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## Cognitive Arguments for a Fuzzy Construction Grammar

*Guillaume Desagulier*

### 1. Introduction.

Following Desagulier (2005), I assume that it is by studying intermediate forms that we can gain a better understanding of creativity and innovation, from both a linguistic and a cognitive perspective. My case studies tend to show that form/function reshuffling is best understood as a grammatical blend, for which I offer a new definition, based on a critical examination of works by Fauconnier and Turner (1996, 1998, 2002) and Fauconnier (1997). Constructional integration networks, which are the keystone of my model, hinge on the following principle: a construction that is cognitively salient provides can serve as the basis for the structuring of speakers' mental grammars. This stable symbolic unit can thus (i) be retrieved wholly or partially to provide a template for the composition of new constructions (ii) help speakers/hearers gain access to more complex pairings.

Especially revealing in this regard is the fuzziness attached to the genitive of measure ( $\text{Det}_1 \text{ Det}_2 \text{ NP}_1 \text{ measure } 'S \text{ NP}_2 \text{ uncount}$ ) exemplified below:

- (1) *He was sentenced to Ø twenty years' imprisonment.*
- (2) *The seats outside us were occupied by two middle aged women who were going to London for a week's holiday* (M. John Harrison, *The Course of the Heart*, quoted in Larreya 1995).
- (3) *Afternoon 13:30 start from the Crown for a 5½ miles' walk through Brackmills Woods* ([www.northamptonra.org.uk](http://www.northamptonra.org.uk)).

Owing to the ambiguity concerning the scope of the determiners, the multifunctionality of <s> in English and the instability of the apostrophe in written discourse, this construction is particularly challenging for speakers who, in non-expert situations of communication, will cognitively respond by reanalysing it in light of a similar unit which is more readily accessible. Consequently there can be considerable variation in the use of this construction. Taylor (1996) treats the not so clear-cut distinction between possessives and compounds in terms of 'fudging' (1996: §11.2).

Alternatively, drawing on Fauconnier (1997), I consider that ‘fuzzy’ instantiations of the genitive of measure are *constructional blends* that integrate component elements from two inputs, namely the constructional schemas associated with the genitive of measure on the one hand and nominal compounds on the other hand.

My findings are in keeping with the view that “Grammar involves the syntagmatic combination of morphemes and larger expressions to form progressively more elaborate symbolic structures. These structures are called grammatical constructions (Langacker 1987: 82).” The strong reliance on emergent and representational primitives has earned cognitive linguistics repeated criticisms from anti-representationists (e.g. Cadiot & Visetti 2001, Visetti & Cadiot 2002). Cadiot and Visetti argue that this conception of language relies on ontological prejudice:

(...) there is a trend towards relying on a very general psychological prototype, according to which language, at its most fundamental level, encodes tangible and/or physical structures (Visetti & Cadiot: 2002).

Although such remarks are particularly welcome in view of Conceptual Metaphor Theory, we will show that they do not provide a fair reflection of Cognitive Grammar and most Construction Grammars, especially when the aforementioned authors write: “In short, we think that cognitive linguistics have up to now too strongly dissociated ‘structure’ (identified to the schematical dimensions of meaning) from ‘content’ (*ibid.*)”. Their criticism cannot affect Construction Grammars since a construction is precisely a procedural symbolic pairing of ‘structure’ and ‘content’.

## 2. Aims and claims

Among the tenets shared by constructionist approaches Goldberg quotes the following: “Constructions are understood to be learned on the basis of the input and general cognitive mechanisms (they are *constructed*), and are expected to vary crosslinguistically” (2003: 219) [emphasis mine]. My point is precisely to help determine what it means for a construction to be constructed. To this aim, I want to show that:

- fuzziness is what makes language change possible,
- fuzzy grammatical categories, which are traditionally perceived as exceptions, may well be the norm when considered from a usage-based perspective,

- fuzziness is a central component of Construction Grammars since it amounts to the differential between the conservative and innovative dynamics of a construction,
- this differential characterizes the *zone of potential development* of a construction, by which grammar keeps pace with language flexibility (both synchronic and diachronic).

To illustrate those claims, I will follow Jackendoff's valuable guideline:

(...) fuzziness must not be treated as a defect in language; nor is a theory of language defective that countenances it. Rather, fuzziness is an inescapable characteristic of the concepts that language expresses. To attempt to define it out of semantics is only evasion (1983: 125).

Similarly, to attempt to define fuzziness out of Construction Grammars (and not only semantics) is also evasion.

### **3. Case study: the Genitive of Measure Construction**

#### **3.1. Main issues**

The Genitive of Measure Construction (henceforth GMC) is typologically challenging despite a relatively straightforward form-function mapping: the syntactic component –  $[\emptyset \text{ Det } NP_1 \text{ sing } <'s> NP_2]$  or  $[\emptyset \text{ Det } NP_1 \text{ pl } <s> NP_2]$  – is paired with a single function: quantification. However, if we try to think as a non-linguist does, we are soon faced with the ambiguity of the scope of the construction determiners (in writing as well as in speech). Also problematic in this regard is the role of  $<s>$  (in speech mostly), one of the most multifunctional morphemes in English. In conversation – i.e. when the hearer is not concerned with decomposing the sound input into clear-cut grammatical categories – one can hesitate as to whether the morpheme should be regarded as a marker of the plural, a vestige of the possessive case, or even a vaguer entity such as the so called 'linking-s' found in some morphological compounds (*menswear*, *craftswoman*, *spokesperson*). Likewise, the apostrophe is far from stable in writing. It does not even appear in the following example:

- (4) *The criminal penalties, however, are draconian: up to twenty years imprisonment and up to \$25,000 fine for each count* (BNC). [emphasis mine]

The distribution and function of the formal components of the GMC rely heavily on how speakers/hearers and writers/readers reanalyse the whole construction. As will appear in the course of this paper, there is indeed significant variation concerning the GMC, especially as regards its determiners, punctuation and the construction of each NP (depending on whether each one is interpreted as countable or uncountable).

### 3.2. Genitive constructions

Relatively little is said in the literature about the genitive of measure, with the exception of Larreya (1995). Most studies on genitives give pride of place to (i) the variation between the *s*-genitive constructions and *of*-constructions (Quirk et al. 1985: 321, Deane 1987, Gries 2002, Rosenbach 2002), (ii) the concept of possession and its realizations in terms of event schemas (Heine 1997: 83-108) or (iii) reference point phenomena (Langacker 1999: 174-188). Moreover, the GMC is the form that receives the least attention within the genitive paradigm as most descriptions focus on the determinative and classifying genitives.

All genitive constructions share the same basic syntactic configuration: NP<sub>1</sub>'s NP<sub>2</sub>. The number of correlated functions depends on the degree of accuracy the linguist wants to achieve. Quirk et al (1985: 326-330) list no fewer than six types of *s*-genitives:

- genitive as determinative  
*[Jenny's] desk* (1985: 326),
- genitive as modifier  
*He wants to become a ship's doctor when he grows up* (1985: 327),
- the group genitive  
*The Museum of Modern Art's Director* (1985: 328),
- the independent genitive  
*My car is faster than John's* (1985: 329),
- the 'local genitive'  
*We'll meet at Bill's* (1985: 329),
- the 'post-genitive'  
*some friends of Jim's* (1985: 330)

The criteria that make up those categories are not homogeneous. Some of them are mainly syntactic (the independent genitive, the post-genitive) whereas some others are primarily semantic (the genitive as modifier, the group genitive, the local genitive) or even both (the determinative genitive). In fact, most of those *s*-genitives break down into two main groups: determinative and classifying genitives. As we will see, the genitive of measure does not fit either category and seems closer in form and function to the nominal compound paradigm.

### 3.3. The Genitive of Measure Construction.

Two main properties define the genitive of measure according to Larreya (1995: 106-109). First of all, NP<sub>1</sub> expresses a measure of time, distance, or money (in which case it is followed by *worth*):

- (1) *He was sentenced to twenty years' imprisonment.*
- (5) *There are two areas a few miles' drive away which offer a wider selection of restaurants* (<http://calico.mth.muohio.edu>).
- (6) *(...) okay that the utility that comes from ten thousand dollars' worth of retirement benefits, is probably greater than the utility that comes from ten thousand dollars' worth of earnings (...)* (MICASE).

Secondly, NP<sub>2</sub> is constructed as uncountable. This is clearly evidenced in (1): being a nominalized predicate, *imprisonment* cannot be determined by the indefinite article *a*. Special attention should be paid to nouns which can be constructed as countable or uncountable depending on their meaning. In this case, Larreya claims that the genitive of measure selects the uncountable behavior. *Holiday* belongs to the class of nouns that can be constructed in both ways:

- (7) *This is a holiday, or hadn't you noticed?* (BNC)
- (2) *The seats outside us were occupied by two middle aged women who were going to London for a week's holiday.*

In (7), it is clearly countable. In (2), despite the misleading presence of the indefinite article *a* before *week*, *holiday* is uncountable. Larreya suggests it is determined by the zero article ( $\emptyset$ ) whereas *week* is determined by the indefinite article:  $[[\emptyset]_{\text{DET}_2} [a]_{\text{DET}_1} [\text{week}]_{\text{NP}_1}'s [\text{holiday}]_{\text{NP}_2}]_{\text{NP}}$ . This is

confirmed if *week* is in the plural, in which case a numeral takes the place of the indefinite article, as in (8):

- (8) *Hampshire gave Smith two weeks' holiday on his return from the World Cup (...)* (BNC).

The Genitive of Measure Construction, depicted in figure 1 integrates those properties:

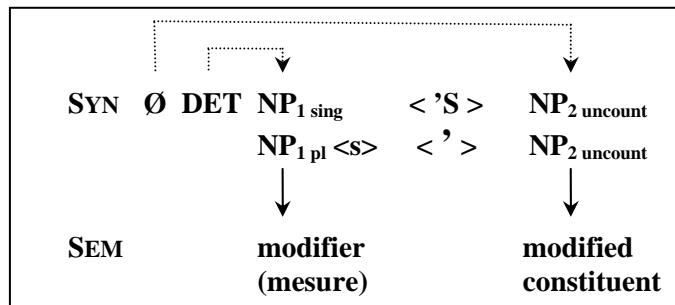


Figure 1. The Genitive of Measure Construction

### 3.4. From syntactic to constructional fuzziness

This prototypical depiction of the GMC should not hide the existence of some fuzzy zones which influence the use and perception – that is to say the *construction*<sup>1</sup> – of the linguistic unit. In (8), NP<sub>1</sub> is determined by the numeral *two*. Logically enough, we should expect any other linguistic element sharing the same distribution to work just as well. As expected, most cardinal numerals occur felicitously in the determiner slot, with the exception of *one*. This is not to say that this numeral cannot occur in the slot; it just appears that it is not as frequent as its properties would allow:

- (8') *?Hampshire gave Smith one week's holiday.*

Technically – i.e. distributionally – nothing bars the singular numeral from appearing in this context. However, *one* hardly ever occurs in the GMC, contrary to the indefinite article *a/an*. Table 1 compares the token frequency of *a* and *one* in the lexically-filled constructional environment <*x week's holiday*> in the BNC.

Table 1.

	hits	rel freq (%)
<i>one week's holiday</i>	1	1,96
<i>a week's holiday</i>	41	80
<i>x week's holiday (= C)</i>	51	100

The significant gap between the token frequencies of *a* and *one* has several causes, one of which is the functional specificities of each determiner. In Culioni's utterer-centered approach to grammar, *a* and *one* mark what is called an operation of extraction<sup>2</sup> (Culioni 1990). *One* lays stress on the quantitative nature of the extraction (gloss: "one and only one"), whereas *a* implies that the same operation is qualitative (gloss: "one occurrence/quantity is extracted from the class"). In other words, besides marking extraction, *one* specifies the extracted quantity and contrasts it with respect to the other elements. The numeral *one* is thus more constraining in its use than the indefinite article, which may explain why the former is far less frequent than the latter<sup>3</sup>.

The second reason for the higher frequency of the indefinite article is properly constructional (and therefore based on usage). As pointed out above, not all speakers are linguists. As a result, it is highly improbable that a speaker's knowledge of the construction corresponds exactly to a linguist's characterization of the GMC (cf. §3.3). It is very likely that non-linguists do not even acknowledge the existence of the zero article (which appears in figure 1) and that they do not have a very clear grasp of the complex determination schema within the construction. Larreya (1995: 108) claims that a zone of "fuzzy syntax" affects determination in genitive constructions. Confusion is likely to occur when NP<sub>2</sub> is in the singular, in which case nothing blocks the indefinite article from being mistakenly perceived as bearing on the second NP (providing it is erroneously construed as countable). From a linguist's perspective, the overall determination schema is easily accessible: in (2), the indefinite article determines the countable noun *week* (NP<sub>1</sub>); *holiday* (NP<sub>2</sub>) which is here used as an uncountable noun, is determined by the zero article. In genuine conversation, the scope of each determiner may not be so easy to grasp, especially for non-linguists who process the construction without having to decompose it. This goes along with Langacker's definition of a symbolic unit:

A unit is a structure that a speaker has mastered quite thoroughly, to the extent that he can employ it in largely

automatic fashion, without having to focus his attention specifically on its individual parts or their arrangement. Despite its internal complexity, a unit constitutes for the speaker a “prepackaged” assembly; because he has no need to reflect on how to put it together, he can manipulate it with ease as a unitary entity (1987: 57).

Yet, since the GMC is perhaps not so frequent – therefore not totally entrenched as a unit – speakers and hearers may not be so at ease when they manipulate it. Consequently, the indefinite article may end up reanalyzed as the determiner of NP<sub>2</sub>, even more so when the latter is constructed as countable. Also a cause for reanalysis (and thus for the preference given to *a* over *one*) is the fact that, in the absence of clear knowledge as regards the internal functioning of the construction, the speaker might want to preserve the ambiguity<sup>4</sup> attached to the scope of the determiner so as to avoid a possible mistake. It appears that the use of *a* instead of *one* is more appropriate when it comes to maintaining a certain degree of ambiguity. Indeed, the indefinite article seems to give the speaker more leeway in cases where both NPs are compatible with a countable interpretation, as in (2). Owing to the association of *one* with the other numerals, it might seem clearer that the determiner bears on NP<sub>1</sub>. Indeed, in *two weeks' holiday*, only *weeks* (NP<sub>1</sub>) can be determined by the numeral *two* since it is the only noun in the sequence that is both countable and in the plural. Even if *one* is more ambiguous than *two*, *three*, *four*, etc., speakers/hearers may be more willing to map the behavior of plural numerals onto the singular numeral *one* (on the grounds of family-resemblance) than onto the indefinite article. This is despite the fact that *one* is semantically closer to the indefinite article<sup>5</sup> than to the other numerals. As a consequence, speakers and hearers might feel more constrained when they use a numeral, be it in the singular or in the plural.

In some cases, the GMC is thus endowed with a fuzzy zone, namely an under-specification as regards the scope of the explicit determiner. Taking the perception of the construction by speakers and hearers into account is a crucial step towards the understanding of the genesis and processing of this unit. In other words, a construction is *constructed* in two ways: it is an artefact (i.e. the combination of form and meaning into a congruous object of language) as well as an object of perception (i.e. a product as well as a vector of cognitive activity). Larreya (1995) assumes that interpretation plays a very limited part in the syntactic behavior of the genitive of measure. On the contrary, we claim that it plays a central role in the *construction* of the construction. This is further evidenced by the small but

certainly not insignificant number of exceptions to the second property of the GMC (cf. §3.3 above). In the examples below, NP<sub>2</sub> is not construed as uncountable:

- (9) *He went further, saying: "We have reached the stage in the Conservative Party where if we have **a week's conference**, and in that we have a 10-minute row about the euro, that will be all that is reported* (<http://news.bbc.co.uk>).
- (10) *Each expedition starts with **a week's training period*** (<http://www.raleigh.org.uk>).
- (11) *Initially she purchased CMSI services, and after **a week's session**, she switched to IBIS facilitation available in-house from SCE* (<http://www.touchstone.com>).
- (12) *Afternoon 13:30 start from the Crown for **a 5½ miles' walk** through Brackmills Woods.*
- (13) *No application, however, shall be denied unless an opportunity for a hearing has been given the applicant by **a ten days' notice** in writing (...)* ([www.hermosabch.org](http://www.hermosabch.org))
- (14) ***a ten days' absence*** (Quirk et al. 1985: 1333).

In (9)-(14), NP<sub>2</sub> is exclusively countable, a configuration in which the genitive of measure is normally impossible and only a nominal compound can occur (Larreya 1995: 109). Yet, *a week's conference*, *a week's training period*, *a week's session*, *a 5½ miles' walk*, *a ten days' notice* and *a ten days' absence* all belong to the GMC despite the countable behavior of each NP<sub>2</sub>. We are faced with two options: either we consider those sentences as ungrammatical or we acknowledge that this construction includes a certain degree of indeterminacy. In our usage-based perspective, the first option is of course ruled out from the start.

### 3.5. Causes for constructional variation

English genitives owe their high degree of variation to the graphemic instability of the apostrophe, the multifunctionality of <s> (in speech as in writing) and the unstable classification of its NPs in the countable/uncountable dichotomy. This instability stems in equal proportion from the speakers' partial ignorance of conventional spelling as well as from the fuzziness inherent in the GMC.

In his attempt at explaining the fluctuating position of the apostrophe (when present), Taylor (1996: 305) conjures up Sklar's (1976) historical account. That study shows that the “possessive apostrophe” occurs frequently before singular nouns in the 17<sup>th</sup> century and is conventionalized by the middle of the 18<sup>th</sup> century. The possessive apostrophe before plural nouns is not documented until the end of the 19<sup>th</sup> century. Sklar reveals that the oldest function of the apostrophe is to indicate that a sound or a letter has been elided<sup>6</sup>. In the 18<sup>th</sup> century, the apostrophe is also used as a marker of the plural in cases where the adjunct of a plural ending is awkward<sup>7</sup> (e.g. *genius's*). Both functions must have interfered with the use of <s> in middle position in some nominal compounds (e.g. *craftsman*, *spokesperson*, *bridesmaid*, *sportscar*, etc.) to such an extent that speakers have been faced with several options. One of them is to generalize the use of the apostrophe whenever there is a need to separate a noun and the affix <s>, whether in plural marking or in the possessive construction. Another one is to avoid the apostrophe altogether (especially in the plural).

The instability of <s> echoes the variation in the use of the possessive apostrophe insofar as both hinge on speech-writing discrepancies. Consequently, the same sequence heard by different hearers can give rise to different phonological parsings. We should therefore expect instantiations of the GMC to display a high degree of variation. (15) below lists the variants collected from different corpora based on example (8):

- (15)     *two weeks' holiday*  
         (a) *two weeks holiday* (BNC),  
         (b) *a two(-)week's holiday* (*Lonely Planet*),  
         (c) *a two(-)week holiday* (BNC),  
         (d) *a two weeks holiday* (BNC),  
         (e) *two week's holiday* (<http://www.ei-ae.gc.ca>).

Those variants are very likely to derive from the same phonological sequence. Each of them is the product of a different phonographematic parsing. It is to be noted that the most frequent variants – (c) and (d) – are also those we are most familiar with. Apart from being affiliated with the GMC, they also come under the influence of the nominal compound construction (NCC), depicted in figure 2:

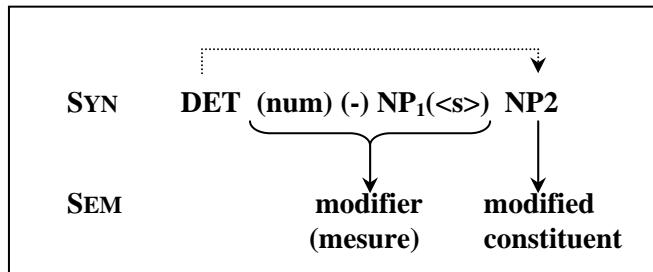


Figure 2. The (Quantifying) Nominal Compound Construction

The frequent overlaps tend to show that those two constructional prototypes are not necessarily in complementary distribution. The mutual interference between them does not stem just from speakers' ignorance. It is also and mainly the side effect of the zone of fuzziness that surrounds each prototype. This argument is all the more convincing as it is in keeping with Taylor's development on the fuzziness attached to the syntax of the nominal compound schema (1996: 301-312). Taylor is certainly right in drawing a striking parallel between compound possessives and compound nouns as he writes:

The orthographic variability exhibited by *magistrate's court*, *magistrates' court*, and *magistrates court* is not simply a consequence of people's ignorance of the prescriptive rules, or their failure to abide by them, it also reflects the absence of clear-cut criteria for distinguishing a possessive from a non-possessive compound, and, in the case of a possessive compound, one with a singular possessor from one with a plural possessor (1996: 306-307).

In other words, both the GMC and the NCC are characterized by a certain degree of fuzziness as regards the apostrophe and <s>. That the NCC hinges on a prototype – as illustrated in (16) below – does not mean that the construction is not affected by a significant degree of variation, as exemplified by (16a) and (16b)<sup>8</sup>:

- (16)    *If the individual has more than a three-year break in service he or she must meet current training standards* ([www.post.ca.gov](http://www.post.ca.gov)).
- (16a)    *In the consequence of a three years break, I could reset my own style completely* (<http://www.cargorecords.co.uk>).

- (16b) *After a three years' break, Crematory, leading band of its genre in Germany from the beginning of the 1990s until 2001, is back with a fine new album* (<http://shopping.theendrecords.com>).

Most of the time, deviations from the prototype are marginal and display a limited array of formal variants. This is not to say that the form/meaning pairing of the NCC is inflexible. Significantly, some of its constituents can be recruited in other pairings. Conversely, the construction is also liable to import elements from other cognitively salient constructions. This is made possible by perceptual factors. Taylor writes:

The distribution of the possessive morpheme in nominal compounds is essentially a question of how speakers (or, more accurately, writers) interpret a compound. (...) Patterns in the construal of compounds are certainly discernible (1996: 307).

In some cases, it seems that usage blurs the distinction between the GMC and the NCC. Indeed, the interaction between both constructions is made possible not only by their formal and functional similarities but also by the construing activity of cognitive subjects involved in verbal communication.

### 3.6. Why the schema of the NCC is gaining ground

There is every reason to think that the form/meaning pairing of the GMC is often reanalyzed in terms of the NCC, especially when the latter expresses a measure: e.g. *a three-day trip, a one-month tour, a one million pound reduction, a three thousand dollar pay rise, a three hundred acre plant*, etc. Among the cognitive causes for the overlap between those two constructions is the fact that they are strikingly similar as regards form and meaning. Each of them consists of a modifying element and a modified entity, both of which are realized as NPs. Their main difference lies in the number of determiners (the GMC has two, whereas the NCC has only one) and in the presence or absence of the genitive morpheme. Incidentally, the latter feature is hard to account for. Taylor (1996) devotes several pages to the issue without coming up with a satisfactory explanation. According to him, the absence of the possessive morpheme occurs when the modifying NP lacks referentiality:

To say that a person is a 'child molester' is to characterise them as a certain kind of person, it is not to invoke the notion of any particular child, or children, who have been molested.

(...) Likewise with *woman doctor* and *student nurse*. Here the modifier has a purely descriptive function, *woman*, in *woman doctor*, being roughly equivalent to 'female' (1996: 309).

However appealing, this argument fails to explain the presence of the genitive morpheme in common examples such as (17a):

- (17) (a) *women's college*  
(b) \**womens college*  
(c) \**women college*

The modifier NP *women* does not have a referential value: the school in question is for female students only, which means that *women* does not refer to individuals but to a quality. Yet the presence of <'s> is compulsory in what seems to be a qualifying genitive. It is perfectly possible to interpret the genitive construction in (17a) as the mark of an abstract location ( $NP_2$  is located relative to the quality expressed by  $NP_1$ , that is to say the referent of  $NP_2$  is accessed via the quality denoted by  $NP_1$ ), which blurs even more the distinction between genitive constructions in general and the NCC.

The latter is all the more likely to provide a solid basis as its constructional schema is quite productive: the modifying element can be instantiated as a noun, a noun phrase or even a genitive construction:

- (18) [Cat] *milk*.  
(19) A [ham and cheese] *sandwich*.  
(20) The [spider's web] *layout of the streets* (Taylor 1996: 302).

Insofar as the schema of the NCC is more productive, more frequent and in theory easier to process than the constructions associated with the genitive of measure (notably concerning the range of the determiners), it is plausible to say that it is the NCC which influences the GMC more than the reverse. A linguist's characterization of the NCC posits that neither the apostrophe nor the <s> morpheme are required after  $NP_1$ . Furthermore, since  $NP_1$  has a qualifying function, we can expect it to behave syntactically like an adjective, that is to say without the plural morpheme <s> (since adjectives are invariable in English). This in return diminishes the chance of having the apostrophe. All those factors brought together help make the construction a keystone in the architecture of speakers' mental grammars. The principle of cognitive economy may well be at work here. In her book on genitives<sup>9</sup>, Rosenbach writes: « Given two structural alternatives, the

option demanding less mental effort is more likely to be chosen than that option requiring more mental effort (Rosenbach 2002: 238) ». One should be careful not to misunderstand the phrase “less mental effort” and put it on a par with a morally condemnable attitude on the part of speakers (the concepts of laziness and carelessness have no relevance *per se* in linguistics). Cognitive economy can be summed up as follows: when a complex unit is constructed, speakers/hearers can conjure up a similar construction which is perceived as easier to process, especially in genuine discourse. In other words, cognitive economy is at work whenever speakers/hearers produce/interpret a complex pairing in light of a similar one which is more readily accessible to them. The genitive construction can be said to be more complex because of the fluctuating role of determiners and the multifunctionality of the <s> morpheme. If we adopt a usage-based approach, we should expect perceptual factors to influence (at least partially) the construal of constructions by cognitive subjects. We should also come to terms with the reality that scientific characterization of a construction by a linguist does not always correspond to the representation of the same construction by lay people. The same discrepancy can be observed between members of the same linguistic community as a speaker’s mental representation of a given construction may not always correspond to the hearer’s mental representation of the same linguistic unit. For instance, in oral speech the <s> morpheme may be *intended* as the genitive affix but *perceived* as the mark of the plural.

As pointed out above, the NCC is also affected by the same kind of variation. However, its mental representation appears to be simpler and more stable for the reasons mentioned earlier. This might explain why the NCC is more frequent than the GMC in functionally equivalent contexts (i.e. in the expression of a measure). A casual Google search yields 5,390 hits for <a three(-) week holiday> (NCC) against 917 for <Ø three weeks’ holiday> (GMC). Likewise, around 105,000 hits were found for <a two (-) hour drive> (NCC) against 546 for <Ø two hours’ drive>. It should be noted that those 546 occurrences include intermediate instances such as *it is about a two hour’s drive*, which is halfway between *two hours’ drive* and *a two hour drive*. I do not mean this to be considered an orthodox corpus analysis, but it is enough to reveal the existence of a fuzzy zone between the two constructional poles I have been depicting so far. Even if some examples show evidence of a possible contamination of the NCC by the GMC, cognitive factors make the former a more obvious choice to help speakers/hearers gain access to the latter.

### 3.7. Constructional compositionality

Frequent blends occur precisely because the constructional template of each construction is loose enough to make reanalysis possible. Taylor (1996: 294) describes this phenomenon in terms of *fudging*, but does not provide a clear definition of the concept, which leads us to think that it is used informally and is devoid of any theoretical ambition. However, most of Taylor's argumentation hinges on syntax, which might imply that fudging is first and foremost equated with syntactic fuzziness: “(...) from the point of view of their external syntax, the distinction between compounds and possessives can blur (1996: 301)”. This amounts to saying that speakers have a partitioned conception of language, i.e. one that makes a clear distinction between syntax and semantics for instance. Yet this is far from obvious: there are indeed disturbing situations in which a speaker knows exactly what to say but lacks the words to express the intended propositional content. Some might say it evidences that form and meaning are distinct in the mental grammar, and that a pairing is constructed *ad hoc* to fit conversational needs. I do not go along with that analysis, and just see this phenomenon as a mark of flexibility in the form/meaning pairing. In any case, a constructional approach is more psycholinguistically relevant than a purely syntactic or semantic analysis.

As pointed out above, when two constructions are similar and/or compatible in syntax and semantics, the more entrenched one can help gain access to the less cognitively salient or the more complex one. My case studies seem to show that speakers gain access to the GMC via the NCC. Johnson (1999), who conducted similar research in language acquisition, came up with the concept of *constructional grounding*. We claim that a similar phenomenon is at work even after a language has been acquired.

When one browses through grammar books of English, one comes up with the idea that there is a clear cut distinction between grammatical categories, as for instance between genitive and nominal compound constructions. Most of the examples are selected precisely because they instantiate an uncontroversial aspect of each category. But simple corpus searches reveal a significant fuzzy zone between clear-cut constructional poles. This zone results from the differential between the conservative and innovative dynamics of a construction. This differential defines a zone of influence, namely a *zone of potential development* (Desagulier 2005). The more schematic the pole, the greater its zone of influence will be. All the intermediate constructions described above – e.g. (15) – belong to that zone, halfway between the GMC and the NNC poles. Taking constructional

fuzziness into consideration is all the more important as it might be what enables speakers' mental grammar to keep pace with language flexibility (both synchronic and diachronic).

Example (15b) might seem strange to educated speakers in writing, yet, it occurs on repeated occasions in various contexts:

- (21) (...) so she had her hair cut for **a two week's holiday** in a country where it was only marginally hotter than in her own (<http://thorntree.lonelyplanet.com>).
- (22) The boat's fuel tank with ordinarily hold more than enough for **a two week's holiday** (<http://www.canals.com>).
- (23) In other words, if you arrive on 1 Jan 2002 and have **a two week's holiday** outside Australia in the meantime, you will be eligible for citizenship on 15 Jan 2004 (<http://britishexpats.com>).

This intermediate construction integrates components from both the GMC and the NCC and forms an original pairing. This is clearly a case of constructional blending (Desagulier 2005). Figure 3 illustrates the compositional process that leads to the construction of this intermediate unit:

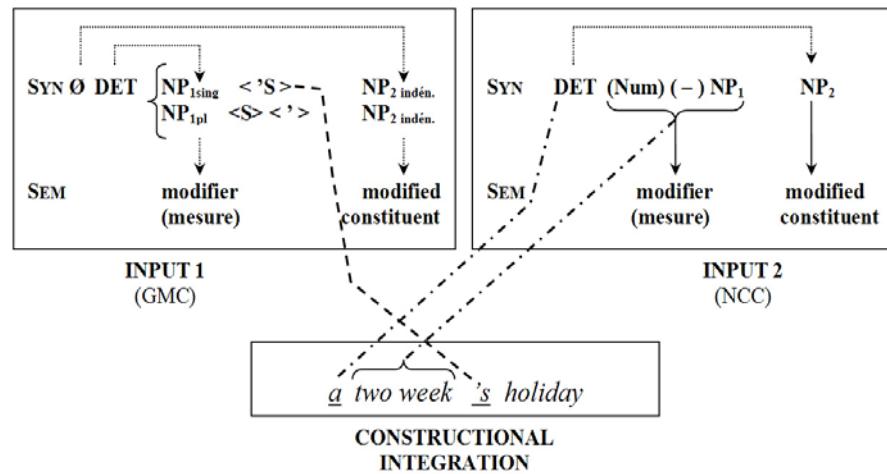


Figure 3. Constructional blending: *a two week's holiday*

It appears that *a two week's holiday* is an intermediate construction that integrates elements from the prototypical GMC (*Ø two weeks' holiday*) and the canonical schema of the NCC (*a two-week holiday*). The blend is the

product of compositional projections from those two constructional templates. It integrates the genitive morpheme <'s><sup>10</sup> and the couple modifier/modified constituent from the GMC. From the NCC, the blend selects the use of the determiner, the hyphen (optional), the couple modifier/modified and, within this pair, the invariability of the modifier, and the countable functioning of the noun. The inheritance pattern that makes up the blend is asymmetrical as most elements are imported from the NCC template. The blend feeds on the zone of potential development between prototypes. Whereas intermediate constructions like (15a-e) pose numerous typological problems, they fit elegantly in a blending-based representation.

(15e) shows an even higher degree of compositionality. On the one hand, the modifier ( $NP_1$ ) echoes that of the NCC since *week* is in the singular. On the other hand, *holiday* is constructed as an uncountable noun, thus determined by the zero article: it is a property of the GMC. It is impossible to decide whether the construction belongs to the genitive or measure category or whether it is a nominal compound. Nevertheless, the genesis of  $\emptyset$  *two week's holiday* is unproblematic from our perspective since it can reasonably be analysed as a constructional blend, of which figure 4 is a simplified illustration (the parallel mapping of the modifying and modified constituents has been left aside):

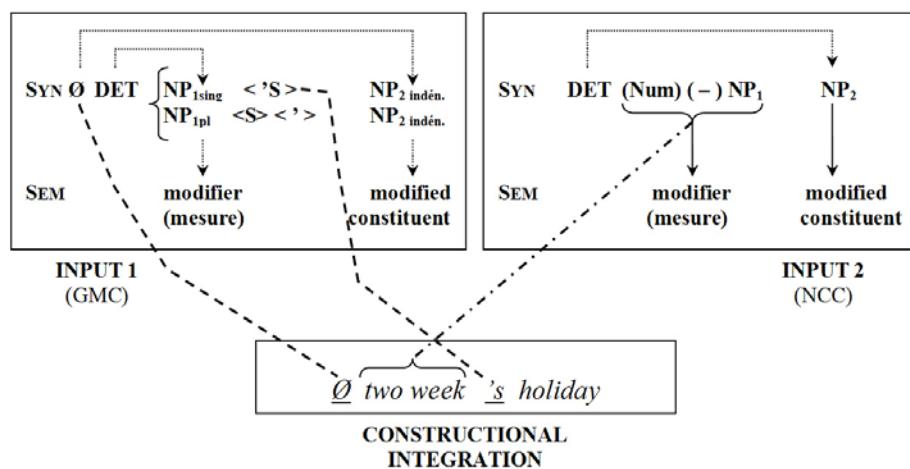


Figure 4. Constructional blending: *two week's holiday*

This time, more elements from the GMC are integrated into the blend. In writing, this construction is closer to the genitive pole than it is to the NCC,

In speech, this affinity is neutralized, and there is no way one can distinguish  $\emptyset$  *two week's holiday* from  $\emptyset$  *two weeks holiday*. The phonetic realization of the <s> morpheme is open to several interpretations as it can be analysed as the possessive marker, the plural affix, or the 'linking s', which characterizes some compound nouns. This means that the same component in a constructional blend can be the product of multiple inheritance patterns. Figure 5 below shows that the <s> morpheme is probably the outcome of a fuzzy mapping from the possessive marker in input 1 and the plural affix in input 2.

The fuzziness attached to intermediate cases of the GMC is not merely syntactic but also constructional. Each intermediate construction is a constructional blend that integrates various syntactic components from two constructional templates and the functional bipartition between a modifier and a modified constituent. In other words, the blend exists because the GMC and NCC templates are compatible in form *and* meaning and because those prototypes are general and flexible enough to make reanalysis possible.

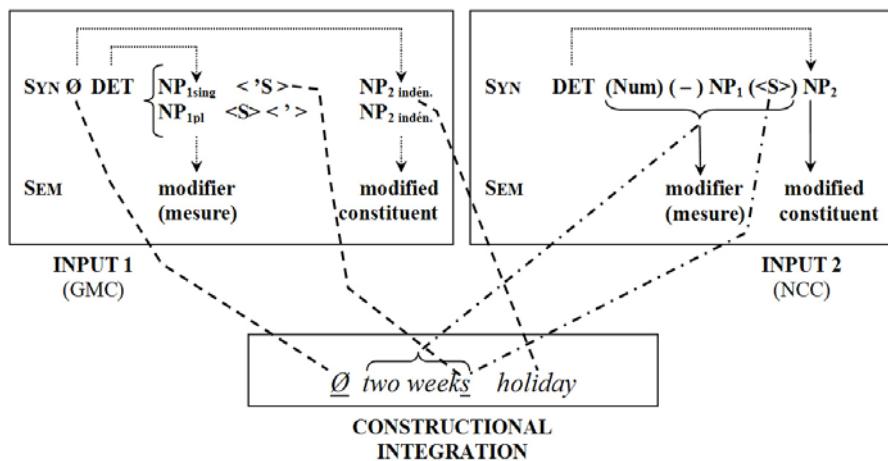


Figure 5. Constructional blending: *two weeks holiday*

### 3.8. Summary

The GMC is characterized by a broad zone of potential development, owing to the complex interaction between its formal and functional constituents and because this symbolic pairing has not reached a

sufficiently advanced stage of entrenchment. Consequently, it is prone to form/function reanalysis all the more so as it competes with the NCC which is more cognitively salient in many respects. In fact, prototypical instances of the GMC are certainly less common than its variants, whereas canonical realizations of the NCC are frequent (and somewhat simpler to compute). We have hypothesized that speakers/hearers often gain access to the GMC via the NCC, since the latter defines a template that is more stable and yet flexible enough to participate in the construction of another symbolic unit.

Constructional blending both makes possible and is made possible by the double nature (stable yet flexible) of constructions. Intermediate constructions, that is to say constructions for which it is next to impossible to say which paradigm they are primarily related to – are not so much a sign of speakers' ignorance as a mark of their ability to rely on stable schemas to access more complex form/meaning pairings. That which might be erroneously perceived as a mark of laziness is in fact a trace of cognitive activity, creativity, and optimality. Our examples show that cognitive subjects do not always avoid complexity: they merely choose the most stable path to achieve their communicative goals. Far from being peripheral, cognitive activity is a key component in the understanding of the mechanisms of variation and language change.

#### **4. Conclusion: towards a Fuzzy Construction Grammar**

The subtlety and complexity of the issues I have touched on cannot be fully covered by such a short development. This paper should thus be read in light of previous research on constructional integration networks – which includes but is not limited to Desagulier (2003, 2005). Nevertheless, I hope to have shown that fuzziness is central in the construction of a symbolic pairing of form and meaning. The more challenging a construction is from a usage-based perspective, the more we are likely to oppose a more or less conscious cognitive reaction to it, such as the reanalysis of the difficult construction in light of a more accessible one. Most of the time, this will result in a significant degree of instability in the instantiation of the construction.

Constructions owe their stability to the fact that speakers stock and share a certain number of form-meaning pairing conventions which have been abstracted from previous linguistic experience. However, each symbolic unit is not fixed insofar as speakers do not necessarily have access to exactly the same form-meaning pairings. The differential between

those two principles defines what I have termed the *zone of potential development*, of which fuzziness is an inevitable side effect. Any usage-based characterization of mental grammar (understood as a combination of procedural representations) should take this principle into account, for it conditions the very idea of language dynamics. Fuzziness may well be what enables grammar to keep pace with language flexibility.

Constructional integration networks exploit the double nature (i.e. stable/unstable) of constructions, and more generally rely heavily on the principles that govern language dynamics. Linking language variation and change to constructional blending is in keeping with the view of grammar as a set of interrelated procedural units. Speakers routinely use constructions or fragments of constructions (which may be mutually inconsistent) in a compositional manner. They can do so because the parts involved in the grammatical engine (the constructions) are loose (fuzzy) enough to make form/function reanalysis possible. If this hypothesis is validated – that is to say if constructional blending is indeed a central process of grammar – then we can think of the language faculty as a meshwork in which each emerging unit is based on a cognitively salient construction and may in turn either be retrieved wholly or partially to provide a template for the composition of a new construction, or help speakers gain access to more complex symbolic pairings. In sum, we have good reason to believe that there exists a double based-on relation between constructions: each of them can serve as reference units as much as they are themselves based on other templates.

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## Notes

<sup>1</sup> The word *construction* is polysemous. It stands for both a grammatical unit (a linguistic artefact) and cognitive activity (also expressed by the verb *construe*). Linguists working in the framework of Cognitive Grammar have shown that this polysemy is no happy coincidence. A construction is indeed a unit constructed on the basis of a cognitive routine (perception and interpretation mainly).

<sup>2</sup> Extraction is an operation of determination by which the utterer singles out one or several elements from a class of occurrences (when the noun is countable) or a quantity from a class of quantities (when the noun is uncountable and what it refers to is quantifiable). For instance, in the NP *a dog*, the indefinite article *a* marks an extraction of the occurrence *dog* from the class of dogs.

<sup>3</sup> This is easily confirmed by a quick search in the BNC: outside the <*x week's holiday*> environment, *one holiday* obtains 16 hits against 995 for *a holiday*.

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<sup>4</sup> Intentional ambiguity in conversation amounts to what Bolinger (1961) calls *generality*, i.e. a situation where ambiguity is not dispensed with, but deliberate and endowed with a communicational purpose.

<sup>5</sup> Both are etymologically related insofar as *a* derives from *one* (OE *An* > ME *on*, *an*).

<sup>6</sup> A function that is still well grounded in usage nowadays, as in some contracted forms in English (I'm, you're, ain't, etc.), in French (l'eau) and in Italian (Uniti nell'Ulivo). In English, some historical linguists think that elision played a role in the emergence of the apostrophe as a marker of the possessive with nouns in the singular. Thus, as Taylor (1996: 306) observes, *the king's daughter* is thought to have derived from *the king his daughter*.

<sup>7</sup> This is still observed nowadays: e.g. *the pro's and con's, p's and q's, in the early 1990's*, etc.

<sup>8</sup> The specification of the numeral was deliberately left aside. It may however play a role – however minimal – in the entrenchment of the construction and alter its variability.

<sup>9</sup> Strangely enough, the genitive of measure is left aside in that book.

<sup>10</sup> The variant *a two weeks' holiday*, with NP<sub>1</sub> in the plural + the apostrophe is quite uncommon in writing.

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