From the relational dimension of lexical contents to syntax

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1. The relational dimension of lexicon

Lexical units display a relational dimension, so that their definition requires that a complex structure is taken into account as a relevant unity of analysis, either cognitive – a cognitive model – or linguistic: a sentence (Gross 2012: Ch. 1).

The observation of sentence structures proves that the distribution of each lexeme within a model sentence is constrained by different layers of restrictions based on their content. Thus, the meaning of a lexeme may in principle be circumscribed by explicitly stating its distributional restrictions. If the sentence structure becomes the relevant level for lexical analysis, a question naturally arises: is there a sharp borderline between the relational dimension of lexicon and the syntax of the sentence? If the answer is positive, what are the relevant differences?

In my presentation, I shall provide arguments backing the idea that there is a sharp borderline between lexicon and syntax.

1.1. Layers of restrictions based on content

There are at least three different layers of restrictions based on the content of lexemes (Prandi 2016a):

- *Wesenhafte Bedeutungsbeziehungen* (Porzig 1934), known as **lexical solidarities** since Coseriu (1967). One example is the relation between the verb *assassinate* and the referent of its direct object, who is a person with a political profile. Lexical solidarities constrain the distribution of lexemes in a non-trivial way. From a formal syntactic point of view, such a combination as *Hans frisst*, for instance, is well-formed. It is the task of the lexical solidarity to qualify this combination as inappropriate – as a lexical mistake.

- **Selection restrictions** (Harris 1946; Chomsky 1957; 1965). The distributional structure of complex expressions is also constrained by substantive conceptual criteria holding as consistency requirements. The formal distributional structure being equal, *Mary dreams* displays a consistent meaning while *The moon dreams* (Blake) displays an inconsistent one. Beside a syntax of forms, a syntax of concepts is active in constraining the distribution of words and phrases.

- **Complex cognitive models** ((Schank 1975; Schank, Abelson 1977; Fillmore 1977; Holland, Quinn 1987; Gibbs 1999) are complex networks of relevant conceptual relations that are activated when a word is used and impose further restrictions on the distribution of lexemes. Within the restaurant frame, for instance, meat is not produced by feeding cattle and slaughtering it, but is cooked according to given social conventions, served by waiters end eaten by customers who pay for it.

1.2. A hierarchy of restrictions: lexical structures and content are tautologically consistent

Lexical solidarities, consistency criteria and cognitive models **are different kinds of structures with very different functions**. **Both lexical solidarities and cognitive models are lexical data**. Lexical solidarities are formal lexical structures rooted in the language-specific organization of lexical paradigms, while cognitive models provide lexemes with their substantive content. **Selection restrictions are** neither lexical structures nor cognitive models, but **consistency requirements** that draw from outside the borderline of consistent conceptual areas – the same that are open to both formal lexical and cognitive modelling.

As consistency requirements, selection restrictions provide a conceptual background for consistent cognition and consistent lexical structures in that they form a heritage of ultimate presuppositions (Prandi 2016a) of practical behaviour shared by all people who share a form of life and its "natural standpoint" (Husserl (1913(1931)). They form "the river-bed of thoughts" (Wittgenstein 1969, prop. 97) and of their linguistic expression only in that they shape the conceptual bedrock of the only form of life we are acquainted with. The reasons that induce us to think that *The moon smiles* is an inconsistent complex meaning that fits neither lexical structures nor conceptual modelling are the same as those that prevent us from addressing statements, questions and orders to the moon.

My hypothesis about the functional hierarchy between consistency criteria, lexical solidarities and cognitive models is confirmed by the empirical data provided by distributional lexical analysis. **A distributional analysis meets both cognitive restrictions and lexical solidarities**. The fact that one may travel with both individual transportation means such as cars or bicycles and collective means such as trains,

busses or planes sends back to shared cultural models that constrain the distribution of such a verb as *travel*. On the other hand, the appropriate verb denoting the use of collective transportation means in English is *take* – *take a train*, *a bus*, *a plane* while in French it is *emprunter*, the same that in its primitive sense translates the English verb *borrow*: *emprunter un train*, *un car*, *un avion*. In order to identify formal and substantive distributional restrictions, on the other hand, the only relevant uses are the consistent ones. When defining the distribution of the verb *pour*, for instance, one takes into account its consistent co-occurrence with liquid masses and, in another sense, with money, but not its inconsistent co-occurrence with feelings – *And Winter pours its grief in snow* (Emily Brontë) – or light: *He* [the sun] *pourd his light* (Blake).

This datum, as we shall see, will also be relevant for drawing the borderline between lexical and syntactic distribution, and hence between lexicon and syntax.

2.   Lexicon and syntax

The distinction between lexicon and syntax has been explicitly called into question, among others, by Langacker's (1987; 1991) conception of language as a system of symbols – of pairings of forms and meanings. Lexicon is seen as a repository of meaningful words and idioms, while grammar is described as a repository of meaningful complex forms. According to Goldberg (1995): the premise that "Constructions themselves carry meaning" leads to the idea of constructicon (Goldberg 2003: 219), which is a functional equivalent of lexicon in the area of complex constructions.

The idea I shall argue for is opposite: between lexicon and syntax there is an essential discontinuity, which is connected to the elective function of syntactic structures, that is, a potentially creative connection of atomic meanings to form complex ones. My discussion will provide two arguments (sections 2.1 and 2.2).

2.1.   The autonomy of core grammatical relations

Lexical contents are associated to lexemes or idioms by a bi-univocal relation that Saussure (1916(1974)) calls sign and the cognitive tradition calls symbol (see for instance Langacker 1987; 1991). The first relevant point to stress is that the expression of lexical units does not have an inner complex structure, while sentences have one. Owing to this, **it makes sense to ask whether complex expressions simply "represent" complex conceptual structures or contribute in some way with their structure to their construction**. In the former case, syntactic structures are assumed to be parasitic of conceptual structures. In the latter, they are, at least to a given extent, autonomous.

For a complex structure to behave like a symbol, two conditions have to be satisfied: first, the structure of the form and the structure of the content should be **isomorphic**. Second, the formal structure should not be autonomous but **motivated** by the conceptual structure: the structure of the form of expression should be a diagram of the structure of its conceptual content. Let us examine the structure of as model sentence under this light.

The structure of the core of a sentence NP + VP (Chomsky 1957) **is integrally formal** in that it does not reflect the structure of one specific kind of process and is compatible with any. Its relevance depends on a typological parameter: within the languages that share the accusative alignment, the grammatical subject codes the first argument of any process, irrespective of the nature of the predicate, verbal or nominal, of the valency (Tesnière 1959(1965)) of the main predicator, and of its specific conceptual content. This datum justifies the idea that **the subject is a formal grammatical relation**.

The formal structure of the core of the sentence and the conceptual structure of the core of its content – of the process (Tesnière 1959(1965)) – **are not isomorphic**. The conceptual structure of the process has a centre: a predicator (Lyons 1977), typically a verb, controls the number and content of its arguments, which surround it in the same way as the planets turn around the sun. The distributional structure of the nuclear sentence – NP + VP – by contrast, has no centre: is an exocentric (Bloomfield 1933; Hockett 1958) kind of structure that contains two constituents belonging to different distributional classes whose combination builds up a structure that belongs to neither. The conclusion is that the formal structure of the core cannot possibly "carry a meaning", and therefore is not a symbol in the way a lexeme is.

Unlike the subject, **the predicate has a syntactic structure that is isomorphic with the conceptual structure of the process** in that it contains the complements required by the valency of the verb and diagrammatic, in that the number of complements mirrors the number of arguments. **Diagrammatic isomorphism** at construction level, however, **does not entail iconicity at constituent level** but simply admits it as an empirical datum. The arguments included in the predicate behave in two opposite ways.

The direct object is not bound to a given role of the process and is ready to host many: among others, a passive experiencer – *Thunders scare John* – a stimulus – *John fears thunders* – a patient – *John fixed*

Mary's bike – the result of an action – *John painted a Nativity* – an addressee – *John informed Mary of his plans* – and so on. This proves that **the direct object is a formal grammatical relation**, independent of its conceptual content. The two-place transitive construction does not "carry meaning" either.

There are complements whose form of expression is motivated by the conceptual structure of the roles entrusted to them. The **spatial relations** that saturate the locative arguments of verbs of state and motion, in particular, **are immediately identified as conceptual relations**. Their forms of expression, accordingly, are not autonomous but are shaped under the pressure of the conceptual relations it is their task to express. The preposition, in particular, is chosen by the speaker among a paradigm of options owing to its aptitude to draw a specific spatial relation: for instance, *John lives near the castle*; *John lives in front of the cathedral*; *John is going near the castle*; *John is going in front of the cathedral*. In this case, both the presence of an expression within the predicate and its inner shape are motivated by the underlying conceptual relation.

The difference between autonomous and iconic forms of expression is correlated with the presence or absence of formal grammatical relations. In *John is going in front of the cathedral*, for instance *John* codes the agent not owing to the form of expression – a NP – but as subject, that is, thanks to its grammatical relation with the whole construction. *In front of the cathedral*, by contrast, codes a spatial relation directly, thanks to its inner structure, and in particular to the preposition. Based on this difference of behaviour, I distinguish **two coding regimes, that is, a relational coding and a punctual coding** (Prandi 2004: 60-68).

In conclusion, the structure of a sentence is never fully isomorphic. The core of the sentence is not; the predicate is isomorphic and motivated in a diagrammatic sense, and is ready to contain both grammatical relations and motivated forms of expression of conceptual relations. These are good arguments for concluding that the relationship between the syntactic structure of a sentence and its conceptual content is far from being isomorphic, let alone iconic. Grammatical structure is autonomous from the relational dimension of lexical structures at least to a given extent.

2.2. Syntactic combinations are not submitted to the requirement of consistency.

If syntactic structures do not integrally mirror independent conceptual structures but are, at least to a given extent, formal and autonomous, their **elective function is no longer to carry meanings but to combine atomic concepts to form complex ones**. This elective function may be performed in two opposite ways.

The syntactic structure of a sentence performs its function **in a purely instrumental way** when its formal scaffolding simply **brings to expression an independent conceptual model**, that is, a consistent conceptual structure that can be conceived of independently of this specific form of expression: for instance, *Mary dreams*. If focus is restricted to consistent combinations, a contingent empirical option is interpreted as an essential property. It is this optical illusion that feeds a radical iconic stance, that is, the idea that "The linguistic form is a diagram of conceptual structure" (Haiman 1985, 2).

The syntactic structure of a sentence, however, may also perform its function **in a creative way**. In this case, its formal scaffolding **depicts a semantic structure that does not match any independent conceptual model and therefore cannot be conceived of independently of its form of expression**: for instance, *The moon smiles* (Blake). The ideation of conflictual complex meanings is the outpost of conceptual creativity, which depends on the aptitude of formal syntactic structures to connect concepts in unexpected ways, and therefore on the dissociation between function and instrumentality. Far for being nonsensical structures, **conflictual complex meanings provide the semantic purport for creative metaphorical thinking** not only in **poetry** but also in **philosophy** (Blumenberg 1960), in **sciences** (Hesse 1965(1966), Kuhn 1979(1993), Boyd 1979(1993)) and in **special terminologies** (Rossi 2015). The idea that nature is a clever farmer, which lies at the grounds of the concept of natural selection, for instance, is as conflictual in its raw formulation as the idea that the moon smiles.

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