

WILLIAM CROFT, **Explaining Language Change**. An Evolutionary Approach. Harlow: Pearson Education 2000. XV, 287 S. (Longman Linguistics Library)

Linguistics and biology are connected by a long history of mutual conceptual influence. Schleicher's (1873) family tree is probably the best known example of the interplay between both fields of investigation. William Croft's 'Explaining Language Change' is a recent example of such a transfer of theoretical concepts, in this case in the opposite direction, namely from biology to linguistics.

The subtitle 'An Evolutionary Approach' already points to the biological concept of 'evolution'. However, this book does not deal with the evolutionary origin of language itself, but applies principles that have been developed for explaining biological evolution to gain insight into the workings of language change. In essence, this is the same approach as propagated by Lass (1990), quoting the concept 'exaptation', and by Dixon (1997), adopting the concept 'punctuated equilibrium'. Yet, Croft's book does not just pick out one aspect of the biological conceptualisation of change. In this inspiring exchange of theoretical principles, he proposes a complete theory of language change on a neo-Darwinian basis.

The usage of a Darwinian model of change is opposed to the widely held conception that language, just as all elements of human culture, changes on a Lamarckian basis. In the Lamarckian notion of change, the changes achieved during the lifetime of an individual are directly passed on to its offspring. In contrast, Darwinian change induces that individual achievements are only of importance inasmuch as they improve reproductive success; thus, changes are only indirectly influenced by individuals. The idea that cultural change proceeds according to Lamarckian principles is, for example, expressed by the biologist Stephen Jay Gould:

“Why can’t organisms figure out what would do them good, develop those adaptive features by dint of effort during their lifetimes, and then pass those improvements to their offspring in the form of altered heredity? We call such a putative mechanism ‘Lamarckism’ [...] Natural evolution would go like gangbusters if heredity happened to work in this manner. But, unfortunately, it doesn’t [...] But cultural change, on the radical other hand, is potentially Lamarckian in basic mechanism. Any cultural knowledge acquired in one generation can be directly passed to the next.” (Gould 1996, p. 221f.)

The problem for linguistics is that a Lamarckian approach would not leave much room for a restrictive scientific theory. The speakers of a language could develop just anything that would appear functional. In the end, this would amount to a theory of language change which lacked restrictions, following the ‘anything-goes-principle’. Recurrent regularities as observed in actual language change are hard to explain. A Lamarckian approach would predict language change to be much more haphazard and accidental than it actually is. That is why many linguists would like to have a different theory backing linguistic explanations.

The solution favoured in recent years, starting with Bickerton (1990) and Pinker & Bloom (1990), combines Darwinian and Lamarckian processes. In this proposal, linguistic competence has a strong hereditary component. The ability to use language is passed on in a Darwinian manner from parent to offspring as part of the genetic endowment, but the cultural knowledge of the language structure itself is passed on in a Lamarckian fashion. The only phase during which language change can occur is during a ‘window’ in the child’s early years, when the linguistic bioprogram develops – roughly between the first and the twelfth year. In this view, the actual language change as investigated by historical linguists is still a Lamarckian process.

This does not apply to Croft’s radically different Darwinian approach to language change in which the linguistic utterance itself is the basic unit of evolution, not the human being that produces it. Only innovative linguistic expressions that are uttered recurrently – that are (re)produced successfully

– will lead to a change. Therefore, change is only indirectly influenced by individuals inasmuch as any innovation has to spread through the linguistic population to become a real change. This rather unusual perspective results in a view on language that is highly compatible with the assumptions of the traditional historical-comparative approach to language change.

‘Explaining Language Change’ addresses three questions, which will be subsequently discussed in this review: What is language change, why and how does a language change, and which principles should a theory of language involve in order to reflect this view of language change? The first question – what is language change? – is dealt with in chapters 1–3. Here, Croft’s central thesis is formulated, namely the ‘Theory of Utterance Selection’. This theory emulates a neo-Darwinian model of evolution on language change. The second question – why and how does a language change? – is discussed in chapters 5 and 6. In these chapters, Croft proposes a typology of different kinds of language change. This part of the book is most directly related to the daily practice of historical linguistics and will therefore be discussed in some more detail. In the remaining chapters 4, 7, and 8, an outline of a theory of language is presented in accordance with the ‘Theory of Utterance Selection’. A sketch of a theory of grammar is missing in this survey. This omission is filled by Croft (2001), which is referred to “as a pendant to this book” (p. xiii).

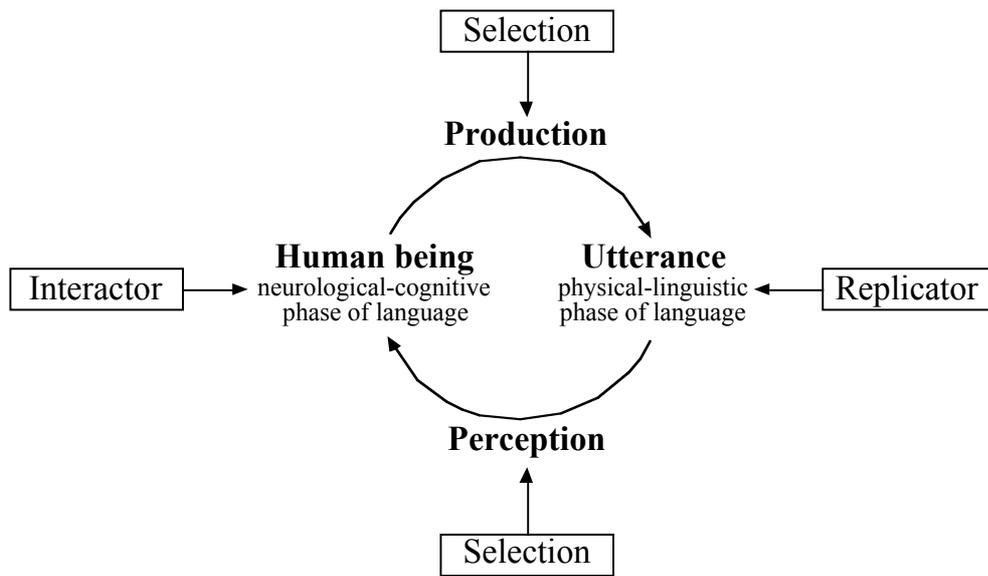
WHAT IS LANGUAGE CHANGE? THE THEORY OF UTTERANCE SELECTION

The first chapter roughly sketches some general desiderata for a theory of language change. The central proposal, the ‘Theory of Utterance Selection’, is set out in chapter 2. This theory is an application of Hull’s (1988) generalisation of Darwinian ideas about evolution and includes the concept of ‘memes’ as first proposed by Dawkins (1976). According to the – by now traditional – Darwinian approach, evolution involves replication of individuals with random mutations and selection of the fittest among them,

who in turn replicate themselves. In Hull's generalisation, the processes of replication and selection do not necessarily affect the same kind of individuals. Hull uses the term 'interactor' for an individual that produces other individuals. These descendants, who in turn produce new interactors, are called replicators. For example, humans are interactors and their genes are the accompanying 'replicators'. Selection can take place at any point in this cycle of interactors and replicators.

I have summarised Croft's application of this approach to language change in Figure 1 (this scheme presents a slight modification of Croft's account). In this view, it is the linguistic utterance that is the replicator – the real 'gene of language', so to speak. Every individual utterance, each token, is a replicator. If someone asked *Where are you?* ten times, this person would have produced ten replicators; ten physical sound waves that all 'live' in the air and then 'die' in the sea of entropy within a few milliseconds. Only when one of the sound waves is recognised as a linguistic utterance by a human being, it can 'reproduce' by becoming part of the body of knowledge the hearer has of the English language. As an answer, the utterance *Here!* might be produced: the next replicator out in the air. The two major aspects of selection are, first, which utterances are actually being produced and, second, which are actually being perceived. Of course, the longevity of the human being and the duration of the availability of the utterance are also factors in the selectional process, but in Croft's view of language these are only of secondary importance (for instance, writing can be interpreted as a means to extend the lifespan of an utterance, thereby enlarging its possible influence on the replication process).

Figure 1. Language as analysed in the Theory of Utterance Selection



This second chapter discusses many linguistic concepts (like ‘language’, ‘grammar’, ‘etymology’, etc.) and explains how they should be interpreted within this approach. A central point is the precise definition of the units that can be classified as an utterance. Croft proposes the morpheme as the basic unit of selection, though fixed phrases can also be selected – and maybe even syntactic structures or other higher level linguistic constructs. He uses the term ‘lingueme’ to designate a selectable linguistic entity. In addition, a distinction between normal replication and altered replication is introduced (p. 30f.), concepts not used by Hull. Croft explains: “Normal replication is simply conformity to linguistic convention. Altered replication is the result of not conforming to linguistic convention” (p. 31). However, the postulation of this opposition is not compelling and is even contradictory to one of the central aspects of the Darwinian account. A basic concept championed by Darwin is to view species as inherently variable. Every individual is unique. If one shouts the word *here* ten times, every utterance will be slightly different. This inherent variation is enough to allow change, namely by differential selection of particular variants. As Croft himself formulates it in another context in his book: “There is no

sharp distinction between conservative and innovative language use. All language use is innovative, to some degree” (p. 104). Thus, the differentiation between normal and altered replication appears to be superfluous.

In chapter 3, this ‘Theory of Utterance Selection’ is compared with other theories of language change. Croft argues here strongly against ‘child-based’ theories of language change as proposed in the syntactic literature. Such theories take the view that language change is only instantiated in the next generation of human beings – the children learning the language (p. 44-53). By contrast, Croft proposes to take the results of half a century of sociolinguistic research seriously, which show the inherent variability of human language, even after the (linguistic) maturation of the individual (p. 53-59). He also argues against teleological explanations of language change (p. 62-71) and shows the compatibility of his approach with the theory of grammaticalisation (p. 62f.).

WHY DOES LANGUAGE CHANGE? INHERENT VARIABILITY

The main objective of this book is to introduce a new perspective on language change as summarised in the preceding section. However, the title of the book is ‘Explaining Language Change’, so one might ask: How does Croft explain language change? Asking for an explanation, there are basically two separate questions to be answered, namely the more difficult one ‘Why does language change?’ and the more practical one ‘How does language change?’.

The question ‘why’ is only discussed in passing (p. 117-120), though Croft’s answer is quite appealing: Every replicator (think: ‘utterance’) has two aspects, namely a physical form (sound wave) and a meaning/function that it evokes within the interactor (the terms ‘function’ and ‘meaning’ appear to be used synonymously). This connection is called the ‘form-function mapping’ and sounds highly reminiscent of de Saussure’s

‘signifiant-signifié’ coupling, but there are two important differences. First, the form-function mapping is made anew for every utterance (every token). Every time the word *tree* is uttered, a new mapping has to be made. Related to this idea is the second difference, namely that form-function mapping is a dynamic process and not somehow pre-existing coupling. Variation is thus built into the model from the start as “there is some leeway for speakers/listeners to reanalyze the form-meaning mapping in a grammatical construction” (p. 118).

Normally, language users (the interactors) will try to be conservative in their form-function mapping. However, if they are not very careful (which probably is the norm in actual speech), the inherent variability of the mapping process will slightly change the replicator either in form or in function (or both) automatically. A very important consideration in this respect is hidden in a footnote: Variation is often credited to the interplay of competing motivations (economy, iconicity, frequency, etc.), but Croft makes clear that this is not enough to explain the existence of change:

“Competing motivations by themselves do not suffice to account for innovation, however. One must still invoke an argument along the lines [as sketched above, MC] [...] to explain why speakers might disturb the balance between competing motivations represented by the current linguistic system” (p. 144, n. 13).

Thus, competing motivations only account for the fact that a balance will be found, but this rather suggests the expectation that language does not change at all. Competing motivations do not explain why there is a driving force leading to variation in the first place. The explanation for the existence of change proposed by Croft is that the form-function mapping is inherently unstable.

HOW DOES LANGUAGE CHANGE? A TYPOLOGY OF KINDS OF CHANGE

The goal of chapters 5 and 6 is to present a typology of various kinds of language change based on the principle of variable form-function mapping.

These chapters are full of actual examples of language change, illustrating how Croft perceives the relation between his theoretical perspective and the more down-to-earth aspect of language change. Implicitly, these chapters also attempt to classify the various manifestations of language change as attested in the world's languages. The proposed typology is far from perfect, though it is an interesting approach – worthwhile to be inspected with more than just a curious glance.

In chapter 5, four kinds of change are presented: ‘hyperanalysis’, ‘hypanalysis’, ‘metanalysis’ and ‘cryptanalysis’. Croft defines all of them strictly from the viewpoint of the listener, which is somewhat surprising considering the rest of the book. The definitions (see below) convey that it is always the listener who has some freedom in the interpretation of the form-function mapping. It is this freedom that possibly results in a form-function reanalysis in the long run. However, I should like to add that the same freedom is also available in production: A speaker can induce a form-function reanalysis as well. Thus, the reanalysis can occur in both phases of the reproductive cycle shown in Figure 1. Whether the variation in the mapping results in actual reanalysis depends on the joint action of all speakers/hearers in a community – a perspective that is completely in line with Croft's argumentation in chapter 4. One reason for his listener-bias in the following definitions might be the intention to counter a speaker-bias common in theories of language:

“Speaking, or rather, speaking-and-hearing, is [...] a joint action. Most speech act analysts [and many other linguists as well, MC] have ignored the action performed by the hearer because it appears to be relatively passive” (p. 89).

I will briefly present the four kinds of form-function reanalysis, showing at the same time the wide variety of examples of language change that are discussed. First, hyperanalysis (p. 121-126) is a kind of change that is characterised by a reduction in function:

“In HYPERANALYSIS the listener reanalyzes an inherent semantic/functional property of a syntactic unit as a contextual property [...]. In the reanalysis, this inherent property of a syntactic unit is then attributed to the context [...], and so the syntactic unit in question loses some of its meaning or function. Hence, hyperanalysis is a major source of semantic bleaching and/or loss in general” (p. 121).

As examples, Croft discusses the loss of oblique case assignment in Russian and Germanic and the evolution of impersonal marking in Bantu.

Hypoanalysis (p. 126-130) is the counterpart of ‘hyperanalysis’. In the process of hypoanalysis the function of a particular form is extended:

“In HYPOANALYSIS, the listener reanalyzes a contextual semantic/functional property as an inherent property of the syntactic unit. In the reanalysis, the inherent property of the context [...] is then attributed to the syntactic unit, and so the syntactic unit in question gains a new meaning or function [...]. Hypoanalysis is the source of a process [...] called EXAPTATION by Lass [...] and REGRAMMATICALIZATION by Greenberg” (p. 126f.).

As examples, Croft examines the shift from indicative to subjunctive in Armenian, German *umlaut*, the last phase of the development of demonstratives to articles in Nilo-Saharan, and recent changes in the use of English *do* and 3rd person singular *-s*.

Metanalysis (p. 130-134) is introduced to account for the negative cycle in French and the development of a passive from a third person active form in Massai. Further, all examples discussed in the literature under the heading ‘pragmatic inference’ are occurrences of metanalysis.

“In metanalysis, the listener swaps contextual and inherent semantic values of a syntactic unit. [...] Metanalysis is basically an account of the innovation of invited inferences” (p. 130, 133).

Finally, cryptanalysis (p. 134-140) is a generalisation of reinforcement:

“In cryptanalysis, the listener analyzes a covert semantic/functional property of a syntactic unit as not grammatically marked, and inserts an overt marker expressing its semantic value. [...] Cryptanalysis is the source of many cases of pleonasm and reinforcement [...]” (p. 134).

As examples, Croft discusses pleonastic negation in English and paratactic negation in Romance, pleonastic plural marking in Turkish and the rise of use of definite articles with proper names in various languages.

I have summarised these four kinds of form-function reanalysis in Table 1, which makes overt two logical problems with this typology: First, metanalysis is the only kind of language change involving a complete shift. It might be better to conceive this category as a combination of both hyper- and hypoanalysis. Further, I have added one logically possible kind of change missing in Croft's survey, which could be called 'conventionalization' (cf. p. 162): Here, the form is reduced without any change in meaning. In a different context, Croft discusses such changes, namely 'fusion', 'erosion' and 'structural reanalysis' (p. 162-165). He then claims without any elucidation that they "cannot be interpreted as involving the form-function mapping" (p. 165). This strikes me as rather puzzling: Why could changes in form not be part of form-function reanalysis as well?

Table 1. Summary of (syntagmatic) kinds of form-function reanalysis

Reanalysis	Form	Function
Hyperanalysis	no change	is reduced
Hypoanalysis	no change	is enlarged
Metanalysis	no change	has shifted
Cryptanalysis	is enlarged	no change
Conventionalization	is reduced	no change

After the thoroughly structured chapter 5, the various kinds of change discussed in chapter 6 appear somewhat haphazardly collected leftovers. First, two kinds of change based on exchange are discussed. Contact-induced change is discussed under the heading 'interference' (p. 145-148). Second, influence between linguistic elements can also be attested within

one language: “Different elements of the same language can interfere with each other if they share enough linguistic substance, in particular meaning” (p. 148). Such changes are called ‘intraference’ (p. 148-156). Examples are the restructuring of paradigms under the influence of skewed frequency of the elements therein and lexical semantic change.

Chapter 6 closes with an extensive discussion of the concept of grammaticalisation (p. 156-165). It looks as if Croft is struggling here to integrate grammaticalisation (and in particular its purported unidirectionality) into his scheme of form-function reanalysis – but does not succeed.

A THEORY OF LANGUAGE ON THIS BASIS

The topic of the remaining three chapters can be summarised as an investigation on how a theory of language should be designed in accordance with the evolutionary model. Three different aspects of language are discussed: language usage (chapter 4), the spread of language change through the community (chapter 7), and language contact (chapter 8).

In chapter 4, various themes relating to language usage are presented: the joint character of speech, the coordination problem (How does joint action succeed?) and the tension between innovation and successful communication. This chapter runs smoothly because Croft’s model of language is inherently variable – an assumption that is shared by most approaches to language usage.

Chapter 7 deals with the question how changes are propagated from an individual utterance to a change in the whole language community. Many insights from sociolinguistic research (e. g. ‘networks’, ‘power/prestige structure’, ‘S-curve’) are related to the study of populations in biology (e. g. ‘species’, ‘deme’, ‘niche’), once more highlighting the fruitfulness of exchanging theoretical concepts between the fields.

Chapter 8 starts with a short section criticising zoöcentric thinking (p. 196-198). By applying a different perspective, replacing the one that has been entrenched in linguistic commonsense, the notion of ‘language’ is put into new light. Ever since at least Schleicher, a language has been compared to an animal species which can be integrated into a genealogical tree of higher order categorisation (e. g. linguistic families and stocks). However, this is zoöcentric thinking, argues Croft (following the biologist Grant), and it does not work. The main problem is that hybridization hardly ever occurs among animals – but is rampantly attested between languages. Yet, hybridization is also common in biology, but only among plants and not among animals. Croft suggests “that a language system is more like a plant than an animal” (p. 230). The rest of chapter 8 is a survey of the extensive literature on various forms of ‘hybridization’ in language (e. g. borrowing, interference, code-switching, mixed languages, pidgins/creoles).

The book concludes with a short summary of the main argument in chapter 9, followed by a glossary of terms and various extensive indices.

CONCLUSION

‘Explaining Language Change’ presents a highly original and very inspiring perspective on the nature of human language by applying insights into change from evolutionary biology. In just a bit more than 200 pages, a completely new theory about language is set out, in much detail and with many actual examples of language use and language change. This new theory indeed helps to make sense of many puzzles of the mechanisms of language. Moreover, Croft’s grasp of the literature in many disparate fields of linguistics is impressive.

The concept of ‘variation’ is deeply rooted in the theory presented, and as such it provides a fine theoretical background for comparative linguistics. Variation is not a burden anymore, but part of the theory itself. Further, the central element of the theory is the individual utterance – also a feature that

fits well with historical-comparative practice. The typology of kinds of language change, as presented in chapters 5 and 6, would benefit from a more thorough reworking. However, also without such improvements, I highly recommend this book as a theoretical foundation of historical linguistics.

REFERENCES

- Bickerton, Derek 1990: *Language and species*, Chicago.
- Croft, William 2001: *Radical construction grammar: Syntactic theory in typological perspective*, Oxford.
- Dawkins, Richard 1976: *The selfish gene*, Oxford.
- Dixon, Robert M. W. 1997: *The rise and fall of languages*, Cambridge.
- Gould, Stephen Jay 1996: *Full house: The spread of excellence from Plato to Darwin*, New York.
- Hull, David L. 1988: *Science as a process: An evolutionary account of the social and conceptual development of science*, Chicago.
- Lass, Roger 1990: How to do things with junk: Exaptation in language evolution, in: *Journal of Linguistics* 26, p. 79-102.
- Pinker, Steven and Paul Bloom 1990: Natural language and natural selection, in: *Behavioral and Brain Sciences* 13, p. 707-784.
- Schleicher, August 1873: *Die darwinsche Theorie und die Sprachwissenschaft*, Weimar.