

Ten unwarranted assumptions in syntactic argumentation

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1. Introduction

Much debate over grammatical theory, when it is not merely polemical, centers around two things: theoretical assumptions and relevant data. One can compare the theoretical assumptions of various formalist and functionalist theories of grammar, that is, what linguistic entities each theory assumes to exist, for example phrase structures, dependency relations, symbolic units, movement operations, taxonomic hierarchies linking grammatical structures, and so on. One can also compare what counts as relevant data for evaluating grammatical theories, such as grammaticality judgments, naturally occurring conversation, judgments in psycholinguistic experiments, frequency patterns, etc.

In contrast, methods of syntactic argumentation are much less often discussed in debates over grammatical theory. I have become convinced, however, that differences in methods of syntactic argumentation are at least as important, if not more important, than theoretical assumptions in distinguishing grammatical theories and in advancing our understanding of the nature of language. Radical Construction Grammar (Croft 2001, 2004a) emerged mostly from a critique of widely used methods of syntactic argumentation, rather than any a priori theoretical assumptions about the nature of syntactic structure. The theoretical assumptions of Radical Construction Grammar emerged from the abandonment of unwarranted assumptions in syntactic argumentation, and from the empirical data that forced that abandonment.

In this chapter, I describe and illustrate ten unwarranted assumptions that are commonly found in syntactic argumentation. Before delving into these methodological assumptions certain caveats must be issued. These are unwarranted assumptions, not necessarily fallacies. They are assumptions taken for granted, that is, they are often hidden premises in syntactic arguments. Even if they are made explicit, it is assumed that these principles of argumentation are automatically valid: the linguist can—indeed, must—invoke the principle wherever possible. The criticism here is that these methodological principles cannot simply be assumed; they must be defended, with empirical evidence demonstrating their applicability on a case by case basis. Nevertheless, some of the methodological principles are in fact likely to be fallacies, that is, invalid under any circumstances. I will discuss the status of each of them in §2.

Second, these unwarranted or hidden assumptions can be found in the arguments of syntacticians of a wide variety of theoretical persuasions. Some of them are characteristic of formalist syntactic argumentation, or more specifically Chomskyan argumentation. Several of the assumptions in this paper will be illustrated by examples from Adger (2003), a textbook on Minimalism. (I should hasten to add that I chose this textbook because I believe it is a very good introduction to recent Chomskyan theory, even if I disagree with the theoretical and methodological assumptions of that theory.) But others are found in the argumentation of nontransformational formalists, cognitive linguists, functionalists, typologists and “descriptive linguists” who do not follow any particular linguistic theory, or at least minimize reference to theory-specific categories and

structures. These more widely employed unwarranted assumptions often have their roots in American and/or European structuralism, or in traditional grammar.

Third, the rejection of these methods of syntactic argumentation does lead to the rejection of certain theoretical assumptions and the adoption of others. Based on lectures I have given where I have critiqued various of these unwarranted assumptions, I have found that some assumptions are fairly widely recognized and rejected (at least among non-Chomskyan linguists, or among functionalist linguists). Others are more controversial, probably in part because they would require the abandonment of widespread and deep-seated theoretical assumptions about the nature of grammar and syntactic representation that are shared by many linguists no matter what contemporary syntactic approach they follow. I will survey the methodological assumptions in an order that roughly represents the degree to which rejection of the methodological assumption would lead to the abandonment of relatively widely held or long held theoretical assumptions.

Finally, where does the “empirical evidence” come from that would actually warrant making these assumptions in particular cases? That empirical evidence comes from the most important and soundest methodology in syntactic analysis, the distributional method. The distributional method is simply a careful examination of the actual range of occurrence of words or phrases in all constructions. The distributional method was first explicitly described in American structuralism (Bloomfield 1933; Harris 1946, 1951). The distributional method as originally described does have to be modified. Distributional analysis must take into consideration the meaning/function as well as the morphosyntactic form of linguistic expressions. This point is fairly widely accepted in contemporary syntactic argumentation. Even formal syntacticians, who strictly separate formal and semantic properties of sentences in separate modules, employ differences in semantic interpretation in justifying syntactic analyses.

Distributional analysis should also take into consideration distribution patterns in actual language use, not simply acceptability or unacceptability in introspective judgement. This point is widely accepted in functionalist syntax, but much less so in formalist syntax, which is based largely on introspective judgements; nevertheless, formalist argumentation increasingly makes use of evidence from electronic corpora. Distributional analysis is, or should be, the link between language use and language structure: it begins with the product of language use, utterances produced in discourse, and ends with language structure, a representation of the grammar of the utterances. But there are many steps of argumentation from a corpus of utterances (or its artificial equivalent, a set of sentences with grammaticality judgments) to the structures that are said to be manifested in those utterances. This paper addresses what the steps from language use to language structure should, and should not, be.

2. The methodological assumptions

2.1. The Free Ride Principle

My formulation of the Free Ride Principle is given below:

FREE RIDE PRINCIPLE. If a theoretical construct has to be stipulated to solve an analytical problem in a construction in a language, it can be used wherever the categorization it provides appears to occur in other constructions in the language, or in another language. It can also be assumed to be universal.

The Free Ride Principle was first formulated and named in Zwicky (1970). He describes a slightly different sort of questionable methodological principle, but it rests on the same basic assumption as the principle formulated here, which reflects a more widespread contemporary use.

Zwicky's Free Ride Principle refers to the case of choosing between two analyses that are descriptively equivalent: choose the analysis that makes use of a theoretical construct that has already been employed elsewhere in the grammar. Zwicky gives the example of Lees' analysis of agent nominalizations such as *seller* (Lees 1960: 69–71, cited in Zwicky 1970:573). Lees chooses an analysis of the derivational morpheme *er* preceding the root *sell* over an analysis where *er* follows *sell*, because the former analysis makes use of the Affix Hopping transformation, proposed by Chomsky (1957) in his analysis of the auxiliary system of English. In this case, the proposed *er* analysis takes a free ride on the Affix Hopping transformation, in Zwicky's terms.

This example of the Free Ride Principle strikes me (and Zwicky) as particularly implausible. The invocation of the independent theoretical construct (Affix Hopping) seems completely gratuitous: one could generate *seller* just as easily with a postposed *er*. However, another less obviously unnatural employment of a similar methodological assumption is quite widespread, at least in generative syntactic analyses.

Consider for example the use of case checking in Minimalism. Minimalism, among other things, posits a syntactic category T, mnemonic for "Tense", which is employed to represent a finite tensed verb form in English. The empirical question is how does one analyze the obligatory nominative case form of subject pronouns in English:

- (1) *She has kissed her.*
- (2) **Her has kissed her.*

The Minimalist analysis is that (finite) T checks the case of the subject pronoun, in particular, it checks that case to be nominative (Adger 2003: 211–214). Thus, a theoretical construct, case checking by T, is employed to explain why the subject pronoun form is what it is in English.

Adger later turns to the problem of nonfinite complements. Here, the empirical question is how does one analyze the obligatory accusative case form of pronouns in nonfinite complements such as the one in (3)–(4) (Adger 2003: 308):

- (3) *Jason intended for him to learn magic.*
- (4) **Jason intended for he to learn magic.*

Adger analyzes this by invoking the already existing theoretical construct, nominative case checking by T, and proposing that the accusative case of *him* is checked by the complementizer *for*, i.e. by the category C of *for* (Adger 2003: 308). This is an example

of the Free Ride Principle: case checking is available, and can be used to solve an analytical problem.

Adger's analysis of (3) is not simply a generalization of case checking to cover case government in other constructions than finite clauses. This is because in Minimalism, *to* in (3) is a (nonfinite) T, and so case checking by T has to be blocked in nonfinite complements. Adger solves this problem by assuming that nonfinite T has no case feature, leaving C to check the case of *him* (Adger 2003: 308–309). Thus the free ride obtained by extending case checking from T to C is paid for by a stipulation of the absence of the case feature on a nonfinite T.

In this version of the Free Ride Principle, it is not a situation where there are two analyses, one of which invokes an independently established theoretical construct and one that does not. In this version, under the assumptions of the theory in question, the construction in question cannot be correctly analyzed without invoking some independently established theoretical construct to fix the analysis. The question is, how plausible is it that the theoretical construct in question should apply to the problematic construction? In the case of Lees' analysis of agent nominalizations, it seems quite implausible: what do participial and infinitival suffixes have to do with the agent nominal suffix? In the example of case checking, it is a bit more plausible: after all, in both cases, the case of a pronoun needs to be determined.

The Free Ride Principle appears to be a case of an unwarranted assumption. In some cases, invoking the "independently motivated" theoretical construct to solve a particular analytical problem seems plausible because our intuition is that the theoretical construct is doing the same kind of analytical work in the two situations. In other cases, it is not. My point is simply that when one invokes an "independently motivated" theoretical construct to solve an analytical problem, then one must explicitly justify why that theoretical construct and not any other should be invoked in that situation, and in what sense the theoretical construct is doing the same kind of work in the problematic analysis as it does in the construction where it was originally posited. Otherwise it appears to be simply a *deus ex machina* brought in to save an essentially wrong analysis.

2.2. Universal Extension of Language-Specific Analyses

This methodological assumption is given below:

UNIVERSAL EXTENSION OF LANGUAGE-SPECIFIC ANALYSES. An analysis that one has justified for a construction in one language applies to the counterpart constructions in all other languages, even for languages in which the relevant evidence is not available.

This methodological assumption is common in Minimalism, if Adger's frequent use of it is representative. For example, Adger poses the question of how to analyze constructions such as (5) (Adger 2003: 131):

(5) *Emily showed Benjamin himself in the mirror.*

Adger compares the construction in (5) to the French causative in (6) (Adger 2003: 132):

- (6) *Pascale fait manger Georges.*
'Pascale makes Georges eat.'

The French construction places the verb *manger* 'eat' before its subject *Georges* 'Georges'. Thus an analysis of predicate conflation (*faire* + *manger*) is plausible for French. This is of course a language-specific analysis for French. What Adger then does is extend the French analysis to the English sentence in (5): there is an underlying "causal" verb, of category (little) *v*, combining with a noncausal verb, e.g. *show* = *cause to see*. The English verb *show* is moved and conflated with the null causal verb, leading to *show* coming before the "subject" of *see*, namely Benjamin.

This is an instance of Universal Extension of Language-Specific Analyses. It is assumed that the syntactic analysis for one language, based on the empirical facts of that language, should be applied to a parallel construction in another language, or all other languages, even though the empirical facts are different. In this case, English does not have the complex predicate causative construction of French, illustrated in (6). It has either a monoclausal causative, as in (5), or the biclausal construction in (7) in which the noncausal verb follows its "subject", not precedes:

- (7) *Pascale makes Georges eat.*

In other words, English does not have the empirical constructions that French does, which justifies the analysis for French. Instead, it appears to be assumed that all languages have the same syntactic structure for a particular construction; but the analyst is free to choose the language with the data to support the syntactic structure s/he prefers. There are numerous other examples of Universal Extension of Language-Specific Analyses in Adger. The positing of a separate syntactic tense node T (and its accompanying projection) in English, even though tense is a morphological affix there, is justified by appealing to Mauritian Creole and Sranan, which have separate words indicating tense (Adger 2003: 165–166). The postverbal NP in English *There*-constructions is assigned nominative case, even though pronouns (the only NPs in English with distinct case forms) do not occur in that position, because the parallel construction in Icelandic has a nominative NP in postverbal position (Adger 2003: 214–215). The existence of two separate preverbal positions for the sentential subject construction in English, even though there are never two preverbal elements, is justified by the occurrence of the pronoun *dat* after the sentential subject in Dutch (Adger 2003: 298–99).

However, Universal Extension of Language-Specific Analyses is by itself an unwarranted assumption. It appears to be motivated by the theoretical assumption in Minimalism that all languages have basically the same syntactic structures. There is an alternative, of course: that languages differ in their syntactic structures for expressing the same state of affairs, e.g. a causative event. This is the simplest analysis for each language. Rejecting Universal Extension of Language-Specific Analyses, and instead allowing—even expecting—languages to differ in their syntactic structures, is the basis

for the typological approach. Typological variation in syntactic structures is generally the case for most nontransformational formal syntactic theories as well. Once one has identified the typological variation in syntactic structures for a particular construction (such as the causative), then universals about the syntax of the causative can be formulated. But such universals are usually in the form of implicational universals, not a uniform syntactic structure for all languages. Thus, I conclude that Universal Extension of Language-Specific Analyses is unjustifiable in almost all cases, and should be regarded as a methodological fallacy.

One might ask, why does this methodological fallacy appear attractive? The attraction is the idea that all languages have basically the same syntactic structure for parallel constructions. What makes the constructions in different languages parallel? Essentially, they have the same meaning (if we include the “information packaging” of a state of affairs as part of the meaning or function of a particular construction). For example, the reason that French causatives are compared to English causatives is because they are semantically equivalent. But that leads to an alternative hypothesis: that similarities in the behavior of parallel constructions in different languages, to the extent that they are similar, are due to semantic equivalence, not syntactic equivalence. In other words, we do not have to posit identical syntactic structures for causative constructions across languages in order to explain their similarities. And we don’t really want to, because the syntax of causatives is in fact not identical across languages.

Accepting that Universal Extension of Language-Specific Analyses is an unwarranted assumption entails that we accept crosslinguistic variation in grammatical structures. This is of course the foundation of the typological approach to language, and is accepted by many other linguistic theories.

The rejection of Universal Extension of Language-Specific Analyses does not entail the rejection of crosslinguistic comparison. Crosslinguistic comparison is of course the foundation of typological linguistic theory (and Radical Construction Grammar). One must be very careful in establishing a valid basis for crosslinguistic comparison (see Croft 2009). But that basis does not require or presuppose that all languages will have the same morphosyntactic structures for those constructions. More important, the typological approach demonstrates that there are universals of language that govern crosslinguistic grammatical variation, which cannot be captured if crosslinguistic variation is denied (for examples of universals of causative constructions, see for example Comrie 1989, chapter 8; Song 1996).

2.3. Global Extension of Construction-Specific Analyses

This methodological assumption is the single-language, constructional version of the previous assumption:

GLOBAL EXTENSION OF CONSTRUCTION-SPECIFIC ANALYSES. An analysis that one has justified for one construction automatically applies to other constructions in the language, even if the other constructions do not exhibit the relevant evidence.

I begin with a Minimalist example from Adger which has been adopted in many other approaches. Adger, like virtually all syntacticians, analyzes the complex sentence in (8) as introducing the complement clause with a complementizer (Adger 2003: 289):

(8) *I claimed that she was pregnant.*

The question, then, is how to analyze (9):

(9) *I claimed she was pregnant.*

Adger argues that the analysis of (8), where the subordinate clause is introduced by a complementizer, should be extended to (9). This analysis requires positing a null complementizer in (9). The null complementizer analysis of (9) is the result of the Global Extension of Construction-Specific Analyses. The term ‘global’ here is used to refer to the assertion of the crossconstructional validity of a particular syntactic analysis (in contrast to ‘universal’, which refers to the crosslinguistic validity of a particular syntactic analysis).

This analysis is not entirely implausible. Minimalism is not the first syntactic theory to have posited a null syntactic element in a construction, in comparison to another construction with an overt element performing the same function. But it is not a necessary analysis. It could be that (9) simply is a different construction, one in which complement clauses simply are not introduced by a complementizer. There are many languages in which complements lack a complementizer (in many of these, the verb form indicates the subordinate status of the clause). In this analysis, (8) and (9) are similar in function, but not in syntactic structure (in this respect).

In fact, as Adger notes later, unwarranted application of Global Extension of Construction-Specific Analyses leads to a problem in this case. If *she was pregnant* in (9) has a null complementizer, then does the main clause sentence *She was pregnant* also have a null complementizer? Adger notes that the Minimalist community is divided on this question (Adger 2003: 294). Such an analysis would not even be considered without unwarranted employment of this assumption.

A second example of the use of Global Extension of Construction-Specific Analyses is found in Kroeger’s textbook on Lexical-Functional Grammar. Kroeger analyzes topic constructions such as the following constructions in Chinese:

(10) *zhèi-ge zì wǒ bù rènshì*
this-CLF character I not recognize
‘This character [i.e., word] I don’t recognize.’ (Kroeger 2004: 148)

(11) *shǔiguǒ wǒ zuì xǐhuan xiāngjiāo*
fruit I most like banana
‘(Among all) fruits, I like banana best.’ (Kroeger 2004: 149, from Chen 2000: 401)

Kroeger argues that examples (10) and (11) actually represent two different topic constructions, syntactically at least. His reasoning is that one can form a relative clause in

Chinese parallel to example (10), as in (12) below; but one cannot form a relative clause in Chinese parallel to (11)—see (13) below (Kroeger 2004: 148–50):

(12) [wǒ bù rènshì de] zì
 I not recognize REL character
 ‘the character I don’t recognize’ (Kroeger 2004: 148)

(13) *[wǒ zuì xǐhuan xiāngjiāo de] shǔguǒ
 I most like banana REL fruit
 *‘the fruit that I like bananas best’ (Kroeger 2004: 149, from Chen 2000: 401)

Kroeger then provides a syntactic analysis of examples like (10) which is like that of relative clauses, where the initial topic NP bears a grammatical relation to the predicate. In contrast, in the syntactic analysis for (11), the topic NP bears no grammatical relation to the predicate, except a special TOPIC relation (Kroeger 2004: 150).

The extension of the syntactic analysis of relative clauses to a subset of topic constructions in Chinese, namely those that are like (10), is an example of Global Extension of Construction-Specific Analyses. It is an unwarranted assumption that must be defended; in this particular case, however, there is reason to believe that such an extension cannot be defended. The analysis breaks up two constructions that are structurally and functionally similar, namely the topic constructions in (10) and (11). An alternative analysis is simply that the constraints on the distributions of the topic construction and the relative clause construction are different. Chen (2000) argues against a common syntactic analysis for relative clauses and topic sentences: not only do some topic sentences lack parallel relative clauses, but some relative clauses lack parallel topic sentences. Example (14) lacks a parallel topic sentence, because the NP ‘two samples’ is indefinite (Chen 2000: 401):

(14) qǐng huànyàn yí-xià wǒ gāng cǎijí de liǎng-ge biāoběn
 please analyze a-bit I just collect REL two-CLF sample
 ‘Please analyze two samples I just collected.’

In other words, although the distributions of relative clauses and topic sentences in Chinese overlap, they are by no means the same, nor is one distribution pattern a subset of the other. Chen argues for a unitary analysis of Chinese topic sentences that is independent of the analysis of relative clauses in Chinese.

The final example of the Global Extension of Construction-Specific Analyses has to do with a syntactic analysis of certain noun phrase constructions, which makes unwarranted use of this assumption as well as two others to be described later (see §§2.7-2.8). The empirical problem is how to analyze noun modifiers.

In many languages, it has been argued that noun modifiers are not syntactically dependent on the verb, as they are analyzed for most European languages. Instead, they are analyzed as noun phrases in themselves, standing in apposition to another NP containing the “head noun” (as it would be described in the standard syntactic analysis of noun modifiers). For example, Foley argues that in a particular noun modifier construction in Yimas, in which all elements carry affixes indicating noun class and

number, “The latter construction is a scrambled paratactic construction, with the two nominals in apposition to each other” (Foley 1991: 182).

Among the pieces of evidence that Foley provides is that a putative modifying expression such as a possessive pronoun may occur discontinuously with its “head noun”, and that it may occur in a “headless” construction, that is, in the absence of any “head noun”:

(15) *patn* *wayk-k* *ama-na-kn* *wa-n*
 betelnut.CLV.SG buy-IRR 1SG-POSS-CLVSG go-PRES
 ‘Go buy my betelnut.’

(16) *ama-na-kn* *wayk-k* *wa-n*
 1SG-POSS-CLV.SG buy-IRR go-IMP
 ‘Go buy my (betelnut).’

The examples in (15) and (16) are examples of the Discontinuous NP construction and the Headless NP construction respectively. In both of these constructions, the modifier *amanakn* ‘mine [class V singular]’ is normally analyzed as an NP. In the Discontinuous NP construction, the “head noun” is separated from the modifier, and therefore cannot form a syntactic grouping with it. In the Headless NP construction, there is no “head noun”, and the modifier forms an NP by itself.

Foley, however, also applies the modifier-as-NP analysis to the putative modifier in the contiguous, “headed” NP construction in (17), in which both elements carry the class-number affix (Foley 1991: 180):

(17) *ama-na-kn* *patn*
 1SG-POSS-CLV.SG betelnut.CLV.SG
 ‘my betelnut’

As the quotation above indicates, Foley analyzes *amanakn* as an appositive NP in the construction in (17) as well as in the constructions in (15) and (16). It is this analysis that represents an example of Global Extension of Construction-Specific Analyses. The analysis of “modifiers” as NPs in the Discontinuous NP construction and the Headless NP construction is being extended to the regular (Contiguous) NP construction.

Although no evidence is explicitly provided in Yimas, there is good reason to believe that discontinuous and “headless” NP constructions are in fact different from contiguous NP constructions, in function if not also in structure. In those languages where discontinuous NPs have been examined in language use, the discontinuous NPs perform a different discourse or information-structure function than the elements in a contiguous NP construction (Croft 2007a: 27–28). The two parts in a discontinuous NP perform distinct discourse functions, whereas the modifier and head of a contiguous NP perform a single function. For example, in Polish, the initial part of a discontinuous NP is a contrastive focus, while the final part is a contrastive topic (Siewierska 1984). In Gooniyandi, the initial part is a theme, while the final part is an unmarked focus (if it is in the same intonation unit; McGregor 1997). In Wardaman, the initial part is thematic, while the final part is an information focus (Merlan 1994: 241–242). These facts indicate

that discontinuous NPs are different constructions than contiguous NPs, and hence the syntactic analysis for one should not be extended to the other. It is possible that Yimas discontinuous NPs have the same function as Yimas contiguous NPs, but this has not been demonstrated by Foley.

Headless NPs are also functionally different from regular headed NPs with contiguous modifiers. Headless NPs must always have a pragmatically highly accessible referent in the discourse context, usually one that was mentioned in the immediately preceding discourse. Regular headed NPs with contiguous modifiers, by contrast, have any degree of pragmatic accessibility, including an indefinite expression naming a new referent to the hearer in the discourse context. In other words, the headless NP construction is also distinct from the regular (contiguous) headed NP construction, and again, the syntactic analysis for one should not be extended to the other.

Global Extension of Construction-Specific Analyses is not a fallacy. I am not ruling out the possibility that the same analysis does apply to more than one construction, or to a family of constructions that share functional and formal properties. In a construction grammar model, for example, constructions may be related to each other as instances of a more general (schematic) construction. However, giving two constructions the same analysis has to be justified with empirical evidence. This includes evidence that the similarities are due to syntactic identity, not identity of function. For example, I suspect that positing null syntactic elements is a generally unwarranted employment of Global Extension of Construction-Specific Analyses, since the motivation for extending the analysis is actually similarity of function, not form—the form is not the same, because it is zero, not overt.

However, accepting that Global Extension of Construction-Specific Analyses is an unwarranted assumption entails that some, if not many, constructions in fact have unique or distinctive properties. The fact that the distributional patterns of different constructions are different strongly suggests that the best analysis of different constructions is as autonomous syntactic entities, each with its own constraints (in terms of structure and function). This sort of analysis is most easily represented in construction grammar.

Abandoning this unwarranted assumption and recognizing the existence of a range of autonomous constructions does question a deeply held assumption of many syntactic theories apart from construction grammar (or certain varieties of construction grammar). That assumption is that the constructions of a language can be described by a small set of grammatical categories and syntactic structures that is the representation language of the theory (and, in theory, of the language speaker; see §2.10). The intricate differences in morphosyntactic form, function and distribution among the constructions of a language suggest that this theoretical assumption is incorrect. But the unwarranted use of Global Extension of Construction-Specific Analyses allows an analyst to maintain this theoretical assumption in the face of evidence to the contrary.

2.4. Symmetry

This assumption and the following two are manifestations of a more general unwarranted assumption: that the “simplest” and “most elegant” analysis is the correct analysis of the facts (see for example Aarts 2007: 432). The general objection to this family of assumptions is that language is a social and psychological phenomenon, and in

particular syntactic analyses are assumed to have some sort of psychological reality. Yet there is no psychological (or evolutionary biological) imperative that syntactic representations are “simple” or “elegant”.

Also, there are different ways in which syntactic representations can be “simple”. Which is simpler, a construction grammar or generative grammar? It depends on what yardstick is used. There is no precise definition of “simple” or “elegant”. I have grouped together several methodological assumptions that I believe are driven by “simplicity” and “elegance” under three broad headings: symmetry, nonredundancy in representation, and generality.

Symmetry, the topic of this section, is formulated as follows:

SYMMETRY. One should construct an analysis that possesses symmetry in the underlying linguistic system, or symmetry in crosslinguistic patterns, even if the data are asymmetric.

Symmetry is probably a descendant of the theoretical assumptions of structuralism. In structuralism, elements of a system are defined by their contrast with other elements in the system. Thus, there must be contrasting elements for each element within a system. Contrasts in multiple dimensions lead to a symmetric set of contrasting elements. An example of a symmetric system would be a phoneme segment inventory in which all consonant phonemes contrast with all other phonemes in voicing, place and manner of articulation.

A frequently cited example of a proposed symmetric system in syntax are the major category features of generative grammar. The three traditional major syntactic categories of Noun, Verb and Adjective are defined in terms of two binary features, N and V, such that Noun is [+N,-V], Verb is [-N,+V] and Adjective is [+N,+V]. This is an asymmetric system, in that there is no major syntactic category that is [-N,-V]. Generative grammar posits that Preposition is the “missing” category in this symmetric system (e.g., Adger 2003: 36). This is an example of assuming Symmetry.

In this case, however, it is not obvious that the system of major syntactic categories is symmetric. In particular, Preposition (or Postposition), the category that fills out the symmetric system of two binary features, is quite different from the other three categories. It is basically an intermediate stage in grammaticalization from a source structure—relational noun, serial verb, and/or directional adverb—to a target structure—a case affix. Grammatically, Prepositions or Postpositions in a single language are often quite diverse in their morphosyntactic behavior, reflecting the diversity of their diachronic sources and their being at different stages in the grammaticalization process. Functionally, Prepositions relate arguments (referring expressions) to predicates or to other referring expressions. In all of these respects, Prepositions or Postpositions differ from the major syntactic categories of Noun, Verb and Adjective.

It is also clear that Adjectives are not of the same status as Nouns and Verbs. To the extent that one can describe major syntactic categories as language-specific word classes (a position that I reject, see Croft 2001, 2005, 2007b, 2009), it is clear that the grammatical behavior of Adjectives is often similar or identical to that of Nouns or Verbs—or of both; as with Prepositions, Adjectives are frequently not a morphosyntactically uniform word class. Functionally, Adjectives differ from Nouns and

Verbs in that the latter head up phrases that perform the major propositional acts of reference and predication respectively, while Adjectives perform the secondary function of modifying referring expressions.

Thus, there are significant asymmetries among Noun, Verb, Adjective and Preposition that are ignored or suppressed by placing them in a symmetric system based on the features $\pm N$, $\pm V$. This is not to mention the many other word classes that exist (at least in traditional and formal syntactic analyses), to which the N and V features are not applied.

Using symmetry to justify a syntactic analysis is an unwarranted assumption, not a fallacy. It is indeed possible that the best analysis of the empirical data happens to result from positing a symmetric system. Invoking symmetry in itself as the reason to choose one analysis over another one, however, is unwarranted. In other words, language systems can be, and in fact often are, asymmetrical, even at a “deep” level of analysis.

2.5. Nonredundancy in representation

This assumption is formulated broadly in order to cover several different assumptions, which all have in common the minimization of redundancy in representation (see also Croft 1998, in which this is called the redundancy fallacy):

NONREDUNDANCY IN REPRESENTATION. An analysis that minimizes redundancy in representation of syntactic units, syntagmatically or paradigmatically, must be chosen over an analysis which does not, even if the latter analysis is computationally more parsimonious.

The paradigmatic type of nonredundancy is what I have previously referred to as storage parsimony (Croft 2003: 61): minimize the number of different units to be represented. The Minimalist Program of generative grammar is the most extreme example of storage parsimony in the recent history of linguistic theory. All that is permitted is a relatively small number of categories and features, which are combined in syntactic trees with only binary branches, specifically branches functioning only as Specifiers or Complements (at least in underlying form prior to movement operations), and a strictly ordered set of projections (the Hierarchy of Projections; see §2.6).

However, the operations which combine these elements in the correct way (according to the principles of the Minimalist Program) are quite complex. Consider Adger’s description of the generation of the clause structure for the French sentence in (18) (Adger does not analyze the noun phrase structures here, or the declarative mood of the sentence):

- (18) *Jean n’aime pas Marie.*
‘John doesn’t love Mary.’

Step 1. Merge *aime*, ‘love’, with the object *Marie*.

Step 2. Merge the result with little $v[uInfl : , uV^*]$, raise *aime* to adjoin to v (satisfying the uV^* feature on v), and then Merge in the subject *Jean*.

Step 3. Merge the negation *pas* with the output of Step 2.

Step 4. Merge T[pres] with the output of Step 3. The tense feature on T matches the inflectional feature on *v*, and the inflectional feature on *v* which is valued as a tense feature is strong, so the whole little *v* complex raises to T...

Step 5. Still at the same node, the subject moves into the specifier of TP.

(Adger 2003: 182–183; note that the existence and position of the preverbal negative marker *n'* is not accounted for in this description)

In contrast, construction grammar, in any of its versions, is not parsimonious in storage. In construction grammar, a very large number of distinct constructions of varying degrees of specificity are stored in the representation of the grammar of the language. However, the process of generating a sentence such as (18) is quite simple: unify the negative construction [*ne* VERB *pas*], the argument structure construction [SBJ, *aimer*, OBJ], and the inflectional/agreement construction [SBJ, VERB-TNS.AGR_{SBJ}] (as with Adger's analysis, we exclude the generation of the noun phrases and the declarative mood of the sentence).

The construction grammar model exhibits computing parsimony instead of storage parsimony: all that is necessary computationally is the retrieval of three constructions and their unification. In fact, *n'aime pas* is probably of high enough token frequency to justify positing it as a single construction [SBJ *n'aime pas* OBJ], in which case there is simply retrieval of [SBJ *n'aime pas* OBJ]—a maximally parsimonious computation.

These two approaches represent analytical extremes. My point here is simply that the analytical extreme represented by Minimalism is an unwarranted assumption, as would be an extreme version of construction grammar in which every utterance ever produced is stored and retrieved for reuse. Clearly, some utterances are computed, because they are novel. Equally clearly, many utterances, or large chunks of structure in those utterances, are simply retrieved, chiefly because they occur frequently enough to be stored autonomously (Bybee 1985 *inter alia*). The point is that an analysis that posits computation of a syntactic structure instead of simple storage and retrieval, or vice versa, must be justified empirically, via psycholinguistic evidence or other relevant evidence (see Croft 1998 for some sources of such evidence).

One subtype of the nonredundancy assumption is what Langacker calls the rule/list fallacy (Langacker 1987: 42). This is the assumption that a linguistic unit must be stored or must be computed, but not both: the option that a linguistic unit may be both stored and computed is excluded a priori. Langacker argues forcefully against the exclusion of the latter option. For example, if there is reason to posit a unitary construction [SBJ *n'aime pas* OBJ], on the basis of its high token frequency, phonetic reduction (compare Bybee and Scheibman 1999), or other evidence, this does not exclude the existence of the more general constructions [*ne* VERB *pas*] and [SBJ, *aimer*, OBJ], and the possibility that a speaker might compute example (10) from these latter constructions as well as retrieving [SBJ *n'aime pas* OBJ] directly.

Lastly, there is a syntagmatic variant of the nonredundancy assumption, which I believe originates in structuralist analyses. In the syntagmatic variant, an analysis in which certain syntactic or semantic properties of a construction are represented only once, in one element of the construction or its underlying form, is preferred over an analysis in which that feature is represented redundantly in more than one place in the syntactic structure of the construction. This unwarranted assumption is described as

redundancy in expression in Croft (2001: 119–24). I will illustrate this assumption with a summary of an example described therein.

A large number of languages use classifiers when numerals modify nouns. An example of one such language is Yucatec Maya (Lucy 1992: 52):

(19) *'un- túul máak*
one- CLF.ANIM man
'one man'

(20) *'um- p'éeh nàah*
one- CLF.GENL house
'one house'

Lucy argues that the Yucatec construction is essentially the same as an English mass noun construction: one cannot say **two zincs* or **two cottons* in English, just as one cannot combine the numeral directly with the noun in Yucatec. Lucy then argues that the similarity of the Yucatec construction to the English construction indicates that nouns such as *máak* and *nàah* are actually mass nouns like the English nouns: the English example “suggests, by analogy, that all the lexical nouns of Yucatec are unspecified as to unit since they all require supplementary marking (i.e. numeral classifiers in the context of numeral modification)” (Lucy 1992: 73).

Lucy’s argument actually uses three of the unwarranted assumptions described in this paper. Lucy extends the standard semantic analysis of English mass nouns to Yucatec nouns such as ‘man’ and ‘house’, by ‘analogy’ as he writes. This is an example of the Universal Extension of Language-Specific Analyses: extension of the analysis of an English construction to a Yucatec construction. It is also, arguably, an example of the Global Extension of Construction-Specific Analyses, since it extends an analysis of the English construction for ‘zinc’ and ‘cotton’ to the Yucatec construction for ‘man’ and ‘house’, not the Yucatec construction for ‘zinc’ and ‘cotton’. Finally, Lucy’s argument assumes Nonredundancy in Representation in that it supports the analysis of ‘man’ and ‘house’ as lacking unit semantics by invoking the obligatory presence of the numeral classifier which possesses unit semantics (analogous with English *two ounces of zinc* or *two bales of cotton*).

However, there is no a priori reason to assume that all representations of syntactic and/or semantic structure are syntagmatically nonredundant. In fact, there are good reasons to think that numeral classifier constructions do have redundant representation of unit status (for a more detailed argument, see Croft 2001: 120–123). The mass noun construction, even in numeral classifier languages, is different in a number of respects (i.e. Global Extension of Construction-Specific Analyses is unwarranted; Greenberg 1977). Mass nouns do not have unique classifiers for units, a variety of partitive and measure classifiers being used (*two bales of cotton*, *two pounds of cotton*, *two balls of cotton*, etc.). Sortal classifiers, unlike measure classifiers, describe the inherent state of the object (Berlin 1968: 175), form a closed class (De León 1987: 84, cited in Aikhenvald 2000: 116), and are often optional without changing the meaning of the construction (Aikhenvald 2000: 117).

Finally, consistent application of syntagmatic Nonredundancy in Representation would lead to nonsensical results in many cases. In *three books*, the obligatory number suffix encodes plurality and nothing else; a nonredundant analysis of *three books* would then have to conclude that plurality is not part of the meaning of *three*. Similarly, in *Yesterday I biked to work*, the obligatory past tense suffix encodes past time reference and nothing else. A nonredundant analysis of the sentence would then imply that past time reference is not part of the meaning of *yesterday* (Croft 2001: 122).

Syntagmatic Nonredundancy in Representation is an unwarranted assumption, not a fallacy. There probably are cases in which there is empirical evidence for nonredundancy of the representation of some piece of syntactic or semantic information in a grammatical construction. However, nonredundancy is not in itself a sufficient reason to endorse a particular analysis.

Not invoking this unwarranted assumption implies that some, probably many, syntactic structures are redundantly represented (absence of storage parsimony), and that some grammatical information is redundantly represented in morphosyntactic structures.

2.6. Generality

The last of the “simplicity”/“elegance” assumptions is Generality:

GENERALITY. An analysis that is more general, that is, is formulated to cover a larger number of cases, must be chosen over an analysis that covers a smaller number of cases.

This formulation is itself, ironically, quite general. Generality is the driving factor behind several of the assumptions described here, including Universal Extension of Language-Specific Analyses (§2.2), Global Extension of Construction-Specific Analyses (§2.3), Strong Form-Function Isomorphism (§2.8), and both Crosslinguistic and Language-Internal Methodological Opportunism (§§2.9-2.10). The Generality assumption is the main topic of Croft (1998), where it is called the generality fallacy (this is too strong a characterization). Scientists are trained to find the most general patterns possible in the data. But in the case of syntactic representation, the question is how general a pattern does a speaker of the language “find”? This may not necessarily be the most general pattern that a trained linguist can find. The generality of the pattern that is identified by a speaker is a function of several variables, including the type frequency of the pattern and the degree of similarity of the instances (Bybee 1995).

In many cases, however, highly general grammatical analyses run into a more prosaic problem: the data do not warrant the generalization. There are exceptions and idiosyncrasies that require the linguist to posit a more specific pattern as part of the representation of the grammatical construction.

An example of the assumption of Generality, and some of its problems, is the analysis of clauses and phrases in Minimalism. Clauses have been analyzed as possessing a Hierarchy of Projections: a functional projection, TP in Adger (2003, chapter 5), then little *v*P, then big VP (Adger 2003: 165). Certain constraints on linking, so that agents are linked to subject but not to object, are constrained by the Uniformity of θ -Assignment Hypothesis (UTAH; Adger 2003: 138). Minimalism then generalizes this analysis to

determiner phrases, or what are traditionally called noun phrases. The Hierarchy of Projections for phrases is: a functional projection, DP; then little *nP*, then big NP (Adger 2003: 267). This analysis of phrasal syntax is an example of Generality, which is very highly valued in generative grammar: assume the most general analysis possible. (This analysis is also motivated by the Symmetry assumption: the same types and hierarchy of projections are found in phrases as in clauses.)

There are empirical problems with Generality in this case, however. Adger argues that UTAH applies also to phrases and accounts for why agents can appear as prenominal genitives in action nominal phrases but not as postnominal *of*-phrases:

- (21) a. *the government's imposition of a fine*
b. **the imposition of the government of a fine*

However, agents in clauses are moved to preverbal position by a special EPP feature, while phrases lack evidence for such a feature. So an optional strong [gen] feature is posited on DP, which triggers the movement of the agent to preverbal position (Adger 2003: 270). (Also, agents in clauses are assigned the case feature [nom] while agents in phrases are assigned the case feature [gen], another non-generalization not highlighted or explained by Adger.) Finally, many phrases have nouns that do not have argument structures, and yet they may have possessors (e.g. *Jenny's cat*, *my penknife*; Adger 2003: 274). This anomalous difference between clauses and phrases does not have a consensus analysis in Minimalism (Adger 2003: 274).

The Generality assumption is unwarranted without a thorough empirical investigation. An alternative to the highly general Minimalist analysis of phrases and clauses is that they are simply different constructions, albeit with some similarities in structure as well as many differences. Again, a less general analysis of this type is more compatible with a construction grammar approach. Construction grammar proposes that there are grammatical patterns that are regular but not predictable from more general syntactic patterns (such as general phrase structure rules) that have traditionally been posited in generative grammar and other formal syntactic theories.

The generality assumption is not itself a fallacy, however. Speakers do form general categories and schemas under certain circumstances. Even when a general analysis is justified in terms of formal (or functional) linguistic grounds, however, it must also be justified on psycholinguistic grounds: do speakers actually form the generalizations that linguists have been able to come up with (see Croft 1998)?

2.7. Weak Form-Function Isomorphism

The next two unwarranted assumptions, Weak and Strong Form-Function Isomorphism, represent a continuation of theoretical assumptions of structuralism. As noted in the discussion of Symmetry (§2.4), in the structuralist approach linguistic elements are defined solely by their contrast with other elements in the system. The most important properties in the structuralist model are therefore identity and difference (contrast). This theoretical assumption motivates two unwarranted methodological assumptions about the relationship between form and function, the latter construed broadly. The first, Weak Form-Function Isomorphism, has to do with contrast:

WEAK FORM-FUNCTION ISOMORPHISM. Differences in form always entail differences in “underlying” structure or function.

The analysis of noun modifiers as appositive NPs discussed in §2.3 also provides an example of Weak Form-Function Isomorphism in some cases including Yimas. In §2.3, it was mentioned that one NP construction in Yimas, one in which both modifier and head possess class-number affixes as in (17), repeated below, was analyzed by Foley as an appositive NP construction.

- (17) *ama-na-kn* *patn*
1SG-POSS-CLV.SG betelnut.CLV.SG
‘my betelnut’

Yimas also has another NP construction, in which the modifier lacks the class-number affixes (Foley 1991: 180):

- (22) *ama-na* *patn*
1SG-POSS betelnut.CLV.SG
‘my betelnut’

Foley argues that this construction, unlike the NP construction in (17), is a modifier-head, single NP construction. Thus, the distinction in form between (17) and (22), namely the presence vs. absence of the class-number affixes on the modifier, entails a difference in the syntactic structure of the constructions, namely appositive NPs vs. single NP. This is an example of the application of Weak Form-Function Isomorphism.

In effect, a formal morphosyntactic distinction is taken to demand an underlying structural or functional distinction (in this case, just an underlying structural distinction). Since there is a difference as to whether the modifier takes the inflectional affixes or not, there must be a difference in their syntactic structure. Conversely, it is supposed that the underlying distinction “explains” the difference in formal morphosyntactic structure of the two constructions.

It is not obvious how the underlying distinction “explains” the difference in formal morphosyntactic structure (presence vs. absence of the class-number affixes on modifiers). A problem with this assumption is that the number of formal morphosyntactic distinctions can be quite large, and positing underlying structural (or functional) distinctions to match the formal morphosyntactic variation begins to look less plausible.

For example, Miraña appears to be similar to Yimas, and Seifart (2005) analyzes it in the same way. There is one construction with only class/number marking on the modifier, used for genitive modifiers, which Seifart analyzes as a single modifier-head NP (Seifart 2005: 147; example from Seifart 2005: 144):

- (23) *táhkórá-bá* *táhuuta*
trap-CL3DIM bait
‘the bait of the *tahkoraba* trap’

There is a second construction, which includes case marking on the modifier as well as the head, which is used for other modifiers (Seifart 2005: 153):

- (24) *ó uhkuí-ʔi ma:kini-mu-βá-ke kuʔri-mu-ke*
 1SG take-PRED three-ANIM.PL-PL-ACC pintadillo-ANIM.PL-ACC
 ‘I caught three *pintadillo* (fish, sp).’

Seifart analyzes this construction as apposition, just as Foley analyzes the comparable Yimas construction, in contrast to the construction in which the modifier lacks some or all of the inflectional affixes. This underlying structural contrast is intended to “explain” the morphosyntactic difference in occurrence of affixes between the two constructions in each language. But in Miraña, not all non-genitive modifiers behave alike. Numeral modifiers may be discontinuous with the putative head noun, but they always precede it; while other modifiers such as relative clauses may be discontinuous and may precede or follow the putative head noun (Seifart 2005: 154). Hence positing a distinction between the genitive and other modifier constructions in terms of underlying structure cannot “explain” the variation in the behavior of the other modifier constructions.

In fact, the discontinuous NP constructions of Miraña are probably better analyzed as autonomous constructions in their own right, for the reasons given in §2.3. The contiguous constructions, varying as to whether certain inflectional affixes are found with the modifiers or not, may or may not be best analyzed as separate constructions. They could be grouped together as a single construction with optional marking of the inflectional affix on the modifier. On the other hand, they may be distinct. McGregor (1989), for example, argues that NPs with contiguous modifiers with inflectional affixes (what he calls fractured NPs) in Gooniyandi are discourse-functionally distinct from contiguous modifiers without those affixes (in fact, fractured NPs have at least three distinct discourse functions in Gooniyandi).

There is insufficient data given in Foley (1991) or Seifart (2005) to decide which is the better analysis of contiguous modifiers with inflectional affixes: variants of a simple NP construction, or a distinct fractured NP construction. In neither case, however, is it required to posit distinct underlying syntactic structures. The constructional difference in the distribution of inflectional affixes across the head noun and its modifiers suffices to differentiate the construction, along with any discourse-functional difference. There is no reason to think that there is more than meets the eye, except a long history of a theoretical metaphor that “deep” differences exist and are more significant than “shallow” differences. This metaphor is based on theoretical assumptions that are not necessitated by the facts of languages.

2.8 Strong Form-Function Isomorphism

Strong Form-Function Isomorphism is the converse of Weak Form-Function Isomorphism:

STRONG FORM-FUNCTION ISOMORPHISM. Identity of form always entails identity of “underlying” structure or function.

Strong Form-Function Isomorphism is a special case of Generality: a general analysis is required to cover all forms that are identical. Strong Form-Function Isomorphism is frequently invoked to offer identical syntactic analyses of lexically or morphologically identical forms.

Strong Form-Function Isomorphism can be illustrated again with the analysis of noun modifiers in languages such as Yimas and Miraña (see §§2.3, 2.7). The motivation for extending the analysis of discontinuous NPs and headless NPs to contiguous NPs is the identity in morphological form of the modifier: the modifier takes the same inflectional affixes in the contiguous NP construction as it does in the discontinuous and headless constructions (in Yimas and Miraña, as discussed in §2.7, there is another contiguous NP construction in which the modifiers lack some or all of the inflectional affixes). The assumption, then, is that the contiguous NP construction with the inflectional affixes must have the same syntactic analysis as the identical modifier forms in the discontinuous and headless constructions. Since the latter constructions must be analyzed as NPs in their own right, then the contiguous NP construction must also be analyzed as containing modifiers as NPs in their own right, and in apposition to the putative head noun.

This is an example of reasoning based on Strong Form-Function Isomorphism. But the assumption is unwarranted; there must be independent evidence provided to demonstrate that the constructions are identical to the point that identical syntactic analyses must be given for them. We have already argued in §2.3. that there are reasons not to extend the analysis of a Discontinuous NP construction or a Headless NP construction to a Contiguous NP construction, even if the form of the modifiers is identical in all cases. The effect of extending the analysis also makes the contiguous NP construction identical in syntactic analysis to a “true” appositive construction such as *my brother, the poet*. A true appositive construction, unlike the Discontinuous and Headless NP constructions, consists of two contiguous coreferring NPs. (It should be pointed out that there is a range of so-called appositive constructions, in English at least; see Matthews 1981: 224–225.)

But there are significant differences between the paradigm case of a true appositive construction and an alleged appositive modifier construction (Croft 2007a: 28–29). True apposition involves two coreferring object words, as in *my brother, the poet*. “Appositive” modifiers always involve an object word and another kind of word—property word, deictic word, numeral word, etc.—that is analyzed as “coreferential” with the object word: ‘red book’ contains a property-word headed NP ‘red’ [one] that corefers with the object word ‘book’. True apposition may have independent grammatical specifications, as in French *mon plat préféré, une truite meunière* ‘My favorite dish [MASC], pan-fried trout [FEM]’. “Appositive” modifiers always share their grammatical specifications with the nominal NP. That is, in traditional parlance, they agree. Also, true appositive NPs almost always occur in separate intonation units; “appositive” modifiers overwhelmingly occur in the same intonation unit. In a study of intonation units and grammatical structure in Wardaman, an Australian aboriginal language, the distribution of the constructions across intonation units is almost complementary (see Table 1).

Table 1. Putative modifiers and true appositive phrases in Wardaman (Croft 2007a: 29, Table 21)

	Whole	Pct	Broken	Pct	Total
True appositive NPs	18	12.9%	121	87.1%	139
“Modifiers”	352	89.1%	43	10.9%	395
Total	370	69.3%	164	30.7%	534

Chi-square = 276.72, $p < .001$

The appositive modifier analysis demonstrates the interlocking employment of two unwarranted assumptions, Strong Form-Function Isomorphism and Global Extension of Construction-Specific Analyses. The identity of form of modifier expressions in Discontinuous and Headless NP constructions on the one hand and contiguous modifiers on the other motivates the Global Extension of Construction-Specific Analyses based on Strong Form-Function Isomorphism (identity of form). The result is a syntactic analysis of apposition, which in turn involves the extension of the appositive NP construction analysis to modifier+noun constructions. The latter is again an example of Global Extension of Construction-Specific Analyses. Both extensions of analyses, from Discontinuous and Headless NPs to contiguous modifier+noun constructions and from appositive NPs to modifier+noun constructions, are unwarranted.

Rejecting the Strong Form-Function Isomorphism assumption again points to a more constructional model of grammar. The forms of individual linguistic expressions may be the same, but they occur in different constructions which have distinct functions. If one looks at the constructions as a whole—Discontinuous NP, Headless NP, Contiguous Modifier-Noun NP, and Appositive NP—each construction is distinct both in morphosyntactic form, in distribution and in function, even if an element in one of those constructions is similar or identical to an element in another construction. There are certainly good diachronic reasons for the similarity of certain elements. But these historical explanations are not necessarily a part of synchronic representation. What matters is the distinctive combination or gestalt of morphosyntactic, semantic and discourse-functional properties that make up each construction, and individual speaker’s inductions of relations, if any, between the constructions.

2.9. Crosslinguistic Methodological Opportunism

The last two unwarranted assumptions, Crosslinguistic Methodological Opportunism and Language-Internal Methodological Opportunism, are probably the most deeply entrenched in syntactic argumentation, and therefore the most difficult to expose and abandon. I believe this is true for two reasons. First, both types of methodological opportunism are considered to be part of the distributional method, which is central to all syntactic argumentation (see §1). But it turns out that methodological opportunism is not a necessary part of the distributional method. Second, both types of methodological opportunism allow the analyst to maintain two extremely deep-seated theoretical assumptions: that all languages draw from the same set of grammatical categories and structures, and that the different constructions of a particular language are built from a single, construction-independent set of grammatical categories and structures. But these deep-seated theoretical assumptions are not necessary, and in fact are empirically untenable, as I have argued at length (Croft 2001, 2004a,b, 2005, 2007b, 2009). The only

way these theoretical assumptions can be protected from empirical reality is by employing the unwarranted methodological assumptions of Crosslinguistic and Language-Internal Methodological Opportunism.

Crosslinguistic Methodological Opportunism is described below:

CROSSLINGUISTIC METHODOLOGICAL OPPORTUNISM. In each language, one may select any constructional test(s) to justify the positing of a universal (crosslinguistically valid) category, such as Noun/Verb, or not, in that language, thereby supporting the universality, or nonuniversality, of the category.

Crosslinguistic Methodological Opportunism is the unwarranted methodological assumption that allows one to maintain the theoretical assumption that all languages draw from a single set of grammatical categories.

An example of Crosslinguistic Methodological Opportunism can be found in my critique of Aarts' analysis of adjectives in English and German, and his reply to my critique (Aarts 2004, Croft 2007b, Aarts 2007). Aarts' 2004 article is chiefly devoted to English (one of his English examples will be discussed in §2.10). He does give one crosslinguistic example, examining German adjectives. Aarts states that the German form *sprechend+er/en* in (25) and (26) 'has clear adjectival properties' (Aarts 2004: 34):

- (25) *ein mehrere Sprachen sprechender Mann*
 a.NOM several languages speaking:MASC.NOM.SG man. MASC.SG
- (26) *einen mehrere Sprachen sprechenden Mann*
 a.ACC several languages speaking: MASC.ACC.SG man. MASC.SG

Aarts argues that *sprechend+er/en* is 'clearly' adjectival because it occurs in prenominal position and agrees with the following noun in case and number. This is an example of distributional analysis: distributional analysis involves careful analysis of the occurrence of words or syntactic units in larger syntactic units, that is, constructions (see §1).

The problem with Aarts' analysis is that Aarts uses distributional analysis selectively across languages. That is, Aarts selects the Agreement construction to define Adjectives in German but not in English. If one were consistent in applying the same constructions to define the same categories across languages, and then asks, which English words fit the criteria for Adjectives in German, the closest match is not a word like *thin*, but *this* and *that*: *this* and *that*, but not *thin*, agree in number (though not case) with the following noun (Croft 2007b: 417):

- (27) ***this*** *box/these* *boxes*
 (28) ***that*** *chair/those* *chairs*

These distributional facts across the two languages give us two options for analysis. Aarts takes the view that there is an English Adjective class, which includes *thin* but not *this* or *that*. This class is the same class that is illustrated in the German examples in (25)–(26). That is, Aarts uses one distributional criterion in one language (number-case

agreement in German), another distribution criterion in another (prenominal position *inter alia* in English, but not number agreement)—and then says the resulting categories are crosslinguistically the same, namely adjectives. This is an example of Crosslinguistic Methodological Opportunism: using different constructions in different languages to establish categories that are then claimed to be the same crosslinguistically.

Alternatively, one can be consistent in using the same construction across languages, and say that English has only two Adjectives, *this* and *that*. If we take this option, we still have no basis for saying why agreement with the following noun is the criterion for Adjective class membership, rather than some other criterion. In other words, this approach also relies on Crosslinguistic Methodological Opportunism: although we are consistent in the construction we use across languages, we are still claiming that the same crosslinguistic category is being described here. In this case, it seems implausible that the categories are crosslinguistically the same, since the two language-specific categories have such different class membership. As we will see below, however, this second alternative is sometimes also taken. My main point here, though, is that either analysis is unwarranted.

In Aarts' reply to my critique of this example (Aarts 2007: 435), he argues that there are other constructions that differentiate *this* and *that* (Aarts' "determinatives") from "true" adjectives in English, and differentiate their German translation equivalents from "true" adjectives in German. This argument only supports the differentiation of English *this* and *that* from English "true" adjectives. It does not support the argument that English words like *thin* are to be assigned to the same word class as their German translation equivalents, despite their differences in grammatical behavior. Aarts writes only that 'a separate mechanism will then be required to account for the fact that *this* and *that* agree with the head that follows' (Aarts 2007: 435).

Aarts addresses the question of why we should give the English and German categories the same, putatively crosslinguistically valid, grammatical category Adjective in a footnote:

As for the perceived problem that the English and German adjective classes are not the same, if the aim is to arrive at a universally valid definition for adjectives, as Croft suggests, then the same aim might be expected to apply to constructions as syntactic primitives, in Croft's sense [see Croft 2001, chapter 1]. But given the idiosyncrasies of constructions crosslinguistically, this is unlikely to be achieved. (Aarts 2007: 441, fn. 2)

Aarts is correct about the idiosyncrasies of constructions crosslinguistically—a point that has come up in earlier sections of this paper (see also part III of Croft 2001). But this only reinforces the point that calling both the English class and the German class "Adjective" is an unwarranted assumption, namely Crosslinguistic Methodological Opportunism.

Crosslinguistic Methodological Opportunism means that an analyst may choose whichever constructions s/he wants in order to justify the existence or nonexistence of a supposedly crosslinguistically valid grammatical category or structure in a language. The result of this unwarranted assumption is that disagreements about whether certain crosslinguistic categories exist in a language or not can never be resolved by

argumentation that allows this assumption. I illustrate this point with an example of argumentation regarding the noun-verb distinction in Straits Salish (Croft 2001: 31–32).

There has been an ongoing debate about whether native American languages of the Pacific Northwest have a Noun-Verb distinction or not. Linguists on both sides of the debate appear to be employing distributional analysis to support their positions. How do two analysts come to opposing conclusions in applying the same method to the same languages?

For example, Jelinek and Demers argue that Straits Salish does not distinguish nouns, verbs and adjectives, because all can appear in the Predication construction as in (29a–c), with the enclitics =*lə=sx* ‘=PST=2SG.NOM’), and in the Determination construction as in (30a–c), with the Article *cə* (Jelinek and Demers 1994: 698–699):

- (29) a. *t'iləm=lə=sx* ‘you sang’
 b. *si'em=lə=sx* ‘you were a chief’
 c. *sey'si'=lə=sx* ‘you were afraid’
- (30) a. *cə t'iləm=lə* ‘the (one who) sang’
 b. *cə si'em=lə* ‘the (one who) was a chief’
 c. *cə sey'si'=lə* ‘the (one who) was afraid’

But van Eijk and Hess (1986) observe the same distributional facts for the closely related languages Lillooet and Lushootseed, and yet conclude that Lillooet and Lushootseed do distinguish Noun and Verb. Their argument is based on the distribution pattern of Possessive affixes and Aspectual inflection, which divide Lillooet and Lushootseed roots into Noun and Verb categories in their analysis (van Eijk and Hess 1986: 321–322).

Jelinek and Demers note that in Straits Salish also, only a subset of roots may take possessive affixes (Jelinek and Demers 1994: 699). But they point out that “Nouns” may occur in the predication construction, as in (29b), and then argue that the fact that “Nouns” with possessive affixes may occur in the predication and determination constructions is the deciding case: “they have the same syntax as any other predicate” (Jelinek and Demers 1994: 700).

This is a common pattern in syntactic debate. The distributional facts show that there are some similarities and some differences between two grammatical phenomena, in this case, the occurrence of different semantic classes of words in various constructions in Salishan languages. One set of analysts (here, Jelinek and Demers) takes a “lumping” approach, arguing that certain distributional differences are superficial compared to the underlying grammatical unity. That is, they select certain constructions as criterial for establishing a grammatical category or distinction. In this case, Jelinek & Demers select the Predication and Determination constructions as criterial, and ignore the different distribution pattern of the Possessive affixes.

This is Crosslinguistic Methodological Opportunism. What makes this Crosslinguistic Methodological Opportunism is that Jelinek and Demers are using distributional argumentation to identify the presence or absence of a putative crosslinguistically valid category or categories, in this case noun and verb, which are used in the syntactic analysis of English, Salishan, and other languages. However, they are using distributional

argumentation selectively, choosing some constructions and ignoring others, in order to “prove” their analysis, namely that the noun-verb distinction does not exist in Straits Salish.

The selective use of distributional facts also characterizes the other side of the debate. The other analysts (here, van Eijk and Hess) take a “splitting” approach, arguing that the distributional differences with possession and aspect inflection really are significant and requires a distinct analysis for the two phenomena. In this case, van Eijk and Hess use the possessive construction to distinguish Noun and Verb in Lillooet and Lushootseed. However, their analysis is selective in the opposite manner: they have no explanation for the similarity in distribution of words of all major semantic classes in the Predicate and Determination constructions.

There is no a priori way to resolve the question: the “lumper” overlooks the mismatches in distribution, and the “splitter” overlooks the generalizations. Without prior agreement or some principled means for specifying which constructions define a category across languages, analysts can use whatever constructions they wish in order to come to whatever conclusions they wish. The reason for this is the selective use of distributional facts to posit supposedly crosslinguistic categories in a particular language, namely Crosslinguistic Methodological Opportunism. This methodological assumption is always unwarranted, that is, it is a genuine fallacy.

Abandoning Crosslinguistic Methodological Opportunism has major consequences for syntactic theory. The reason that Crosslinguistic Methodological Opportunism is problematic as an assumption is the variability of distribution of words and constructions across languages. If all languages had the same constructions, and words (or other syntactic units) in all languages had the same distribution patterns across those constructions, then being selective about which distribution pattern (i.e. which construction) is used to define grammatical categories would not be a problem. But languages are not that way. This fact of crosslinguistic variability can only be ignored by disregarding empirical evidence, which is scientifically unacceptable. But recognizing this fact requires abandoning the theoretical assumption that there are crosslinguistically valid formal linguistic categories and syntactic structures.

Nevertheless, Crosslinguistic Methodological Opportunism is only a crosslinguistic version of the most deeply entrenched fallacy of all in syntactic argumentation, Language-Internal Methodological Opportunism, which is described in the last subsection.

2.10. Language-Internal Methodological Opportunism

Language-Internal Methodological Opportunism is described below:

LANGUAGE-INTERNAL METHODOLOGICAL OPPORTUNISM. In each language, one may select any constructional test(s) to justify the positing of a global (cross-constructional, or constructionally independent) unit—a category like Direct Object, constituent like PP, etc.—or not, thereby supporting the global existence of the unit, or the inapplicability of the unit in a particular construction.

Language-Internal Methodological Opportunism is a response to the variation in distribution patterns in a single language. This variation challenges the theoretical assumption that the different constructions of a particular language are built from a single set of grammatical categories and structures. If a single, relatively small, set of grammatical categories and structures define all constructions, then those constructions should have the same distribution patterns as defined by those categories. But they do not. Language-Internal Methodological Opportunism is the unwarranted methodological assumption that allows one to maintain this ultimately invalid theoretical assumption.

I have given many examples of Language-Internal Methodological Opportunism elsewhere, especially in *Radical Construction Grammar* (Croft 2001). Here I will discuss an example from my critique of Aarts (2004). The traditional analysis of a Preposition in English is that it governs an argument phrase:

- (31) a. *John arrived **before** the last speech.*
 b. *I haven't seen him **since** the party.*

Aarts, following earlier analyses, analyzes both *before* and *since* as Prepositions not only in (31a–b), but also in (32a–d), where the words introduces clauses, or introduce nothing at all (Aarts 2004: 19):

- (32) a. *I haven't seen him **since** the party began.*
 b. *John arrived **before** the last speech ended.*
 c. *I haven't seen him **since**.*
 d. *John arrived **before** (hand).*

In other words, the traditional analysis of Preposition takes occurrence with an NP complement as criterial, whereas Aarts does not: occurrence with a clausal complement or no complement at all are also acceptable for prepositions. Choosing—or not choosing—which constructions to be criterial for defining a category is Language-Internal Methodological Opportunism. I pointed this out in my critique of his analysis, and Aarts responds, “What we have [...] are prepositions which can take different types of complement (clause, NP) or no complement” (Aarts 2007: 439). But Aarts is merely downplaying the distributional difference that the traditional analysis takes to be essential. The real point is that both the traditional analysis and Aarts’ analysis are guilty of Language-Internal Methodological Opportunism.

The facts are that not every Preposition in either the narrow (traditional) or broad (Aarts) sense can occur in the contexts illustrated in (32), as seen in (33a–e):

- (33) a. **Joan is really **into** she flies in a balloon.*
 b. **Joan walked **into**.*
 c. **Randy looked **down** the bird looked up at him.*
 d. *Randy looked **down**.*
 e. *Randy walked **down** the hill.*

All of the forms in boldface in (31)–(33) can take NP complements (i.e., are Prepositions in the traditional definition of the term). In contrast, the word *while* takes a clausal

complement, but not an NP complement, while the word *back* takes no complement, but cannot take an NP complement:

(34) *She slept **while** I ate lunch/***while** my lunch.*

(35) *I ran **back**/***back** my office.*

I do not know if Aarts considers *while* and *back* to be Prepositions that happen to take only a clausal complement and only no complement respectively (not unlike a verb that must take a clausal complement and an intransitive verb that takes no complement). That is in fact not relevant to the point here. What is relevant here is that there is inconsistency regarding how many or which constructions should be taken as criterial in establishing categories. Whatever choice is made for (34)–(35) is essentially arbitrary.

Who is right? How can one decide? In all cases, there are differences in distribution patterns for all of the constructions invoked to define the categories in question (Direct Object, Preposition). In all cases, linguists have selected which constructions should be used to define categories, and disregarded or downplayed mismatches in the constructions not considered to be criterial. This is Language-Internal Methodological Opportunism. As with Crosslinguistic Methodological Opportunism, the unwarranted assumption is that one can choose freely and selectively which constructions should be criterial for categories. This leads to different analyses of the same data, and no means to decide which analysis is better, as with Crosslinguistic Methodological Opportunism (see Croft 2001: 42-44).

The problem arises because of the conflict between a theoretical assumption and an empirical reality. The theoretical assumption is that there is a (ideally small) set of grammatical categories and structures, such as Direct Object and Preposition, that are used to analyze all constructions. The empirical reality is that the distribution patterns of different constructions varies, so that analyzing all of them with the same set of categories and structures forces constructions to be defined using inappropriate categories. Language-Internal Methodological Opportunism selects certain constructions as criterial, so that the categories defined by them are assumed to apply to all constructions; mismatches are patched by ad hoc devices. In the examples here, ad hoc devices are required to explain why there are the gaps in distribution of Prepositions in the broad sense in (33a–c), (34) and (35); or alternatively why (34) and (35) have the distributions they do and yet are not Prepositions). But Language-Internal Methodological Opportunism is an unwarranted assumption. Why should any distribution pattern be ignored? Language-Internal Methodological Opportunism is in fact a fallacy.

Rejecting Language-Internal Methodological Opportunism leads to abandonment of the theoretical assumption that constructions are built from a single set of grammatical categories and structures. This assumption grounds virtually all syntactic theories: virtually all such theories posit a set of syntactic building blocks which are used to define more complex syntactic structures, namely, constructions.

Instead, I argue that we should begin with constructions. Constructions are the basis of the distributional method: the distributional method defines categories of words and larger syntactic units in terms of their occurrence in larger constructions. In fact, the facts in (31)–(35) tell us not about some construction-independent category of Preposition;

they tell us something about the PP, adverbial subordinate clause, and verbal satellite constructions.

Aarts (2007) perceives my critique of traditional syntactic argumentation as a rejection of distributional analysis (his reply is titled ‘In defense of distributional analysis’). In fact, the method I advocate in my critique of Aarts is the only method that consistently applies distributional analysis, rejecting all of the unwarranted assumptions described in this paper. Aarts is defending certain untenable theoretical assumptions, not distributional analysis, from my critique.

One must take seriously all of the variation and mismatches that are revealed by careful distributional analysis. On the basis of that, one can develop a model of grammar in which constructions are basic and there is no fixed set of categories independent of constructions. I characterize this method as inductive. Aarts responds:

the problem with the inductive method is that to arrive at useful generalizations one cannot simply look at the data without having some preconceived ideas (hypotheses) as to how the data are organized...Without such preconceived ideas one doesn't know what to observe, i.e. which data are (ir)relevant' (Aarts 2007: 432–33)

It is true, of course, that nobody comes to data without any preconceptions. But the risk in the hypothetico-deductive method is that one does not always see that some preconceptions are indeed preconceptions, and may need to be jettisoned (and that this will change which data are relevant). No preconception is immune to rejection in the face of the data.

For instance, Aarts writes:

the categorization of formatives into form classes proceeds by hypothesizing the existence of a number of properties for the categories of grammar (noun, verb, adjective, etc.) and then seeing to what extent formatives in particular syntactic environments conform to these properties...Of course, there is no way we can know *in advance* which criteria are the correct ones. Perceived problematic distributions may lead one to find explanations for the putative recalcitrance, or posit new criteria or classes, which is an ongoing process (Aarts 2007: 432, 433; emphasis original)

Aarts' characterization of the hypothetico-deductive method applied to syntax here simply presupposes that formatives (words, morphemes, syntactic units) belong to general word classes (valid across many constructions). This is stated as fact in some linguistics and syntax textbooks (e.g. O'Grady et al. 1997: 164; Haegeman 1994: 36), and simply presupposed in others (Adger 2003: 33; Kroeger 2004: 43). But it is precisely this theoretical assumption that the empirical variability of syntactic distributions implies that we should abandon.

3. Conclusion

The road from language use—the utterances that speakers produce—to the positing of language structure can be a treacherous one. In this paper, I have described ten unwarranted assumptions in syntactic argumentation, and given reasons why we should abandon them. Many of them date back to structuralism; some of them, such as the two types of methodological opportunism, are still older.

It might appear that I have undermined all syntactic argumentation. That is, there is no justifiable way to arrive at language structures based on the empirical evidence found in what utterances occur (and do not occur) in a language. This is not the case. It is possible to construct genuinely rigorous syntactic argumentation without invoking any of these unwarranted assumptions. I describe genuinely rigorous syntactic argumentation in more detail in Croft (2009); a summary is provided here. Within a language, all distributional patterns must be taken equally seriously, and generalizations must be recognized as generalizations about the constructions that define the distributional patterns—that is, no Language-Specific Methodological Opportunism. Differences in distributional patterns, including differences in function, among constructions must be respected—this means avoiding Global Extension of Language-Specific Analyses, Symmetry, Nonredundancy, Generality or Strong Form-Function Isomorphism unless independently justified. Any hypotheses of relations between constructions must be validated crosslinguistically—this means avoiding the Free Ride Principle and Weak Form-Function Isomorphism unless independently and crosslinguistically justified. Functionally comparable constructions must be used across languages for crosslinguistic comparison, and crosslinguistically valid criteria must be employed in comparison—that is, no Crosslinguistic Methodological Opportunism. Finally, differences in comparable constructions across languages should be respected—that is, no Universal Extension of Language-Specific Analyses.

Truly rigorous syntactic argumentation is not impossible. The result, however, will encourage the adoption of some theoretical assumptions and the abandonment of others. Careful syntactic argumentation favors a construction grammar approach. It also leads to the abandonment of overly general grammatical categories and syntactic structures, and favors the typological approach to language. Radical Construction Grammar is an example of a syntactic theory that shows that it is possible to develop a syntactic theory that is compatible with this critical reevaluation of syntactic argumentation. Nevertheless, I believe that the most important contribution of this paper is not to advocate any particular theory of syntactic representation, but to bring these methodological assumptions out into the open. In this way, they can be debated and made explicit in syntactic argumentation, and linguists can decide for themselves whether or not to accept syntactic arguments using—or avoiding—these assumptions. In this way also, the relationship between the empirical evidence of language use, and the language structures that linguists propose, can be made clearer.

Abbreviations used in examples

1	first person
2	second person
3DIM	three-dimensional object
ACC	accusative

ANIM	animate
CLF	classifier
CL _n	noun class n
FEM	feminine
GENL	general
IMP	imperative
IRR	irrealis
MASC	masculine
NOM	nominative
POSS	possessive
PRED	predicator
PRES	present
PST	past
REL	relative clause marker
SG	singular

References

- Aarts, Bas 2004 Modelling linguistic gradience. *Studies in Language* 28: 1–49.
- Aarts, Bas 2007 In defense of distributional analysis, *pace* Croft. *Studies in Language* 31: 431–443.
- Adger, David 2003 *Core syntax: a minimalist approach*. Oxford: Oxford University Press.
- Aikhenvald, Alexandra Y. 2000 *Classifiers: a typology of noun categorization devices*. Oxford: Oxford University Press.
- Bybee, Joan L. 1985 *Morphology: A study into the relation between meaning and form*. Amsterdam: John Benjamins.
- Bybee, Joan L. 1995 Regular morphology and the lexicon. *Language and Cognitive Processes* 10: 425–455.
- Bybee, Joan L. and Joanne Scheibman 1999 The effect of usage on degrees of constituency: the reduction of *don't* in English. *Linguistics* 37: 575–596.
- Chen, Dingxu 2000 Topic and topic-comment constructions in Mandarin Chinese. *Language* 76: 383–408.
- Chomsky, Noam 1957 *Syntactic structures*. The Hague: Mouton.
- Comrie, Bernard 1989 *Language universals and linguistic typology* (2nd ed.). Chicago: University of Chicago Press.

- Croft, William 1998 Linguistic evidence and mental representations. *Cognitive Linguistics* 9: 151–173.
- Croft, William 2001 *Radical construction grammar: syntactic theory in typological perspective*. Oxford: Oxford University Press.
- Croft, William 2003 Lexical rules vs. constructions: a false dichotomy. In: Hubert Cuyckens, Thomas Berg, Rene Dirven & Klaus-Uwe Panther (eds.), *Motivation in Language: Studies in honour of Günter Radden*, 49–68. Amsterdam: John Benjamins.
- Croft, William 2004a Logical and typological arguments for Radical Construction Grammar. In: Mirjam Fried and Jan-Ola Östman (eds.), *Construction grammar(s): cognitive and cross-language dimensions*, 273–314. (Constructional Approaches to Language 3.) Amsterdam: John Benjamins. [Reprinted in: Vyvyan Evans, Benjamin K. Bergen and Jörg Zinken (eds.), *The cognitive linguistics reader*, 638–73. London: Equinox, 2007.]
- Croft, William 2004b Syntactic theories and syntactic methodology: a reply to Seuren. *Journal of Linguistics* 40: 637–654.
- Croft, William 2005 Word classes, parts of speech and syntactic argumentation. *Linguistic Typology* 9: 431–441.
- Croft, William. 2007a. Intonation units and grammatical structure in Wardaman and in crosslinguistic perspective. *Australian Journal of Linguistics* 27: 1–39.
- Croft, William 2007b Beyond Aristotle and gradience: a reply to Aarts. *Studies in Language* 31: 409–430.
- Croft, William 2009 Methods for finding language universals in syntax. In: Sergio Scalise, Elisabetta Magni and Antonietta Bisetto (eds.), *Universals of language today*, 145–164. Berlin: Springer.
- Foley, William 1991 *The Yimas language of New Guinea*. Stanford: Stanford University Press.
- Greenberg, Joseph H. 1977 Numeral classifiers and substantival number: problems in the genesis of a linguistic type. In: Adam Makkai, Valerie Becker Makkai, and Luigi Heilmann (eds.), *Linguistics at the Crossroads*, 276–300. Padua: Liviana Editrice. [Reprinted in: Keith Denning and Suzanne Kemmer (eds.), *On language: selected writings of Joseph H. Greenberg*, 166–193. Stanford: Stanford University Press.]
- Haegeman, Liliane 1994 *Introduction to government and binding theory* (2nd ed.). Oxford: Basil Blackwell.
- Harris, Zellig S. 1946 From morpheme to utterance. *Language* 22: 161–183.

- Harris, Zellig S. 1951 *Methods in structural linguistics*. Chicago: University of Chicago Press.
- Jelinek, Eloise and Richard A. Demers 1994 Predicates and pronominal arguments in Straits Salish. *Language* 70: 697–736.
- Kroeger, Paul R. 2004 *Analyzing syntax: a lexical-functional approach*. Cambridge: Cambridge University Press.
- Langacker, Ronald W. 1987 *Foundations of Cognitive Grammar, vol. I: theoretical prerequisites*. Stanford: Stanford University Press.
- Lees, Robert B. 1960 *The grammar of English nominalizations* (International Journal of American Linguistics, Publication 12.) Bloomington: Indiana University Press.
- Lucy, John A. 1992 *Grammatical categories and cognition: a case study of the linguistic relativity hypothesis*. Cambridge: Cambridge University Press.
- Matthews, Peter H. 1981 *Syntax*. Cambridge: Cambridge University Press.
- McGregor, William B. 1989 Phrase fracturing in Gooniyandi. In: László Marácz and Peter Muysken (eds.), *Configurationality: the typology of asymmetries*, 207–222. Dordrecht: Foris.
- McGregor, William B. 1997 Functions of noun phrase discontinuity in Gooniyandi. *Functions of Language* 4: 83–114.
- Merlan, Francesca 1994 *A grammar of Wardaman*. Berlin: Mouton de Gruyter.
- O’Grady, William, Michael Dobrovolsky, and Mark Aronoff 1997 *Contemporary linguistics: an introduction* (3rd ed.). New York: St. Martin’s Press.
- Seifart, Frank 2005 The structure and use of shape-based noun classes in Miraña (north west Amazon). (MPI Series in Psycholinguistics 32.) Ph.D. dissertation, Radboud Universiteit Nijmegen, the Netherlands.
- Siewierska, Anna 1984 Phrasal discontinuity in Polish. *Australian Journal of Linguistics* 4: 57–71.
- Song, Jae-Jung 1996 *Causatives and causation: a universal-typological perspective*. London: Longmans.
- van Eijk, Jan P. and Thom Hess 1986 Noun and verb in Salish. *Lingua* 69: 319–331.

Zwicky, Arnold 1970 The free-ride principle and two rules of complete assimilation in English. In: Mary Ann Campbell et al. (eds.), *Papers from the Sixth Regional Meeting of the Chicago Linguistic Society*, 579–588. Chicago: Chicago Linguistic Society.