INTRODUCTION

Asymmetries, mismatches and construction grammar

An introduction

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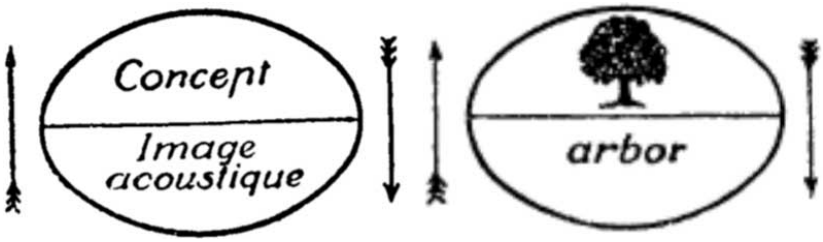
1. Canonical and non-canonical form-meaning correspondences: A historical overview

In the early 20th century, Ferdinand de Saussure laid the foundation for the contemporary discussion of the relationship between form and meaning. In his *Cours de linguistique générale* (1916/1995: 98–99), he considered the sign, which is defined as the *union* of an acoustic image (Fr. *signifiant*; E. *signifier*) and a concept (Fr. *signifié*; E. *signified*), as the corner-stone of linguistic theory.[1] Symbolically, his view in its simplest form can be exemplified as follows:

(1) The structure of a linguistic sign (Saussure 1916/1995: 199)



In what were later called simple bases, the link between the signifier and the signified was considered 'arbitrary'.[2] Although Ferdinand de Saussure introduced the

1. Saussure was by no means the first to conceptualize language in terms of signs but he was the first who gave shape to this idea in very clear terms (see Joseph 2004: 59).

2. "Ainsi l'idée de 'sœur' n'est liée par aucun rapport intérieur avec la suite de sons *s-ö-r* qui lui sert de signifiant; il pourrait être aussi bien représenté par n'importe quelle autre: à preuve les différences entre les langues et l'existence même de langues différentes" (Saussure 1916/1995: 100).

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notion of the sign, he did not examine in great detail whether this concept also applies to grammatical units smaller or bigger than words. F. de Saussure in his *Cours* speaks of morphology only in relation to syntax and, in his analysis of the linguistic sign, he mainly uses morphologically simple units, such as the Latin word *arbor* 'tree' and the French word *sœur* 'sister', to justify his theory.

Subsequently, the sign has been a fundamental notion in linguistic theory and many linguistic models have tried to define its basic characteristics and its structure (Holdcroft 1991: 5). Two important questions arise regarding this concept: (i) Does the notion of the sign apply to grammatical units of various sizes, both larger and smaller than the word? (ii) Is there always a correspondence between form and meaning in signs? The first question will be the topic of section 1.1, while the second question will be addressed in sections 1.2 and 1.3.

1.1 The notion of the sign: Canonical form-meaning correspondence

Almost simultaneously with the appearance of F. de Saussure's work, the research paradigm which is commonly known as 'American structuralism' began to take shape. The pioneering figure of the American paradigm, Leonard Bloomfield, 'inherited' Baudouin de Courtenay's theory of morphological analysis and developed a theory that extends to the analysis of words into smaller units, i.e. morphemes. Bloomfield (1933/1967: 158, 161) argued that languages consist of a number of linguistic forms which are fixed combinations of phonemes. Each linguistic form has a constant and definite meaning and those linguistic forms which have no components bearing phonetic-semantic resemblance to any other form are simple forms or morphemes.

This parallel development of the two notions, i.e. the sign and the morpheme, sparked off the debate regarding the logical relation between them (cf. Lehrer 2000; Blevins 2016).[3] American structuralists do not directly equate morphemes with signs. They mainly focus on the problems of the identification of the morphemes and the distinction of various types of allomorphic variations. Since they discovered that morphemes do not always involve a correspondence between form and meaning, they laid the groundwork for the relevant discussion to follow (cf. Blevins 2016).

In the European structuralist tradition, Hjelmslev (1943, 1954 as cited in Swiggers 2000) introduces the association between the notion of the sign and the

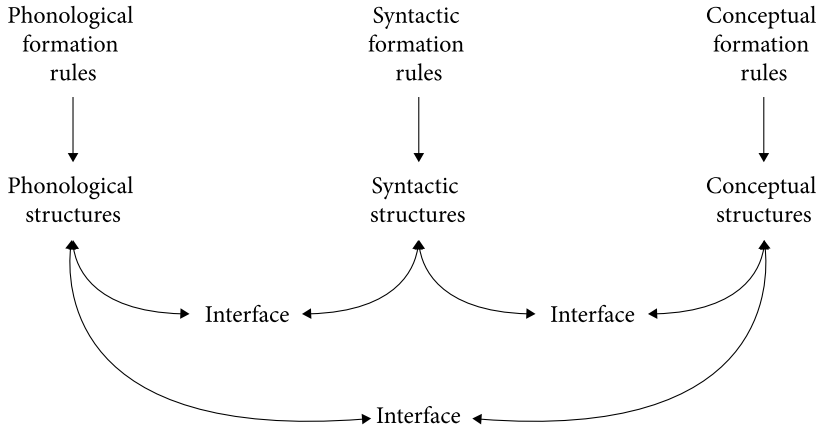
3. René de Saussure, Ferdinand de Saussure's brother, published a book in 1911 where he lays out a picture of word structure as a matter of structured combination of basic signs: units corresponding to what would later be called morphemes (Anderson 2018; Anderson & de Saussure 2018).

morpheme. Later, Miclău (1970: 20), based on Hjelmslev's suggestions, defined the morpheme as a 'morphological sign': "Nous appelons morphème l'ensemble de traits distinctifs de morphes, le trait sémantique général, exprimés par les formants correspondants […]. Le morphème représente donc *le signe morphologique* [emphasis is ours]". Also within the framework of Natural Morphology (Dressler et al. 1987), the notion of the sign has taken a central position in the description of morphological structures (Swiggers 2000).

The notion of the sign also made its way into syntactic theory. Early generative syntax described syntax as a finite system of rules to generate an infinite range of possible well-formed sentences (Chomsky 1965). The rules themselves were thought of as meaningless. In response to this view, various authors began to emphasize the semantic value of syntactic patterns (Bolinger 1968; Wierzbicka 1988; Langacker 1987). The approach typically taken was to demonstrate that syntactically different patterns would be semantically non-equivalent. The underlying idea was that "a difference in syntactic form always spells a difference in meaning" (Bolinger 1968: 127). From there, it is a small step to recognizing syntactic patterns as semiotic units in their own right.

Jackendoff (1997, 2010, among others) offers further elaboration as well as a new perspective on the discussion by providing the first presentation of the 'extended notion of the sign', according to which a sign cannot be completely specified by means of the pair 'Signifier-Signified' and more detailed information about its properties is needed. Jackendoff (1997: 110) proposes that a lexical item is conceived of as a triplet consisting of *Phonological Structure* (PS), *Syntactic Structure* (SS), and *Conceptual Structure* (CS), while *correspondence rules* establish the connections among the three components. A lexical item partakes of all three. In this view, the lexicon is a repository of <PS, SS, CS> triplets that enable correspondences to be established between pieces of structure derived by the three independent generative systems, the so-called *Tripartite Architecture of the Lexicon* (Jackendoff 1997). In the Parallel Architecture, a word functions as a small-scale interface rule: it stipulates that its phonological, (morpho)syntactic, and semantic structures can be linked as part of a well-formed sentence (Jackendoff 2013).

(2) The tripartite architecture of lexical items (Jackendoff 2013: 72)



Although Jackendoff's *Parallel Architecture* focuses on words and prefers to distinguish *lexical items* from other stored meaningful pieces of structure (such as idioms and phrase structure rules), he admits that *theoretically* there are no sharp dividing lines between them: "they are all encoded in a common format" (Jackendoff 2013: 78). This non-modular view of language, in which words and abstract grammatical patterns are arranged on a cline from lexis to grammar, is a fundamental assumption of construction grammar (cf., among others, Goldberg 1995, 2006; Croft 2001; Booij 2010; Hoffman & Trousdale 2013) (see also section 2).

1.2 Lack of form-meaning correspondence

In most of the theoretical developments described above, it has been implicitly and explicitly assumed that there exists correspondence between form and meaning in any given sign at two levels; first, one form should express one meaning, and second, the way in which the form of a complex whole (be it a complex word or a syntactic structure) is made up of its parts is paralleled by the way in which its meaning is derived (concatenation of discrete units). The first assumption is usually expressed by the 'one-form-one-meaning principle', often attributed to Wilhelm von Humboldt (1767–1835) (cf. Vennemann 1972; Zwanenburg 2000), while the second is part of a general principle which has been considered as an important design feature of natural languages, the so-called 'Compositionality Principle' (among others, cf. Hoeksema 2000; Cohnitz 2005; Hinzen et al. 2012; Marzo 2015).[4] The Compositionality Principle in morphology implies that the semantic interpretation of a complex word is determined by its parts and is

4. The compositionality principle – usually attributed to Frege (1892) – implies that the interpretation of a complex expression (complex word or sentence) is a function of the interpretation

built through a concatenation of morphemes (cf. Hoeksema 1987, 2000; Lieber 2004).

Although these two principles describe the simplest, or ideal, kind of correspondence between form and meaning, many exceptions can be adduced to these principles at different levels of linguistic analysis.[5] For example, F. de Saussure (1916/1995:181) already acknowledged that there exist some problematic cases of non-correspondence between form and meaning, like the existence of zeroes,[6] while, among others, Szymanek (1988), Corbin (1987, 1989), Anderson (1992), and Mel'čuk (2006) for derivation, and Matthews (1991), Stump (2001), and Haspelmath & Sims (2010) for inflection, give a full description of the apparent 'distortions' between the morphological structure and the semantic interpretation of constructed words (see examples in the next section). These analyses show that word formation is rife with violations of compositionality (Marzo 2015).

At the level of lexical items, Jackendoff (2013:75) also admits that a lexical item is not always a full triplet of phonology, syntax, and semantics:

> although a stereotypical lexical item consists of a full triplet of three structures – a Saussurean sign – there also exist items with less than the full complement. In other words, like every other human category, lexical items have many non-stereotypical cases with partially divergent properties.

He provides examples of discourse/fluency markers such as *yes, hello, wow, ouch*, and *allakazam* which do not participate in syntactic combination, but still have phonological and semantic features, and nonsense phrases like *fa-la-la, hey nonny nonny, doodah doodah,* and *inka-dinka-doo* (used to fill up space in song lyrics) that have phonology but lack syntactic and semantic features.

At the level of syntax, non-compositionality is usually associated with idioms (though some caution should be exercised, as some degree of compositionality often remains even in idiomatic expressions, cf. Nunberg et al. 1994 and see below). For example, there is no obvious way in which the meaning 'feel ill' derives from *feel a bit under the weather*. Apart from idioms, however, there are

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of the parts from which it is composed and the way in which they are combined (Bach 1989:46; Dowty 2007).

5. Bazell (1966) calls 'Correspondence Fallacy' the erroneous assumption of the structuralists that an analysis at one linguistic level should isomorphically map onto the analysis at other levels, while Spencer (2012:93) points out the problems of the segmentation in what he calls 'the segmentation problem'.

6. "S'il y a des éléments formatifs transparents, comme *-ier* dans *poir-ier*, vis-à-vis de *cerisier*, *pomm-ier*, etc., il en est d'autres dont la signification est trouble ou tout à fait nulle; ainsi jusqu'à quel point le suffixe *-ot* correspond-il à un élément de sens dans *cachot*?" (Saussure 1916/1995:181).

many other ways in which form-meaning correspondences might be violated. For instance, languages may have function words that mainly serve to signal syntactic relations but do not individually contribute meaning to the constructions they mark. An example might be the operator *do*, used in English to build interrogatives and negative clauses (e.g. *do you insist?*) (Jackendoff 2013:75). Of course, in approaching any such issues, much depends on prior theoretical assumptions as to the nature of meaning and syntax. Linguists of a different persuasion may feel more or less inclined to distinguish function from meaning,[7] or may vary in their readiness to accept the idea that language may have a purely formal component.

1.3 A typology of asymmetries and mismatches

Although the 'distortions' between form and meaning have been analyzed in various studies, a typology of these cases is still missing. In this section, we propose a distinction between two major types of form-meaning non-correspondence, i.e. asymmetry and mismatch, and we try to bring together the different cases.

The term 'asymmetry' was introduced by Karcevkij (1929/1964) to refer to cases of polyfunctionality in Russian inflection, but Bazell (2004:105) made the notion more general and used it to describe formations which do not show an ideal correspondence between form and meaning:

> The morpheme of current grammatical description is a compromise between two different units, of which the one is that with which this note is concerned, whereas the other might be described as the 'minimal complex of semantic features capable of receiving distinct expression'. Up to a point the two units may stand in a one-one relation, and it is only good method to assume that they do when there is no cogent argument to the contrary. But there is no necessary relation. The morpheme, as the central unit of language, bridges the asymmetry of content and expression but stands itself in a relation of 'reduced' asymmetry to each of these levels.

Nevertheless, the notion 'form-meaning asymmetry' is not always clearly differentiated from the notion of 'form-meaning mismatch'.

Based on Zwanenburg (2000), we distinguish two types of form-meaning non-correspondence. First, we propose the term *asymmetry* as a notion which describes a lack of form-meaning correspondence at the numerical level. In other words, asymmetries conflict with the 'one-form-one-meaning principle'. Second, we propose the use of the term *mismatch* to refer to all types of structural lack

7. With respect to morphology, among others, Bybee (1985) proposes a cline from meaning to function.

of form-meaning correspondence, i.e. cases that conflict with the compositionality principle. A similar distinction can also be found in Francis & Michaelis (2003: 4–5) who contrast 'complexity mismatches' with 'content mismatches'; the former involve "a discrepancy in the number of elements involved (and, consequently, the complexity of the structure) at different levels of representation", while the latter involve "an incongruous mapping in the content of the items from two different levels of representation (though not necessarily a difference in the number of linguistic elements at the two levels)" (Francis & Michaelis 2003: 4).

Asymmetries and mismatches appear in both morphological and syntactic constructions and at the paradigmatic and the syntagmatic plane. Table 1 presents a typology of asymmetries (Types 1–4) and mismatches (Type 5) and includes some examples that will be discussed in more detail below.[8] It is only fair to point out that nearly all of these examples are at least somewhat controversial. Some asymmetries and mismatches may well be argued away by particular theoretical approaches or, conversely, may only be recognized given certain specific theoretical assumptions. However, in many cases, the very fact that linguistic analyses diverge supports the status of these examples as somehow problematic or unusual. We have chosen examples here that have been analyzed as asymmetries or mismatches by at least some authors. We do not necessarily endorse those analyses, but simply offer them here to illustrate the types of phenomena at issue and to systematize the debate.

Type 1 involves asymmetries in which one form corresponds to multiple meanings. On the syntagmatic axis, this can be illustrated by cases of fusion or accumulation (syncretism). For instance, at the morphological level, the Dutch suffix *-ster* in *speel-ster* 'feminine player' accumulates the 'agentive' and 'feminine' meaning aspects (Zwanenburg 2000: 841; Van Marle 1985: 286–288); at the word level, indefinite articles simultaneously carry the features 'indefinite', 'singular', and 'countable'.

On the paradigmatic axis, the correspondence of multiple meanings to one form is represented by cases of polyfunctionality and polysemy. The Dutch inflectional suffix *-s* is polyfunctional in the sense that it can be used to indicate the plural (cf. *tafel-s* 'tables') or the genitive case (cf. *iets mooi-s* 'something beautiful-GEN') (Moortgat & van der Hulst 1981). The English lexeme *wood* can be considered polysemous because it can both refer to 'a piece of a tree' or 'an area with many trees'. Other examples of the same type include the English *to*-infinitives which have been considered polysemous by Wierzbicka (1988), Goldberg

8. It is beyond the scope of the present introduction to analyze all these cases. We give some basic references and the interested reader may refer to the works cited in section 1.3 and below.

Table 1. Typology of asymmetries and mismatches[9]

Type	Syntagmatic axis	Paradigmatic axis	
Type 1 one form~many meanings	**D** *speel-ster* 'female player' STEM-AGENT.FEMIN **E** *a,* **D** *een,* **G** *ein* ART.INDEF.SING.COUNT	**D** *iets mooi-s* something beautiful-GEN 'something beautiful' **E** *wood* '1. a piece of a tree, 2. an area with many trees'	**D** *tafel-s* table-PLUR 'tables'
Type 2 many forms~one meaning	**GR** *apo-cefal-izo* DPREF-BASE-DSUFF.ISUFF 'decapitate' **ME** *ne dout he nan þat his saul ne was til hel gan* 'he had no doubt that his soul had gone to hell'	**E** *refus-al, celebrat-ion, establish-ment* (process nouns) **F** *redouter, craindre, avoir peur* 'be afraid of' **E** *I started falling/to fall*	
Type 3 one form~zero meaning	**E** *cran-berry* EMPTY MORPH-STEM **E** *I hope that he will be okay*	–	
Type 4 zero form~one meaning	**E** *put* as past tense of *put* **E** *to cool-Ø* 'to make cool' $[[\text{STEM}]_A]_V$ **E** *Mrs Southey had asked Sarah*$_i$ *to* PRO$_i$ *visit*	–	
Type 5 structural mismatch between meaning and form	**I** *violon-ista classico* 'classical violonist' **E** *She sneezed the napkin off the table* **E** *the whole family* ***were*** *present*	–	

(1995), and, more recently, Colleman & De Clerck (2011) have analyzed the English ditransitive construction as polysemous.

Type 2 includes asymmetrical structures in which many forms map onto one single meaning. On the syntagmatic axis, a classic example of this type of asymmetry includes the so-called parasynthetic verbs where two word-formation processes (prefixation and suffixation) are intrinsically fused, leading to a ternary structure. Based on the inherent properties of the prefix and the suffix, we can have neither a structure of the type: $[\alpha + [\beta + \gamma]]$ nor of the type: $[[\alpha + \beta] + \gamma]$. We need to assume a multiple affixation of the type: $[\alpha + [\beta] + \gamma]$ (cf. Bisetto & Melloni

9. We use the following abbreviations: D = Dutch, E = English, F = French, G = German, GR = Greek, I = Italian, ME = Middle English, ART = article, INDEF = indefinite, PLUR = plural, SING = singular, COUNT = countable, NEG = negation, GEN = genitive, DPREF = derivational prefix, DSUFF = derivational suffix, ISUFF = inflectional suffix.

2008). For instance, in the Modern Greek verb *apo-cefal-izo decapitate*, we need to assume a simultaneous addition of the derivational prefix *apo-* and the derivational suffix *-izo* in order to derive the deprivative meaning of the verb (cf. Ralli 2004; Efthymiou 2015 on the Greek structures).

A similar structure may also appear in syntax. For example, Middle English had expletive negation in complement clauses following 'adversative predicates', as in *Quen he was ded ne dout he nan / þat his saul ne was til hel gan* 'when he was dead he had no doubt / that his soul had gone (lit. had *not* gone) to hell' (example from Iyeiri 2001: 87). The negative marker in the complement clause is essentially redundant and therefore, arguably, semantically empty (van der Wurff 1998).[10]

Well-described examples of this non-correspondence at the paradigmatic plane usually include *synonymous lexemes*, such as *redouter, craindre, avoir peur*, which have the same meaning 'to be afraid of', for which Saussure (1916/1995: 160) nevertheless already claimed that they "n'ont de valeur propre que par leur opposition" ['they do not have any value on their own if not in opposition']. Different affixes which serve the same function and may be in paradigmatic competition can also be described as instances of this type of asymmetry: for instance, the suffixes *-al* (*refus-al*), *-ion* (*celebrat-ion*), *-ment* (*establish-ment*) all derive process nouns from verbs (among others, Jackendoff 1975: 651; Zwanenburg 2000: 842–844).[11] Competition in syntax can be exemplified by verbs like *start* that allow two competing complementation patterns (*I started falling/I started to fall*) (De Smet et al. 2018) or by the existence of two Dutch forms, i.e. *ver van* and *verre van*, both corresponding to English *far from* to cover the spatial, metaphoric, and downtoner semantics expressed by only one form in English (Van Goethem et al. 2018).

Types 3 and 4 refer to syntagmatic asymmetric structures in which a zero meaning (Type 3) or a 'significant absence' (Type 4) is involved.[12] An often-quoted example of Type 3 asymmetry in morphology are the so-called *empty morphs* (or cranberry morphemes), i.e. bound morphemes that – synchronically speaking – do not have independent meaning but nonetheless may still serve a distinctive function, e.g. *cran-berry* and *rasp-berry* vs. *blue-berry* and *black-berry* (Aronoff 1976; Croft & Cruse 2004: 254). Another well-known example of empty morphs are the theme vowels that characterize the various verb conjugations of Latin (cf.

10. See also Croft (2000: 136) on paratactic negation.

11. Another related phenomenon in morphological formations is overabundance, i.e. the coexistence of two or more forms realizing the same cell in an inflectional paradigm (cf. Thornton 2012).

12. Other non-linear derivation processes, such as vowel change/mutation (e.g. E *proud/pride*) may also be arranged along these lines because no discrete morphemes are added to reflect the new semantics. See also Höder (2014) for an analysis of these cases within the framework of Diasystematic Construction Grammar.

Aronoff 1994). In syntax, too, some grammatical forms are sometimes considered 'empty' as a result of *semantic bleaching*, because they only function as 'grammatical glue,' such as the *that* complementizer, expletive *it*, and the *do* of *do-support* for inversion and negation. As Jackendoff (2013:75) puts it, these forms have phonological and syntactic features but no semantics.

Type 4 can be exemplified by zero-forms, which are typically posited on analytical grounds. For example, given that English systematically marks past tenses on virtually all its verbs, it is reasonable to posit a zero-marked past tense for the few verbs that lack overt past tense marking, such as *put* or *cut* (Haas 1957; McGregor 2003). However, zero-forms are often controversial, with linguists of different theoretical persuasions being more, or less willing to accept them. A much-disputed example involves conversion, which can be analyzed as zero-derivation (Marchand 1969). Such an analysis implies that a meaning/functional change is present in a word form but it is not represented by any given morph and this ('significant') absence contrasts with overt morphological marking of the same derivational function in other examples, e.g. English causative verbs *to cool-Ø* 'to make/become cool' vs. *to hard-en* 'to make/become hard' (cf. Kastovsky 2006:153, among others).[13] For syntax, one example of meaning that comes without formal marking is found in the so-called control relations. For example, in *Mrs Southey*$_i$ *had invited Sarah*$_j$ *to* Ø$_{j/*i}$ *visit*, we know that the unexpressed subject of *visit* is coreferential with *Sarah*. The meaning is there but (again depending on theoretical assumptions) there is no form to express it: in similar-looking patterns, control relations may be different (e.g. *Mrs Southey*$_i$ *promised Sarah*$_j$ *to* Ø$_{i/*j}$ *visit*). Another example is the use of null subjects in finite main clauses in spoken English, as in *got it?* (Wagner 2018).

Finally, Type 5 includes all cases of structural mismatch between form and meaning, such as bracketing paradoxes (Spencer 1991) and cases of coercion (Goldberg 1995, 2006; Michaelis 2003) in which the holistic meaning of the construction induces semantic effects that cannot be derived from the semantic features of the individual components. In Italian *violon-ista classico* 'classical violonist', for example, the suffix *-ista* is only attached to the first noun but has semantic scope over the entire noun-adjective phrase since it refers to someone who plays the classical violin (Booij & Masini 2015). Content mismatches also apply, for instance, to exocentric compounds: in Italian *portalettere* 'postman (lit. carry-letters)' or French *tire-bouchon* 'cork screw (lit. pull-cork)', the agentive and instrumental meaning, respectively, cannot be derived from the meaning of the formal constituents of the compound (cf. Booij 2013). Another violation of the

13. Incremental morpheme-based theories offer a number of 'technical' solutions, such as the assumption of zero-morphemes, in order to solve the problem of this significant absence. However, it is highly disputed whether empty morphs and zero morphemes should be part of morphological analysis.

compositionality principle can be found in reduplicative compounds of the type *salad-salad* 'real salad' in English and *vakantie-vakantie* 'real holidays (lit. vacation-vacation)' in Dutch, in which the occurrence of two identical constituents conveys a specific constructional meaning: a salad-salad is a '(proto)typical' salad (Ghomeshi et al. 2004; Booij & Masini 2015).

A typical case of syntactic content mismatch is category mismatch: in *Max is a cat* the predicate nominal *a cat* semantically corresponds to a predicate, although NPs mostly refer to semantic arguments (Francis & Michaelis 2003: 4). Such unexpected functions of nouns or verbs are hard to account for when adopting a word-level analysis, e.g. transitivity of the verb *sneeze* in the caused-motion construction *She sneezed the napkin off the table* (Goldberg 1995) or the mass noun interpretation of *cat* in *There's cat all over the place* (Michaelis 2003). In these cases, form overrules a default interpretation. Yet, in other cases, it is meaning that overrules a default form. Possible examples include semantic agreement with English collective nouns (*The family were all present*) or German subordinate clauses with main clause word order (*das sagt man nicht, weil das ist ja falsch* 'one oughtn't say that, as it is untrue').

2. Asymmetries and mismatches in construction grammar

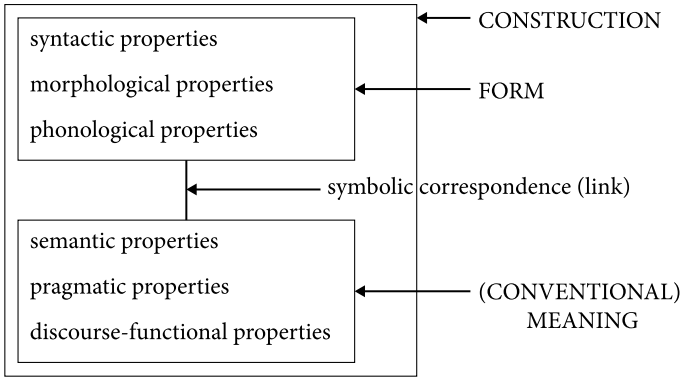
2.1 Background: Constructions as extended signs

The notion of the sign has taken a new turn within the theoretical framework of construction grammar (henceforth CxG). CxG is based on the idea that all levels of grammatical description – not only words, as in the Saussurean tradition – involve form-meaning pairings (Goldberg 2006: 5). This extended notion of the Saussurean sign has become known as a 'construction' (Hoffmann & Trousdale 2013: 1). In what follows, we will show how CxG has extended the notion of the sign compared to the prototypical Saussurean sign, in three dimensions: (i) complexity, i.e. constructions typically contain more complex grammatical information than the Saussurean sign, (ii) size, i.e. constructions range from morpheme-/word- to sentence-level,[14] and (iii) schematicity, i.e. constructions range from fully substantive to fully schematic (cf. Goldberg 2006).

Looking first at *complexity*, constructions include more grammatical information than signs. For example, the formal aspect of a construction includes syntactic, morphological, and phonological properties, while its meaning aspect includes semantic, pragmatic, and discourse/functional information:

14. And beyond the sentence level (cf. Fried & Östman 2005; Lindström & Londen 2008; Nikiforidou et al. 2014, among others).

(3) The notion of construction (Croft & Cruse 2004: 258)



The conceptualization of the sign is fundamental also in the framework of Sign-based construction grammar (SBCG; Michaelis 2013; Sag 2012, among others). SBCG conceptualizes grammar as an inventory of *signs*. *Constructions* are the means by which simpler signs are combined into more complex signs. The concept of sign in SBCG is similar to that of Saussure (1916/1995). However, while Saussure's signs relate only form and meaning, the sign properties recognized in SBCG include phonology, (morphological) form, syntax (e.g. a word's syntactic category and combinatorial potential), semantics (e.g. the frames that collectively define the meaning of a word, a word's referential index), and conditions of use (e.g. the information-structure articulation of a phrasal type). Further, the signs of SBCG include not only words and lexemes but also phrases (phrasal signs), including sentences; the form value of a phrasal sign is a list of words.

A sign, as in the Saussurean tradition, is a form-meaning pairing, but in SBCG a sign is represented as a feature structure. All signs are modeled by feature structures, but not all feature structures model signs. A sign assigns values to the following features, among others (Michaelis 2013: 139):

- phon: a phonological phrase
- form: a list of the formatives (words or morphemes) that comprise the expression
- arg-st: a ranked list of a lexical expression's arguments (i.e., only lexical signs have this feature)
- syn: category and val(ence)
- sem: ind(ex) and frames
- cntxt: background (bckgrnd, including the set of presuppositions associated with a construction type), contextual-indices (c-inds; identities of speaker and addressee), topic and focus (pragmatic roles sharing referential indices with elements on the arg-st list).

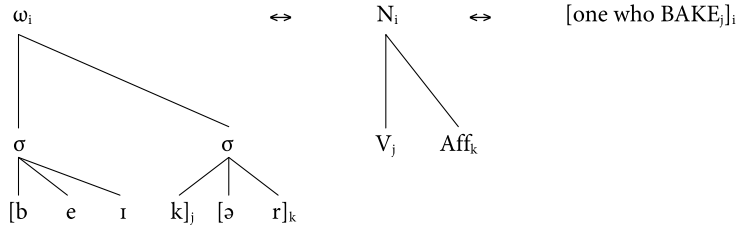
(4) The sign *break* in SBCG (Michaelis 2013:140)

$$\left[\begin{array}{l} \textit{lexeme} \\ \\ \text{FORM} < \textit{break} > \\ \text{ARG–ST} \ \langle \text{NP}i, \text{NP}x \rangle \\ \text{SYN} \left[\begin{array}{l} \text{CAT } \textit{verb} \\ \text{VAL} \ \langle \text{NP}i, \text{NP}x \rangle \end{array}\right] \\ \text{SEM} \left[\begin{array}{l} \text{IND } e \\ \text{FRAMES} \left\langle \left[\begin{array}{l} \textit{break–fr} \\ \text{AGENT } i \\ \text{THEME } x \end{array}\right], \left[\begin{array}{l} \textit{rigid–object–fr} \\ \text{ARG } x \end{array}\right] \right\rangle \end{array}\right] \end{array}\right]$$

With respect to *size*, Goldberg (2006:5) argues that bound morphemes should be also regarded as constructions, while Booij (2010) proposes that bound morphemes should not be considered constructions because they are not independent pairings of form and meaning and because "their meaning contribution is only accessible through the meaning of the morphological construction of which they form part" (Booij 2010:15).[15]

The starting point in *Construction Morphology* (CM; Booij 2010, 2013) is that each word is a linguistic sign, a pairing of form and meaning,[16] and this idea holds for morphologically simplex and complex words. The form of a word in its turn comprises two dimensions: its phonological form and its morphosyntactic properties. Each word is a pairing of three types of information (phonological, syntactic, and semantic) and its meaning may have both strictly semantic and pragmatic components. Morphology affects all three dimensions of words.

(5) The word *baker* in CM (Booij 2010:7)



15. This debate reflects the earlier discussion on whether morphemes should be regarded as signs.

16. The idea that morphemes and words can be seen as constructions was also suggested by Rhodes (1992).

With respect to *schematicity*, this idea implies that productive patterns of, for instance, derivation can be formalized as the combination of an abstract variable with a fixed position filled by the affix: e.g. $[[x]_V$ *er*] ↔ 'one who Vs' (Booij 2010: 2). The insertion of abstract variables within the form and meaning components of constructions applies both to morphological and syntactic constructions. In fact, there is a continuum from substantive to fully schematic constructions. Croft & Cruse (2004: 248) give examples of syntactic constructions with different degrees of schematicity: idioms such as *kick the bucket* are fixed except for grammatical inflection, semi-schematic constructions, such as *give NP the lowdown* 'tell NP the news', have one or more open argument slots (besides inflectional flexibility), and in fully schematic constructions all elements are lexically open, such as in the resultative construction [*NP Verb NP XP*] (Goldberg 1995: 181). Interestingly, morphological constructions can also be placed on this continuum: "A maximally substantive morphological expression is fully specified, as in *book-s*. Partially schematic morphological expressions include *book-*NUMBER and NOUN-*s*. Fully schematic morphological expressions include NOUN-NUMBER" (Croft & Cruse 2004: 254). In current terminology, *book-s* would correspond to a construct, while *book-*NUMBER and NOUN-NUMBER correspond to partially filled and fully schematic constructions, respectively.

The definition of a construction has been based on the idea that form and meaning *always* form a systematic unit in linguistic structure. However, as has been shown above, in many cases we encounter 'peculiar' correspondences between form and meaning. Therefore it is interesting to see how the notion of construction may be combined with the analysis of these asymmetries and mismatches.

2.2 Asymmetries/mismatches and construction grammar

Constructional approaches intend to provide a uniform analysis of more idiosyncratic 'peripheral' as well as 'core' linguistic features (Hoffman & Trousdale 2013: 3). If 'peculiar' correspondences between form and meaning are to be seen as 'peripheral' cases, then they should be accounted for on a par with 'canonical' cases of form-meaning correspondence. In principle, CxG gives us a way to capture the incremental nature of these correspondences, including the potential mismatches between grammatical patterns and the items (words, morphemes) that fill them and whose meaning or grammatical status changes over time (Fried 2013: 423) and in several ways, CxG has already taken a stance – be it explicit or implicit – on the issue of asymmetries and mismatches.

Most evidently, some problems of compositionality[17] are solved by assigning meaning to more abstract constructional templates. The idea that an abstract construction can carry meaning explains why the meaning of a construct is not necessarily derivable from just its parts, while at the same time preserving compositionality (among others, Booij 2010, 2013; Goldberg 1995, 2006; Jackendoff 2013; Stump 1997). Nunberg et al. (1994), for example, point out that many semantically unpredictable expressions can be classified as "idiomatically combining expressions", whose meaning is indeed unpredictable but which become largely compositional, once their meaning has been learned. Essentially, such expressions come with their own constructionally specific set of interpretation rules that complement or supersede the meanings carried by their parts (Croft & Cruse 2004: 252).[18] For example, speakers of English must learn that patterns of the form [X *misses the cut*] mean that 'X fails to meet some standard'. This interpretation is unpredictable in that it is not derivable from the words in isolation but once learned, the expression is compositional, in that speakers can match the verb *miss* to the meaning 'fail to meet' and the NP *the cut* to some contextually given or implied 'standard'. A similar argument could be set up for *cranberry* morphemes, discussed above: the meaning of the whole is unpredictable, yet this does not mean that, once learned, a *cranberry*-type compound is still non-compositional (implying that *cran-* need not in fact be meaningless).

Building on this, CxG – more than any other framework – has given recognition to the complex interplay between the meanings of more abstract grammatical templates and their lexical fillers. In doing so, it has, among other things, offered a solution to otherwise thorny issues of polysemy. For example, *lie* in *he had lied his way into the organization* does not need to be listed in the lexicon with a special extra sense 'gain access by lying' or with the specification of a possible transitive use. The semantics and argument structure of the *way*-construction here overlays in a largely predictable way the typical use of *lie* as an intransitive verb meaning 'tell an untruth'. In CxG terminology, *lie* is coerced into the *way*-construction. In principle, CxG also offers a way of restraining such coercive combinations, which

17. In constructionist approaches, compositionality is a scalar concept (cf. Kay & Michaelis 2012; Wulff 2013). Traugott & Trousdale (2013: 167) propose that the synchronic gradient of compositionality is a consequence of gradualness in the development of new micro-constructions. Fried (2013: 423) argues that a constructional analysis provides a way of capturing the transitions between compositional and non-compositional patterns, as an inevitable effect of the constant tension between creating new combinations of units (with a fully transparent meaning or function) and conventionalizing existing combinations in new interpretations (leading to loss of transparent internal structure).

18. See also Wulff (2013).

are believed to be possible as long as the expressions combined "can be construed as not being in conflict" (Goldberg 2006: 22).

Moreover, in constructionist approaches, the mental grammar of speakers is claimed to consist of a network of schematic and substantive constructions ('constructicon') and it is the parallel activation of constructions that underlies a set of particular utterances ('constructs') (Hoffman & Trousdale 2013: 3). These paradigmatic relations may give access to enough information to resolve asymmetries or mismatches. This view of grammar has received empirical support by independent research (among others, De Smet et al. 2013; Goldberg 1995, 2006; Van de Velde 2014). Booij & Masini (2015: 47) claim that some structural mismatches and bracketing paradoxes can be accounted for by means of the so-called "second order schemas", i.e. "sets of two or more paradigmatically related constructional schemas". For instance, the meaning of the complex expression *violinista classico* 'classical violinist' (cf. section 1.3) cannot be compositionally derived from its building blocks, but – thanks to the paradigmatic relations in the constructional network – it can be related to the meaning of *violino classico* 'classical violin' from which it is derived.

At the same time, CxG has not miraculously solved all problems pertaining to symbolic relations. Some old questions are still being debated among construction grammarians. One is whether all form has meaning. Jackendoff (2013: 78–79) thus distinguishes between two different approaches within the domain of CxG with respect to the content of constructions: (a) *homogeneous Construction Grammar* in which all syntactic form is taken to be determined by meaningful constructions; there are no autonomous syntactic principles, free of semantic implications, which implies that all linguistic units are taken to be full Saussurean signs, and (b) *heterogeneous Construction Grammar*, where meaningful constructions are just one kind of abstract stored structure, which implies that the typical lexical item is a Saussurean sign, but there are also numerous atypical lexical items that are not signs.

In CxG, mismatches are represented by non-default constructions,[19] which contain information that is not inherited from those constructions to which they are related taxonomically or partonomically (Francis & Michaelis 2003: 5–6). However, the apparatus is not always well-developed in order to account for these cases. For example, there is debate on the degree to which abstract constructions need to be able to accommodate polysemy and how such polysemy is to be theoretically modeled (compare, for instance, the conflicting positions in Colleman &

19. Börjars et al. (2015: 376) argue that "in models of this kind, form and meaning are strictly linked so that when discrepancies arise they have to be stated explicitly as such by special non-default constructions which license their exceptionality".

De Clerck 2011 and D'hoedt 2017). Similarly, CxG is only beginning to explore the challenges posed by language variation, including competition between (seemingly?) synonymous forms (Van de Velde 2014; De Smet et al. 2018).

3. Aim of this issue and contributions

Despite the wealth of literature on CxG in recent years, an in-depth discussion of non-canonical correspondences between form and meaning in grammatical constructions has seldom – with few exceptions – taken place. However, it is theoretically challenging to examine what implications these phenomena bring to CxG.

The principal aim of this volume is to answer this question. In the previous section, we mentioned that CxG can 'in principle' account for non-canonical form-meaning correspondences and we hope that in this volume, we will show that CxG provides all the necessary apparatus in order to analyze these phenomena, which range from marginal to central cases of linguistic creativity. The second aim of this volume is to provide a collection of analyses that flesh out this basic idea and shed light on a number of questions, such as: (a) what exactly constitutes an asymmetry/mismatch within construction grammar, and (b) what kind of theoretical mechanisms and/or formalizations can account for these asymmetries/mismatches. This volume comprises five contributions analyzing phenomena concerning both morphological and syntactic structures.

Peter Andersson and **Kristian Blensenius** focus on the Swedish [*gå och* V2] '*go/walk and* V2' construction, which is analyzed as a type of pseudo-coordination because it combines a coordinating structure with a subordinating function. A compositional analysis based on the lexical meanings of V1 and V2 does not account for the different (aspectual) meanings, such as a surprise effect, that can be expressed by the construction. To resolve this mismatch, the authors advance a usage-based and constructional approach based on frequent exemplars and diachronic stages of mismatch between the concrete instantiations of the construction and its schematic template and show how specific semantic inferences become part of the meaning of the construction as a whole.

Edwige Dugas's paper deals with the French [*non*-N] construction and shows that, at first sight, this pattern exemplifies both an asymmetry (one form with three different meanings) and a mismatch (non-compositional semantics). However, both problems can be resolved within the constructional framework. On the one hand, the author resolves the form/meaning asymmetry by demonstrating that the construction actually instantiates three different subconstructions, conveying three different meanings (ontological, classifying, and qualifying meaning). With respect to the compositionality problem, on the other hand, she

argues that this can be accounted for by including pragmatic and contextual information into the meaning part of the construction.

Astrid De Wit addresses a special Type 5 problem, that is, mismatch not between a schematic construction and its lexical fillers, but between two schematic constructions. Specifically, she starts from the observation that the English simple tenses can exceptionally be used with progressive meaning when there is full-verb inversion (e.g. *Out go the conventional pan supports*). The aspectual mismatch is possible, she argues, because there is a more basic, maximally schematic semantic match between simple tense and inversion that overrules aspectual meaning. The full-verb inversion construction and the simple tenses share the same epistemic schemas, motivating their joint use. In this case, then, a mismatch is argued to be resolved by a deeper-level semantic harmony.

Kevin M. Gould and **Laura A. Michaelis** home in on the interplay between lexical meaning and constructional meaning, focusing specifically on the interaction between two classes of verbs (change-of-possession verbs and caused-motion verbs) and two constructions (the Ditransitive construction and the Oblique Goal construction). The various combinations of verbs and constructions can be expected to spark off different semantic representations, which Gould & Michaelis bring out through an action-sentence compatibility experiment. In doing so, they address both the Type 1 issue of polysemy and the Type 5 issue of mismatch, showing that semantic representations are sensitive to the combined effect of verbs and constructions.

Dirk Pijpops, **Isabeau De Smet**, and **Freek Van de Velde** deal with the notion of constructional contamination; that is, the effect observed when structurally unrelated constructions give rise to strings that look similar on the surface and, as a result, a subset of instances of one of these constructions may deviate in the probabilistic preference for any of several possible formal variants. Two types of asymmetry can be considered as conditions for the appearance of constructional contamination: first, a Type 2 (one-meaning-multiple-forms) asymmetry in which a target construction T displays some form of formal alternation between its variants TX and TY and, second, a Type 1 (one-form-multiple-meanings) asymmetry in which the contaminating construction C has a subset of instances that can be interpreted in multiple ways.

Since these issues touch upon the broad topic of the nature of the linguistic sign, we hope that this issue will open a new window to the nature of the linguistic sign from a CxG perspective.

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