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Metaphoric mapping and argument structure in semantic change: A case study

It is a well-known fact that abstract meanings usually have their origin in concrete domains, which are extended due to a process of metaphoric transfer. Meanings are thus extended in a motivated way. The study of the historical development of groups of verbs of mental activity, for example, shows that many of them derive from verbs originally referring to physical activity. Whereas cognitively-based inter-domain metaphoric connections are crucial in semantic change, the close links between syntax and semantics cannot be ignored either. This paper approaches the syntax-semantics interface by bringing together the study of metaphoric mapping and verb complementation. Its aim is to investigate the rise of new subcategorization frames connected to the extension of verb senses from the concrete to the abstract domain. Thus, we explore how the rise of the abstract senses in a verb of mental activity—ponder—conforms, interacts with and is reflected in the argument structure of this verb.

Introduction¹

Research in cognitive linguistics has stressed the importance of metaphoric connections in human cognition and language (Lakoff 1987; Lakoff and Johnson 1999; Sweetser 1990). Metaphor permits an understanding of one kind of experience in terms of another and this is extensively reflected in language. It is a well-known fact that many abstract meanings have their origin in concrete domains, which are extended due to a process of metaphoric transfer.

The study of the historical evolution of groups of verbs of mental activity shows that many of them derive from verbs originally referring to physical activity (Sweetser 1990). The historical development of verbs such as see,

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contemplate (from the past participle of Latin *contempro*, «look at») or speculate (from Latin *specular*, «watch», «spy out», «observe») shows that physical vision can be regularly extended to mental perception. Thinking has been conceptualized as perceiving. Reflect (ultimately from Latin *reflecto*, *re* + *flecto* «bend», «turn back»), ruminare (from Latin *rumino* «ruminare», «chew the cud» and «turn over in the mouth»), or cogitate (from the past participle of Latin *cogito*: *co*, an intensive + *agito*, «turn over», «agitate») show that ideas can be seen as objects moving and revolving in the mind. In the case of ruminare, in addition, ideas are compared to food which is turned over and over in the mouth. In ponder or deliberate (from Latin *deliberare*, *de* + *librare*, «weigh», from *libra*, «scales»), ideas are seen as objects which can be weighed and in grasp and in comprehend ideas are objects which can be held or manipulated.

There have been, then, semantic shifts by which verbs alluding to physical actions have come to refer to mental activities. Different metaphoric connections, which could be said to show the parallelism between our external and internal worlds, are involved in these examples. These semantic shifts in the verbal items obviously imply in the transitive verbs a shift in the type of the NP, which is semantically extended to include abstract nouns. For example, compare the following two sentences:

(1) *I shall never eat garlike with Diogenes in a Tub, and speculate the Starres without a shirt.*

H. Shirley, *Grateful Servant*, II, i (1630)

(2) *We should not, therefore, wholly consult our senses when we speculate truth.*
Evelyn, *Hist. Rel.* I. 54 (1706)

In these two examples the complementation pattern of *speculate* is SVO; however, in (1) *speculate* is used in the sense of physical perception and is followed by *stars*, a concrete Object, but in (2) it is used in the sense of mental perception or activity and the object is not something physical but abstract. These different meanings are reflected in the following Argument Structures of *speculate*:

$$\begin{array}{l} \textit{speculate}1 < \text{Subj-NP}_{[\text{Agent}]} \text{Obj-NP}_{[\text{Concrete}]} > \\ \textit{speculate}2 < \text{Subj-NP}_{[\text{Agent}]} \text{Obj-NP}_{[\text{Abstract}]} > \end{array}$$

This leads us to the idea that, whereas inter-domain metaphoric connections are crucial in semantic change, the close links between syntax and semantics cannot be ignored either. The importance of an approach which integrates syntax and semantics in synchronic linguistic description has been shown for a long time not only in cognitive linguistics approaches (Langacker 1987, 1991; Lakoff 1987; Goldberg 1995, among others)² but also in formal linguistics (Pollard and Sag 1987) and lexical semantics (Pustejovsky 1995). Research in diachronic linguistics has also confirmed the need to integrate syntax and semantics. It is in the study of grammaticalization where this interrelationship is especially taken into account (Heine et al. 1991; Heine 1993; Hopper and Traugott 1993; Traugott 2003, among others). The fact that the evolution of certain grammatical particles cannot be separated from the syntactic structure in which they appear proves this. It has been shown that, in different languages, it is crucial to take into account the syntactic structure in which the word that is grammaticalized appears to explain the evolution of this particle.

Although this is not a new idea, it is worth considering to what an extent it can be extended to explain types of semantic change where grammaticalization is not present (Verdaguer and Poch 1996, 1997). Our proposal in this paper consists in trying to see the importance of the syntax-semantics interface in the emergence of new meanings in verbs of mental activity. We have already seen that from a purely semantic point of view, in the rise of the meaning of such verbs metaphoric transfer has been involved. This metaphoric transfer has been accompanied by a change from concrete to abstract objects. However, the development of these verbs has to be further explored to see the rise of new subcategorization frames connected to the extension of their senses. The example that we have chosen to illustrate this is the English verb *ponder*.

In order to show the interaction of syntax and semantics in the rise of new meanings, we will follow common practice in linguistics as is usual in the Unification-based tradition (e.g. Head-Driven Phrase Structure Grammar (HPSG)) in treating the argument structure of the verb as the interface between syntax and semantics. The argument structure, therefore, links syntactic valency to syntactic functions and semantic roles. An illustration of how lexical information is encoded in these models is provided by the verb *weigh* in the following context, which shows how syntactic and semantic information is merged in the Argument Structure of the verb (ARG-ST):

(3) *The butcher weighed the chicken*

weigh	sem	RELN	<i>weigh</i>
		AGENT	[1]
		THEME	[2]
	ARG - ST	{[3]NP _[1] , [4]NP _[2] }	
	syn	SUBJ	[3]
		OBJ	[4]

Figure 1

As can be seen in this feature structure, the Argument Structure encodes the valency of the verb as a list of syntactic categories tagged with numbers linking semantic roles and syntactic functions. Thus, the first NP of the Argument Structure is linked to the Subject and to the Agent, and the second NP is linked to the Object and the Theme.

A case study³

Ponder, introduced in ME, derives from OF *pondürer* «weigh, poise», ultimately from Latin *ponderare*, which originally meant «weigh». The earliest meaning, then, is one of physical activity. However, when it was introduced into English it had already undergone the metaphoric transfer to the more abstract meaning «to weigh (a matter, words...) mentally», «to estimate or judge the worth, value or amount of», «to evaluate». Those meanings are illustrated in the following examples:

(4) *If all men living were pondered in one balance.*

J. Frith *A mirroure or glasse to know thyself*, 263 (1532)

(5) *Consydre thys matter and ponder my cause.*

J. Lydgate. *Assembly of Gods* 134 (1420)

(6) *Vertues are not to be pondered by the sexe or kinde by whom they be done.*

W. Painter. *The Palace of Pleasure* I. 44 (1566)

In (4) the semantic object is a physical entity, thus *ponder* means «weigh», but in (5) and (6) the semantic objects are mental entities and the meaning of *ponder* is «weigh mentally».

Figures 2 and 3 are a partial representation of these meanings of *ponder* and show that the new sense of the verb is related to a change in the semantic type of the Object Noun Phrase.

$$\text{ponder}_{(1)} \left[\begin{array}{l} \text{sem} \left[\begin{array}{l} \text{RELN } \textit{weigh} \\ \text{AGENT} \quad [1] \\ \text{PHYSICAL OBJECT} \quad [2] \end{array} \right] \\ \text{ARG -ST} \langle \text{NP}_{[1]}, \text{NP}_{[2]} \rangle \end{array} \right]$$

Figure 2

$$\text{ponder}_{(2)} \left[\begin{array}{l} \text{sem} \left[\begin{array}{l} \text{RELN } \textit{weigh mentally} \\ \text{AGENT} \quad [1] \\ \text{MENTAL OBJECT} \quad [2] \end{array} \right] \\ \text{ARG -ST} \langle \text{NP}_{[1]}, \text{NP}_{[2]} \rangle \end{array} \right]$$

Figure 3

This extension of meaning from concrete to abstract can also be found in the English verb *weigh*, among many others, when the Noun Phrase which is the Object is not a physical object which can be actually weighed but something abstract:

(7) *They wayeing in thaire myndes the force of the saide acte.*

Star Chamber. Cases (Selden Soc) II. 300 (1533)

So far, all the examples have illustrated the use of *ponder* with an Object which is always a Noun Phrase, either referring to something concrete or abstract. *Ponder*, however, can also appear with a clausal complement from the fourteenth century onwards meaning “consider carefully”, “deliberate about”, represented in Figure 4 and illustrated by the following examples:

(8) *pei ponderen wip pis suspending pat pey don it for riftwisenesse to teche curatis obedience.*

J. Wyclif. *English Works* (1380)

(9) [He] at that very instant, was *pondering* only how he might save the monarch's crown.

W. K. Kelly tr. *L. Blanc's History of Ten Years* I. 119 (1848)

(10) *The government should ponder well whether the prize would be worth the cost.*

W. H. Prescott. *History of the Reign of Philip II*, I. 116 (1855)

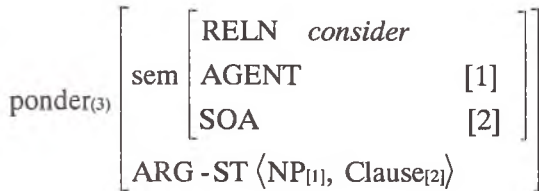


Figure 4

In order to explain why *ponder* acquires this new meaning, we need to focus again on the mental object of *ponder*₍₂₎, which gradually evolves towards a State of Affairs with propositional content and expressed by a clausal complement. With a clausal complement, there still may be the idea of “weighing mentally”; however, the concept of “thinking” is gradually highlighted. That is, when the complement of *ponder* is not an idea, a word, a matter, but a proposition, expressed by a clause, the verb develops the sense “give consideration to”. For instance, in (9) “ponder how to save a crown” gives the idea of somebody thinking how to develop a strategy; it is not so much to weigh the fact or estimate the value of saving the crown, but to think how to save it. The sense “thinking” is highlighted and the sense of “weighing” fades away.

This extension of meaning can be explained by a metonymic process, triggered by a clause, whereby we refer to the whole (that is, “consider”, “think”) with the term which is used to refer to a part of the whole process (to weigh mentally or estimate the value of something can be a part of the whole process of thinking). The early sense, which keeps its original Latin value (“weigh something” > “weigh in the mind”) acquires a more generic sense.

Once the metonymy is consolidated, *ponder* is documented since EModE with a new subcategorization frame: a Prepositional Phrase, introduced by *on* or *over*.

(11) *Pondering thus on human miseries.*

J. Dryden. *Aeneid* i. 311 (1697)

(12) *And at the same time, I pondered a little over who tried to kill me and why.*

British National Corpus

In these examples we can see exactly the same process. In (11), for instance, the subject is not weighing in the mind or evaluating human miseries, but reflecting on them.

Also, with this sense the syntactic complement is not necessarily overt:

(13) *So he from side to side roll'd, pondering deep.*

W. Cowper. *Homer.Odysseus*. xx. 30 (1791)

This extension is represented in Figure 5:

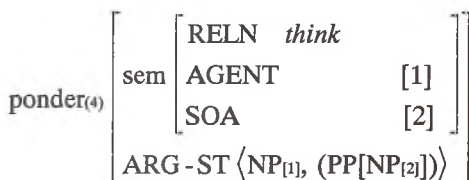


Figure 5

As we can see, changes in the meaning of *ponder* are reflected in its argument structure. When *ponder* is used to express the concept of “reflect, meditate, think”, it can appear without an overt syntactic object or can be followed by a Prepositional Phrase, which specifies the matter which is meditated.

Another point that needs to be considered is the reason why *ponder*₍₄₎ subcategorizes for a Prepositional Phrase. Our hypothesis is that this new subcategorization frame has to be studied taking into account that of the prototypical English verb *think* and the evolution undergone by its troponyms. An exploration of such verbs reveals that most troponyms of *think* which are used in ModE, such as *reflect*, *ruminare*, *speculate*, *cogitate* or *meditate* subcategorize for an optional Prepositional Phrase.

Note the case of *reflect*, which appears with an Oblique Complement (PP) when it is used in this abstract sense:

(14) *Having reflected a little on the Danger which we had escaped, we viewed the second Pyramide.*

A. Lovell, *Thevenot's Travels into the Levant*, I. 134 (1687)

whereas it is usually apprehended in another of its several senses when it is used with a Direct Object (NP):

(15) *The hills reflect the sound* ("cast or send back").

(16) *The Walls reflected a hundred thousand Lights to me from my two Candles* ("emit, give out a light, as the result of reflection").

D. Defoe, *The Life and strange adventures of Robinson Crusoe*, I, (1719)

(17) *Two glasses where herself herself beheld
A thousand times, and now no more reflect* ("mirror").

W. Shakespeare, *Venus and Adonis*, 1130 (1592)

Other verbs which could in earlier periods appear with a Noun Phrase expressing the matter which was the object of the meditation:

(18) *Alberti had deeply meditated the remains of Roman Antiquity.*

J. Hallam *Introduction to the Literature of Europe* I.(1837)

are now, with this sense, predominantly used with a Prepositional Phrase, (and very rarely with a Noun Phrase) as a quick exploration of the *British National Corpus* reveals.

(19) *He ruminated on the idea.*

(20) *I started to meditate on that verse in relation to my argument with my colleague.*

(21) *I stand on the balcony, apparently musing on this very credible story.*

All these data suggest that verbs of similar meaning also have a similar syntactic behaviour and develop similar subcategorization frames.

Conclusions

In this paper we have focused on the evolution of *ponder* as an example of the development of a verb of mental activity. We believe that this example is significant enough to show that diachronic studies require an integrated analysis of syntactic and semantic evolution, even if the change that is analyzed does not involve a shift in the grammatical category of the term in question. The study of our data has enabled us to distinguish three stages in the evolution of *ponder*:

1. The meaning of *ponder*, which was originally a verb of physical action, has been extended to mental activity. In this stage (which was already present in the Latin verb from which *ponder* derives) there has been metaphoric transfer (from concrete to abstract domain) and a shift in the semantic type of the Noun Phrase, which can now be abstract.

2. There has been a metonymic transfer – triggered by a clausal complement – by which part of the process of thinking comes to refer to the whole process.

3. As a result of this extension in the meaning of *ponder*, a new optional complement has emerged, an oblique Prepositional Phrase, probably due to an analogical process with *think* – which can have this complementation since its earliest stages – and other verbs of thinking.

The evolution of *ponder* is summarized in Figure 6:

E. PONDER < F. PONDÉRER < L. PONDERARE

∴

Stages in the evolution of the English verb *ponder*

ponder₍₁₎ (weigh) Ψ {*metaphoric transfer*} Ψ *ponder*₍₂₎ (weigh mentally)
 Arg-St<NP_[Ag.], NP_[phys. Obj.]> Arg-St<NP_[Ag.], NP_[mental. Obj.]>

∴

{*metonymic transfer*}

∴

ponder₍₃₎ (consider)
 Arg-St<NP_[Ag.], Clause_[SOA]>
 {*analogical extension*}

∴

ponder₍₄₎ (think)
 Arg-St<NP_[Ag.], (PP)_[SOA]>

We have thus tried to highlight the importance of not separating the syntactic evolution and the semantic evolution of lexical items. Certainly, the independent study of the syntactic evolution or of the semantic development can reveal interesting facts, but the integration of both levels can provide a better understanding of linguistic change. As Pustejovsky (1995: 5) says: "without an appreciation of the syntactic structure of a language, the study of lexical semantics is bound to fail. There is no way in which meaning can be completely divorced from the structure that carries it".

Notes

¹ The authors acknowledge the support of the Spanish Ministry of Science and Technology and FEDER (project number BFF 2001-2988).

² Goldberg (1995:3) quotes Bolinger (1968:127) «A difference in syntactic form always spells a difference in meaning».

³ Our data have been obtained from the *Helsinki Corpus of English Texts*; the *British National Corpus* and the *Oxford English Dictionary*.

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Периферийные компоненты актуального членения высказывания в немецкой разговорной речи

A.I. Volokitina

Zweitrangige Komponenten der funktionalen Satzperspektive in der deutschen Umgangssprache

Im vorliegenden Beitrag werden die Funktion und die Reihenfolge der zweitrangigen thematischen und rhematischen Komponenten der Äußerung in Bezug auf die syntaktische Struktur des Satzes dargelegt: Vorfeld, Satzfeld, Nachfeld.