which are decidedly multilingual in that they cover additional languages as well, more or less exhaustively, whereas others are (near-)monolingual. Community-specific grammaticography (or constructicography) would presuppose a radically data-driven, bottom-up analysis of the linguistic behavior of the speech community, including both monolingual and multilingual communication, and would ultimately rely on generalizations across individual speakers from the relevant group.

Taking this seriously has ramifications for the analysis and interpretation of data. For example, what looks like transference from a linguocentric perspective might, from a usage-based view, actually not involve any combination of material from different languages at all. It might not even involve interaction between different subsets of the multilingual repertoire (or constructicon), but simply represent conventional usage within a specific speech community. The use of *thinken* in the sense of ‘think’ in Texas German looks odd from a linguocentric perspective that equates German varieties with Standard German and suggests that the expected form should be *denken* instead of some other word.

At first glance, this observation echoes a classic problem known from countless studies on code-switching: On the basis of individual utterances alone, synchronic language contact phenomena cannot be distinguished from the results of diachronic mechanisms; whether the use of *thinken* is caused by a spontaneous

innovation (a ‘nonce borrowing’ or ‘insertion’) or reflects an older, established innovation (‘borrowing’, ‘established loan’) remains undecidable (Gardner-Chloros, 2009, p.195). From a usage-based perspective, however, this is a false dichotomy, since spontaneous and established innovations form part of a synchrony-diachrony continuum (Backus, 2020, p.116), defined by different degrees of entrenchment and conventionalization (Schmid, 2020). Moreover, while – in a linguocentric view – elements originating in language A that are frequently and routinely combined with other elements originally found in language B are viewed as having been borrowed by language B (such as *thinken* in Texas German), such elements are better considered as belonging to both languages at once (or being language-unspecific) from a usage-based perspective, as they are in DCxG.

Another consequence is that a usage-based approach does not presuppose a division of linguistic knowledge into separate modules in the same way as other approaches. As Backus (2020, p.117) states, “[i]f all units can be arranged on continuums of schematicity and internal complexity, then the way these factors play out in contact-induced change has to be explored.” This is very much in line with constructionist thinking which is based on the idea that constructions are arranged along a continuum of schematicity rather than belonging to different parts of grammar.

For example, English marks nominal definiteness lexically by using the proposed uninflected article (*the*). In Norwegian, in contrast, nominal definiteness is an inflectional category and expressed by suffixes that vary according to gender and number (e.g. *-en*, *-et*, *-ene*; with complex noun phrases, other markers are used as well). In a modular view, this would involve different parts of grammar for both languages – the English articles are lexical elements, whereas the Norwegian definite suffixes form part of an inflectional paradigm. From a constructionist perspective, however, the difference between English and Norwegian can be captured by constructions that differ in their degree of schematicity, viz. English [*the* N] vs. Norwegian [N-DEF]. Despite their formal difference, bilinguals do identify both constructions with each other based on their functional similarity and use them as equivalents; this, in turn, might be captured by an even more schematic diaconstruction [DEF, N] – a construction that could not even hypothetically be categorized as being part of any specific module.

As a usage-based constructionist approach, DCxG is not (yet) a falsifiable theory (sensu Hoffmann, 2020; 2022, pp.281–284; see also Cappelle, 2024). However, it allows for some generalizations and (falsifiable) predictions that tie in with usage-based constructionist assumptions in general. For example, the general claim that diaconstructions exist does not imply the existence (and socio-cognitive relevance) of any particular diaconstruction in a given multilingual

construction; the degree of actual diasystematicity remains an empirical question. Nevertheless, DCxG enables us to make some concrete predictions: It proposes possible trajectories for socio-cognitively plausible contact phenomena, based on the diasystematic potential of a pair (or set) of languages in contact. All other things being equal, we would predict, for example, pro-diasystematic change rather than the opposite in multilingual communities, and we would expect to see evidence of this in various types of data, such as corpus data (where interlingual productivity can be attested) or experimental data (which yield insights into decoding processes that involve language-unspecific schemas).

3.2 Non-modular grammar

One of the aspects that sets DCxG apart from other non-cognitive approaches to language contact is that it adopts a non-modular view of language and that it regards the concept of construction (a pairing of form with meaning) as the basic concept of language. This is in contrast to most other approaches that model contact phenomena such as code-switching using different modules.

One such approach is Myers-Scotton's (2002; 2006) Matrix Language Frame (MLF) model, which proposes that in a bilingual or multilingual context, speakers have two or more distinct linguistic systems at their disposal. In this model, the Matrix Language (ML) is the dominant or stronger language in a bilingual speaker's repertoire and it provides the grammatical structure and most of the content words in a sentence. The Embedded Language (EL) is the weaker or less dominant language in a bilingual's repertoire and it contributes content words to the sentence, but not grammatical structure. Typically, the material from the EL is inserted into the ML frame. The MLF model also distinguishes between core and periphery structures within sentences. According to Myers-Scotton (2006), core structures are those that are more resistant to code-switching (e.g. function words, verb tense and aspect, pronouns), while periphery structures are more flexible and allow for code-switching (e.g. noun phrases, adjectives, interjections, question particles).²¹

21. The MLF model has been refined in more recent work so that it now differentiates between different morpheme types that regulate the interplay between matrix and embedded language. The so-called 4-M Model (Jake & Myers-Scotton, 2020) assumes that speakers code-switch between content morphemes without issues, but system morphemes are different. Moreover, there are two different types of system morphemes: (1) early system morphemes and (2) late system morphemes. The first group consists of morphemes that are activated early on during the speech production process, such as determiners and particles. These early system morphemes allow code-switching more easily than late system morphemes that indicate relations between constituents within a phrase or a sentence, such as subject-verb agreement (see Myers-Scotton, 2006, pp. 267–68).

In the following Texas German sentence, it appears as if German is the Matrix Language, while English is the Embedded Language.

- (17) Texas German (Dux, 2018, p. 243)
Ich like's hier besser because ich hab immer mein Deutsches verpasst.
 I like=it here better because I have always my German missed
 'I like it better here because I have always missed my German.'

According to Myers-Scotton's model, the verb *like* and the conjunction *because* belong to the Embedded Language (English). The sentence adheres to the Equivalence Constraint, because the English verb *like* agrees in number with the first person singular subject *ich* ('I'). While the MLF model accounts for the subject-verb agreement in (17), it is not without its limitations and challenges.

Consider, for example, the (etymologically English) conjunction *because*, which is used in between words that are (etymologically) German. While the MLF model allows code-switching to appear at clause boundaries, and while conjunctions – core structures according to the model – are considered to be able to come from either languages (cf. Myers-Scotton & Jake, 2009, pp. 351–354), conjunctions are not expected to occur as Embedded Language islands. Rather, we would expect a conjunction from the Matrix Language (e.g. *weil*), or we would expect *because* followed by an English clause. The example of *because* in (17) raises another important point, namely word order in the subordinate clause following *because*, which would place the finite verb *hab* at the final position in the subordinate clause according to the syntactic rules of the Matrix Language.

Ideally, we would like to consider a systematic way to establish a direct connection between the English conjunction *because* and the finite verb *habe* in the subordinate clause in order to perhaps consider ways in which the position of the Matrix Language *habe* is directly influenced by the presence of the conjunction *because* from the Embedded Language. However, making such a connection does not appear to be possible since the MLF model only assumes switches between the Matrix Language and the Embedded Language in a strictly linear fashion, but there does not seem to be a way to directly connect elements from the Matrix Language with elements from the Embedded Language occurring in a different part of a sentence in order to explain how the presence of one might influence specific structural properties (verb second instead of verb final in German subordinate clauses) of the other.²²

22. Note that some dialects of German and spoken (Standard) German show variability with finite verb placement in subordinate clauses. Some speakers put the finite verb in second position while others put it in final position. In our view, Myers-Scotton's model as well as other modular-based models relying on a linear account of code-switching are not well equipped to deal with these differences.

Our short discussion of the MLF model shows that it has certain limitations when it comes to distinguishing between core and periphery structures.²³ Similarly, Gardner-Chloros (2009, pp.112–113) points out a number of additional issues with the MLF model:

The difficulty with most models of CS grammar — both alternational and insertional — is that they seek to describe the data in terms of the interaction of discrete systems. The notion of *constraints* and that of *base* or *Matrix Language* both imply that these systems are equated with an external notion of what a language is, i.e. a variety which is the common property of a community. This means that a whole bundle of features, grammatical, lexical, phonological, etc. are stored and employed as a self-contained unit. But CS is of interest precisely because it can provide insights as to how individuals' underlying linguistic competence is actually organized, as opposed to how the 'languages' which they officially 'speak' might, in theory, mesh together.

Our discussion so far has shown that the MLF model has a number of issues when it comes to accounting for linearity, language variation, grammatical mixing, and the various degrees of language mixing and hybridity.²⁴ To overcome these issues, we propose, as already mentioned above, an integrated diasystematic approach to language contact phenomena that does not assume a strictly modular approach like the MLF model. On the diasystematic constructional view, there is no strict separation between a Matrix Language and an Embedded Language. Instead, language contact phenomena are taken at face value in that any given structure is analyzed from a synchronic non-modular perspective while relying on the notion of construction, a pairing of form with meaning/function. This usage-based view does not establish any a priori categories (core vs. periphery structures, embedded vs. matrix language, content vs. function words, etc.) or modules, but rather seeks to identify in a bottom-up fashion all of the constructions involved in licensing a given sentence (or utterance).

A crucial aspect of the usage-based approach is to employ naturally occurring language contact data that allow researchers to study each language contact phe-

23. Another issue that is unclear when applying the MLF model to examples such as (17) is the status of irregular morphological markings as in *Deutsches*. Here, the *-es* does not adhere to either the rules of the Matrix Language or the Embedded Language. We suspect that part of the problem lies in the conception of the MLF model that does not seem to be well equipped to deal with language variation. Since Texas German is a non-standard contact variety of German, it appears to be difficult to assume monolingual competence in both (Standard) English and (Standard) German.

24. Other approaches that rely on a modular view of language such as Poplack & Meechan (1988) face similar problems.

nomenon within a broader context. To this end, corpus data such as those offered by the Datenbank Gesprochenes Deutsch (Schmidt, 2017) or the Texas German Dialect Archive (Boas et al., 2010) play a central role, because they allow researchers to systematically search for, compare, and study specific language contact phenomena. Corpus data also allows researchers to reproduce previous analyses, offering the option to verify or falsify them, and, perhaps, to propose an alternative analysis of the same phenomena in context.

One advantage of a corpus-based approach is that researchers need to analyze specific phenomena in context in order to tease apart how different linguistic structures in an utterance might influence any given phenomena under analysis. To this end, researchers first need to identify all constructions in a sentence and to determine their form and meaning/function properties. Recall that we do not make any *a priori* assumptions about separate modules representing different languages, but rather we see the range of multilingual constructions on a continuum with constructions clearly belonging to language A on one end of the continuum and constructions clearly belonging to language B on the opposite end of the continuum, with various degrees of language-specificity in between. Then, it becomes possible to compile (preliminary) entries for these constructions to capture their properties in a systematic way (more on that in the next section). Finally, researchers can find additional corpus evidence to refine the construction entries, and then it becomes possible to systematically study the interactions between different types of constructions in a given sentence (i.e. how the pieces fit together).

3.3 Applying constructicographical insights to language contact data

In this subsection, we outline how DCxG can benefit from recent insights from constructicography. More specifically, we show how a systematic corpus-based bottom-up analysis of language contact data using constructicographic insights allows researchers to tease apart different levels of multilingual information, including lexical, syntactic, semantic, and pragmatic information.

One of the major developments in CxG over the past 15 years has been the emergence and growth of constructicography as a new sub-field of inquiry. The main goal of constructicography is to compile a so-called *constructicon*, a repository of construction entries that capture all of the relevant information about a construction's form and meaning.²⁵ The original idea about the nature

25. Note that there is no agreement yet on the internal structure of a constructicon containing all construction entries of a language. Diessel (2019) proposes different types of relations between construction entries that are ordered in a network of constructions.

of a constructicon was already articulated in Fillmore's earlier research as follows (Fillmore, 1985, p. 84):

If new-style lexical entries for content words were to be seen instead as constructions capable of occupying particular higher-phrase positions in sentences and included both the needed semantic role and the needed specifications of structural requirements [...], we could see such structures as providing expansions of their existing categories.

Fillmore (2008) picks up on these earlier proposals and presents an overview of a pilot project, the FrameNet constructicon, conducted by the Berkeley FrameNet project (Fillmore et al., 2003), whose original goal had been the compilation of a lexicographic database for English based on corpus evidence that is structured around semantic frames (Fillmore, 1982). To better understand the methodology, goals, and architecture of the FrameNet constructicon, we first provide a brief overview of the FrameNet lexical database for English. This will help the reader to better understand the parallels between lexical and constructional information relevant for the analysis of full texts.

Since 1997, the Berkeley FrameNet project has been creating an online lexical database that documents a wide variety of frame-semantic and corresponding valency information for English words (see Fillmore et al., 2003; Fillmore & Baker, 2010; Boas, 2013; Ruppenhofer et al., 2017). Based on manually annotated corpus sentences, FrameNet (FN) lexicographers carefully define semantic frames, which systematically characterize the different types of knowledge that language users are assumed to have about the meanings of words (more specifically: the individual senses of words) (for details, see Ruppenhofer et al., 2013, and Boas, 2017). The resulting FN database consists of a hierarchically structured inventory of semantic frames that organize the lexicon of English by grouping together all the senses of words that evoke the same semantic frame.²⁶ Users can access the FN database online by typing in a word such as *like*, which evokes the *Experiencer_focused_emotion* frame (as in *I just like looking in shop windows*) as in Figure 6, in which the definition of the frame begins with a prose description of the frame. In the description, the frame elements (FEs), which are situation-specific semantic roles, are annotated with different colors to indicate their differences and they are exemplified by specific manually annotated corpus example sentences.

26. Frames are related to other frames in the FN frame hierarchy through a variety of frame-to-frame relations, including Subframe, Inheritance, Uses, Perspective_on, and Precedes. For more details on frame-to-frame relations, see Petruck et al. (2004) and Ruppenhofer et al. (2016).

Experiencer_focused_emotion

[Lexical Unit Index](#)

Definition:

The words in this frame describe an **Experiencer**'s emotions with respect to some **Content**. Although the **Content** may refer to an actual, current state of affairs, quite often it refers to a general situation which causes the emotion.

My **ENJOYMENT** of the movie was considerably impaired by the seven-foot guy sitting in front of me.

Smithers takes great **PLEASURE** in collecting matchboxes.

Sergio derives great **PLEASURE** from smoking.

Smoking gives me extreme **PLEASURE**.

An **Explanation** for the emotion may also be expressed, often giving information about the **Content** of the emotion. In such a case, **Content** is annotated on a second layer:

She **DETESTED** him for eating cheese.

She **DETESTED** him for eating cheese.

With certain verbs, the **Circumstances** can be expressed in a finite clausal or wh- complement which may optionally be preceded by a Null NP Object:

I **HATE** it when you do that.

Note: This is not how it is currently tagged.

Figure 6. Frame and frame element definitions of the `Experiencer_focused_emotion` frame in `FrameNet`²⁷

Following the frame definition is the definition of the individual FEs that make up the frame, as in Figure 6.²⁸ The definitions of the core FEs of the `Experiencer_focused_emotion` frame are crucial for understanding the details of the frame overall. For example, the FE `Content` in Figure 6 is defined as “the Experiencer’s feelings or experiences” that “are directed towards or based upon. The `Content` differs from a `Stimulus` because the `Content` is not construed as being directly responsible for causing the emotion.” The FE `Event` “is the occasion or happening that Experiencers in a certain emotional state participate in.” The FE `Experiencer` “experiences the emotion or other internal state,” while the FE `Topic` “is the area about which the Experiencer has the particular experience.”²⁹

Following the definitions of the FEs, each frame entry lists the lexical units (LUs) that evoke the frame. In the case of the `Experiencer_focused_emotion` frame,

27. https://framenet.icsi.berkeley.edu/fnReports/data/frameIndex.xml?frame=Experiencer_focused_emotion

28. FN makes a distinction between so-called core FEs that are crucial for the understanding of the frame itself and non-core FEs that do not define the frame but provide additional information such as Time, Place, and Manner. Other non-core FEs of the `Experiencer_focused_emotion` frame include `Circumstances`, `Degree`, `Manner`, and `Time`.

29. Parts of this discussion are based on Boas (2017/2021).

FEs:**Core:**

Content [Cont]
Semantic Type: Content

Content is what the **Experiencer**'s feelings or experiences are directed towards or based upon. The **Content** differs from a stimulus because the **Content** is not construed as being directly responsible for causing the emotion.

Everyone **LOVES** compliments.

Everyone **LOVES** being complimented.

His parents **DESPAIED** of him.

John **LIKES** that I cook him lunch.

I am **AFRAID** of spiders.

Event [Event]
Semantic Type: State_of_affairs

The **Event** is the occasion or happening that **Experiencers** in a certain emotional state participate in.

It felt pretty awkward to partake in such a **NERVOUS** ceremony.
 Here we know that the ceremony was filled with nervous **Experiencers**.

Experiencer [Exp]
Semantic Type: Sentient
Topic [Top]

The **Experiencer** experiences the emotion or other internal state.

The **Topic** is the area about which the **Experiencer** has the particular experience.
Mr. Whiskers was **UPSET** about his cat treats.

Figure 7. Definitions of frame elements of the *Experiencer_focused_emotion* frame in FrameNet³⁰

this includes verbal LUs such as *abhor*, *adore*, *delight*, *fear*, *like*, and *pity*, as well as adjectival LUs such as *afraid*, *easy*, and *scared*, and nominal LUs such as *abhorrence*, *adoration*, *love*, and *solace*. LUs are specific senses of words or multi-word expressions (e.g. *kick the bucket*) that evoke a specific frame (FN takes a splitting approach to word meanings, see Fillmore & Atkins, 2000; Boas, 2013; Boas, 2021). Users can click on the name of a LU to get to its LU report and its annotation report (annotated corpus data which forms the basis of the lexical entries). For example, clicking on the lexical entry report for the verbal LU *like* displays a definition of the verb (“find agreeable, enjoyable, or satisfactory”), followed by a list of FEs and their various types of syntactic realizations in terms of phrase types and grammatical functions.

The perhaps most important part of a lexical entry in FN is the detailed listing of a LU's valence patterns as in Figure 8, which shows how the semantics of the *Experiencer_focused_emotion* frame are realized syntactically in various configurations of FEs (the valence patterns are the result of manually annotated corpus sentences). Each line with combinations of FEs in Figure 8 is known as a frame

30. https://framenet.icsi.berkeley.edu/fnReports/data/frameIndex.xml?frame=Experiencer_focused_emotion

element configuration (FEC). For example, the first line in Figure 8 lists the FEC Circumstances, Content, and Experiencer as in the sentence *They liked the play at court*. Below the combination of FEs in the FEC we find the specifications of phrase types and grammatical functions: The FE Circumstances is realized syntactically as a dependent prepositional phrase headed by *at*, the FE Content is realized syntactically as a direct object NP, and the FE Experiencer is realized as an external NP (the subject).

Number Annotated	Patterns			
1 TOTAL	Circumstances	Content	Experiencer	
(1)	PP[at] Dep	NP Obj	NP Ext	
8 TOTAL	Content	Content	Experiencer	
(2)	NP Obj	NP Obj	NP Ext	
(2)	NP Obj	PP[about] Dep	NP Ext	
(1)	NP Obj	PP[in] Dep	NP Ext	
(2)	NP Obj	VPto Dep	NP Ext	
(1)	VPto Dep	VPto Dep	NP Ext	

[Clear Sentences](#) [Turn Colors Off](#)

☒ They **LIKED** the play **at court**.

☒ So select the sort of exercise that you **LIKE**.

☒ And I do believe there were some elephants, which I **LIKED**.

Figure 8. Partial valence table of the verbal LU *like* in the Experiencer_focused_emotion frame, together with annotated example sentences of the first two frame element configurations

The valence information in FN lexical entries is very useful for a number of reasons. First, the valence tables provide detailed information about how the semantics of the frame and of the FEC can be realized syntactically in different ways. For example, the first FEC in Figure 8 (Circumstances, Content, Experiencer) has only one syntactic realization. In contrast, the second FEC in Figure 8 (Content, Content, Experiencer) has a total of five different syntactic realizations. This type of information is useful when investigating whether and how different

types of semantic information are realized syntactically in some configurations, but not in others (see, e.g., Boas, 2003; 2010; Boas & Dux, 2017; Dux, 2020).

Second, it allows researchers to compare how different LUs evoking the same frame realize the same semantics of the frame differently. For example, a comparison of the FN valence tables of *like* and *adore* shows that while *like* has a total of eight FECs (with a total of 24 syntactic configurations), *adore* has a total of only four FECs (with a total of 11 syntactic configurations). This type of information is useful for researchers interested in finding out how LUs evoking the same frame differ from each other in terms of what perspective they offer on the scenario encoded by the semantic frame. In other words, this type of information is useful as a basis for research on viewpoint and perspective taking (see Langacker, 1987).

Third, the information encoded in the valence patterns in FN entries can be regarded as constructions, i.e. they are pairings of form with meaning/function. Boas (2003) coined the term “mini-construction” for such low-level constructions and in subsequent research has shown, based on insights by Croft (2003) and Iwata (2008), how these mini-constructions can be part of larger constructional networks with higher levels of abstraction and generalization (see Boas 2011; 2011) for more details.

The semantic frames developed by the Berkeley FrameNet group for English turn out to be useful for the development of FrameNets for other languages, such as Brazilian Portuguese, French, German, Japanese, Korean, Spanish, and Swedish (for an overview, see the contributions in Boas, 2009c, and Lyngfelt et al., 2018). While the projects each differ in the type of corpora or workflow they use, it turns out that most of the English frames can be “recycled” for other languages besides English, see Boas (2020) for a discussion of “universal” vs. “language-specific” frames.

The Berkeley FN frames are also useful for analyzing grammatical constructions. While the valence patterns in the FN lexical entries can be regarded as mini-constructions, it turns out that the meanings of many more abstract constructions can also be characterized in frame-semantic terms. To this end, Fillmore (2008) reports on a pilot project of an English constructicon, a repository of entries of grammatical constructions that are parallel in architecture to the lexical entries of FN. Parallel to the workflow of lexical FN, Fillmore developed a corpus-based workflow to discover, annotate, and document a broad variety of different types of grammatical constructions, including frame-bearing constructions, valence-augmenting constructions, constructions without meaning, pumping constructions, and exocentric headless constructions. The pilot project resulted in an alphabetically ordered list of about 75 construction entries in the extended FN database that all have the same format.

A definition of the construction in prose (sometimes including reference to the literature), a list of construction elements (CEs) (and their definitions), specifications of a construction evoking element (CEE) (if present), the construct's properties, and the evoked frame (if present). A construction entry also contains a list of annotated example sentences as well as a realization table (parallel to the valence table in lexical FN) showing how the various combinations of CEs are realized syntactically (for details, see Boas, 2017, and Lee-Goldman & Petruck, 2018). For example, a sentence such as *We* [_{sta}*meet*] [_{app}*approximately*] [_{mul}*twice*] *per month* is partially licensed by the *Rate.frequency* Construction, that indicates the number of times a particular event takes place or a particular situation holds over a particular time period. Figure 9 shows the construction description of the *Rate.frequency* Construction in the Berkeley constructionicon.

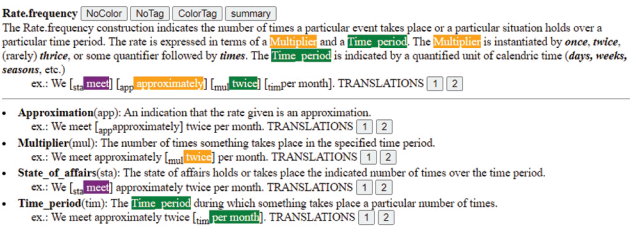


Figure 9. The *Rate.frequency* Construction in the Berkeley constructionicon

Inspired by Fillmore’s (2008) pilot project, a number of FrameNet projects for other languages have begun development on constructicons for other languages, including Brazilian Portuguese, German, Japanese, and Swedish (see the contributions in Lyngfelt et al., 2018, and Boas et al., 2019, for details). This new research field is known as constructicography (parallel to lexicography) and seeks to apply the insights of CxG to the identification, analysis, and documentation of grammatical constructions. In turn, many constructionists are working on using the insights gained from constructicography for enhancing the overall framework of CxG.

Most constructicography efforts over the past ten years primarily focused on identifying constructions in corpus data based on existing constructionist research. For example, Fillmore et al. (2012) discuss, among many other types of constructions, the various properties of the *Verb-way* Construction as in *He belched his way into the room*. Their discussion as well as the search for supporting corpus data and the compilation of the construction’s entry in Figure 10 are all directly influenced by prior constructionist research on the *way*-construction (see, e.g., Goldberg, 1995, and Israel, 1996). While this approach is fruitful in that it builds on the results of (sometimes extensive) prior research, it is limited in scope, because there are only so many constructional analyses around. Once they will

	{Motion verb [Verb] [PossNP]}
Name	<i>verb-way</i>
M	Verb, evokes the Motion frame. Requires at least one SOURCE, PATH, or GOAL-related argument.
D1	A verb with at least an ACTOR argument; any other arguments are suppressed and existentially interpreted.
D2	An NP, headed by way and with a possessive pronoun coindexed to D1's external argument; able to be modified by ACTOR-modifying or PATH-modifying expressions.
Interpretation	The meaning of D1 (the verb) is incorporated into the Motion frame as a MANNER or MEANS of motion. This is clear in many cases but the distinction is not always clear.

Figure 10. The *Verb-way* Construction (Fillmore et al. 2012, p.356)

have been all taken into account, there does not seem to be a clear strategy that could lead towards a strategy for systematically discovering, analyzing, and documenting constructions.

To overcome this problem, Boas (2019; 2025), building on prior proposals by Ziem et al. (2014), outlines an alternative approach to the compilation of constructicons that relies on full-text annotation of a corpus. More specifically, Boas (2019; 2025) proposes a systematic workflow for discovering and documenting constructions in a corpus that builds on Goldberg’s (1995) classic definition of “construction.” The main idea is to start with the first sentence of a corpus and to identify all of the constructions that are necessary for licensing that first sentence. If the constructicon does not have any construction entries, it will be necessary to write entries for each construction necessary to license the first sentence. Moving on to the next sentence, researchers will then repeat the same steps as with the first sentence, except for if the constructicon already has an entry necessary for licensing the second sentence or if a combination of existing constructions are capable of contributing to the licensing of the second sentence, then no new construction entries are needed. In other words, constructicographers will then only have to write new entries for constructions necessary for licensing the second sentence. This workflow is repeated until the last sentence of the corpus. Then, the constructicon should contain all of the constructions needed to license all of the sentences (or, constructs) in the corpus. The size of the resulting constructicon depends on the size and nature of the corpus under analysis. Of course, this type of workflow is rather time and labor-intensive, but the results, Boas claims, will lead to complete coverage of all the constructions in the corpus and they will

allow other researchers to empirically verify the structure and content of the construction entries.³¹

One major advantage of this approach, Boas (2019; 2025) argues, is that it requires the constructicographer to analyze all of the constructions necessary for licensing all sentences in the corpus. In this approach it is not possible to pick and choose the construction(s) one wants to analyze. Instead, the corpus-driven approach forces the constructicographer to dissect each sentence, to arrive at all of the relevant constructions, and to write entries for all of them.³² This approach, in turn, also avoids the imbalance found in some constructionist analyses, in which researchers focus primarily on only one particular type of constructions while carefully avoiding having to make any statements about how these types of constructions under analysis occur in the context of other types of (often very different) constructions (or, how they interact with them).

With this overview of some of the key insights emerging from recent research in constructicography, we now turn to the question of how these insights can be applied to language contact data. In our view, applying the methodology of full-text corpus analysis outlined in the paragraphs above is one of the most straightforward ways of putting DCxG on a more empirical and systematic foundation. We are aware that all of the constructicographical full-text analyses to date have been conducted on monolingual corpora. Applying this methodology to a corpus consisting of language contact data will pose its own unique sets of challenges.

In addition, we are aware that there are only limited numbers of full-text corpora of contact languages available and that they differ in size, representativeness, and accessibility, among other things. Nevertheless, we propose that this novel approach, despite the extra efforts that it requires, brings with it the same advantages that we outlined above regarding full-text annotation and analysis of monolingual corpora.

Returning to our example sentence from (17) above, repeated here as (18), we first provide a tentative list of the various constructions in Table 3, focusing primarily on the form side of these constructions.

- (18) Texas German (Dux, 2018, p. 243)
Ich like's hier besser because ich hab immer mein Deutsches verpasst.
 I like=it here better because I have always my German missed
 'I like it better here because I have always missed my German.'

31. Once there is a construction with entries for all the constructions necessary to license all the sentences in a given corpus, then it also becomes possible to more effectively study how different types of constructions interact with each other.

32. For a case study illustrating an outline of a constructional full-text analysis, see Ziem et al. (2014).

The goal here is to identify and spell out all the various constructions involved in licensing this sentence (instead of focusing only on a few select structures).

Table 3. Constructions involved in licensing *Ich like's hier besser because ich hab immer mein Deutsches verpasst*

Types of construction	Instances
subject-predicate agreement construction [[x] _{NP/Subj-i} [y] _{V-fin-i}]	[[Ich] _{NP/Subj-i} [like] _{V-fin-i}]
declarative main clause construction [[x] _{NP/Subj} [y] _{VP-fin}] _S	[[Ich] _{NP/Subj} [like] _{VP-fin}]
subordinate clause construction s [[x] _{sub-conj} [y] _{NP/Subj} [z] _{Aux} [A] _{AdvP} ([B] _{NP/Obj}) [B] _{Part}]	[[because] _{sub-conj} [ich] _{NP/Subj} [z] _{Aux} [immer] _{AdvP} [B] _{NP/Obj} [C] _{Part}]
transitive construction [[x] _V [y] _{NP/Obj}]	[[like] _V [-s] _{NP/Obj}]
present perfect construction [[x] _{Aux} [y] _{Part}]	[[hab] _{Aux} [verpasst] _{Part}]
present tense construction [[v] _{root-morph} [y] _{Infl-Pres}]	[[like] _{root-morph} [Ø] _{Infl-Pres}]
NP construction [[([x] _{Det/Poss}) [y] _N]	[[mein] _{Det/Poss} [Deutsch] _N]
accusative construction [[x] _{Det/Poss} [y] _N [z] _{Acc-case}]	[[mein] _{Det/Poss} [Deutsch] _N [-es] _{Acc-case}]
VP construction [[x] _V ([y] _{AdvP})]	[[like] _V [y] _{AdvP}]
AdvP construction [[([x] _{AdvP}) [y] _{Adv}]	[[hier] _{AdvP} [besser] _{Adv}]
lexical constructions	[ich] _N , [like-] _V , [besser] _{Adv} , [because] _{conj} , [habe-] _V , [immer] _{Adv} , [mein] _{Poss} , [Deutsch] _N , [verpass-] _V
morpheme/clitic [[v]- _s], [[N]- _{es}]	-s, -es

Recall that CxG does not assume multiple levels of representation, but instead focuses on surface forms only (“what you see is what you get”). Thus, a constructional analysis of Example (18) suggests that the various constructions listed in Table 3 are needed to license the sentence. In other words, the licensing of (18)

takes place by simultaneously recruiting different constructions for the speaker's construction and combining them.

In our case, this means that there are several lexical constructions, of which the verb *like* sets out the overall structure of the main declarative clause. The lexical construction *like* combines with a variety of different constructions, including the subject-predicate-agreement construction (to ensure agreement in number between subject and predicate), the main-declarative-clause construction lists the various constituents to license the word order, the transitive construction (an argument structure construction), and the present-tense construction (for tense marking). The subordinate-clause construction attaches to a main clause (S) and specifies the order of the various elements, beginning with the subordinating conjunction *because* as well as the various remaining constituents, including in this particular case, a subject NP construction, a present-perfect construction, an AdvP construction and a direct object.

The constructions listed in Table 3 are all simultaneously involved in licensing Example (18). It is important to remember that this is only a rough outline of what a constructional analysis of (18) could look like. The goal here is to show how a diasystematic constructional approach goes about analyzing utterances in language contact situations in an empirical bottom-up way without making any prior assumptions about separate linguistic systems. Instead, we consider each type of construction on a continuum of more or less specific and as belonging to the same linguistic system.

Most of the constructions are of German origin and have structural equivalents in Standard German, although the accusative construction (as instantiated by *mein Deutsches*) appears to be specific to Texas German, as it marks the accusative case on *Deutsch* with a case suffix (-es), which is different from case marking in Standard German (*mein Deutsch*). Furthermore, two of the lexical constructions involved are English in origin (*like, because*). However, this rather obvious etymological fact does not imply that they belong to a different language than the other lexical elements. From a DCxG perspective, the general communicative situation would imply that, since Texas Germans are bilingual and speak Texas German and English, etymologically German constructions are much more likely in general to carry pragmatic information of the type that is relevant for idioconstructions, while etymologically English constructions are more likely to qualify as diaconstructions, as they are pragmatically unmarked within the bilingual community.

Focusing on [*like-*], the analysis of (18) suggests that this verb comes with an argument structure construction that can be summarized as [*like-*, NP_{subj}^{experiencer}, NP_{obj}^{theme}], with a nominative NP as a subject expressing an experiencer as well as an accusative object pronoun expressing a theme. In (18), both the subject slot

and the object slot are filled by German pronouns (*ich, es*). However, based on comparison with the many other occurrences of *like* in Texas German corpus data such as in (19), we can infer that these slots are not restricted to pronouns, while other pronominal instances do occur as well, as in (20):

- (19) a. (1-62-1-16)³³
ABER, ich like immer noch Musik
 but I like always still music
 ‘But I still like music.’
- b. (1-40-1-4)
mein Vadder un der hat Vieh geliked.
 my father and he has cattle liked
 ‘My father liked cattle.’
- c. (1-40-1-21)
DIE liken nich Blutwurscht.
 they like not blood-sausage
 ‘They don’t like blood sausage.’
- (20) a. (1-42-1-1)
UND ich hab das nicht geliket.
 and I have that not liked
 ‘And I didn’t like that.’
- b. (1-40-1-17)
un ich like se mir ham se auch alle geliked.
 and I like them me have they also all liked
 ‘And I like them. They all liked me too.’

Moreover, [*like-*] also appears with infinitives and infinitive markers, i.e. with a different argument structure that can be captured in constructional terms as [*like-*, NP_{subj}^{experiencer}, *zu* V_{inf}^{theme}], as in (21):

- (21) a. (1-37-1-2)
denn er hat er liked tomatoes zu essen
 because he has he liked tomatoes to eat
 ‘Because he liked to eat tomatoes.’
- b. (1-37-1-3)
er liked zu lesen ein Buch
 he liked to read a book
 ‘He liked to read a book.’

33. The numberings are unique file identifiers in the freely available Texas German Dialect Archive (www.tgdp.org) at the University of Texas at Austin, see Boas (2006) and Boas et al. (2010) for details.

Interestingly, these argument structure constructions have one-to-one structural equivalents in English, as can be seen in the translations in Examples (18) through (21), but not necessarily in Standard German. Firstly, English *like* corresponds functionally both to Standard German *mögen*, with a similar argument structure [*mög*-, NP_{subj}^{experiencer}, NP_{obj,acc}^{theme}], and Standard German *gefallen*, with a divergent argument structure that expresses the experiencer with a dative object NP and the theme as a nominative subject [*gefall*-, NP_{subj}^{theme}, NP_{obj,datt}^{experiencer}], as illustrated in (22) (translations of (19a)):

- (22) a. *Ich mag immer noch Musik.*
 I like always still music
 b. *Musik gefällt mir immer noch.*
 music likes me always still
 ‘I still like music.’

Secondly, Standard German *mögen* cannot be combined with infinitives in the same way as [*like*-], but is either used without an infinitive marker ([*mög*-, NP_{subj}^{experiencer}, v_{inf}^{theme}]) or with an additional 3rd person neuter pronoun (*es*) as a dummy object, as illustrated in (23) (translations of (21a)):

- (23) a. *Denn er mochte Tomaten essen.*
 because he liked tomatoes eat
 b. *Denn er mochte es, Tomaten zu essen.*
 because he liked it tomatoes to eat
 ‘Because he liked to eat tomatoes.’

In sum, these findings suggest that the use of [*like*-] in utterances such as (18)–(21) reflects established constructions in the multilingual constructicon that Texas German speakers have at their disposal rather than code-switching in the traditional sense.

Firstly, speakers do not insert an English lexical element into an otherwise German frame – otherwise we would have to expect a mere relexification of the relevant lexical argument structure constructions instead of the use of constructions that have equivalents in Standard English, but not Standard German.

Secondly, whereas one could argue that [*like*-] and its argument structure construction [*like*-, NP_{subj}^{experiencer}, NP_{obj}^{theme}] have been borrowed from English into Texas German and hence represent Texas German idi constructions, the evidence rather supports the view that both are dia constructions within the Texas Germans’ multilingual constructicon that can be used in combination with (morphological and syntactic) constructions from both varieties.

Thirdly, while the use of *like* with an infinitive and infinitive marker ([*like*-, NP_{subj}^{experiencer}, zu v_{inf}^{theme}]) has to be considered as specifically Texas German

when compared to Standard German (even if *liken* were analyzed as a relexification of its closest Standard German equivalent *mögen*), it is hardly specifically Texas German when compared to English, which has a structurally equivalent construction [*like*-, NP_{subj}^{experiencer}, *to* V_{inf}^{theme}]. This suggests that the multilingual construction might contain either a Texas German idioconstruction [*like*-, NP_{subj}^{experiencer}, *zu* V_{inf}^{theme} <C_{Texas German}>] in addition to an English one ([... <C_{English}>]) or a diaconstruction that contains an infinitive marker slot ([*like*-, NP_{subj}^{experiencer}, INF.MARKER V_{inf}^{theme}]) which then is filled by lexical idioconstructions in either language.

While this brief discussion only covers one of the constructions found in (18) and listed in Table 3, and while even [*like*-] can be assumed to be associated with more constructions than the ones discussed here, this example illustrates how DCxG can be employed to identify both idio- and diaconstructions based on analyses of empirical data, and how this in turn can be used as a preparatory step for compiling construction entries. To fully understand the distribution and nature of idio- and diaconstructions within the multilingual construction, however, we need to conduct full-text annotation of a corpus that represents the speech of a multilingual community in its entirety, i.e. covers all languages involved as well as both monolingual and multilingual utterances.

4. Conclusions

This chapter provided an overview of some of the current trends in DCxG, which over the past 15+ years has grown and evolved in a number of interesting directions. Section 2 offered a brief sketch of how language contact research has evolved over the past 150+ years. It started with a discussion of the Neogrammarians' views of language contact and short summaries of different types of language contact studies in North America during the 20th century. Then, we showed how over the past 15+ years researchers became more interested in cognitively oriented approaches such as Cognitive Contact Linguistics (Zenner, Backus & Winter-Froemel, 2019) and, more specifically, DCxG (Höder, 2012; 2014a; 2018; Boas & Höder, 2018; 2021).

In Section 3, we pointed out various topics of interest in on-going constructional research on language contact, especially (1) the question of how a usage-based commitment in DCxG can be implemented as a part of a broader "model" in contact linguistics, (2) the various roles played by the concept of "construction" in a multilingual context, and (3) the relevance of constructicographic research for empirical and usage-based contact linguistics. To illustrate the complexity of

the various types of constructional knowledge involved in licensing sentences involving diaconstructions and idioconstructions, we dissected the various constructions of different levels of abstraction and schematicity involved in licensing just one sentence in Texas German.

Without the space to go into all of the details of such a constructional full-text annotation and analysis, we argued that such a usage-based approach offers a number of advantages over most existing modular approaches to language contact that rely on different assumptions about the separation of linguistic knowledge into two separate systems that influence each other. On the diasystematic approach, such a division is unwarranted, and dealing with language contact phenomena more holistically offers the opportunity to account for a range of different constructions in a more straightforward matter. In summary, this chapter has pointed out how an ever-growing interest in DCxG offers an alternative approach to language contact phenomena. To this end, we also discussed a number of important open questions and possible further research areas that so far have gone unexplored.

References

-  Aikhenvald, A.Y. (2007). Grammars in contact. A cross-linguistic perspective. In A.Y. Aikhenvald, & R.M.W. Dixon (Eds.), *Grammars in contact. A cross-linguistic typology* (pp. 1–66). Oxford University Press.
-  Anthonissen, L. (2020). Cognition in Construction Grammar. Connecting individual and community grammars. *Cognitive Linguistics*, 31, 309–337.
-  Arnbjörnsdóttir, B. (2015). Reexamining Icelandic as a heritage language in North America. In J.B. Johannessen, & J. Salmons (Eds.), *Germanic heritage languages in North America. Acquisition, attrition and change* (pp. 72–93). Benjamins.
- Arnbjörnsdóttir, B., & Þráinsson, H. (2018). Hvað einkennir vesturíslensku? Yfirlit um fyrri rit og rannsóknir. In B. Arnbjörnsdóttir, H. Þráinsson, & Ú. Bragason (Eds.), *Sigurtunga. Vesturíslenskt mál og menning* (pp. 211–255). Háskólaútgáfan.
-  Auer, P. (1998). Dialect leveling and the standard varieties in Europe. *Folia Linguistica*, 32, 1–9.
- Backus, A. (2020). Usage-based approaches. In E. Adamou, & Y. Matras (Eds.), *The Routledge handbook of language contact* (pp. 110–126). Routledge.
-  Barking, M., Backus, A., & Mos, M. (2022). Similarity in language transfer. Investigating transfer of light verb constructions from Dutch to German. *Journal of Language Contact*, 15, 198–239.
- Barlow, M., & Kemmer, S. (Ed.) (2000). *Usage-based models of language*. CSLI Publications.
-  Bayley, R., Cameron, R., & Lucas, C. (Eds.) (2013). *The Oxford handbook of sociolinguistics*. Oxford University Press.
-  Bialystok, E., Craik, F.I.M., Green, D.W., & Gollan, T.H. (2009). Bilingual minds. *Psychological Science in the Public Interest*, 10, 89–129.

- doi Bickerton, D. (1984). The language bioprogram hypothesis. *Behavioral and Brain Sciences*, 7, 173–188.
- doi Blevins, M. (2018). Towards a constructional analysis of the progressive aspect in Texas German. In H. C. Boas, & S. Höder (Eds.), *Constructions in contact. Constructional perspectives on contact phenomena in Germanic languages* (pp. 73–114). Benjamins.
- Bloomfield, L. (1933). *Language*. Holt.
- Boas, H. C. (2003). *A constructional approach to resultatives*. CSLI Publications.
- doi Boas, H. C. (2006). From the field to the web: implementing best-practice recommendations in documentary linguistics. *Language Resources and Evaluation*, 40, 153–174.
- Boas, H. C. (2009a). *The life and death of Texas German*. Duke University Press.
- doi Boas, H. C. (2009b). Case loss in Texas German: The influence of semantic and pragmatic factors. In J. Barðdal, & S. Chelliah (Eds.), *The Role of semantics and pragmatics in the development of case* (pp. 347–373). Benjamins.
- doi Boas, H. C. (Ed.) (2009c). *Multilingual FrameNets in computational lexicography: Methods and applications*. De Gruyter.
- Boas, H. C. (2010). The syntax-lexicon continuum in Construction Grammar: A case study of English communication verbs. *Belgian Journal of Linguistics*, 24, 54–82.
- doi Boas, H. C. (2011). Zum Abstraktionsgrad von Resultativkonstruktionen. In S. Engelberg, K. Proost, & A. Holler (Eds.), *Sprachliches Wissen zwischen Lexikon und Grammatik* (pp. 37–69). Mouton de Gruyter.
- doi Boas, H. C. (2013). Cognitive Construction Grammar. In T. Hoffmann, & G. Trousdale (Eds.), *The Oxford handbook of Construction Grammar* (pp. 233–252). Oxford University Press.
- doi Boas, H. C. (2017). Computational resources: FrameNet and constructicon. In B. Dancygier (Ed.), *The Cambridge handbook of cognitive linguistics* (pp. 549–573). Cambridge University Press.
- Boas, H. C. (2019). Zur methodologischen Grundlage der empirischen Konstruktikographie. In D. Czicza, V. Dekalo, & G. Diwald (Eds.), *Konstruktionsgrammatik VI. Varianz in der konstruktionalen Schematizität* (pp. 237–263). Stauffenburg.
- doi Boas, H. C. (2020). A roadmap towards determining the universal status of semantic frames. In R. Enghels, B. Defrancq, & M. Jansegers (Eds.), *New approaches to contrastive linguistics* (pp. 21–52). De Gruyter.
- doi Boas, H. C. (2021). Construction Grammar and Frame Semantics. In X. Wen, & R. J. Taylor (Eds.), *The Routledge handbook of cognitive linguistics* (pp. 43–77). Routledge.
- doi Boas, H. C. (2025). Constructional syntax. In M. Fried, & K. Nikiforidou (Eds.), *The Cambridge handbook of Construction Grammar* (pp. 44–70). Cambridge University Press.
- doi Boas, H. C., & Dux, R. (2017). From the past into the present: From case frames to semantic frames. In *Linguistics Vanguard*, 2017, 1–14.
- doi Boas, H. C., & Höder, S. (Eds.). (2018). *Constructions in contact. Constructional perspectives on contact phenomena in Germanic languages*. Benjamins.
- doi Boas, H. C., & Höder, S. (Eds.) (2021). *Constructions in contact 2. Language change, multilingual practice, and additional language acquisition*. Benjamins.
- doi Boas, H. C., Lyngfelt, B., & Torrent, T. T. (2019). Framing constructicography. *Lexicographica*, 35, 41–95.

- doi Boas, H. C., & Pierce, M. (2011). Lexical developments in Texas German. In M. Putnam (Ed.), *Studies on German language islands* (pp. 129–150). Benjamins.
- doi Boas, H. C., Pierce, M., Roesch, K., Halder, G., & Weilbacher, H. (2010). The Texas German Dialect Archive: a multimedia resource for research, teaching, and outreach. *Journal of Germanic Linguistics*, 22, 277–296.
- doi Boogaart, R., Coleman, T., & Rutten, G. (2014). Constructions all the way everywhere: Four new directions in constructionist research. In R. Boogaart, T. Coleman, & G. Rutten (Eds.), *Extending the scope of Construction Grammar* (pp. 1–14). De Gruyter Mouton.
- doi Bot, K. de. (2019). Defining and assessing multilingualism. In J. W. Schwieter (Ed.), *The handbook of the neuroscience of multilingualism* (pp. 3–18). Wiley-Blackwell.
- doi Bourgeois, S. (2021). ‘Ok, qui d’autre na, nobody on the line right now?’ A Diasystematic Construction Grammar approach to discourse markers in bilingual Cajun speech. In H. C. Boas, & S. Höder (Eds.), *Constructions in contact 2. Language change, multilingual practices, and additional language acquisition* (pp. 55–80). Benjamins.
- doi Brenzinger, M. (Ed.) (2007). *Language diversity endangered*. Mouton de Gruyter.
- Bresnan, J. (1982). Control and complementation. *Linguistic Inquiry*, 13, 343–434.
- doi Bybee, J. (2012). Domain-general processes as the basis for grammar. In M. Tallerman, & K. R. Gibson (Eds.), *The Oxford handbook of language evolution* (pp. 528–536). Oxford University Press.
- doi Bybee, J. (2013). Usage-based theory and exemplar representations. In T. Hoffmann, & G. Trousdale (Eds.), *The Oxford handbook of Construction Grammar* (pp. 49–69). Oxford University Press.
- doi Cappelle, B. (2017). What’s pragmatics doing outside constructions? In I. Depraetere, & R. Salkie (Eds.), *Semantics and pragmatics. Drawing a line* (pp. 115–151). Springer.
- doi Cappelle, B. (2024). *Can construction grammar be proven wrong?* Cambridge University Press.
- Chomsky, N. (1965). *Aspects of a theory of syntax*. MIT Press.
- Chomsky, N. (1981). *Lectures on government and binding*. Foris.
- doi Clyne, M. (2003). *Dynamics of language contact*. Cambridge University Press.
- doi Cook, V. & Li Wei (Eds.) (2016). *The Cambridge handbook of linguistic multi-competence*. Cambridge University Press.
- doi Costa, A., Santesteban, M., & Ivanova, I. (2006). How do highly proficient bilinguals control their lexicalization process? Inhibitory and language-specific selection mechanisms are both functional. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 32, 1057–1074.
- doi Coupland, N. (Ed.) (2010). *The handbook of language and globalization*. Wiley-Blackwell.
- doi Croft, W. (2003). Lexical rules vs. constructions: A false dichotomy. In H. Cuycens, T. Berg, R. Dirven, & K.-U. Panther (Eds.), *Motivation in language* (pp. 49–68). Benjamins.
- doi Croft, W. (2005). Logical and typological arguments for Radical Construction Grammar. In J.-O. Östman, & M. Fried (Eds.), *Construction Grammars. Cognitive grounding and theoretical extensions* (pp. 273–314). Benjamins.
- doi Croft, W. (2009). Towards a social cognitive linguistics. In V. Evans, & S. Pourcel (Eds.), *New directions in cognitive linguistics* (pp. 395–420). Benjamins.
- doi Croft, W., & Cruse, D. A. (2004). *Cognitive Linguistics*. Cambridge University Press.
- doi Crystal, D. (2000). *Language death*. Cambridge University Press.

- Czulo, O., Ziem, A., & Torrent, T. T. (2020). Beyond lexical semantics: notes on pragmatic frames. In T. T. Torrent, C. F. Baker, O. Czulo, K. Ohara & M. R. L. Petruck (Eds.), *Proceedings of the International FrameNet Workshop 2020: Towards a global, multilingual FrameNet*. European Language Resources Association.
-  Dąbrowska, E. (2019). Individual differences in grammatical knowledge. In E. Dąbrowska, & D. Divjak (Eds.), *Cognitive Linguistics*, vol. 3: *Key topics* (pp. 231–250). De Gruyter.
-  Dąbrowska, E. (2020). Language as a phenomenon of the third kind. *Cognitive Linguistics*, 31, 213–229.
- DeGraff, M. (2001). Morphology in creole genesis: Linguistics and ideology. In M. Kenstowicz (Ed.), *Ken Hale: a life in language* (pp. 53–121). MIT Press.
-  Del Maschio, N., & Abutalebi, J. (2019). Language organization in the bilingual and multilingual brain. In J. W. Schwieter (Ed.), *The handbook of the neuroscience of multilingualism* (pp. 199–213). Wiley-Blackwell.
-  De Pascale, S., Pijpops, D., Van de Velde, F., & Zenner, E. (2022). Reassembling the pimped ride: a quantitative look at the integration of a borrowed expression. *Frontiers in Communication*, 7, 777312.
-  De Smet, H. (2020). What predicts productivity? Theory meets individuals. *Cognitive Linguistics*, 31, 251–278.
-  Díaz-Campos, M., & Balasch, S. (Eds.) (2023). *The handbook of usage-based linguistics*. Wiley-Blackwell.
-  Diessel, H. (2019). *The grammar network. How linguistic structure is shaped by language use*. Cambridge University Press.
-  Diessel, H. (2023). *The constructicon. Taxonomies and networks*. Cambridge University Press.
-  Dijkstra, T., Grainger, J., & Heuven, W. J. B. van (1999). Recognition of cognates and interlingual homographs: The neglected role of phonology. *Journal of Memory and Language*, 41, 496–518.
-  Dunn, J. (2017). Computational learning of construction grammars. *Language & Cognition*, 9, 254–292.
-  Dux, R. (2017). Classifying language contact phenomena: English verbs in Texas German. *Journal of Germanic Linguistics*, 29, 379–430.
-  Dux, R. (2018). Texas German and English word order constructions in contact. In H. C. Boas & S. Höder (Eds.), *Constructions in contact. Constructional perspectives on contact phenomena in Germanic languages* (pp. 211–249). Benjamins.
-  Dux, R. (2020). Code-switching and loan translation in German-American. A cognitive-constructional account. *Belgian Journal of Linguistics*, 34, 52–65.
- Eliasson, S. (2013). Language ecology in the work of Einar Haugen. In W. Vandebussche, D. H. Jahr & P. Trudgill (Eds.), *Language ecology for the 21st century. Linguistic conflicts and social environments* (pp. 15–63). Novus.
- Fauconnier, G., & Turner, M. (2002). *The way we think: Conceptual blending and the mind's hidden complexities*. Basic Books.
- Fillmore, C. J. (1982). Frame Semantics. In Linguistic Society of Korea (Ed.), *Linguistics in the morning calm*, vol. 2 (pp. 111–137). Hanshin.
-  Fillmore, C. J. (1985). Syntactic intrusions and the notion of grammatical construction. In *Proceedings of the Eleventh Annual Meeting of the Berkeley Linguistics Society* (pp. 73–86). Linguistic Society of America.

- Fillmore, C. J. (2008). Border conflicts: FrameNet meets Construction Grammar. *Proceedings of the XIII EURALEX International Congress* (Barcelona, 15–19 July 2008) (pp. 49–68).
-  Fillmore, C. J., & Atkins, B. T. S. (2000). Describing polysemy: The case of ‘crawl’. In Y. Ravin, & C. Lacock (Eds.), *Polysemy. Theoretical and computational approaches* (pp. 91–110). Oxford University Press.
-  Fillmore, C. J., & Baker, C. (2010). A frames approach to semantic analysis. In B. Heine, & H. Narrog (Eds.), *The Oxford handbook of linguistic analysis* (pp. 13–340). Oxford University Press.
-  Fillmore, C. J., Johnson, C., & Petruck, M. R. L. (2003). Background to FrameNet. *International Journal of Lexicography*, 16, 235–251.
- Fillmore, C. J., Lee-Goldman, R., & Rhodes, R. (2012). The FrameNet constructicon. In H. C. Boas, & I. Sag (Eds.), *Sign-based Construction Grammar* (pp. 309–372). CSLI Publications.
-  Fischer, K. (2015). Conversation, Construction Grammar, and cognition. *Language and Cognition*, 7, 563–588.
-  Fishman, J. (Ed.) (2001). *Can threatened languages be saved? Reversing language shift, revisited: A 21st century perspective*. Multilingual Matters.
-  Freitas Junior, R. de, Soares, L. A. A., Nascimento, J. P. da S., & Silveira, V. L. V. da (2022). A gramática de construções diassistêmica: uma abordagem aquisicional baseada no uso. *Revista de estudos da linguagem*, 30, 606–634.
-  Gardner-Chloros, P. (2009). *Code-switching*. Cambridge University Press.
-  Geeraerts, D., Kristiansen, G., & Peirsman, Y. (2010). *Advances in Cognitive Sociolinguistics*. Mouton de Gruyter.
- Goldberg, A. E. (1995). *Constructions. A Construction Grammar approach to argument structure*. University of Chicago Press.
-  Goldberg, A. E. (2006). *Constructions at work*. Oxford University Press.
-  Goldberg, A. E. (2016). Partial productivity of linguistic constructions. Dynamic categorization and statistical preemption. *Language and Cognition*, 8, 1–22.
-  Goldberg, A. E. (2019). *Explain me this. Creativity, competition, and the partial productivity of constructions*. Princeton University Press.
- Goll, S. (forthc.). *Südschleswigdänisch. Eine strukturelle Bestandsaufnahme aus dialektologischer Perspektive*. Universitätsverlag Kiel.
-  Grant, A. P. (2019). Contact-induced linguistic change. An introduction. In A. Grant (Ed.), *The Oxford handbook of language contact* (pp. 1–50). Oxford University Press.
-  Grant, A. P. (2020). Contact and language convergence. In R. Hickey (Ed.), *The handbook of language contact*, 2nd edn. (pp. 113–128). Wiley Blackwell.
-  Grey, C. G. (2019). English and Welsh in contact. In A. P. Grant (Ed.), *The Oxford handbook of language contact* (pp. 350–373). Oxford University Press.
-  Grosjean, F. (1989). Neurolinguists, beware! The bilingual is not two monolinguals in one person. *Brain and Language*, 36, 3–15.
-  Grosjean, F. (2008). *Studying bilinguals*. Oxford University Press.
-  Guion, S. (1996). The death of Texas German in Gillespie County. In P. S. Ureland, & I. Clarkson (Eds.), *Language contact across the North Atlantic* (pp. 243–263). Niemeyer.

- Günther, K. (2020). Die Caused-Motion-Konstruktion im deutsch-französischen bilingualen Spracherwerb: ein konstruktionsgrammatischer Ansatz. PhD dissertation, Ludwig Maximilian University of Munich.
-  Hagel, A. (2020). Strange sounds, familiar words. Interlingual decoding from a CxG perspective. *Belgian Journal of Linguistics*, 34, 122–134.
-  Hakimov, N., & Backus, A. (2021). Usage-based contact linguistics: Effects of frequency and similarity in language contact. *Journal of Language Contact*, 13, 459–481.
-  Haspelmath, M., & Tadmor, U. (2009). The Loanword Typology Project and the World Loanword Database. *Loanwords in the world's languages: A comparative handbook* (pp. 1–34). De Gruyter.
- Haugen, E. (1953). *The Norwegian language in America. A study in bilingual behavior*, vol. 2: *The American dialects of Norwegian*. University of Pennsylvania Press.
- Haugen, E. (1971). The ecology of language. *The Linguistic Reporter*, 13, 19–26.
-  Hell, J.G. van, & Dijkstra, T. (2002). Foreign language knowledge can influence native language performance in exclusively native contexts. *Psychonomic Bulletin & Review*, 9, 780–789.
- Hendriks, I. (2019). The acquisition of intensifying constructions in Dutch and English by French-speaking CLIL and non-CLIL students: Cross-linguistic influence and exposure effects. PhD dissertation, Université catholique de Louvain.
- Hesseling, D.C. (1899). *Het Afrikaansch: bijdrage tot de geschiedenis der Nederlandsche taal in Zuid-Afrika*. Brill.
- Hesseling, D.C. (1905). *Het Negerhollands der Deense Antillen: Bijdrage tot de geschiedenis der Nederlandse taal in Amerika*. Sijthoff.
-  Heuven, W.J. van, & Dijkstra, A. (2010). Language comprehension in the bilingual brain: fMRI and ERP support for psycholinguistic models. *Brain Research Reviews*, 64, 104–122.
-  Heuven, W. van, Dijkstra, T., & Grainger, J. (1998). Orthographic neighborhood effects in bilingual word recognition. *Journal of Memory and Language*, 39, 458–483.
- Hilpert, M. (2019a). *Construction Grammar and its application to English*, 2nd edn. Edinburgh University Press.
- Hilpert, M. (Ed.) (2019b). Higher-order schemas in morphology. Thematic issue, *Word Structure* 12(3).
-  Höder, S. (2012). Multilingual constructions: a diasystematic approach to common structures. In K. Braunmüller, & C. Gabriel (Eds.), *Multilingual individuals and multilingual societies* (pp. 241–257). Benjamins.
-  Höder, S. (2014a). Constructing diasystems. Grammatical organisation in bilingual groups. In T.A. Åfarli, & B. Mæhlum (Eds.), *The sociolinguistics of grammar* (pp. 137–152). Benjamins.
-  Höder, S. (2014b). Phonological elements and Diasystematic Construction Grammar. *Constructions and Frames*, 6, 202–231.
-  Höder, S. (2018). Grammar is community-specific: Background and basic concepts of Diasystematic Construction Grammar. In H.C. Boas, & S. Höder (Eds.), *Constructions in contact. Constructional perspectives on contact phenomena in Germanic languages* (pp. 37–70). Benjamins.

-  Höder, S. (2019). Phonological schematicity in multilingual constructions: a diasystematic perspective on lexical form. *Word Structure*, 12, 334–352.
-  Höder, S. (2021). Grammatical arealisms across the Danish-German border from a constructional perspective. In C. Zimmer (Ed.), *German(ic) in language contact. Grammatical and sociolinguistic dynamics* (pp. 11–42). Language Science Press.
-  Höder, S., Prentice, J., & Tingsell, S. (2021). Additional language acquisition as emerging multilingualism. A Construction Grammar approach. In H. C. Boas, & S. Höder (Eds.), *Constructions in contact 2. Language change, multilingual practices, and additional language acquisition* (pp. 310–337). Benjamins.
-  Hoffmann, T. (2020). What would it take for us to abandon Construction Grammar? Falsifiability, confirmation bias and the future of the constructionist enterprise. *Belgian Journal of Linguistics*, 34, 148–160.
-  Hoffmann, T. (2022). *Construction Grammar. The structure of English*. Cambridge University Press.
- Hymes, D. (Ed.) (1971). *Pidginization and creolization of languages*. Cambridge University Press.
-  Ibbotson, P. (2020). *What it takes to talk. Exploring developmental cognitive linguistics*. De Gruyter Mouton.
- Israel, M. (1996). The way constructions grow. In A. Goldberg (Ed.), *Conceptual structure, discourse and language* (pp. 217–230). CSLI Publications.
-  Iwata, S. (2008). *Locative alternation: A lexical-constructional approach*. Benjamins.
-  Jach, D. (2021). Something I was dealing with. Preposition placement in multilingual constructicons. In H. C. Boas, & S. Höder (Eds.), *Constructions in contact 2. Language change, multilingual practices, and additional language acquisition* (pp. 339–374). Benjamins.
- Jake, J. L., & Myers-Scotton, C. (2020). The 4-M model. Different routes in production for different morphemes. In E. Adamou, & Y. Matras (Eds.), *The Routledge handbook of language contact* (pp. 63–87). Routledge.
- Järvinen, S., & Lyngfelt, B. (2024). *Suomessa på grund av corona niillä on visiiri kaikilla*. En konstruktionsgrammatisk analys av kodväxling mellan finska och svenska. In D. Jansson, I. Melander, G. Westberg, & D. Y. Falk (Eds.), *Svenskans beskrivning. Förhandlingar vid trettioåttonde sammankomsten, Örebro 4–6 maj 2022* (vol. 1, pp. 272–289). Örebro universitet.
-  Johanson, L. (2002). Contact-induced change in a code-copying framework. In M. C. Jones, & E. Esch (Eds.), *Language change. The interplay of internal, external and extra-linguistic factors* (pp. 285–313). Mouton de Gruyter.
- Johnson, M. (1987). *The body in the mind. The bodily basis of meaning, imagination, and reason*. University of Chicago Press.
-  Jones, M. C. (2022). Contact between English and Norman in the Channel Islands. In S. S. Mufwene, & A. M. Escobar (Eds.), *The Cambridge handbook of language contact*, vol. 2: *Multilingualism in population structure* (pp. 635–654). Cambridge University Press.
-  Joseph, B. (2019). Historical linguistics in the 50 years since Weinreich, Labov, and Herzog (1968). In H. C. Boas, & M. Pierce (Eds.), *New directions for historical linguistics* (pp. 153–174). Brill.

-  Koch, N., & Günther, K. (2021). Transfer phenomena in bilingual language acquisition. The case of caused-motion constructions. *Languages*, 6, 25.
-  Kroll, J.F., Dussias, P.E., Bice, K., & Perrotti, L. (2015). Bilingualism, mind, and brain. *Annual Review of Linguistics*, 1, 377–394.
-  Labov, W. (1966). Hypercorrection by the lower middle class as a factor in linguistic change. In W. Bright (Ed.), *Sociolinguistics. Proceedings of the UCLA Sociolinguistics Conference, 1964* (pp. 84–113). Mouton.
-  Labov, W. (2001a). Applying our knowledge of African American English to the problem of raising reading levels in inner-city schools. In S. J. Laneheart (Ed.), *Sociocultural and Historical Contexts of African American English* (pp. 299–317). Benjamins.
- Labov, W. (2001b). *Principles of linguistic change*. Vol. 2: *Social factors*. Blackwell.
-  Labov, W. (2011). *Principles of linguistic change*. Vol. 3: *Cognitive and cultural factors*. Blackwell.
-  Labov, W. (2019). What has been built on empirical foundations. In H.C. Boas, & M. Pierce (Eds.), *New directions for historical linguistics* (pp. 42–57). Brill.
- Lakoff, G. (1987). *Metaphors we live by*. University of Chicago Press.
-  Lakoff, G., & Johnson, M. (1980). The metaphorical structure of the human conceptual system. *Cognitive Science*, 4, 195–208.
- Langacker, R. W. (1987). *Foundations of Cognitive Grammar*. Vol. 1: *Theoretical prerequisites*. Stanford University Press.
-  Leclercq, B., & Morin, C. (2023). No equivalence: A new principle of no synonymy. *Constructions*, 15.
-  Lee-Goldman, R., & Petruck, M. R. L. (2018). The FrameNet constructicon in action. In B. Lyngfelt, L. Borin, K. Ohara, & T.T. Torrent (Eds.), *Constructicography. Constructicon development across languages* (pp. 19–40). Benjamins.
-  Lepic, R. (2021). From letters to families. Initialized signs in American Sign Language. In H.C. Boas, & S. Höder (Eds.), *Constructions in contact 2. Language change, multilingual practices, and additional language acquisition* (pp. 267–305). Benjamins.
-  Lyngfelt, B., Borin, L., Ohara, K., & Torrent, T.T. (Eds.) (2018). *Constructicography. Constructicon development across languages*. Benjamins.
-  Matras, Y. (2020). *Language contact*, 2nd edn. Cambridge University Press.
-  Matras, Y. (2022). Structural outcomes of language contact. In S.S. Mufwene, & A.M. Escobar (Eds.), *The Cambridge handbook of language contact*, vol. 2: *Multilingualism in population structure* (pp. 593–617). Cambridge University Press.
- McColm, D. (2019). A cross-linguistic investigation of the way-construction in English, Dutch, and German. PhD dissertation, University of Edinburgh.
-  McWhorter, J. (2005). *Defining creole*. Oxford University Press.
-  Mott, B., & Laso, N. J. (2019). Semantic borrowing in language contact. In A. P. Grant (Ed.), *The Oxford handbook of language contact* (pp. 155–172). Oxford University Press.
-  Mufwene, S. (2001). *The ecology of language evolution*. Cambridge University Press.
- Mühlhäusler, P. (1996). *Linguistic ecology. Language change and linguistic imperialism in the Pacific region*. Routledge.
- Muysken, P. (1981). Halfway between Quechua and Spanish: The case for relexification. In A. Highfield, & A. Valdman (Eds.), *Historicity and variation in creole studies* (pp. 52–78). Karoma.

- Muysken, P. (2000). *Bilingual speech. A typology of code-mixing*. Cambridge University Press.
-  Muysken, P. (2013). Language contact outcomes as the result of bilingual optimization strategies. *Bilingualism, Language and Cognition*, 16, 709–730.
- Myers-Scotton, C. (1993). *Dueling languages. Grammatical structure in codeswitching*. Clarendon Press.
-  Myers-Scotton, C. (2002). *Contact linguistics: Bilingual encounters and grammatical outcomes*. Oxford University Press.
-  Myers-Scotton, C. (2006). Natural codeswitching knocks on the laboratory door. *Bilingualism, Language and Cognition*, 9, 203–212.
-  Myers-Scotton, C., & Jake, J. (2009). A universal model of code-switching and bilingual language processing and production. In B.E. Bullock, & A.J. Toribio (Eds.), *The Cambridge handbook of linguistic code-switching* (pp. 336–357). Cambridge University Press.
-  Namboodiripad, S. (2021). Non-Dravidian elements and (non)diasystematic change in Malayalam. In H.C. Boas, & S. Höder (Eds.), *Constructions in contact 2. Language change, multilingual practices, and additional language acquisition* (pp. 191–232). Benjamins.
- Odden, O.R. (2019). *North Scandinavian type noun constructions. Patterns with slags, SORTs and TYP(E)*. PhD dissertation, University of Oslo.
-  Onysko, A. (2019). Reconceptualizing language contact phenomena as cognitive processes. In E. Zenner, A. Backus, & E. Winter-Froemel (Eds.), *Cognitive contact linguistics* (pp. 23–50). De Gruyter.
-  Pavlenko, A. (2023). Multilingualism and historical amnesia: an introduction. In A. Pavlenko (Ed.), *Multilingualism and history* (pp. 1–49). Cambridge University Press.
- Petruck, M.R.L., Fillmore, C.J., Baker, C., Ellsworth, M., & Ruppenhofer, J. (2004). Reframing FrameNet data. In *Proceedings of the 11th EURALEX International Congress, Lorient, France* (pp. 405–416).
-  Pfaff, C. (1979). Constraints on language mixing: Intrasentential code-switching and borrowing in Spanish/English. *Language*, 55, 291–318.
- Pollard, C., & Sag, I. (1994). *Head-driven Phrase Structure Grammar*. University of Chicago Press.
-  Poplack, S., & Meechan, M. (1998). Introduction: How languages fit together in codemixing. *International Journal of Bilingualism*, 2, 127–138.
-  Poplack, S., Sankoff, G., & Miller, C. (1988). The social correlates and linguistic processes of lexical borrowing and assimilation. *Linguistics*, 26, 47–104.
-  Quick, A.E., & Verschik, A. (2021). Usage-based contact linguistics: An introduction to the special issue. *Applied Linguistics Review*, 12, 165–177.
-  Rabé, M. (2021). Kodewisseling in Afrikaans-Nederlandse kinders se spraak. Master's thesis, North-West University, Potchefstroom.
-  Rooy, B. van (2021). A Diasystematic Construction Grammar analysis of language change in the Afrikaans and English finite verb complement clause construction. In H.C. Boas, & S. Höder (Eds.), *Constructions in contact 2. Language change, multilingual practices, and additional language acquisition* (pp. 109–137). Benjamins.

- doi Rottet, K. J. (2021). Making one's way in Welsh. Language contact and constructional change. In H. C. Boas, & S. Höder (Eds.), *Constructions in contact 2. Language change, multilingual practices, and additional language acquisition* (pp. 233–265). Benjamins.
- doi Ruppenhofer, J., Boas, H. C., & Baker, C. (2013). The FrameNet approach to relating syntax and semantics. In R. H. Gouws, U. Heid, W. Schweickard, & H. E. Wiegand (Eds.), *Dictionaries. An international encyclopedia of lexicography* (pp. 1329–1329). De Gruyter Mouton.
- Ruppenhofer, J., Boas, H. C., & Baker, C. F. (2017). FrameNet. In P. A. Fuertes-Olivera (Ed.), *The Routledge handbook of lexicography* (pp. 383–398). Routledge.
- Ruppenhofer, J., Ellsworth, M., Petruck, M. R. C., Johnson, C., & Scheffczyk, J. (2016). *FrameNet II: Extended theory and practice*. <https://framenet2.icsi.berkeley.edu/docs/r1.7/book.pdf>
- doi Sabino, R. (2018). *Languaging without languages. Beyond metro-, multi-, poly-, pluri- and translanguaging*. Brill.
- doi Sakel, J. (2007). Types of loan: matter and pattern. In Y. Matras, & J. Sakel (Eds.), *Grammatical borrowing in cross-linguistic perspective* (pp. 15–29). Mouton de Gruyter.
- Sankoff, G. (1980). *The social life of language*. University of Philadelphia Press.
- doi Sankoff, G. (2019). Building on empirical foundations: Individual and community change in real time. In H. C. Boas, & M. Pierce (Eds.), *New directions for historical linguistics* (pp. 58–77). Brill.
- Sapir, E. (1921). *Language. An introduction to the study of speech*. Harcourt, Brace and Company.
- doi Schmid, H.-J. (2020). *The dynamics of the linguistic system. Usage, conventionalization, and entrenchment*. Oxford University Press.
- doi Schmidt, T. (2017). DGD — die Datenbank für Gesprochenes Deutsch. *Zeitschrift für germanistische Linguistik*, 45, 451–163.
- Schuchardt, H. (1884). *Dem Herrn Franz von Miklosich zum 20. November 1883. Slawo-Deutsches und Slawo-Italienisches*. Leuschner & Lubensky.
- Schuchardt, H. (1914). *Die Sprache der Saramakkaneger in Surinam*. Müller.
- Shohamy, E. (Ed.) (2009). *Language policy. Hidden agendas and new approaches*. Routledge.
- doi Sigurðsson, H. Á. (2010). Mood in Icelandic. In B. Rothstein, & R. Thieroff (Eds.), *Mood in the languages of Europe* (pp. 33–55). Benjamins.
- doi Skutnabb-Kangas, T., & Philipson, R. (2011). Language ecology. In J.-O. Östman, & J. Verschueren (Eds.), *Pragmatics in practice* (pp. 177–198). Benjamins.
- doi Smith, N. (2019). Mixed languages, younger languages, and contact-induced language change. In A. P. Grant (Ed.), *The Oxford handbook of language contact* (pp. 303–330). Oxford University Press.
- Talmy, L. (1985). Lexicalization patterns. Semantic structure in lexical forms. In T. Shopen (Ed.), *Language typology and syntactic description*, vol. 3 (pp. 36–149). Cambridge University Press.
- doi Talmy, L. (2000). *Toward a cognitive semantics*. Vol. 1: *Concept structuring systems*. MIT Press.
- Thomason, S. (2001). *Language contact. An introduction*. Edinburgh University Press.
- doi Thomason, S. (2003). Contact as a source of language change. In B. Joseph, & R. Janda (Eds.), *The handbook of historical linguistics* (pp. 687–712). Blackwell.

-  Thomason, S. (2019). Historical linguistics since 1968: On some of the causes of linguistic change. In H. C. Boas, & M. Pierce (Eds.), *New directions for historical linguistics* (pp. 110–131). Brill.
-  Thomason, S., & Kaufmann, T. (1988). *Language contact, creolization and genetic linguistics*. University of California Press.
- Tomasello, M. (2003). *Child language acquisition: A usage-based approach*. Harvard University Press.
-  Traugott, E. C. (2019). Precursors of work on grammaticalization and constructionalization in *Directions for Historical Linguistics*. In H. C. Boas, & M. Pierce (Eds.), *New directions for historical linguistics* (pp. 132–152). Brill.
- Trudgill, P. (1986). *Dialects in contact*. Blackwell.
- Trudgill, P. (2011). *Sociolinguistic typology. Social determinants of linguistic complexity*. Oxford University Press.
-  Urban, A. (2021). Idioconstructions in conflict. Ad hoc generalization in multilingual speech processing. In H. C. Boas, & S. Höder (Eds.), *Constructions in contact 2. Language change, multilingual practices, and additional language acquisition* (pp. 17–53). Benjamins.
- Van Coetsem, F. (1988). *Loan phonology and the two transfer types in language contact*. Foris.
-  Van Goethem, K., & Hendriks, I. (2021). Intensifying constructions in second language acquisition. A diasystematic-constructionist approach. In H. C. Boas, & S. Höder (Eds.), *Constructions in contact 2. Language change, multilingual practices, and additional language acquisition* (pp. 375–428). Benjamins.
- Weinreich, M. (1945). Der yivo un di problemen fun undzer tsayt. *Yivo bleter*, 25, 3–18.
- Weinreich, U. (1953). *Languages in contact: Findings and problems*. Mouton.
- Weinreich, U., Labov, W., & Herzog, M. (1968). Empirical foundations for a theory of language change. In W. P. Lehmann, & Y. Malkiel (Eds.), *Directions for historical linguistics* (pp. 95–188). University of Texas Press.
-  Westergaard, M., & Anderssen, M. (2015). Word order variation in Norwegian possessive constructions. In J. B. Johannessen, & J. Salmons (Eds.), *Germanic heritage languages in North America. Acquisition, attrition and change* (pp. 21–45). Benjamins.
- Whitney, W. D. (1881). On mixture in language. *Transactions of the American Philological Association*, 12, 5–26.
- Winford, D. (2003). *An introduction to contact linguistics*. Blackwell.
- Winford, D. (2019). Another look at the creolist hypothesis of AAVE Origins. In R. Blake, & I. Buchstaller (Eds.), *The Routledge companion to the work of John R. Rickford* (pp. 64–78). Routledge.
-  Zenner, E., Backus, A., & Winter-Froemel, E. (Eds.) (2019). *Cognitive contact linguistics*. De Gruyter.
- Zenner, E., Heylen, K., & Van de Velde, F. (2018). Most borrowable construction ever! A large-scale approach to contact-induced pragmatic change. *Journal of Pragmatics*, 133, 134–149.
- Ziem, A., Boas, H. C., & Ruppenhofer, J. (2014). Grammatische Konstruktionen und semantische Frames für die Textanalyse. In J. Hagemann, & S. Staffeldt (Eds.), *Syntaxtheorien. Analysen im Vergleich* (pp. 297–333). Stauffenburg.