

## Chapter 3

# Some language universals are historical accidents

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In this short paper, I elaborate on previous work by Givón (1971) and Aristar (1991) to argue that a substantial part of the well-known word-order correlations is best explained by grammaticalisation processes. Functional-adaptive accounts in terms of processing or learning constraints are currently weakly substantiated, and they suffer from the fact that they do not adequately control for language-internal inheritance patterns. More generally, historical relatedness between different types of phrases constitutes an important confound in typological research, one that needs to be taken seriously before word-order correlations are motivated by anything other than the diachronic patterns that link the word order pairs in question.

## 1 Introduction

There are surprisingly few properties that all languages share. Almost every attempt at articulating a genuine language universal tends to have at least one exception, as documented in Evans & Levinson (2009). However, there are non-trivial properties that are found in if not literally all languages, enough of them and across multiple language families and independent areas of the world, that they demand an explanation.

An example is the fact that languages have predictable word orders. If a language has the verb before the object, it tends to have prepositions rather than postpositions, as in English; if the verb is after the object, it is a good bet that the language will have postpositions rather than prepositions (Greenberg 1963). The ordering of different elements such as a possessed noun and its possessor, or a noun and elaborate modifiers (complex adjective phrases, relative clauses), are to some extent free to vary among languages, but again tend to fall into correlating



types (Dryer 1992; 2011). Why should knowing the word order of one category in a language help predict the orderings of other categories? One prominent view holds that these patterns reflect an innate harmonic ordering principle of Universal Grammar, which is ultimately argued to solve the logical problem of language acquisition (Pinker 1994; Baker 2001; Roberts 2007). This would amount to what Haspelmath (2019 [this volume]) calls a “representational constraint” on the shape of grammars. Another possible explanation is that word-order correlations have evolved in the service of efficient language processing (e.g. Hawkins 1994; Kirby & Hurford 1997), i.e. for functional-adaptive reasons. We find this view in the functional-typological literature (e.g. Dryer 1992; Evans & Levinson 2009) as well as in computer simulations in the literature on language evolution (Van Everbroeck 1999).

However, I would argue that many of these patterns are not evidence of our psychological preferences, but are accidental consequences of language history. More specifically, they are accidental in the sense that they arise as a by-product of grammaticalisation processes. These processes do not seem to have word-order correlations as a goal, nor is there good evidence for a “pull force” in that direction. Accordingly, grammaticalisation is an *alternative* to functional motivations here, and an understanding of this historical dimension is thus crucial to explaining word-order correlations. In this short paper, I first elaborate this claim (§2) based on an earlier publication (Collins 2012), before I outline its consequences for typological theory and practice (§3). In doing so, I am extending a line of argumentation by Givón (1971) and Aristar (1991), but I relate the discussion specifically to the concerns of the present volume, and to Haspelmath’s position paper in particular.

## 2 Word-order correlations as a result of grammaticalisation

Grammaticalisation is the process by which new grammatical categories can be formed from other (often lexical) categories. For example, Mandarin Chinese has a class of words which might be called prepositions from a cross-linguistic point of view but which clearly have their historical roots in verbs. An example is 從 *cóng*, which in modern Mandarin is a preposition meaning ‘from’ but which in classical Chinese was a verb meaning ‘to follow’. It has lost its ability to be used as a full verb, requiring another verb such as ‘come’ in the sentence, just as English requires a verb in the sentence *I come from London*. Other Chinese prepositions such as 跟 *gēn* ‘with’ also have a verbal origin, and many preposition-like words

such as 給 *gěi* ‘for’ and 在 *zài* ‘in/at’ even retain verbal meanings (‘give’ and ‘to be present’) and verbal syntax (such as being able to be used as the sole verb in the sentence and to take aspect marking). These patterns of inheritance directly explain why the two types of constituents (i.e. PP and VP) have the same word order: Prepositions and verbs were once the same category, and they simply have not changed their word orders since then. Since the verb precedes its NP object in classical and modern Chinese, its prepositional offspring in modern Chinese also precedes its NP complement. Interestingly, Chinese also has postpositions, such as *li* ‘in’, and these, too, are simply continuations of their lexical sources (cf. also Dryer 2019 [this volume]). Thus *li* is etymologically ‘interior’ or ‘village’, hence *fangzi li* ‘in the house’ might be glossed more literally as ‘the house’s inside’. Again, the ordering of the younger construction as noun (*fangzi*)–postposition (*li*) reflects the order of the older construction with genitive (*fangzi*)–noun (*li*). Very similar remarks apply to Niger-Congo languages like Dagaare in Ghana, which also shows typologically mixed adpositional phrases (Bodomo 1997).

More generally, the pattern of adpositions inheriting the ordering of the noun or verb they derive from is replicated in different language families: We find it in many Oceanic languages (Lynch et al. 2002: 51), where adpositions are transparently nouns and reflect whatever ordering of genitive–noun the language has (hence it can be either prepositional, as in Hawaiian, or postpositional, as in Motu); we also see it in Indo-European languages (e.g. English *across* < 13 ct. Anglo-French *an cros* ‘on cross’ (Bordet & Jamet 2010: 16)), in Japanese (e.g. *kara* ‘from’ < ‘way’, *si* restrictive particle < ‘do’ (Frellesvig 2010: 132–135)), in Australian languages in which adpositions are morphologically still nouns (Dixon 2002), in Tibetan and Burmese (DeLancey 1997), and so on. Heine & Kuteva (2007: 62) even remark that “we are not aware of any language that has not undergone such a process”.

Grammaticalisation can also often explain the ordering of verb and object correlating with genitive and noun ordering (Dryer 2011). Certain types of verb phrase derive historically from noun phrases made up of a nominalised verb and its patient argument in a possessive construction. An example is Ewe:

- (1) Ewe (Atlantic-Congo, Gbe; Claudi 1994: 220)  
 Me-le é-kpɔ dzí.  
 1SG.-be.at 3SG.POSS/OBJ-see surface/on  
 ‘I am seeing him.’ (lit. ‘I am on his seeing.’)

Ewe is normally SVO but employs the genitive–noun ordering here (‘his seeing’), creating a construction which is SOV. Nominalisations of this kind are

used cross-linguistically for expressing aspect (such as the continuous aspect in Ewe), for subordinate clauses (expressing ‘I was surprised that he saw me’ as ‘I was surprised at his seeing of me’ in Javanese, cf. Ogloblin 2005: 618) and for voice marking (in Austronesian languages, cf. Himmelmann 2005: 174). These verb phrases can become the most frequently used and unmarked verb phrases in the languages, thus the basic verb–object order of a language can evolve from a genitive–noun construction, even if the nominal origins of the verb form are no longer transparent.

This development of (main-clause) verb phrases from nominalised verbs with a possessor object is again attested in very different language families, although it is more complicated to reconstruct. A typical example is the evolution of VOS ordering in Proto-Austronesian, which has been inherited by over a thousand Austronesian languages or evolved further into SVO or VSO (Adelaar 2005: 7). It is now generally accepted that verb phrases in Austronesian languages evolved from nominalising verbs, with a sentence such as ‘The children are looking for the house’ deriving from a Proto-Austronesian construction of the type ‘The children are the searchers of the house’. Starosta et al. (1982) as well as Kaufman (2009) present several pieces of evidence in favour of this diachronic hypothesis: For example, the voice markers on verbs derive from nominalising morphemes, cognates of which still exist in Tagalog and other languages, such as the locative voice marker *an* which is also used for deriving place names (*aklat-an* ‘library’ < *aklat* ‘book’). Moreover, the direct object of the verb is marked with the genitive marker *ng* or put into the genitive case if a pronoun. Both nominalisation and the use of equational sentences of the form AB ‘A is B’ are extremely common in conservative Austronesian languages and presumably were in Proto-Austronesian, allowing this frequently used construction to become a standard form of predication. Thus the verb–object ordering in Austronesian languages derives simply from the noun–genitive ordering of Proto-Austronesian, which is still retained in these languages. At a stroke this word-order correlation is accounted for in roughly a sixth of the world’s languages.

As Sasse (2009: 167) notes in a comment on Kaufman (2009), the situation in Austronesian is “not as ‘exotic’ as it seemed to be at first sight, especially not for a Semiticist or an Afroasiaticist”. He notes that the Cushitic languages also replaced their finite verb forms with participles and are used with dative marking on the agent, in effect saying ‘I have heard it’ as ‘To me was hearing’ (Sasse 2009: 174); and that the dative pronouns eventually grammaticalised further to finite verbal morphology. This change also took place in the Iranian and Indo-Aryan languages, stretching over a large linguistic area.

Sasse also notes independent developments of agents marked with genitive case in Mayan and Inuit languages, and Gildea (1997) made a similar reconstruction for the Cariban language family, of which the famous OVS language Hixkaryana is an example: It has genitive marking on the object, effectively expressing ‘the enemy will destroy the city’ as ‘it will be the city’s destruction by the enemy’ (Gildea 1997: 153), explaining among other things why the subject is placed last, and why it has ergative marking. One can add to this list many languages in Asia, as described in Yap et al. (2011), such as Tibeto-Burman languages that often use nominalised forms in main clauses (e.g. ‘goat-killing exists’ for ‘he is killing a goat’, cf. DeLancey 2011: 349), and even Japanese, in which argument markers such as *ga* were originally genitive markers (Shinzato 2011: 461). Examples of Niger-Congo languages such as Ewe were given earlier and are discussed by Claudi (1994), while Heine describes how many Nilo-Saharan and Chadic languages render desiderative sentences in the following way:

- (2) Angas (Afro-Asiatic, Chadic; Heine 2009: 31)

Musa rot dyip kə-shwe.

Musa want harvest POSS-corn

‘Musa wants to harvest corn.’ (lit. ‘Musa wants the harvesting of the corn.’)

The historical data thus show that these processes of grammatical change are not limited to individual languages or families but can instead be found much more widely, and independently of one another. They lead us to predict, then, that ultimately all correlations between the ordering of elements in verb phrases (V–NP), adpositional phrases (P–NP) and possessive noun phrases (GEN–NP) are due to direct historical connections between pairs of phrases (cf. also Croft 2003: 77–78 for more discussion of such pairs). In the next section, I consider the implications of this assumption for both explanation and methodology in linguistic typology.

### 3 Consequences for typology

As historical evidence for the grammaticalisation account is accumulating, one may ask whether this makes alternative, functional-adaptive explanations invalid. Recall from above that on non-nativist approaches, word-order correlations are often argued to make sentences easier or more efficient to parse in real time, as compared to sentences with mixed head-dependent ordering patterns (e.g. Hawkins 2004). Is it possible that these factors play a role alongside

grammaticalisation, such that, for example, processing demands filter out certain difficult-to-process constructions, as Kirby & Hurford (1997) suggest (cf. also Christiansen 2000)? Put somewhat differently, could it not be the case that grammaticalisation happens to produce orderings that are easy (or easier) to parse?

There is currently not much evidence to substantiate this view. From a theoretical perspective, there is no indication that the processes involved in grammaticalisation are instigated by considerations of efficient parsing or learning. They happen through pragmatic inference in specific communicative contexts (Hopper & Traugott 2003: Ch. 4), through widespread metaphorical mappings (cf. Deutscher 2005: Ch. 4) and by means of chunking of repeated sequences (Bybee 2002). Through these mechanisms, a new construction begins to emerge that gradually emancipates from its original lexical source. Since it is gradual, this process often creates a chain of intermediate cases, such as denominal adpositions in Tibetan, some of which still require genitive marking (e.g. *mdun* ‘front’) while others have shed this marking (e.g. *nang* ‘inside’; cf. DeLancey 1997: 58–59). In other words, grammaticalisation has its origin in common non-linguistic processes (cf. also Bybee 2010: 6–8) and has predictable consequences, such as the gradual and sometimes only partial elimination of the morphology associated with the source. Importantly, a hallmark of grammaticalisation is syntagmatic “freezing” (Croft 2000: 159; cf. also Lehmann 2015[1982]: 168), so that the order of the elements in the new construction mirrors the order of elements in the source. The result is a “correlation” between the syntagmatic structure of the old and the new construction, but one that effectively rests on inertia rather than overarching processing principles that work towards a correlation.

From a methodological perspective, processing and learning accounts are an example of a broader trend of the “ad hoc search for functions that match the universals to be explained”, as Kirby (1999: 13) puts it. Attempts in the evolutionary literature to simulate processing or learning with computers in order to derive Greenberg’s word order universals (e.g. Van Everbroeck 1999; Kirby & Christiansen 2003), have a particularly “just-so” flavour: All that computer simulations can do is show that processing or learning preferences of individuals can cause these correlations to emerge over time, all other historical factors being equal, not that they are actually responsible. What we would thus need is independent historical evidence that processing concerns do, in fact, guide historical change. There are some attempts to show this, for example, in earlier English (e.g. Fischer 1992; Clark et al. 2008), when the language appeared to converge on the word-order correlations after a period of freer word order. This could indeed be evidence for word-order correlations emerging at least in part out of processing

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considerations; but there are other possibilities in this case which need to be investigated further, such as it being related to the rise of analytic verb forms and periphrastic *do*, to the loss of inflections or as a result of contact from French (cf. also Fischer & van der Wurff 2006: 187–188 for some of the controversies). The historical role of processing is unclear even in this case, and there is no conclusive cross-linguistic evidence for it either.

One possibility for establishing such causal relations cross-linguistically would be to look for cases of correlated evolution, i.e. situations in which a change in one word order can be shown to be followed by a change in another word order in the history of a language, or in its descendants. For example, if a language has verb–object order and prepositions but then changes to having object–verb order and postpositions, then this suggests that the two word orders are functionally linked (if this event takes place after any grammaticalisation linking these verbs and postpositions). The only solid statistical test of this so far has been a widely discussed study by Dunn et al. (2011). Dunn and colleagues examined the ways in which four language families have developed (Bantu, Austronesian, Indo-European and Uto-Aztec) and tested models of word order change using a Bayesian phylogenetic method for analysing correlated evolution. They found that some word orders do indeed change together: For example, the order of verb and object seems to change simultaneously with the order of adposition and noun in Indo-European. A model in which these two word orders are dependent is preferred over a model in which they are independent with a Bayes factor of above 5, a conventional threshold for significance. This seems to vindicate the idea that adpositions and verb-object order are functionally linked in Indo-European, and the pattern also holds up in Austronesian. It does not show up in the smaller and younger families Uto-Aztec and Bantu, although that may be because of the low statistical power of this test when applied to small language families (cf. Croft et al. 2011). But a more important drawback is that there is no control for language contact. What could be happening is that some Indo-European languages in India have different word orders because of the languages that they are near, such as Dravidian languages, which also have object-verb order and postpositions. A similar point could be made about the Austronesian languages that undergo word order change, which are found in a single group of Western Oceanic languages on the coast of New Guinea, which is otherwise dominated by languages with object–verb order and postpositions.

In the context of the present discussion, an important result of Dunn et al.'s (2011) paper is that word orders are very stable, staying the same over tens of thousands of years of evolutionary time (i.e. the total amount of time over mul-

multiple branches of the families). In this light, it is also instructive to note that some typologically “mixed” or non-correlating languages show the same inert behaviour: Despite the fact that grammaticalisation has produced a mixture of prepositions and postpositions (e.g. in Chinese or Dagaare), the resulting systems have also survived for many generations, or even thousands of years, without showing any inclination to change. This, too, is a problem for processing-based theories, which sometimes explicitly predict that such inconsistencies should die out (e.g. Kirby & Hurford 1997).

In the absence of convincing evidence for functional-adaptive motivations, I suggest that we accept that different types of syntactic constituents share their ordering patterns because they are historically related to each other, i.e. because they are linked by common ancestry. This also has important methodological consequences for typology. The kind of historical relatedness we observe here qualifies as a subtle, language-internal variant of Galton’s problem (cf. Cysouw 2011 for an introduction), and it is thus actually a *confound* in typological samples. Just as other, more widely known, types of historical relatedness, such as a genealogical or areal interaction between two data points in a sample, need to be controlled for before one can test for a typological correlation, so does the language-internal historical relatedness between the grammatical patterns that make up that correlation. Put differently, languages in which possessor arguments are known to have developed from former object arguments and have simply adopted their order from this source, do not constitute an independent data point in support of the alleged word-order correlation. For typological practice, this entails that we need large databases of attested grammaticalisation pathways, and that we need to examine more carefully the actual markers and their (likely) etymologies before we set out to test a functional-adaptive hypothesis. In principle, it would then be possible to inspect whether certain grammaticalisation pathways tend to be taken only in certain types of languages; for example, do postpositions only develop from nouns in a genitive construction (‘table’s head’ > ‘table on’) if the language also places the verb after the object? It is easy enough to find exceptions to that, such as Dagaare (Atlantic-Congo), which has taken this route to postpositions despite being a VO language (Bodomo 1997). But in a large database, we might still find interesting structural constraints, as well as geographical patterns, that could potentially speak for or against functional-adaptive motivations in addition to grammaticalisation.

For now, the major point is that the historical non-independence of data points can create correlations that are not causal. Such spurious correlations are well-known from non-linguistic research (cf., e.g., the spurious correlation between



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chocolate consumption and Nobel Prize winners; cf. also Roberts & Winters 2013 for further discussion), and my claim in this paper is that this is a serious methodological pitfall in the domain of word-order correlations. Given the naturalness of grammaticalisation, and the above observation that word orders tend to be preserved and long retained after grammaticalisation, invoking functional-adaptive motivations to explain the correlations in question is not only redundant, but actually wrong-headed. It is as if one wanted to claim that there was a deeper ecological reason why chimpanzees and humans share 98.8% or so of their DNA, rather than just the primary historical reason, which is that they have a common ancestor.

Having said this, it should be pointed out that I am neither arguing against functional-adaptive explanations in general, nor am I denying the relevance of processing to understanding word order patterns as such, including some combinations of word order that tend to be preferred over others. For example, the fact that VO languages strongly tend to have postnominal relative clauses is plausibly related to processing constraints (Hawkins 2004). Similarly, correlations between numeral–noun and adjective–noun ordering do not have a clear explanation in terms of grammaticalisation, but they do seem to be functionally linked and hence show interesting dependencies in experiments in artificial language learning (e.g. Culbertson et al. 2012; cf. also Dryer 2019 [this volume]). But with more and more diachronic evidence coming to light, historical links between many grammatical categories (VPs, auxiliaries, genitives, adpositions) can no longer be dismissed as marginal and as “lack[ing] generality” (Hawkins 1983: 131). Our default assumption, then, should be that the core word-order correlations are first and foremost an accidental by-product of grammaticalisation.

Haspelmath (2019 [this volume]) actually acknowledges this type of explanation, at least for the ordering patterns of adpositional phrases, and labels it a “mutational constraint” – a situation in which historical sources and grammaticalisation pathways directly determine the synchronic outcomes and hence make functional-adaptive explanations superfluous. On the other hand, he rejects “common pathways” as too weak to have explanatory power in typology. But how common is “common”, and when do we begin to speak of a mutational constraint? It is perfectly possible that common pathways (such as those documented in Heine & Kuteva 2002; 2007), while not exhausting the possible sources and routes, are still frequent enough to produce a principled synchronic result. Therefore, I disagree with Haspelmath (p. 15) that we need not be able to understand the diachronic patterns behind a universal tendency if there is a good functional-adaptive motivation available for it. In the case of word-order corre-

lations, and possibly other domains of grammar, it is the other way around: We first need to understand the diachronic links between different types of phrases and then control for them when we attempt to establish whether there are universal correlations beyond historical dependencies at all. It may turn out that the real question is why it should ever be the case that the order of grammaticalised categories, such as adpositions, genitives or auxiliaries does *not* correlate with that of their source constructions.

## 4 Conclusion

Word-order correlations are often invoked as evidence for universals of language acquisition or language processing. In this paper, I have argued that, before we can do so, it is important to understand the historical background of these patterns, which standard interpretations do not take into account. Given the naturalness and the non-teleological nature of grammaticalisation processes, it should be our default assumption that the order of grammaticalised categories retains the order of their respective source constructions. From this perspective, word-order correlations are far from mysterious and, in many cases, do not require functional-adaptive motivations (such as specific processing principles) or innate constraints (such as a head-ordering parameter). Instead, the correlations arise during the creation of new constructions by extending old constructions. The grammaticalisation processes involved are well-understood and ubiquitous (cf. Bybee 2015). And although we will never be able to have a full picture of the possible routes that lead to adpositions, auxiliaries, genitives, etc., the ones we know of seem common enough to produce the correlations in question. At the very least, they constitute language-internal dependencies, in Galton's spirit, that need to be controlled for in any typological investigation of word-order correlations, in addition to areal dependencies that hold across languages. If they are not, one runs the risk of erroneously inferring causation from correlation, as the word-order correlations would appear so strong that they require a deeper explanation, when in fact they are largely dependencies built into the sample.

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## References

- Adelaar, Alexander. 2005. The Austronesian languages of Asia and Madagascar: A historical perspective. In Alexander Adelaar & Nikolaus P. Himmelmann (eds.), *The Austronesian languages of Asia and Madagascar*, 1–42. London, New York: Routledge. DOI:10.4324/9780203821121
- Aristar, Anthony R. 1991. On diachronic sources and synchronic pattern: An investigation into the origin of linguistic universals. *Language* 67(1). 1–33.
- Baker, Mark C. 2001. *The atoms of language: The mind's hidden rules of grammar*. Oxford: Oxford University Press.
- Bodomo, Adams. 1997. *The structure of Dagaare*. Stanford: CSLI publications.
- Bordet, Lucile & Denis Jamet. 2010. Are English prepositions grammatical or lexical morphemes? *Cercles: Occasional Papers*. 1–26.
- Bybee, Joan L. 2002. Sequentiality as the basis of constituent structure. *Typological Studies in Language* 53. 109–134. DOI:10.1075/tsl.53.07byb
- Bybee, Joan L. 2010. *Language, usage and cognition*. Cambridge: Cambridge University Press. DOI:10.1017/CBO9780511750526.011
- Bybee, Joan L. 2015. *Language change*. Cambridge: Cambridge University Press. DOI:10.1017/CBO9781139096768
- Christiansen, Morten H. 2000. Using artificial language learning to study language evolution: Exploring the emergence of word order universals. In Jean-Louis Dessalles & Laleh Ghadakpour (eds.), *The evolution of language: 3rd international conference*, 45–48. Paris: École Nationale Supérieure des Télécommunications.
- Clark, Brady, Matthew Goldrick & Kenneth Konopka. 2008. Language change as a source of word order correlations. In Regine Eckardt, Gerhard Jäger & Tonjes Veenstra (eds.), *Variation, selection, development: Probing the evolutionary model of language change*, 75–102. Berlin, New York: Mouton de Gruyter. DOI:10.1515/9783110205398.2.75
- Claudi, Ulrike. 1994. Word order change as category change: The Mande case. In William Pagliuca (ed.), *Perspectives on grammaticalization*, 191–231. Amsterdam, Philadelphia: John Benjamins. DOI:10.1075/cilt.109.04cla
- Collins, Jeremy. 2012. The evolution of the Greenbergian word order correlations. In Thomas C. Scott-Phillips, Mónica Tamariz, Erica A. Cartmill & James R. Hurford (eds.), *The evolution of language: 9<sup>th</sup> international conference*, 72–79. Singapore: World Scientific. DOI:10.1142/9789814401500\_0010
- Collins, Jeremy. 2016. Some language universals are historical accidents. In <http://humans-who-read-grammars.blogspot.co.uk/2016/08/some-language->

- universals-are-historical.html, accessed 2016-8-28. Blogpost at Humans Who Read Grammars.
- Croft, William. 2000. *Explaining language change: An evolutionary approach*. London: Harlow. DOI:10.1075/jhp.6.1.09rau
- Croft, William. 2003. *Typology and universals*. 2nd edn. Cambridge: Cambridge University Press. DOI:10.1017/CBO9780511840579
- Croft, William, Tanmoy Bhattacharya, Dave Kleinschmidt, D. Eric Smith & T. Florian Jaeger. 2011. Greenbergian universals, diachrony, and statistical analyses. *Linguistic Typology* 15(2). 433–453. DOI:10.1515/lity.2011.029
- Culbertson, Jennifer, Paul Smolensky & Géraldine Legendre. 2012. Learning biases predict a word order universal. *Cognition* 122(3). 306–329. DOI:10.1016/j.cognition.2011.10.017
- Cysouw, Michael. 2011. Understanding transition probabilities. *Linguistic Typology* 15(2). 415–431. DOI:10.1515/lity.2011.028
- DeLancey, Scott. 1997. Grammaticalization and the gradience of categories: Relator nouns and postpositions in Tibetan and Burmese. In Joan L. Bybee, John Haiman & Sandra A. Thompson (eds.), *Essays on language function and language type*, 51–69. Amsterdam, Philadelphia: John Benjamins. DOI:10.1075/z.82.07del
- DeLancey, Scott. 2011. Finite structures from clausal nominalization in Tibeto-Burman. In Foong Ha Yap, Karen Grunow-Hårsta & Janick Wrona (eds.), *Nominalization in Asian languages: Diachronic and typological perspectives, Vol. 1*, 343–360. Amsterdam, Philadelphia: John Benjamins. DOI:10.1075/tsl.96.12del
- Deutscher, Guy. 2005. *The unfolding of language*. London: Random House.
- Dixon, R. M. W. 2002. *Australian languages: Their nature and development*. Cambridge: Cambridge University Press. DOI:10.1017/CBO9780511486869
- Dryer, Matthew S. 1992. The Greenbergian word order correlations. *Language* 68(1). 81–138. DOI:10.1353/lan.1992.0028
- Dryer, Matthew S. 2011. The evidence for word order correlations. *Linguistic Typology* 15(2). 335–380. DOI:10.1515/lity.2011.024
- Dryer, Matthew S. 2019. Grammaticalization accounts of word order correlations. In Karsten Schmidtke-Bode, Natalia Levshina, Susanne Maria Michaelis & Ilja A. Seržant (eds.), *Explanation in typology: Diachronic sources, functional motivations and the nature of the evidence*, 63–95. Berlin: Language Science Press. DOI:10.5281/zenodo.2583810
- Dunn, Michael, Simon J. Greenhill, Stephen C. Levinson & Russell D. Gray. 2011. Evolved structure of language shows lineage-specific trends in word-order universals. *Nature* 473. 79–82. DOI:10.1038/nature09923

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- Evans, Nicholas & Stephen C. Levinson. 2009. The myth of language universals: Language diversity and its importance for cognitive science. *Behavioral and Brain Sciences* 32(5). 429–448. DOI:10.1017/S0140525X0999094X
- Fischer, Olga. 1992. Syntax. In Norman Blake (ed.), *The Cambridge history of the English language, Vol. 2: 1066–1476*, 207–408. Cambridge: Cambridge University Press. DOI:10.1017/CHOL9780521264754.005
- Fischer, Olga & Wim van der Wurff. 2006. Syntax. In Richard Hogg & David Denison (eds.), *A history of the English language*, 109–198. Cambridge: Cambridge University Press. DOI:10.1017/CBO9780511791154.004
- Frellesvig, Bjarke. 2010. *A history of the Japanese language*. Cambridge: Cambridge University Press. DOI:10.1017/CBO9780511778322
- Gildea, Spike. 1997. Introducing ergative word order via reanalysis: Word order change in the Cariban family. In Joan L. Bybee, John Haiman & Sandra A. Thompson (eds.), *Essays on language function and language type*, 145–163. Amsterdam, Philadelphia: John Benjamins. DOI:10.1075/z.82.10gil
- Givón, Talmy. 1971. Historical syntax and synchronic morphology: An archaeologist's field trip. *Chicago Linguistic Society* 7. 394–415.
- Greenberg, Joseph H. 1963. Some universals of grammar with particular reference to the order of meaningful elements. In Joseph H. Greenberg (ed.), *Universals of language*, 58–90. Cambridge, MA: MIT Press.
- Haspelmath, Martin. 2019. Can cross-linguistic regularities be explained by constraints on change? In Karsten Schmidtke-Bode, Natalia Levshina, Susanne Maria Michaelis & Ilja A. Seržant (eds.), *Explanation in typology: Diachronic sources, functional motivations and the nature of the evidence*, 1–23. Berlin: Language Science Press. DOI:10.5281/zenodo.2583804
- Hawkins, John A. 1983. *Word order universals*. New York: Academic Press. DOI:10.1016/C2009-0-21896-4
- Hawkins, John A. 1994. *A performance theory of order and constituency*. Cambridge: Cambridge University Press. DOI:10.1017/CBO9780511554285
- Hawkins, John A. 2004. *Efficiency and complexity in grammars*. Oxford: Oxford University Press. DOI:10.1093/acprof:oso/9780199252695.001.0001
- Heine, Bernd. 2009. From nominal to clausal morphosyntax: Complexity via expansion. In Talmy Givón & Masayoshi Shibatani (eds.), *Syntactic complexity: Diachrony, acquisition, neuro-cognition, evolution*, 23–52. Amsterdam, Philadelphia: John Benjamins. DOI:10.1075/tsl.85.02fro
- Heine, Bernd & Tania Kuteva. 2002. *World lexicon of grammaticalization*. Cambridge: Cambridge University Press. DOI:10.1017/CBO9780511613463

- Heine, Bernd & Tania Kuteva. 2007. *The genesis of grammar: A reconstruction*. Oxford: Oxford University Press.
- Himmelman, Nikolaus P. 2005. The Austronesian languages of Asia and Madagascar: Typological characteristics. In Alexander Adelaar & Nikolaus P. Himmelman (eds.), *The Austronesian languages of Asia and Madagascar*, 110–181. London, New York: Routledge. DOI:10.4324/9780203821121
- Hopper, Paul J. & Elizabeth Closs Traugott. 2003. *Grammaticalization*. 2nd edn. Cambridge: Cambridge University Press. DOI:10.1017/CBO9781139165525
- Kaufman, Daniel. 2009. Austronesian nominalism and its consequences: A Tagalog case study. *Theoretical Linguistics* 35(1). 1–49. DOI:10.1515/THLI.2009.001
- Kirby, Simon. 1999. *Function, selection, and innateness: The emergence of language universals*. Oxford: Oxford University Press.
- Kirby, Simon & Morten H. Christiansen. 2003. From language learning to language evolution. In Morten H. Christiansen & Simon Kirby (eds.), *Language evolution*, 272–294. Oxford: Oxford University Press. DOI:10.1093/acprof:oso/9780199244843.003.0015
- Kirby, Simon & James R. Hurford. 1997. Learning, culture and evolution in the origin of linguistic constraints. In Phil Husbands & Inman Harvey (eds.), *Fourth European Conference on Artificial Life*, 493–502. Cambridge, MA; London: The MIT Press.
- Lehmann, Christian. 2015[1982]. *Thoughts on grammaticalization*. 3rd edn. Berlin: Language Science Press. DOI:10.17169/langsci.b88.99
- Lynch, John, Malcolm Ross & Terry Crowley. 2002. *The Oceanic languages*. London: Routledge. DOI:10.4324/9780203820384
- Ogloblin, Alexander K. 2005. Javanese. In Alexander Adelaar & Nikolaus P. Himmelman (eds.), *The Austronesian languages of Asia and Madagascar*, 590–624. London, New York: Routledge.
- Pinker, Steven. 1994. *The language instinct: How the mind creates language*. New York: HarperCollins.
- Roberts, Ian. 2007. *Diachronic syntax*. Oxford: Oxford University Press.
- Roberts, Seán & James Winters. 2013. Linguistic diversity and traffic accidents: Lessons from statistical studies of cultural traits. *PLoS One* 8(8). e70902. DOI:10.1371/journal.pone.0070902
- Sasse, Hans-Jürgen. 2009. Nominalism in Austronesian: A historical typological perspective. *Theoretical Linguistics* 35(1). 167–181. DOI:10.1515/THLI.2009.010
- Shinzato, Rumiko. 2011. Nominalization in Okinawan: From a diachronic and comparative perspective. In Foong Ha Yap, Karen Grunow-Hårsta & Janick Wrona (eds.), *Nominalization in Asian languages: Diachronic and typologi-*

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- cal perspectives*, Vol. 1, 445–472. Amsterdam, Philadelphia: John Benjamins. DOI:10.1075/tsl.96.16shi
- Starosta, Stanley, Andrew K. Pawley & Lawrence Reid. 1982. The evolution of focus in Austronesian. In Amran Halim, Lois Carrington & Stephen Wurm (eds.), *Papers from the Third International Conference on Austronesian Linguistics*, Vol. 2: *Tracking the travellers*, 145–170. Canberra: Pacific Linguistics. DOI:10.15144/PL-C75.145
- Van Everbroeck, Ezra. 1999. Language type frequency and learnability: A connectionist appraisal. In Martin Hahn & Scott C. Stoness (eds.), *Proceedings of the 21st Annual Conference of the Cognitive Science Society, Vancouver, British Columbia, Canada*, 755–60. Mahwah, NJ: Erlbaum.
- Yap, Foong Ha, Karen Grunow-Hårsta & Janick Wrona (eds.). 2011. *Nominalization in Asian languages: Diachronic and typological perspectives*, Vol. 1. Amsterdam, Philadelphia: John Benjamins. DOI:10.1075/tsl.96

