

**Diachronic evidentiality:
from the sense of smell to the expression of knowledge¹**

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1. Preliminary concepts and hypothesis

Evidentiality is the name given in modern linguistics to the capacity that languages have to identify the knowledge sources of which speakers make use. As is well known, some languages –including Balkan languages, Tibeto-Burman ones and many of those spoken in the American continent– code such sources in a grammatical way (mainly by means of verbal suffixes), which has led researchers such as Aikhenvald to claim that evidentiality must always be a grammatical procedure. Other authors, however, believe that evidentiality is a semantic category which becomes conceptualized in a particular way, either using specialized morphemes or taking advantage of discursive markers or other lexical procedures (*evidentiality strategies*). This second case can be illustrated by Romance languages –and a large part of the European ones– where no morphological element is found that unmistakably points at the source of information.

According to the different classifications of evidentiality proposed, and leaving aside detail issues,² the existence of three broad types of evidence is widely accepted in linguistic science, namely: direct evidence, when the information source lies at the senses (sight, hearing, etc.); referred or citative evidence, when the information is transmitted by a second or third person; and inferential evidence, when the information results from a speaker's reasoning. All three types of evidence become visible by means of *evidentials*, which can be described as the lexical or grammatical resources through which the knowledge source is linguistically coded.

From the perspective of cognitive-functional linguistics, evidentials are always originally diverse words (verbs, adverbs, pronouns or any other grammatical category) pragmatically utilized to identify the information source as well as the speaker's level of certainty with regard to what he is communicating, or expressed differently, the degree of *epistemic modality* in his utterance. In a sentence like *por lo visto Pedro se ha comprado un coche nuevo* [Apparently Pedro has bought a new car], the discursive marker *por lo visto* suggests that the speaker has obtained this information via third parties (referred evidence), which entails that his commitment to the said information is only partial –insofar as he does not have absolute certainty about that fact (Ruiz Gurillo). However, if the same speaker said *Vi a Pedro con su coche nuevo* [I saw Peter with his new car], the level of epistemic certainty would increase because the information would stem from a direct visual type of evidence in that case.³

A solid argument in favor of the pragmatic hypothesis about evidentiality supported by cognitive linguistics can be found in the fact that, as shown by a number of recent studies, the morphological evidentials of languages owning them diachronically derive

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² The books by González Vázquez (2006) and Greco (2012) can be consulted for an exhaustive state of the art on evidentiality.

³ Nevertheless, it is worth highlighting that the link between type of evidence and degree of epistemic modality is not universal. By way of example, whereas vision is usually associated with certainty in Indo-European languages, the mode-evidential scale has a different behavior in other languages. In the Amerindian Patwin language, for instance, direct evidence is related to uncertainty (González Vázquez, 115-116).

from full terms which are eventually transformed into suffixes or morphemes through a grammaticalization process. For instance, De Haan (in press) has analyzed the development of evidential morphemes used to express direct visual evidence in several languages, verifying that these morphemes has etymologically evolved from visual verbs (as it happens in the Maricopa language, spoken in California), or from first-person deictics such as the pronoun *I* or the spatial adverb *here*. The speaker thus uses vision and the expression of the first person (*I can see something here*) with the aim of verbalizing a direct perception of the information, in such a way that the aforementioned verbs and deictics become ritualized in usage and end up being re-analyzed as morphemes specialized in identifying a knowledge collection mechanism.

Nowadays, research is strongly focusing its attention on inferential evidence, which has a more complex behavior than direct or referred evidence. The main problem lies in the fact that no clear-cut separation seems to exist between inferential types of evidence and direct ones, since it is often checked that the sensory perception of something does not lead to knowledge as such, but only acts as a contextual hint that triggers a logical reasoning. In this respect, Squartini (2001, 2008) has developed a taxonomy according to which there are three basic types of inferential evidence: specific (or circumstantial); generic; and conjectural. Specific inferences are based on objective data found in the speaker's environment which can very often be easily perceived through the senses. Generic inferences start from an encyclopedic knowledge of the world, that is, from the facts assumed and accepted as certain by an idiomatic community. Finally, conjectures arise from markedly axiological lines of reasoning which are not necessarily based on any evidence or shared knowledge. The degree of objectivity in these inferences is naturally variable; thus, while specific inferences tend to be quite reliable insofar as they are anchored to specific data from the environment, generic inferences turn out to be a little more subjective and contingent. Finally, conjectures are highly subjective, for which reason they are often nothing but speculations or value judgments made by the speaker.

The purpose of this research work is to analyze the expression of epistemic modality and evidentiality in Spanish through a historical study of the olfactory verb *oler*.⁴ Our research assumes cognitive-functional linguistics as its theoretical framework and starts from a very specific hypothesis: can the sense of smell be an information source? The mentions which are made of direct or sensory evidence in the bibliography stress the connection between this type of evidence and sight, hearing, and 'other senses'; nevertheless, the bibliography rarely specifies which are those 'other senses' or whether the sense of smell is one of them. The present paper seeks to prove that, in the case of Spanish, the sense of smell can actually lexicalize evidentiality, and that the verb *oler* acts as an extremely operational evidential characterized by its wealth of semantic nuances. Proof will likewise be provided that all the evidential utilizations of *oler* come as a result of a gradual metaphorization process guided by the axioms defended from cognitive semantics.

⁴ That analysis is supported on the study of a large corpus of occurrences extracted from *CORDE* (*Corpus Diacrónico del Español* [Diachronic Corpus of the Spanish Language]). For a more detailed analysis, see Fernández Jaén (2008, 2012).

2. Origin and syntactico-semantic properties of the verb *oler*

Latin had two main verbs to convey the olfactory meaning: (a) *oleo*, a stative intransitive verb which served to express that things gave off smell; and (b) *olfacio*, a transitive verb used to highlight that an animate subject smelt something voluntarily. *Olfacio* did not survive in Spanish and, therefore, *oleo* eventually assumed all the syntactico-semantic possibilities –both the intransitive and the transitive ones. *Oler* consequently results from the evolution of *oleo* in the Spanish language and, the same as its etymon, this verb can code all the grammatical situations associated with the expression of smell; it thus admits three constructional variants from its earliest documented origins (in the 13th century according to our corpus).

The first of those three variants is the transitive agentive one, in which the semantic subject performs the semantic role of an OBSERVER; in other words, of an animate entity that consciously concentrates its attention on a SENSORY STIMULUS. The second one is the transitive passive variant with a PERCEIVER subject. The PERCEIVER subject differs from the OBSERVER subject in that he does not voluntarily receive the STIMULUS but only records it because of his proximity to that stimulus in the physical milieu. Finally, the third variant shows *oler* behaving as a stative intransitive verb with a STIMULUS subject. The recipient of the smell is not conceptualized in these cases (although it may appear in the form of a dative pronoun), the smell itself being the most outstanding element in the scene. This variant has in turn three combinatory possibilities; firstly, the concise combination, where only the verb and the STIMULUS subject are present; and secondly, two possibilities in which the introduction of a supplement with *a* [of] or an object starting with the comparative connective *como* [like] serves to make a more or less subjective speculation about the source of the smell in question. The following sentences exemplify each one of these possibilities:

- (1) *Luis olió el perfume para decidir cuál comprar* [Luis smelt the perfume to decide which one to buy] (transitive use, OBSERVER subject)
- (2) *Luis olió el perfume cuando entró en el ascensor* [Luis smelt the perfume when he entered the elevator] (transitive use, PERCEIVER subject)
- (3) *La comida huele* [The food smells] (concise intransitive use, STIMULUS subject)
- (4) *La comida huele a cebolla* [The food smells of onion] (intransitive use with a reference to the source, STIMULUS subject)
- (5) *La comida huele como la cebolla* [The food smells like onion] (intransitive use with a reference to the source, STIMULUS subject)

It deserves to be mentioned that –above all in oral contexts– the STIMULUS subject is often not made explicit in intransitive variants (\emptyset subject), especially when a reference is made to the place where the conceptualizer detects the smell. Therefore, the presence of the circumstantial place adjunct *en la cocina* [in the kitchen] in (6) makes it unnecessary for the STIMULUS subject to be mentioned:

- (6) *En la cocina huele (a cebolla / como la cebolla)* [In the kitchen it smells (of onion/like onion)]

This phenomenon –known as *locative inversion* (RAE, 2009)– is due to the fact that smells are abstract, invisible objects which often prove difficult to verbalize; this is why the conceptualizer vaguely refers to their mere existence, either identifying what smells (*la comida*) or specifying where the smell finds itself (*en la cocina*). In any case, it is worth noting the intimate metonymic connection between the STIMULUS and the PLACE (the food and where it is prepared), a connection which makes the simultaneous presence of both elements become anomalous –for being redundant.⁵

As for the conceptual level, the verb *oler* has developed an internal structure of a polysemous nature with different intertwined meanings. From the point of view of cognitive linguistics (cf. Lakoff & Johnson; Lakoff; Johnson; Langacker, 1987, 1991; Geeraerts), the new meanings emerge thanks to metaphorical and metonymic projections irradiated from prototypical meanings, which are the most basic and frequent, as well as the oldest of any lexical category. Those prototypical meanings additionally tend to own a highly physical and specific content that will gradually become metaphorized and loaded with subjectivity (subjectivisation hypothesis) as speakers use them. For all these reasons, the onomasiological evolution that a word undergoes is based on the most prototypical values, which will become more abstract and schematic over time so that new contents can be introduced.

Apart from the hypothesis according to which meanings develop in a unidirectional way from prototypical nuclei through metaphorical expansions, cognitive semantics also defends the corporeized nature of language. This idea presupposes that the physical awareness of their own body influences the perception of reality that speakers have, insofar as the latter adapt part of their somatic life experiences to the semantic content of words. For this reason, understanding in all its dimensions how the polysemy of *oler* has developed is only possible when a previous knowledge exists about the human sense of smell and its main features, since those features act as the experiential foundation on which metaphorical projections are supported.

Amongst all the smell properties which have been described in the literature,⁶ it seems to us that four of them appear as decisive when it comes to understanding the behavior of the verb *oler*: scarce cognitive importance; olfaction brevity; referential vagueness; and lack of control. The first property establishes that, unlike sight and hearing, the sense of smell is barely related to the intellectual understanding of the world, and with survival in the middle; hence the reason why olfactory verbs in languages do not usually develop epistemic contents. Secondly, human olfactions are brief because human beings cannot retain an olfactory experience for too long; after being perceived for a few minutes, all smells vanish (what is known as *adaptation* in psychobiology) and that makes it difficult to become aware of smells or to remember them. As for referential vagueness, it has to do with the fact that speakers find it very difficult to categorize smells. Indeed, when someone smells something, they are hardly ever sure of what it is; which turns smell into an extremely subjective sense. Finally, olfactory processes are nearly always uncontrolled, since it is the smells that inadvertently assault speakers without them being able to avoid it. It needs to be borne

⁵ This is confirmed by the surprise caused when an utterance like # *La comida huele en la cocina (a cebolla / como la cebolla)* [The food smells in the kitchen (of onion / like onion)] is made.

⁶ For a thorough approach to the peculiarities of smell and its interaction with language, see the works of Ibarretxe-Antuñano and Fernández Jaén (2008, 2012).

in mind that the nose is an organ that always remains active; which explains why the reception of a new smell may take place at any time.

In short, from the speakers' point of view, smells are intangible and dynamic entities which appear spontaneously and disappear shortly after, without the conceptualizer being able to exert any rational control over them. These properties influence the semantic functioning of olfactory vocabulary, as will be seen below. So much so that, already in the later 19th century, Wood (1899) realized that smell terms and olfactory verbs in Indo-European languages usually come from words that mean things such as SMOKE, VAPOR or EXHALATION, these being notions which in turn can be connected with contents linked to MOVEMENT; smells are something unexpected, invisible, and elusive, just like a wind or an exhalation; and they smell like smoke or vapor. The nodular connection of all these semantic nuances not only can be observed in the origins of European languages but also can be recovered in today's Spanish language. Suffice it to mention as an example the sentence *Ernesto se esfumó* [Ernesto vanished] which, despite meaning "Ernesto left/went away," has been metaphorically formulated from the idea of "becoming smoke" –the literal meaning of *esfumarse*. As can be seen, *esfumarse* implies becoming smoke and, therefore, to turn into something that moves until it disappears.

The empirical observations in our corpus allowed us to determine that *oler* has developed throughout its history seven metaphorical meanings arisen from one of the aforementioned prototypical meanings (active transitive, passive transitive, and intransitive). Such prototypical values transmit their particular characteristics to the meanings which emerge from them; in other words, the new meanings are metaphorical abstractions that respect the basic properties of the meaning from which they stem, as well as its semantic configuration (*semantic invariability*). Consequently, the intransitive prototype has given rise to metaphors such as TO SEEM IS TO SMELL, TO REMEMBER IS TO SMELL, TO BE SOMETHING BAD IS TO SMELL and TO BE SOMETHING GOOD IS TO SMELL. They all have a subject (no longer physical but notional) from which something subjectively related to various memories or experiential associations is predicated. The passive transitive prototype is the origin of the meanings TO SUSPECT IS TO SMELL and TO DISCOVER IS TO SMELL; in this case, there is a conceptualization of a scene in which a subject has a suspicion about something (olfactory indetermination and referential vagueness) or unexpectedly discovers some information in the same way as someone unexpectedly discovers a smell. Finally, the metaphorical projection TO FIND OUT IS TO SMELL is born from the active transitive prototype, since the dominant role corresponds to the subject's conscious attitude when it comes to performing the action. In short, it is our conviction that *oler* expresses the collection of information about the world through the general metaphor KNOWLEDGE IS A SMELL; the smell features described above thus become metaphorized and come to express the way in which certain knowledge items which, due to their peculiar nature, behave "like smells" are obtained. Following the diachronic prototype semantics model (Geeraerts), the internal structure of *oler* can be represented in the shape of a network:

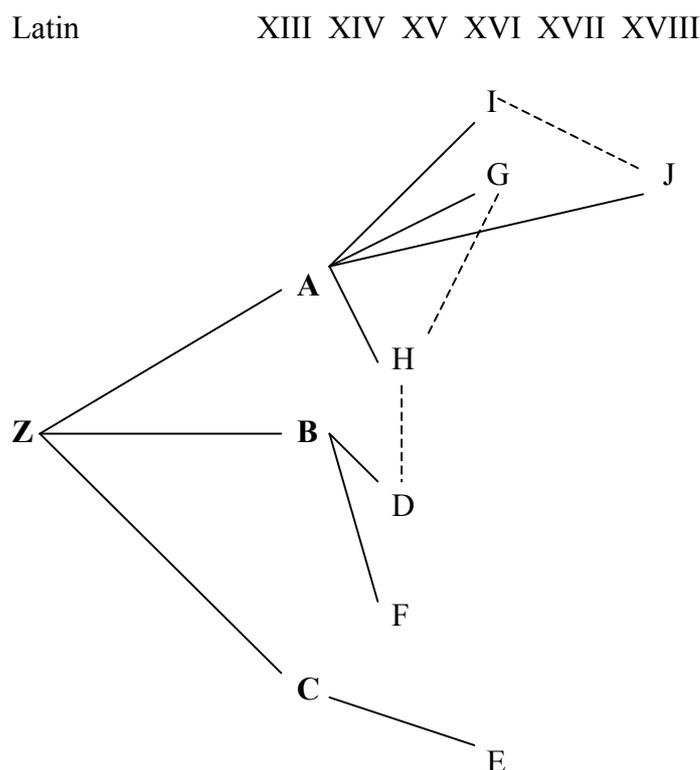


Figure 1. Diachronic structure of *oler*

where

- A:** intransitive values (*la comida huele* [the food smells])
- B:** passive transitive values (*olió el perfume involuntariamente* [he smelt the perfume involuntarily])
- C:** active transitive values (*olió el perfume voluntariamente* [he smelt the perfume voluntarily])
- D:** TO SUSPECT IS TO SMELL (*me olía que tramaban algo* [I smelt (suspected) that they were up to something])
- E:** TO FIND OUT IS TO SMELL (*voy a oler qué pasa* [I am going to smell what is happening])
- F:** TO DISCOVER IS TO SMELL (*de repente olí el panorama* [I suddenly smelt (realized) what the situation was like])
- G:** TO SEEM IS TO SMELL (*Mateo huele a hombre bueno* [Mateo smells like (gives the impression of) being a good man])
- H:** TO REMEMBER IS TO SMELL (*estos lápices me huelen a mi infancia* [these pencils smell (bring me back the smells) of my childhood])
- I:** TO BE SOMETHING BAD IS TO SMELL (*este negocio huele mal* [this business smells bad])
- J:** TO BE SOMETHING GOOD IS TO SMELL (*he empezado a leer la novela y huele bien* [I have started reading the novel and it seems good])

The radial structure shown in Figure 1 contains the prototypical meanings (in bold, **Z** being the semantic content of the Latin verb *oleo*) and the meanings which have appeared through a subsequent metaphorization process. Below can be found a table

which contains the absolute frequency of meaning occurrences in our corpus organized by centuries –a frequency on which our interpretation of the verb is based (Fernández Jaén, 2012):

Table 1. Absolute frequency for the meanings of *oler*

	13th c.	14th c.	15th c.	16th c.	17th c.	18th c.	19th c.
A	31	7	57	317	176	10	173
B	7	2	44	76	43	7	33
C	5	1	122	73	40	7	56
D	-	-	3	3	15	11	22
E	-	-	-	1	1	1	8
F	-	-	1	25	35	14	38
G	-	-	-	14	14	2	12
H	-	-	1	35	46	21	61
I	-	-	-	3	6	-	10
J	-	-	-	-	-	1	-

As can be seen, all the prototypical meanings of our verb have been documented ever since the 13th century, whereas one needs to wait until the 15th century for the first appearances of metaphorical uses in texts. This evidence confirms the progressive nature of the metaphorical expansions undergone by lexical categories, the unidirectional increase of semantic subjectivity and the primacy of prototypes (which keep their purely sensorial value) as structuring axes. It also deserves to be highlighted that A is the prototypical meaning which appears the most often (45,5% of occurrences), especially in its short variant without complements (*la comida huele*), which accounts for 25,9% of our whole corpus. In our opinion, this statistical primacy is due to the conceptual nature of smell itself; since olfactions are usually uncontrolled, the conceptualizer tends to represent the scene in an external way, focusing on the existence of the smell (STIMULUS subject). This circumstance largely favors the evidential uses of *oler*, as will be checked later on (see section 3.2).

Finally, it is additionally necessary to specify that there are times when some examples may prove difficult to assign to a single content, since they simultaneously accept several semantic interpretations. This phenomenon, referred to as *superposition* by Geeraerts, is identified in the network by the broken lines which connect the meanings that –due to their peculiar behavior– may eventually conflate.

3. The verb *oler* as an evidential: uses and variants

The view advocated in this paper is that some of the utilizations of the verb *oler* which were described in the preceding section can be interpreted as evidentials of the Spanish language and also as ways to verbalize certain nuances associated with epistemic modality. Of course, these uses will also be influenced by the experiential properties of smell, which will have some bearing on the linguistic behavior of *oler* according to the predictions made from the language corporeization hypothesis. The next sections are going to deal with the diverse modal-evidential possibilities for *oler*

following a semantic criterion; that is, depending on the (active and passive) transitive or the intransitive nature of each possibility.

3.1. Transitive variants

It is firstly possible to accept as a premise that the mere act of voluntarily smelling a specific substance is perhaps a source of information. Look at this example (7):

- (7) *E olió el ampolla e vido que era vino muy fino* [And he smelt the bottle and saw that it was very fine wine] (Alfonso Martínez de Toledo, *Arcipreste de Talavera (corbacho)*, 1438)

The subject in this text consciously smells a liquid and reaches the conclusion that it is a “very good wine.” Note that the verb *oler* is used in its prototypical physical meaning and that the epistemic conclusion, expressed through a subordinate noun clause (*que era vino muy fino*), is introduced by means of the verb *ver* [to see], a markedly epistemic verb that usually expresses a high level of certainty. Therefore, using the nomenclature developed by Squartini (2001, 2008), it can be said that (7) shows a specific inference, insofar as the olfaction of a smell leads to a highly reliable reasoning.

From the cognitive metaphor KNOWLEDGE IS A SMELL, *oler* is likely to assume more elaborate conceptualizations. For instance, the information may be somewhat more difficult to know (the same as smells are often hard to detect and identify), which is why the metaphor TO FIND OUT IS TO SMELL conveys the speaker’s agentive intention to access certain data which are not easily revealed. Summing up, information behaves as a complex smell. In these cases, *oler* represents a highly subjective and non-resultative predication, since the emphasis is placed on the OBSERVER speaker’s desire to know and not necessarily on the fulfillment of that desire. Of course, when *oler* is utilized with this meaning, it also develops the ability to have an inflected sentence as its direct object because –as seen in example (7)– these sentences by default constitute propositional contents which are interpreted as information. Thus, (8) has a relative clause with no explicit antecedent as its direct object, whereas an indirect interrogative sentence acts as the object in (9):

- (8) *Embió a vn su criado a q[ue] oliesse lo que passaua* [He sent one of his servants to smell (check) what was happening] (Alonso López Pinciano, *Filosofía antigua poética*, 1596)
- (9) *no porque los curas fuesen generalmente amigos del poderoso y cortesanos de la abundancia y del lujo, sino porque es claro que, siendo misión de una parte del clero pedir para los pobres, para las causas pías, no han de postular donde no hay de qué, ni han de andar oliendo dónde se guisa* [not because priests were generally friends of the powerful and courtesans of plenty and luxury, but because it is clear that, part of the clergy’s mission being to raise money for the poor, for pious causes, they must neither collect where there is nothing (to be given) or be smelling where people are cooking] (Leopoldo Alas “Clarín”, *El señor y lo demás son cuentos*, 1893)

As said above, *oler* introduces the subject’s desire to find something out, but not the achievement of information, in these two texts. Nevertheless, the metaphor TO FIND

OUT IS TO SMELL does sometimes permit to infer that inquiries were successful, as can be checked in (10):

- (10) *–¿Y a qué vienen esos consejeros del diantre? / –Según he olido, les manda Napoleón para que nos emboben* [–And what are those damn counselors coming for? / –From what I have ‘smelt’ (heard), they have been sent by Napoleon to hold us spellbound] (Benito Pérez Galdós, *Napoleón en Chamartín*, 1874)

When the transitive predication is passive and consequently has a PERCEIVER subject, *oler* evokes an information source simply because the discovery of a smell may also be interpreted as a way to know reality. In (11), an individual steals from a pantry because he detects with his sense of smell that it contains plenty of food. On this occasion, the smell has undoubtedly –once again– acted as an element that activates a specific or circumstantial inference (*aquí hay buena comida* [there is good food here]) thanks to which the subject can successfully perpetrate his theft:

- (11) *sobresaltáronse los del baile, y fue que nuestro compañero oliendo la despensa, donde había empanadas y pernils como demás cosas, ató u faja á una pata de gato, y por listones que rompió en la celosía metióle, y sacar pudo con el animal, que agarraba sin soltar, cuatro empanadas y una sarta de embutido blanco* [and those in the ball were startled, and it was then that our partner, smelling the pantry, in which there were pies and hams as well as other things, tied a girdle to a cat’s leg, and put the cat inside through planks that he broke in the latticework, and was able to take out four pies and a string of white sausage meat with the cat, which he held without letting it go] (Javier Fuentes y Ponte, *Murcia que se fue*, 1872)

The involuntary perception of smells as well as the experience associated with it have become metaphorized in Spanish and, following the conceptual pattern imposed by the metaphor KNOWLEDGE IS A SMELL, have given rise to two abstract meanings. The first one of them is expressed with the metaphor TO SUSPECT IS TO SMELL. This time the verb *oler* metaphorizes the lack of accuracy which is typical of human olfactions and the high degree of abstraction presented by smells –as well as their elusive nature. All of this makes it possible for information items of which individuals have no evidence (that is, mere suspicions) to become conceptualized as ‘smells’ that generate lots of doubts in the subject perceiving them. Three examples can be found below:

- (12) *Despejada mi razón, he visto claro que si la diamantista huele dinero, estamos perdidos* [Now that my reasoning is no longer blurred, it has become clear to me that, if the diamond merchant smells money, we are lost] (Benito Pérez Galdós, *Mendizábal*, 1898)
- (13) *Que pienso que te han olido por santera* [That I think (that) they have smelt you for being a santería priestess (have realized you are a santería priestess)] (Juan Rodríguez Florián, *Comedia llamada Florinea*, 1554)
- (14) *Salomón quiso matar a Jeroboán, porque olió que se avía de dividir en él el Reyno después de sus días* [Solomon wanted to kill Jeroboam, because he smelt

(suspected) that the Kingdom had to be divided into him after Solomon's days (life)] (Fray Juan Márquez, *El gobernador cristiano*, 1612-1625)

The text in (12) provides a conjecture-based inference; if the diamond merchant smells *dinero* or, expressed differently, if she subjectively suspects for some reason that there is money involved, both the subject and those who are with him will be in trouble. *Oler* does not represent any certainty here but only a contingent or possible type of knowledge. The same situation becomes visible in (13) and (14) –though the syntactic construction is different in these examples. In (13), *oler* behaves as a propositional attitude verb with a direct object (*te*) and an obligatory predicative object (*por santera*); therefore, it is functionally equivalent to a cognitive verb such as *juzgar* [to judge] or *considerar* [to consider]. Thus, the subject of *oler* in (13) axiologically considers that a woman (the referent for the personal pronoun *te*) is a *santera*. This epistemic conclusion must have logically originated in some more or less objective external knowledge source, which is why *oler* represents in this case an inference that, according to what it is based on (the woman's way of dressing, her behavior, etc.), will correspond to a simple conjecture or to something more objective (specific or generic inference). In turn, (14) shows the verb *oler* complemented by a noun clause introduced, once more, by the connective *que*, expressing the materialization of the suspicion drawn by the subject (the possibility for the kingdom to become fractured) on the basis of a more or less weak external evidence.

The second abstract meaning generated from the passive transitive variant is the one represented by the metaphor TO DISCOVER IS TO SMELL. At times, the human sense of smell involuntarily detects a smell and the PERCEIVER subject is capable of identifying it automatically and with a high degree of certainty. Similarly, a specific information item may be accurately discovered ('smelt,' thanks to the metaphor KNOWLEDGE IS A SMELL) at a given moment. When *oler* assumes this meaning, its subject usually has a strong epistemic commitment to its assertion (certainty). Moreover, *oler* tends to behave aspectually as an achievement (since the information is obtained instantaneously) in such contexts, which is why it has to be conjugated in the perfective tenses of preterit. This can be seen in (15):

(15) *Yo, a cien leguas de distancia, olí la trampa* [I, at a hundred leagues' distance, smelt the trap] (Benito Jerónimo Feijoo, *Cartas eruditas y curiosas*, 1753)

As can be seen, the detection of the trap is immediate. In this case, taking into account that the speaker has no doubts whatsoever, neither about the existence of the aforesaid trap nor about its pernicious nature, the achievement of knowledge is considered highly stable and, therefore, *oler* represents a sort of evidence based on a specific or circumstantial inference. Needless to say, this meaning can also have as its object a noun clause which, as checked in this section, is the natural object of a verb which expresses the achievement or possession of knowledge. See (16) below for an example:

(16) *Aunque no fuera más que por la ortografía, cualquiera que no estuviese arromadizado podría oler que, si fuera cosa mía la Derrota, no permitiría que se imprimiese como se imprimió* [Even if it were only by the spelling, anyone who did not have a cold could smell that, should the Defeat be mine (something concerning me), I would not allow it to be printed as it was printed] (José

Francisco de Isla, *Historia del famoso predicador Fray Gerundio de Campazas alias Zotes*, 1758)

In short, the transitive utilizations of *oler* analyzed here (both the agentive and the passive ones) may behave as lexical evidentials in Spanish; firstly, *oler* presents evidential uses when it keeps its prototypical olfactory meaning and the perception of a smell makes it possible to draw an epistemic conclusion. Secondly, these physical uses have gradually developed more notional metaphorical conceptualizations through which *oler* can reach elaborate modal-evidential values, such as those represented by metaphors like TO FIND OUT IS TO SMELL, TO SUSPECT IS TO SMELL and TO DISCOVER IS TO SMELL.

3.2. Stative-passive variants

The stative-passive intransitive construction of *oler* in which only the verb –and, depending on the case, the STIMULUS subject– is expressed turns out to be especially suitable for evidentiality coding purposes, not only in Spanish but also in other languages such as English, French and German. A review of various studies focused on the link between stative-passive verbs and evidentiality (cf. Gisborne 1998, 2010; Cipria; Cornillie; Whitt 2009, 2010, 2011; Fernández Jaén, 2008, 2012) allows us to state that this conceptualization seems natural as an evidential for the following reasons:

- a) Because the sentence subject is the actual STIMULUS, the conceptualization of the scene focuses the STRENGTH⁷ of that stimulus so that it alone can reach the conceptualizer, who records it “from outside” without being able to control the event.
- b) Since the stimulus strength is external, the conceptualizer may either objectively indicate the existence of a particular stimulus (*la casa huele* [the house smells]) or proceed to make a subjective assessment of the said stimulus until an epistemic conclusion is reached. When the second case takes place, it is usual to find a dative pronoun which refers to the conceptualizer and signals his presence on the scene (passage from an objective conceptualization to a subjective one) along with the emergence of a modal assessment about the stimulus in the form of an object (*la casa me huele a gas* [the house smells of gas to me]).
- c) For the reasons explained above, when the existence of a smell is specified, and when some intellectual conclusion derived from its reception and interpretation becomes established, this constructional variant acts as an evidential with epistemic consequences that may be even intersubjective, insofar as these stimuli are likely to be perceived by several speakers who come to the same conclusion (*la casa nos huele a gas* [the house smells of gas to us] → *pensamos que la casa huele a gas* [we think that the house smells of gas]).

This functional scheme which has just been presented turns out to be very productive in languages when it comes to expressing evidentiality and related copulative contents. Latin already used the verb *videor* (stative passive form of *video*, *VER* [TO SEE]) together with a dative for the purpose of transmitting evidentiality and modalized attribution. Thus, structures such as *mihi videtur* or *mihi visum est* (literally, “something is visible for me”) were used in Latin very much like the verb *parecer* [to

⁷ The concept of STRENGTH is used here along the lines of what is proposed within the framework of Cognitive Grammar (Langacker 1987, 1991).

seem] is used in Spanish nowadays: to underline the existence of stimuli that trigger direct knowledge or inferred knowledge (Bordelois; Garelli). It must not be forgotten that, as highlighted by Cornillie, the verb *parecer* admits multiple evidential uses when the existence of a fact being imposed upon the conceptualizer is predicated⁸. It can be verified in sentences like the following two:

(17) *El incendio parece extinguirse por sí solo* [The fire seems to extinguish itself].

(18) *Me parece que va a llover* [It seems to me that it is going to rain].

In both examples, *parecer* is accompanied by attributes, one in the form of an infinitive and the other formed by a noun clause, but the truly decisive aspect lies in the fact that the attribute is impossible without a conceptualizer who observes certain events or performs a reasoning process using certain sensory pieces of evidence. (17) can only be uttered if the speaker is watching the fire (direct evidence), whereas the sentence proposed in (18) results from an inference based on a direct observation of the sky and the state of the weather, although it may also stem from the information provided by someone else (citative evidence). *Parecer* is consequently a verb which can behave as an evidential based on either direct evidence (with an infinitive) or inferred/reproduced evidence (with an inflected sentence object⁹).

In the light of all the above, it is possible to interpret certain uses of the stative-passive variant of *oler* as evidentials with a discursive behavior that closely resembles those expressed by *parecer* or by similar constructions. Of course, the first possibility is the one where a physical smell present in the environment is identified and used as a source of reasoning. This is what happens in (19):

(19) *Algo menudo hay que huele en la boca como almizcle* [There is something small which smells like musk in the mouth] (José de Acosta, *Historia natural y moral de las Indias*, 1590)

During the 16th century, the European explorers who travelled throughout the newly discovered American continent came across a large number of realities for which they did not have a name in Spanish. In this specific case, the speaker refers to an unknown odorous substance; on perceiving it, the speaker categorizes that substance with the object *como almizcle*, so that the reader can have an idea of what that aroma is like. What matters here is that *oler* acts as a generic inference evidential (the shared culture knowledge about how musk smells is utilized) because, once again, the sensory perception of a smell has led to an epistemic conclusion. However, unlike the already mentioned transitive utilizations, the informative prominence now corresponds to the smell itself and not to the subject who assesses it –the reason why the STIMULUS occupies the outstanding position of sentence subject.

⁸ Not in vain, the verb *parecer* and its Romance cognates have evolved from the Latin verb *pareo*, which prototypically meant TO APPEAR, TO SHOW ITSELF, and TO REVEAL ITSELF. It is thus verified that *parecer* was originally a verb also related to the visual perception of a stimulus which becomes manifest by itself. The paper by Antolí Martínez can be consulted with regard to the semantic evolution of *pareo*.

⁹ This last alternative is also possible in Spanish through the use of an impersonal construction (*se ve que va a llover* [it seems that it is going to rain]), which confirms the close semantic link existing between the conceptualizations that have been previously commented upon here.

As anticipated in the preceding section, when this variant becomes metaphorized, it gives rise to a number of uses which can be included within the metaphor TO SEEM IS TO SMELL; this time the conceptualizer does not perceive physical smells but abstract information or data which help him generate inferences. As could be expected, *oler* – unlike the verb *parecer*– does not grammatically code the process by means of an attribute but uses other types of morphosyntactic resources. For instance, the occurrence presented in (20) introduces the modal assessment in the form of a supplement with *a* [like/of]:

- (20) *La cualidad esencial de un gobernante es la honradez, y don Bartolomé huele a honrado* [The essential quality for a ruler is honesty, and don Bartolomé smells like (gives the impression of) being honest] (Ángel Ganivet, *Los trabajos del infatigable creador Pío Cid*, 1898)

This text expresses the conceptualizer's belief that a person seems to be honest. Obviously, that opinion must be based on some indication which has been given to the speaker; depending on how reliable that indication is, the resulting inference (i.e. don Bartolomé's supposed honesty) will be more objective (specific inference) or more speculative and fallible (conjecture). Even though it was quite unusual in our corpus, some examples also appeared of this kind where the inference is coded with an infinitive; the scene is thus provided with greater dynamism, almost as if the inferential deduction took place "in real time," while the circumstances activating it are directly perceived (cf. Langacker 1987, 1991; Cornillie). This can be checked in (21):

- (21) *Ya en la empresa que intento me desmayo / que esto huele a saber que soy lacayo* [Already in the undertaking that I try, I faint / because this smells of knowing that I am a lackey] (Alonso de Castillo Solórzano, *Aventuras del bachiller Trapaza*, 1637)

The speaker in this text expresses his concern because he is trying to hide his identity as a lackey and some events are happening (represented by the neutral deictic *esto* which refers to the scene that is taking place while they speak) at the moment of the utterance which can unmask his plan. Direct evidence consequently serves as the basis for an inference here.

Apart from the metaphor TO SEEM IS TO SMELL, the stative construction has also diachronically generated the metaphor TO REMEMBER IS TO SMELL. This metaphor, conceptually very similar to the previous one, finds its *raison d'être* in the subjective nature of human smell and in the associative memory of speakers; smells have a great evocation capacity and allow individuals to remember things involuntarily. For this reason, the source of an inference sometimes does not lie in external facts but in the conceptualizer's memory. Even so, it must be stressed that the evidential nature of TO REMEMBER IS TO SMELL is mitigated to a much greater extent than that of TO SEEM IS TO SMELL, as shown in the examples below:

- (22) *le dijo un día que no quería en su casa cosa que oliese a comercio* [he told him one day that he did not want his house to smell of a shop/business] (Raimundo de Lantery, *Memorias*, 1705)
- (23) *A sermón me huele, porque esta divina paloma siempre bate las alas sobre la cabeza de los predicadores* [It smells of/like a sermon to me, because this divine dove always flaps its wings over (the) preachers' head(s)] (José Francisco de

Isla, *Historia del famoso predicador Fray Gerundio de campazas alias Zotes*, 1758)

In both texts, *oler* introduces the memory of some conceptual frames which act as a reference point (the world of business/shops and sermons, respectively); the interesting thing is the fact that the inference, whether it is that a house smells as if there were a shop/business in it or that a speech sounds like a sermon, can only be obtained by someone who is familiarized with those *semantic frames*. Consequently, the evidential use in this case has a much more subjective nature than with TO SEEM IS TO SMELL, insofar as the external evidence in these conceptualizations (the objects of the house or the type of speech) do not suffice to draw any conclusions; having a memory of those frames is required to establish the analogy.

Finally, from its concise configuration without any objects, this constructional variant of *oler* may express overall inferential conclusions about the positive or negative character of some information. The inferential process appears as more superficial in this case, which is why only a schematic and highly subjective conjecture can be achieved. These meanings show very little epistemic commitment by the speaker to his assessment, which the latter himself regards as highly fallible. Let us observe this text:

- (24) *No sabía por qué le olía mal aquella sumisión absoluta* [He did not know why that absolute submission smelt bad to him] (Leopoldo Alas “Clarín”, *Su único hijo*, 1891)

This example, which belongs to the metaphor TO BE SOMETHING BAD IS TO SMELL expresses the speaker’s subjectivity (present in the dative *le*) and his awareness of the fact that the perception according to which submission seems to be something negative is totally arbitrary. Proof of this additionally comes from the negated presence of the epistemic verb *saber* [to know], which confirms that this is a conceptualization loaded with uncertainty. It might be interesting to mention that the smells which prove most useful for survival in the biological world are the disagreeable ones, since it is those smells that warn us about a danger which needs to be avoided (rotten food, a poison, etc.). In other words, the human sense of smell arguably behaves as a cognitive alarm sometimes (Fernández Jaén, 2012). Therefore, if KNOWLEDGE IS A SMELL, an exaggerated submission may be conceptualized as something which smells bad and which consequently awakes suspicions –not yet confirmed– in whoever detects it.

The positive counterpart of this same meaning is the metaphor TO BE SOMETHING GOOD IS TO SMELL. It is an extremely peripheral meaning within the network of meanings corresponding to the verb *oler*, to such an extent that only one example from the 18th century appeared in our corpus:

- (25) *Este, pues, descolgando la mandíbula inferior, que era tan grande que se le bañaba en el pecho, hablando a pujos y como que los iba a hacer (porque su traza no era de hacer cosa que oliese bien), y como dando las boqueadas, me dijo [...] [He thus, dropping his lower jaw, which was so big that it bathed in his chest, speaking in pushes and as if he were going to make them (because his appearance was not of doing something that smelt good), and like making gasps, told me [...]] (Diego de Torres Villarroel, *Correo del otro mundo*, 1725)*

It deserves to be stressed that, although *oler* does activate a positive inference in this case, the predication appears in a negative context (*no era de hacer cosa que oliese bien*); this actually implies the suggestion that it is unlikely for the imminent situation to be positive. The rarity of the meaning TO BE SOMETHING GOOD IS TO SMELL seems to confirm the proneness for these variants to express conjectures of a negative nature which, together with transitive meanings like TO SUSPECT IS TO SMELL (which convey this nuance too) shows that the inferences which our verb enables us to extract tend to be disagreeable or inappropriate –the same as the smells from which they metaphorically derive.

It is thus demonstrated that the intransitive –physical and metaphorical– uses of *oler* constitute an optimum evidential strategy, above all when the knowledge source is a set of concepts, facts, or data coming from outside over which the conceptualizer exerts no control whatsoever.

4. The verb *oler* as a mirative evidential

In order to finish our analysis about the evidential uses of *oler*, it is necessary to pay attention to some cases which, in our view, could be included within the category of mirativity. According to the classic paper by Delancey, the term *mirativity* describes the evidential uses in which some sudden, surprising or unexpected information is obtained. This category of mirativity is being extensively studied at present because no consensus has been reached yet about whether mirativity constitutes a special type of evidentiality or an independent semantic category. It is also discussed whether mirativity can be described as a particular form of inferential evidence, taking into account that those languages which code evidentiality grammatically tend to utilize inference morphemes to express mirativity (Delancey; Aikhenvald; Greco).

A number of texts were found in our corpus where *oler* seems to slide into the conceptual ground of what is mirative. In these cases, the conceptualizer presents a scene in which someone makes a discovery, but it is a discovery that breaks certain expectations, unlike what happens with the general metaphor TO DISCOVER IS TO SMELL. Let us consider the following example:

- (26) *¿Y cómo ha olido que estoy aquí?* [And how did you smell (suspect) that I am here?] (Benito Pérez Galdós, *Rosalía*, 1872)

The speaker who asks this question not only verifies that someone has discovered where he is but also shows his surprise because, in principle, that person should not know anything about his presence in that place. The noun clause *que estoy aquí* therefore transmits information which, for some reason, must have seemed surprising to the subject of *oler*, insofar as the expectable thing would have been not to find that individual in that place. Something similar happens in (27), but this time a specific inference is activated, literally, by a physical smell: it is supposed that a man must not smoke near a woman, but his smell betrays him:

- (27) *El olor del tabaco la ofende, y no puedes fumar delante de ella; si por no dejar de verla fumas lejos de su presencia, cuando te acercas huele que has fumado, y te rechaza* [The smell of tobacco offends her, and you cannot smoke in front of her; if, because you do not want to stop seeing her, you smoke far from his presence, when you come closer, she smells that you have smoked, and she rejects you] (José María de Pereda, *El buey suelto...*, 1878)

As can be seen, the smell of tobacco breaks the expectations (it is assumed that the man in question should not smoke in front of a woman), which leads to an unexpected piece of coded information in the noun clause *que has fumado*.

However, apart from examples like these, various occurrences documented in our corpus contain what has been interpreted here as a grammaticalized phrase: the phraseological expression *oler el poste* [to smell the post]. The relevant thing is that this phrase seems to be specialized in expressing mirativity.

The origin of this phrase can be found in the anonymous novel *Lazarillo de Tormes*, published in the first half of the 16th century. During one of its best known passages, Lázaro, the main character, steals a sausage from his blind master, but the latter, introducing his nose into the boy's throat, discovers the deceit and punishes him. After a great many calamities, Lázaro decides to take revenge on the blind man. Thus, at a moment when they both are taking shelter from the rain by a small stream, Lázaro tells his master that there is a narrower part of the stream where they will be able to cross it with a jump and without getting wet. However, there is no narrow pass, but a stone post at the other side of the stream. Lázaro places his blind master before the post and urges him to jump towards it as strongly as he can. The outcome is that the blind man hits himself hard in the head and falls to the ground half dead. At that very moment, Lázaro exclaims this:

- (28) *–¿Cómo, y olistes la longaniza y no el poste? ¡Olé, olé! –le dije yo* [–How, and you smelt the sausage and not the post? Olé, olé! –I told him] (Anónimo, *Lazarillo de Tormes*, 1554)

This anecdote undoubtedly caused a strong impact at the time (remember that this book was initially taken as authentically autobiographical), and it served as a context for the generation of an inference formed with a syllogistic reasoning: if not smelling the post implies falling into an unexpected danger, smelling the post automatically entails discovering that danger in time. In accordance with the invited inference theory developed by Traugott and Dasher, it could be said that this kind of inference acted in the 16th century as a particularized conversational implicature, that is, as an implicature anchored to a single context, that of the novel. Nevertheless, that implicature became widespread until it was fixed in the expression *oler el poste*, which led to a grammaticalization process. The construction *oler el poste* thus ended up becoming fossilized until it was transformed into an idiomatic verbal phrase with the meaning of TO DETECT THE DANGER. Of course, taking into account that this phrase always refers to surreptitious dangers, it can be argued that it is a phrase specialized in expressing mirativity. Below can be found an example:

- (29) *Los holandeses olieron el poste, y echaron de ver no pretendian otra cosa que hacer Señor de Holanda al Palatino, con lo cual le despidieron sin efectuar nada* [The Dutch smelt the post, and gave the impression that they wanted nothing but making (appointing) the Palatino (as) Lord of Holland, and therefore saw him off without doing anything] (Andrés de Almansa y Mendoza, *Cartas. Novedades de esta corte y avisos recibidos de otras partes*, 1626)

The Dutch in this fragment unexpectedly find out about a trap and in time not to fall into it –a situation which does not arise with *oler el poste*. It becomes clear, therefore, that here the phrase has completely lost its connection with the initial literary context and works as an autonomous lexical piece with a univocal meaning. This phraseological

unit is discontinuously documented between the 17th and the 19th centuries in our corpus but, to our mind, without having arrived to the present day, it provides solid evidence that a Romance language like Spanish has the capacity to generate not only lexical evidential strategies but also more grammaticalized forms, even with a mirative function.

5. Conclusions

The analysis performed in the present paper has proved that the sense of smell can indeed be regarded as a source of information; this is shown by the fact that the verb *oler* has produced throughout its semasiological evolution pragmatic meanings and utilizations which connect the olfactory aspect with epistemic modality. *Oler* can consequently express direct and inferential types of evidence (specific, generic, and conjecture-based ones), although it does not seem capable of introducing referred evidence. It was also possible for us to observe that the verb *oler* conveys mirative uses in specific contexts, one of them being so evident that it led to a more or less ephemeral grammaticalization of the phraseological unit *oler el poste*.

On another note, our research additionally offers solid arguments in favor of a cognitivo-functional conception of linguistic events in general, and of evidentiality in particular, since the fact that a full verb like *oler* can act as an evidential strategy when the situation requires it confirms that evidentials are in their origin always pragmatic *ad-hoc*-created strategies which need time to become lexicalized and even grammaticalized. In this respect, the present paper also provides new evidence about the effectiveness of cognitive theories when it comes to explaining semantic change, since the evolution of *oler* responds to a diachronic configuration based on a prototypical organization which experiences a gradual increase in its metaphorization level. Finally, and also in relation to this, the syntactico-semantic behavior of *oler* confirms the validity of the linguistic corporeization hypothesis too because, as seen above, the biological properties of smell (lack of accuracy, subjectivity, etc.) influence its linguistic design.

Finally, it only remains for us to highlight two analysis paths that will need to be explored in future. In the first place: what kind of relationship exists between smell and evidentiality in other languages? This is undoubtedly a relevant issue to complete our understanding about the behavior of evidentials. And, secondly, is it perhaps possible that the evidential morphemes of a language with an obligatory evidentiality grammatical system have arisen from some term related to the olfactory aspect? The findings of our work make the investigation of this hypothesis more than tempting.

Works cited

- Aikhenvald, A. *Evidentiality*. Oxford: Oxford University Press, 2004.
- Antolí Martínez, J. M. “Canvi semàntic i gramaticalització en el sorgiment de marcadors evidencials. Evolució semàntica de PARERE i derivats en el llatí tardà i en el català.” *eHumanista/IVITRA* 2 (2012): 41-84.
- Bordelois, I. *Etimología de las pasiones*. Buenos Aires: Libros del Zorzal, 2006.
- Cipria, A. “Tensed complements of perception verbs: issues in their temporal interpretation.” In J. Gutiérrez-Rexach ed. *From Words to Discourse: Trends in Spanish Semantics and Pragmatics*. Oxford: Elsevier, 2002. 37-60.
- Cornillie, B. *Evidentiality and Epistemic Modality in Spanish (Semi-) Auxiliaries: A Cognitive-Functional Approach*. Berlin: Mouton de Gruyter, 2007.
- De Haan, F. “Visual Evidentiality and Its Origins.” *Diachronica* (to appear).
- Delancey, S. “Mirativity: The grammatical parking of unexpected information.” *Linguistic Typology* 1 (1997): 33-52.
- Fernández Jaén, J. “Modalidad epistémica y sentido del olfato: la evidencialidad del verbo *oler*.” *Estudios de Lingüística Universidad de Alicante* 22 (2008): 65-89.
- . *Semántica cognitiva diacrónica de los verbos de percepción física del español* [PhD Thesis]. Alicante: Universidad de Alicante, 2012.
- Garelli, M. “Verbos epistémicos latinos.” In *Actas del III Coloquio Nacional de Investigadores en Estudios del Discurso*. Asociación Latinoamericana en Estudios del Discurso, 2007.
- Geeraerts, D. *Diachronic Prototype Semantics. A contribution to Historical Lexicology*. Oxford: Clarendon Press, 1997.
- Gisborne, N. “The attributory structure, evidential meaning and the semantics of English SOUND-class verbs.” *UCL Working Papers in Linguistics* 10 (1998): 389-414.
- . *The Event Structure of Perception Verbs*. Oxford: Oxford University Press, 2010.
- González Vázquez, M. *Las fuentes de la información. Tipología, semántica y pragmática de la evidencialidad*. Vigo: Universidade de Vigo, 2006.
- Greco, P. *Evidenzialità. Storia, teoria e tipologia*. Roma: ARACNE, 2012.
- Ibarretxe-Antuñano, I. *Polysemy and metaphor in perception verbs: A cross-linguistic study* [PhD Thesis]. Edinburgh: University of Edinburgh, 1999.
- Johnson, M. *The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason*. Chicago: The University of Chicago Press, 1987.
- Lakoff, G. *Women, Fire, and Dangerous Things. What Categories Reveal about the Mind*. Chicago: The University of Chicago Press, 1987.
- Lakoff, G. & M. Johnson. *Metaphors We Live By*. Chicago: University of Chicago Press, 1980.
- Langacker, R. W. *Foundations of Cognitive Grammar, vol. I: Theoretical Prerequisites*. Stanford: Stanford University Press, 1987.
- . *Foundations of Cognitive Grammar, vol II: Descriptive Application*. Stanford: Stanford University Press, 1991.
- RAE. *Nueva gramática de la lengua española*. Madrid: Espasa Calpe, 2009.
- Ruiz Gurillo, L. *Hechos pragmáticos del español*. Alicante: Universidad de Alicante, 2006.
- Squartini, M. “The internal structure of evidentiality in romance.” *Studies in language* 25 (2001): 297-334.

- . "Lexical vs. grammatical evidentiality in French and Italian." *Linguistics* 46-5 (2008): 917-947.
- Traugott, E. & R. B. Dasher. *Regularity in Semantic Change*. Cambridge: Cambridge University Press, 2002.
- Whitt, R. J. "Auditory evidentiality in English and German: The case of perception verbs." *Lingua* 119 (2009): 1083-1095.
- . *Evidentiality and Perception Verbs in English and German*. Bruxelles: Peter Lang, 2010.
- . "(Inter)Subjectivity and evidential perception verbs in English and German." *Journal of Pragmatics* 43 (2011): 347-360.
- Wood, F. A. "The semasiology of words for 'smell' and 'see'." *PMLA* 14-3 (1899): 299-346.
- Zwierlein, O. *Senecas Hercules im Lichte kaiserzeitlicher und spätantiker Deutung. Mit einem Anhang über tragische Schuld' sowie Seneca. Imitationem bei Claudian und Boethius*. Mainz/Wiesbaden: F. Steiner/GMBH, 1983.