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Subjectification and attenuation in the conceptual schema of the Catalan modal verb *deure* with evidential meaning

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1. Introduction

In Old Catalan (11th-16th c.), modal verbal periphrasis <*deure* + INF> ('must') was the prototypical and the most frequent periphrasis to express deontic necessity (Sentí 2013). However, during the process of grammaticalization of the periphrasis, in the period between the 11th c. and the 16th c., new meanings appear and the semantic network of *deure* broadens significantly. In this study we focus on the semantic evolution of the periphrasis and the unfolding of the inferential evidential readings[1] that we find in Modern Catalan (Gavarró & Laca). Due to the space reasons, we leave for the further research the development of the future readings: a grammaticalization pattern (NECESSITY > FUTURE) that appeared and reached a considerable frequency of use (16% of the instances of *deure* in the 15th c.) but it did not settle and nowadays it is not one of the meanings of the verb (Sentí 2013).

The inferential meaning the verb *deure* develops is a type of indirect evidentiality that expresses a conceptualization of the state of affairs (SoA) based on the inference of information provided by some external circumstances, some incidents observed, some stimuli or some knowledge (see Floyd; Sentí & Cornillie). A prototypical inference, therefore, is a hypothesis prompted by a stimulus. A peripheral inference could be an intuition, a conjecture or a belief. Beginning with this distinction we can establish three inferential readings (Dendale; Cornillie 2007; Squartini 2008): 1) *specific inference* (or *deduction*) based on a external direct evidence; 2) *generic inference*, not based on observing external evidence, but based on prior knowledge of the speaker; and 3) a pure *conjecture* in which the information does not come from any type of external evidence or common knowledge of the world, it is just a speculation. As we will see, this kind of semantic typology allows us to conduct a more fine-grained study of grammaticalization patterns of the verb *deure*.

In order to explain the semantic change and the evolution of *deure* we will apply Langacker's (1987, 1991) Cognitive Grammar (CG) framework. The framework proposed in these studies, as well as in further contributions (Langacker 1999, 2006; Pelyvás 2000, 2006) offers a model that gives a convincing answer to two crucial semantic challenges that are, on the one hand, explaining the semantic network of the words (or constructions) and thus defining the phenomenon of polysemy and, on the other hand, explaining the semantic change. According to the CG framework, when the speaker/ground (S/G) wants to express a meaning and turns to a schema, there can be a full schematicity if this schema is conventionalized and entrenched. This is the case of the prototypical and more or less peripheral readings. In other cases the schema may not go along with the conventionality, which results in a partial sanction, that is, a change in the conceptual structure and, clearly, a semantic change.

The periphrasis <*deure* + INF> in Old Catalan evolves and two more semantic cores emerge, a future reading and inferential evidentiality. The approach to the polysemy

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[1] The inferential evidential reading has traditionally been considered epistemic modality. The connection between modality and evidentiality in Romance languages leaves a lot of theoretical questions. In this article we assume the evidential reading of the modal periphrasis <*deure* + INF> (see the argumentation in Sentí 2013 and Sentí & Cornillie).

offered by the CG allows representing a semantic network of the semantic nuances and, at the same time, it allows putting together all the similar readings under a strong semantic core, in other words, a prototypical reading that corresponds to the conceptual schema. As we will see, the evolution of the periphrasis reflects some modifications in the conceptual schema of the construction that incorporates force dynamics (Talmy). The conceptual origin of necessity, the force, is gradually fading away, which uncovers a subjective conceptualization of the scene.

This is a corpus study based on the corpora CICA and CIGCA, a balanced and representative corpus of Old Catalan with typologically different texts. In order to study *deure* we have analysed 2490 instances aiming to reach the highest precision in the study of Old Catalan.[2] According to the corpus, in general, the periphrasis has a high frequency of use until the 15th c. (between 0,08-0,1%). In the 16th c. though it decreases to 0,03%. Indeed, it is in the 16th c. when a change in modality and evidentiality occurs in Catalan. The grammaticalization of the periphrasis <*haver* (*a*/*de*) + INF>[3] replaces *deure* as a prototypical obligation periphrasis (Sentí 2012, 2013), while a new semantic reading of *deure,* inferential evidentiality, becomes more widespread.[4]

2. Prototypical construction: deontic modality

In Old Catalan the modal verb *deure* was the prototypical verb to express deontic necessity. This reading forms an objective schema, in which the conceptual origin of modality is a force that comes from the imposer, a role that represents the locus of potency, that is, an external authority that is capable of sending out the force, the obligation. The imposer of the deontic modality is a moral, legal or social authority that can apply force to the doer or the subject, the individual that has to carry out the proposed action, the state of affairs (SoA):

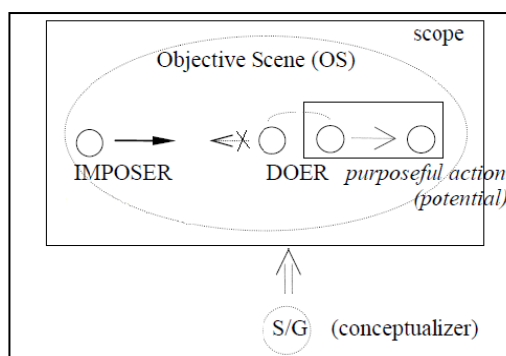(1)   Qan él dix «de tot lo cor», demostra qe de totz sos pecadz si *deu* om *partir*. (*Homilies*: 121, c. 1200)

Figure 1. Conceptual schema 1 with the prototypical deontic reading of <*deure* + INF>.[5]

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[2] However, corpus studies always have some methodological restrictions that are difficult to avoid (see Sentí 2013).

[3] For a full diachronic study of the periphrasis the reader can refer to Sentí (2013).

[4] See Sentí (2013), Sentí & Antolí, Sentí & Cornillie for a detailed quantitative analysis of semantic readings of the periphrasis and its evolution.

[5] This is an adaptation of the schemas of English verbs *must* and *should/ought* from Pelyvás (2000, 2001) with necessary modifications for the semantics of the Catalan periphrasis. With respect to the schema of *must*, we have removed the correspondence between the imposer and the S/G because the prototypical meaning is not so subjective. With respect to *should/ought*, we have added a cross above the counterforce because in case of *deure* it is inferior.

Schema 1 (Figure 1) represents the prototypical reading of deontic necessity. The force, the arrow in bold, affects the subject or the doer, in order for him to carry out the action. The semi-oval line that links the subject of the verb *deure* (first circle of the doer) with the subject of the action or the infinitive (second circle of the doer) shows that it is the same participant.

In his turn, the doer – the target of potency – sends out a very weak counterforce that is represented as a crossed arrow. The obligation is so strong that it does not leave any possibility of not carrying out the potential action. In other words, the counterforce is not effective at all.

All the elements of the schema appear in the objective scene, which points out to all participants of the schema being prominent. The interaction of the forces, the modal relation and the SoA are focalized on the contents codified by the periphrasis <*deure* + INF>. However, the speaker/ground (S/G) is not in the scene and he observes all the elements of the scene from the outside, being outside of the scope of predication. All in all, the construe of the schema is objective.

As it becomes clear in the next section (§3), we have documented some peripheral readings around the prototypical reading of deontic necessity, which we can consider an elaboration of the prototypical conceptual schema (Figure 1). In the fourth section (§4) we will focus on the transitional readings on the way to inferential evidentiality. These are the readings that correlate to a more and more subjective conceptual schema that will be gradually modified.

3. Peripheral necessity readings

Since the very first texts written in Catalan one finds peripheral instances of *deure* that have slightly different conceptual source of necessity. Although they have the same conceptual schema (Fig. 1), one can find a continuum of nuances characteristic of deontic necessity that we will briefly summarize here.[6] In some cases there is an obligation that originates as a request of the speaker and does not come from his moral authority:

(2)   E puys faem manament a ell e·l <u>pregam</u> que degués *amar e honrar* l'infant En Jacme, fiyl nostre, qui era frare seu de part de pare e de mare, e al qual nós havíem dada ja certa heretat, en guisa que ab ell no havia en res a contendre. (*Fets*: foli 200r, XIIIb [ms. 1343])

Another source of obligation related to legal authority is a proposal of a law that generates a reading that can be interpreted as 'to be expected', that is, there is an authority acting as an imposer but, at the same time, such authority elaborates a proposal of a law that gives some rights:

(3)   La ja dicta Rumia demana per raon de sa maire; demana sa legítima e son dret d'aquel dret que sa maire avia ni *aver devia* en aquella honor de la serra subirana de Fígols. (*Medieval 31*: 105, 1250-1255)

In other instances necessity is similar to the prototypical one but the locus of potency is more generic, it has lost moral or regulatory connotations. It is a *participant-external necessity*, a hyperonym of the deontic modality (van der Auwera & Plungian). This kind of modality presupposes that there are some circumstances external to the

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[6] For a full description of these peripheral readings, their chronology and more examples see Sentí (2013).

participant that make the state of affairs necessary or that make the participant carry it out.

(4)   E per asò ve en privació la operació natural et forma·s altra operació estrayna, per la qual muntiplica la còlera et la tersana. On per asò tu *deus donar* al malaute subtil matèria, qui sia de complecció de .D.C., per tal que pusca passar la matèria de .A.B. (Llull, *Medicina*: 54, 1274-1283 [ms. 1275-1299])

There is another instance documented expressing a kind of necessity that is close to prototypical deontic one but is a little diluted, functioning as a discourse marker to introduce new information:

(5)   Mas qui serà qui pusca, ab uls exuts, la mort de Senta Paula recomtar? Devetz saber que ela casec en mot greu malautia, e atrobà aquelò que mot desig[u]ava, per so que nos desemparàs e plus planerament s'ajustàs ab Nostre Seyor. (*Vides*: 214, 1275-1299)

4. Attenuation of the locus of potency and subjectification of the necessity readings
     Apart from the readings that have already been listed, some other readings appear that can be considered a development of the conceptual schema (i.e., partial sanction). Among these readings there is a continuum of instances that increasingly link the imposer, the locus of potency, to the speaker. In other words, the S/G identifies himself with social or moral characteristics that constitute the role of the imposer. This results in a metonymic contiguity connection between the authority (prototypical imposer) and the speaker whose link with the locus of potency gradually strengthens. In what follows we point out several instances that share this kind of attenuation of the locus of potency. First, it is important to point out the instances that express a deontic modality, in which the S/G clearly shares those moral values, or the convenience of the deontic necessity.[7] In these cases the speaker is a part of the locus of potency:

(6)   In primis fecimus clamor de Arnall de Guàrdia de ·LXXXIIII· morabetins que *degre aver pagads* a la mesó, e no·n ha negú pagad. (*Medieval 19*: 85, 1190-1210)

Therefore, such instances add a special feature to the prototypical conceptual schema: the speaker is (a part of) the locus of modal potency. This nuance is represented in the conceptual schema 2 (Fig. 2) with the line that connects the imposer and the S/G. It is a step, although small, towards subjectification because, on the one hand, the S/G is out of the scope but, on the other, the modal force is still partially objective:

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[7] This reading has been documented since the 13th c., although its frequency increases from the 15th c. on.
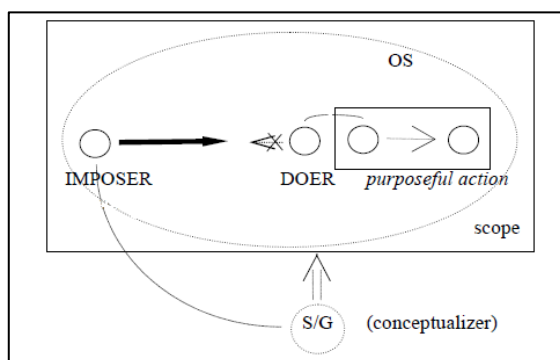
Figure 2. Conceptual schema 2: <deure + inf> with a more subjective necessity reading8

In other, more peripheral instances, modal reading is not deontic but it is a more or less generic participant-external necessity, in which the S/G is also part of the locus of potency:

(7)   De mi en P. de Tous al amat amic nostre en Pedrolo veger del sennor rey en Barcelona saluts e amors; ja·m so escusat a vós <u>per raó de reguard que é d'en F. de sen Martí et am fo feit mal et onta sobre omenatge</u> et sobre treves per què **no par** que jo me'n *dega* tant *fiar* e son guiatge. (*MiS-DJI*: 528, 1251)

(8)   dién e aferman en juhii contra aquella que en lo present dia de huy a tort e sens alcuna justa rahó, injuriosament e no deguda, dix e apellà a la dita Johaneta "puta, bagassa, alquenyada, culmoriscada", que so feÿa de moros, que ·XX· anys ha que *degra ésser cremada*. (*Clams II*: 262, 1306-1321)

The instance in (7) is especially interesting because the text is old enough and it clearly shows subjectification. Here the modal force comes from the speaker's interpretation of the world. His experience (his encyclopedic knowledge), that is, *mal et onta* 'damage and disgrace' that he suffered, warn him not to trust that person. This is the locus of potency.

In many cases there is an explicit external cause (see the underlined fragments) that leads the S/G to evaluate the convenience of sending out force. In other instances the cause can be understood from the communicative context. This cause and the speaker's judgement are where the modal force originates.

(9)   «Cognoscentes», <u>per ço com són fets a semblança de Déu</u>, e per ço *deurien fer* més la voluntat sua que no la del dimoni. (Sant Vicent, *Sermons*: 229, 1410-1415 [ms. 1445-1449])

In some other instances the source of the modal force is also subjective, moreover, the speaker expresses desire or advice. For example, in (10) one can see that the obligation originates because the speaker considers the action convenient. There has been a transition from an external, moral or legal, obligation to an obligation that is still external to the subject but is at the same time filtered through the morality or the

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[8] It is equivalent to the schema of the English modal verb *must*, according to Pelyvás (2000). This author argues that, in case of *must*, the speaker is always part of the locus of potency.

judgement of the speaker. Therefore, such cases stand farther from the source of prototypical obligation.

(10)   dix En Ramon Marquet: «Senyor, **semblar m'ia** que vós *deguéssets tornar* là en la terra, per ço que tota la companya se recuylís e que·ns veessen; e, si no, errar-nos àn en la mar e no us poran trobar». E vim que deÿa raó e faem ço que havia dit. (*Fets*: foli 179r, XIIIb [ms. 1343])

(11)   E açò, **a mon juhí**, pequen axí fort com si prestassen lurs diners a usura, car pijor és lo mal qui se'n segueix, e pus difícilment se'n pot fer esmena ab egual mesura. Certes, *deuríeu*-los *blasmar* e *increpar*, car a cascun cal d'açò que torna a damnage e interès públich. (Malla, *Memorial*: 202, 1420-1430 [ms. 1425-1449])

    Often the presence of the speaker as a locus of potency is reinforced by the presence of speaker-oriented hedges, i.e., main verbs, such as *parèixer/semblar* 'to seem', with the periphrasis and a pronoun in dative case in the dependent subordinate clause; it can also be reinforced by the expression *a mon juhí* that clearly shows that we are dealing with the speaker's judgement (see the fragments in bold in the examples above).

    It is interesting to point out how the conditional form of the verb *deure* contributes to the force attenuation. In this case, we can apply Pelyvás's (2001) proposal for the English modal verbs *ought/should* that express necessity in a more polite way because they leave an option of not carrying out the proposed action. That is why in this case the conceptual schema has a more effective counterforce, that is, the doer has a higher capacity to oppose to the modal force. In the schema this is represented with an arrow (directed to the left) that shows the counterforce (it is not crossed as before):
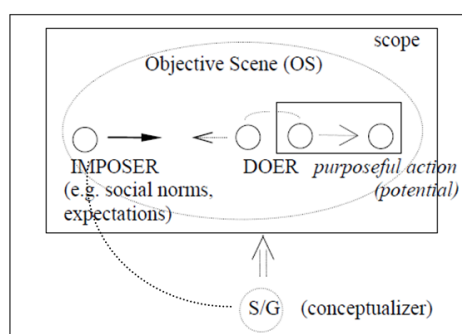

Figure. 3. Conceptual schema 3: *<deure* + INF> with the necessity-convenience reading

    All in all, the authority of the imposer tends to blur: it is an increasingly generalized figure that is more connected to the speaker/ground. These readings ultimately bring closer the semantic change.

5. Necessity with a wide scope

    Apart from the subjectification, another aspect that can bring the periphrasis of necessity closer to evidential/epistemic readings is the change from narrow scope to wide scope (Nordlinger & Traugott).[9] Deontic modality prototypically has narrow

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[9] Traugott & Dasher also analyse this aspect. Pelyvás (2001, 2006) applies it to English modal verbs within Langacker's theoretical framework.

scope, that is, the force is applied to the subject, the doer who has to carry out the state of affairs:

(12)   per ço, compensació deu ésser admesa: que vós, senyora, *deveu cerquar* ab los enemichs matèria de mort e no ab aquell qui us desija servir. (*Tirant:* 740, 1460 [ms. 1490])
[(DEVEU senyora) cercar] «es requereix de vós cercar amb els enemics de la matèria de mort»

By contrast, evidential readings by definition have wide scope, the force cannot be applied to a specific individual (the doer has faded away), it is applied to the whole SoA. That is why the presence of deontic readings with a wide scope is a step towards the semantic change.

(13)   E en aquell sacrifici ha molts àngels. La verge Maria no podie consegrar, ne sent Johan Babtista. Ara donchs, bé·n *deurie ésser* content lo prevere, que deurie dir matines a miga nit, etc. (Sant Vicent*, Sermons*: 45, 1410-1415 [ms. 1445-1449])
[DEURIA (el prevere ésser content)] «es requereix, que el prevere estiga content, atès que farà missa»

As shown in the Fig. 4, the doer has faded away and the target of the force is the SoA, the potential action or the situation. It is important to point out that the salient element is not the modal force or the whole interaction of forces, but the SoA.
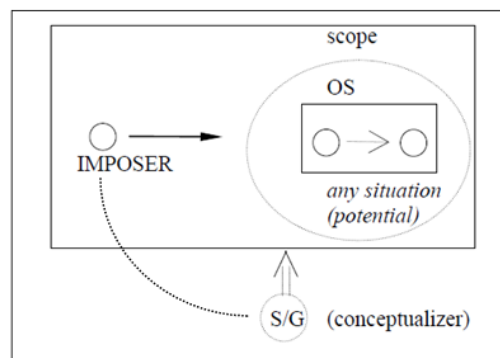

Figure 4. Conceptual schema 4: <*deure* + INF> with a wide scope[10]

Unlike Traugott & Dasher, Pelyvás (2006) does not agree that the verb *must* can set such a schema. By contrast, the data here shows that the verb *deure* can do so, but only in those cases that have been mentioned, especially with such infinitives as *restar, ésser,* or with passive voice, when the verb lacks agentivity.

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[10] This figure is an adapted analysis of English modal verbs *ought/should* from Pelyvás (2001). The correspondence has been added.

6. On the rise of the inferential evidential reading

6.1. Transitional readings

In the most archaic Catalan texts (12th-13th c.) there are some instances documented that could have an inferential evidential reading of pragmatic nature. These are transitional readings (indeterminate or ambiguous) that are connected to peripheral conceptual structures (schemas 2 and 3) and that can be interpreted either as expressing necessity or as expressing inferential evidentiality. These periphrases appear in contexts that allow such double interpretation or, in other words, particular communicative contexts that allow a different pragmatic reading, inference, or innovative reading.[11] Besides, such readings help to establish the diachronic relation that traces the grammaticalization pattern of *deure*.
One of the oldest examples is this one:

(14)   E per aizò qar él dejunà ·XL· dies e ·XL nuits, mostra qe él ere ver Déus; et aizò qe él ag fam mostra [qe él] ere ver om: e per aizò *devem cretre* qe él fo ver Déus e ver om. (*Homilies*: 122, c. 1200)

In this example, on the one hand, we can get the reading codified by the verb as 'we must believe' (a deontic reading, 'it is necessary for us to believe'), and on the other hand, we can get a different reading, in which *deure* means that we necessarily deduce or infer the belief that «él fo ver Déus e ver om» (inferential reading, 'the only possible conclusion is'). It is also bounded to a particular context that makes the inference possible because
    a. the moral authority behind the necessity, the locus of potency, can hardly make the subject *believe*;
    b. another interpretation (or inference) of the Bible, different from that of the S/G, is not possible;
    c. another important thing is that the infinitive verb of the periphrasis is stative, that is why there is no prototypical agent targeted by the obligation.
This is the context that we will often find in other transitional instances with stative infinitives that show an innovative interpretation standing on the threshold of semantic change and emergence of the inferential reading. That is why it also presupposes a change in the deontic conceptual schema. Firstly, the target is not anymore the prototypical doer that has to carry out the action. In the sentences with stative infinitives or passive voice structures the agentivity characteristic of deontic modality has disappeared. The second important element of the conceptual schema being modified is the role of imposer as a locus of potency. In the innovative interpretation the force is attenuated because in theses cases the S/G is also the part of the source of the force.

In other cases, among agentive sentences one can also find some contexts that contribute to the ambiguous reading. In (15) it is possible to have a deontic interpretation because there is no attenuation of the target, it is an agentive sentence. Evidential interpretation is also possible because there is no typical imposer.

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[11] With regard to this, the notion of the generalized deontic/epistemic necessity suggested by Traugott & Dasher (111) is interesting. Traugott & Dasher (111) argue that «it is necessary for X to do/be Y» for the generalized deontic necessity and «the only possible conclusion is that/it can't not be that» for the generalized epistemic necessity.

(15)   Encara dels cosses podrits s'engenren mosques e tavans molt verinoses, la qual
        cosa fo de feyt en Cathaluynna can lo rey de Ffrança e ses gents tenien assetjada
        la ciutat de Girona, ja sie ço que sie fama comuna que per miracle aquelles
        mosques s'engenraren, a la qual cosa no contrast. Car ço que natura obre hó fa,
        tot ho fa en vertut de Deú, donchs Déus en vertut pròpria ho póch fer e ho *dech*
        fer esguardan la injustícia e la iniquitat d'aquells, e·ls greus pecats e eretgies que
        fahien (*Agramont*: 57a, 1348 [ms. 1388])

In this discourse it says that during the siege of Girona some very poisonous flies
and gadflies appeared, which the people attributed to a miracle. Everything created by
nature comes from God. Thus, attending to the injustice of such a situation, the S/G says
that i) God was compelled to do so (obligation) or ii) he infers that God did so because
of the current situation. What has changed from one interpretation to another? The locus
of potency. While in the first interpretation there is an imposer that projects modal
force, in the second one the locus of potency is the S/G.

What do the two conceptualizations have in common? The speaker participating in
the locus of potency and specific circumstances that justify either the necessity or the
inference. These two elements are essential for understanding semantic change. Thus, in
the interpretation (i) the speaker is already a part of the locus of potency, although the
source of the force is still the imposer, external necessity is justified by the situation. In
(ii) it is the situation, the circumstances that together with the intepretation of the S/G
send out the force.

As the dating of the examples shows, transitional instances from necessity to
evidentiality can be found from the first Catalan texts till the 16th c. In fact, in the 16th
c., when evidential reading becomes more widespread (see §0), ambiguous readings do
not disappear, on the contrary, they increase relatively, to more than 3% of the total
number of instances. This fact shows that such transitional instances are not only ways
to achieve the semantic change, but they also reveal the semantic configuration of the
category that has fuzzy boundaries (Geeraerts).

6.2. First instances of evidential readings: *specific inference*

A periphrasis with the most clear evidential reading dates back to the beginning of
the 13th c.:

(16)   E an auant Ramon de Senaoia pres un ladre de noit en sa maiso qui auia fait
        grans mals e fo iujat per peniar per cels qui auien la cort en comanda per P. de
        Lobeira, zo era en Mir et prohomes altres de Lerida et in hoc quando ducebant
        eum pendere uenc P. de Lobeira e fez lo escapar per Mil solidos que ne *dec auer*
        qui len foron promes daizo no sabem si habuit uel non. (*MiS- PSP*: 169, 1200-
        1210)

Here the S/G interprets that P. de Lobeira got a thousand of sous for which he let the
thief get away. It is not a known or directly observed information, it becomes known
indirectly, through the inference of very clear facts, some very obvious evidence.

Periphrases with evidential reading are scarce until 1350. Within the period from the
11th c. till 1350 13 instances have been documented, representing 1% of the periphrases:

(17)   E açò sabem nós bé per cert per los moros de la vila. E hoís molt bé la crida que
        nós havíem feyta fer, car tots cels qui eren en la ost la *devien ohir*. (*Fets*: foli
        137v, XIIIb [ms. 1343])

(18)   Experiència mostre quascun jorn que can foch se pren en alcun alberch, que tots
        los vehins n'àn temor, e·ls qui pus prop li són major *deven haver* pahor.
        (*Agramont*: 53a, 1348 [ms. 1388])

(19)   Emperò havem tramès poder bastant al governador et al un de vosaltres que per
        tractar et haver moneda puxats manlevar et fer venditions en nom nostre. Et ja
        d'aquesta raó les nostres cartes *devets haver haüdes*. (*Reintegració V*: carta 403,
   1349)

Evidential reading that these periphrases have is a *specific inference*: the verb *deure*
points to the fact that the information has been obtained by inference (or deduction)
from some evidence or specific observations (Squartini 2008). For example, in the
following sentence, the periphrasis indicates that, on the basis of the specific (and
explicit) assumption «pus nós no la havíem [Eivissa] e havíem altres coses a fer», the
S/G deduces or infers that, inevitably, «ben devíem voler que él la conquerís»:

(20)   E dix-nos que, si nós li volíem donar Eviça, qu'él ab son liynatge, que la
        conquerria; e, pus nós no la havíem e havíem altres coses a fer, que ben *devíem
        voler* que él la conquerís, per ço que hom digués que l'arquibisbe de Terragona
        havia conquerida Eviça; (*Fets*: foli 65r, XIIIb [ms. 1343])

Another example shows that, of course, everybody can infer that the subject has to
know the name of the lord, given that «tots los hòmens del món lo sabien»:

(21)   e él respòs-vos que [...] *devíets* bé *saber* lo nom de son seyor, que tots los
        hòmens del món lo sabien e saben con és poderós entre·ls chrestians e alt, per
        què no devíets desdenyar que no sabéssets lo seu nom. (*Fets*: foli 45v, XIIIb
        [ms. 1343])

These constructions do not fully sanction the conceptual schema of necessity, the
meaning codified by the periphrasis, they are a partial sanction: a semantic extension
has occured. Semantic change is a substantial modification in the conceptualization of
the semantic interpretation of the periphrasis that corresponds to the schema 5 (Fig. 5).
In this case, the specific inference entails an attenuation of the locus of potency: modal
necessity does not send out any kind of force. Instead of that, the speaker's mental
scanning of the conceptualization is uncovered. Now there is no imposer that makes the
doer carry out the state of affairs (as it is in deontic modality), the force is dimmer and it
causes the conceptualization of the state of affairs. All in all, the locus of potency of the
inference is the S/G who, interpreting the situation, infers some information. That is
why the S/G appears in the scope of predication in the graphic representation.
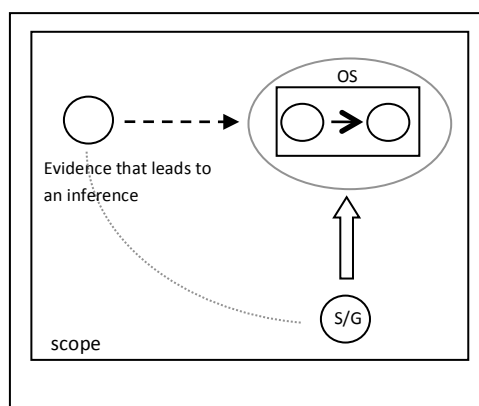
Figure 5. Conceptual schema 5.
The periphrasis <deure + inf> with a specific inferential evidential reading

Nevertheless, there is still an objective component. In the inferential process there is specific evidence that allows making an obvious inference. Therefore, the evidence of the familiar situation forms the locus of potency, together with the S/G. This is a partially objective configuration, or not so subjective as it could potentially be. At this stage, the verb *deure* has developed an evidential reading that points to a relatively objective inference based on the evidence that can be noticed by everyone.

As we have already observed in the case of necessity instances with a wide scope and transitional readings, here the target is attenuated as well. In this schema there is no doer, but the force applies to the state of affairs that appears in the objective scene. All things considered, the modal interaction of forces has attenuated and the conceptualization of the S/G has come into the focus (Langacker 2006). The first subjectification has occured.

6.3. Subjectification and semantization of the inferential reading: between *specific* and *generic inference*

In the period between the years 1350 and 1500 the inferential reading of the periphrasis gets to represent between 7 and 8 percent of the periphrases of this period. That is why we can say that this reading is more widespread. It is in the 16th c. when the evidential reading becomes more frequent and gets to represent 30% of the instances of the corpus in this century. Semantic change and the new reading become get more established. In addition to the consolidation of the semantic change, the process of subjectification and force attenuation progresses as well.

During the second half of the 14th c. and the the 15th c. most instances with evidential reading are variations of the conceptual schema of specific inference (Fig. 5). As it can be observed in the following examples, there is some specific evidence that is part of the objective locus of potency, from which the S/G infers the state of affairs: *per rahó del leó, la vostra roba me fa creure,* etc. (see the underlined fragments). At the same time, the subjective inference of the speaker also becomes explicit through the presence of speaker-oriented hedges: *féu juyhí, a mon juý, pensava, crec, opinant,* (see the fragments in bold).

(22)   Car, senyor, per molt que hajas dit, <u>no m'havets provat</u>, **a mon juý**, per rahons necessàries, sinó ab persuasions mesclades ab fe, que·l sperit de l'hom sia inmortal. <u>Ne veig coses evidents</u> per què ho *dege creure*. (Metge*, Somni*: 78, 1398 [ms. XV])

(23)   E donchs, <u>com Jesuchrist sie de infinida clemència</u>, donchs los salvats molts
         deuen ésser. (Sant Vicent, *Sermons*: 224, 1410-1415 [ms. 1445-1449])

(24)   Per què lo rey féu venir a Laquesis, e li dix: —Laquesis, <u>la vostra roba me fa
         creure que vós</u> *devets conéxer* lo cavaller de qui aquesta tenda és; e axí us prech
         que vós me vullats dir son nom e tant com sapiats de sos fets. (*Curial*: 200,
         1435-1445 [ms. 1445-1458])

(25)   e donaren-li lo jupó e l'anell que havien comprat; e Melchior **féu juyhí** que
         aquell anell *degué ésser estat* de Curial, <u>per rahó del leó que tenia tallat, car tots
         temps Curial feya leó per amor de la Güelfa</u>. (*Curial*: 312, 1435-1445 [ms.
         1445-1458])

(26)   e a vostra il·lustra senyoria sia stat grat voler-me pregar la giràs en lengua
         portoguesa, **opinant** <u>per yo ésser stat algun temps en la illa de Anglaterra</u> *degués*
         millor *saber* aquella lengua que altri; (*Tirant*: 61, 1460 [ms. 1490])

However, in the 15th c. there are also some constructions that develop another
evidential reading, a more subjective one, *generic inference* or induction (Dendale). The
(semi)auxiliary *deure* shows the source of the information: an inference that is not based
on observation of the external evidence but on the prior (or encyclopedic) knowledge of
the speaker. The scene has lost a big part of the objectivity it possessed, it is even more
attenuated. This means that it is much more subjective because there is a tighter
connection between the S/G and the semantic interpretation of the modal verb. The S/G
is more relevant as a source of potency. As it can be observed in the following
periphrases, <*deure* + INF> codifies a more personal inference that is not so obvious and
that not everyone would make in the same way.

(27)   no sabia què dir, sinó que ell axí mateix se traballava ab tot son saber en dir e fer
         totes les coses que a Curial podien e *devien plaure*. (*Curial*: 361, 1435-1445
         [ms. 1445-1458])

(28)   E per sort, encara que la nit fos molt escura, viu una barca qui·m **paregué** que
         de pexcar *degués ésser* (*Tirant*: 1287, 1460 [ms. 1490])

(29)   Mas per ço com no venguist davant la mia vista, te prech que prestament te
         vulles partir davant los meus ulls, car bé **pens** que tanbé *deus ésser* consenta en
         la maldat de ta senyora. (*Tirant*: 1020, 1460 [ms. 1490])

(30)   Com foren dinats e Tirant **conegué** que lo emperador *devia dormir*, ell e
         Diafebus anaren al palau. (*Tirant*: 529, 1460 [ms. 1490])

In such more subjective instances there almost always are speaker-oriented hedges,
such as the verbs *parèixer* 'seem', *conèixer* 'be acquainted with', *pensar* 'think',
estimar 'estimate'. Unlike the specific inferential reading, in most cases of generic
inference we do not find explicit premises of the inference, no evidence that could allow
inferring with a certain degree of objectivity the state of affairs. There is a generic
inference, and the S/G becomes more important as a locus of potency. As it can be
observed in the conceptual schema 6 (Fig. 6), conceptual force has almost disappeared
(the horizontal arrow is not there anymore) because the source of the force does not lead

us directly to a conclusion, but the inference is based on the encyclopedic knowledge or on some generic logical element of the reality that is interpreted by the speaker. All in all, there still is a certain stimulus, a piece of evidence, a shred of objectivity that is the that generic stimulus, the piece of evidence represented by the circle that previously was the source of the force. In this new more subjective construe, the subjective force of conceptualization emerges, and the main locus of potency is the S/G.
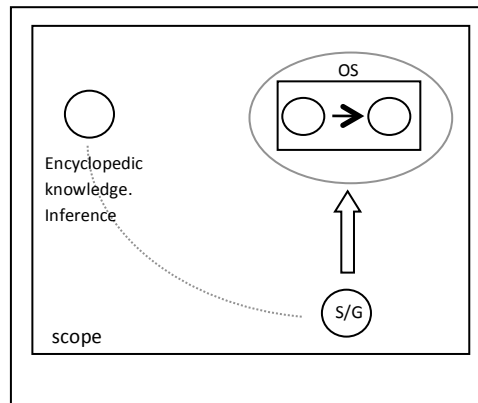
Figure 6 Conceptual schema 6.
Periphrasis with the verb *deure* with a (subjective) generic inferential evidential reading

For example, in the following paragraph there is no explicit evidence, no specific situation from which it is obvious to make an inference of the state of affairs *«haver begut aquella aigua de la font»*, but there is some generic element in mind of the speaker that allows him to make such an inference.

(31)   O! Quina consciència hauràs si la infidelitat prens per companyona? Però **par-me** que tu *deus haver begut* aquella aygua de la font hon morí lo bell Narciso, qui fa fugir de la memòria totes les coses passades ensemps ab la honor. (*Tirant*: 738, 1460 [ms. 1490])

In the 16th c. the subjectification of the scene becomes more widespread and evidential readings of generic inference, more distant from the deontic reading, become the majority:

(32)   perquè les fiu donar del forment de Molín de Rey ý, si vós no u sabeu, Miquel o mossèn Francesch ho *deuen saber* ý se'n *deuen recordar* de les dos quarteres de dona Stefania, o vós, o mossèn Bolet, ho *deuen saber*. (*Estefania*: carta 194, 1522-1542)

(33)   de la enemiga del duc me par molt donosa, que, si ell se avia donat entendre cosa tan fora de raó com aquexa, de l'enperador *deu tenir* la quexa, que no de nosaltres ý, per a perdre la de tots, se deuria recordar que és stat en lo castell de Xàtiva, que é ... (*Estefania*: carta 68, 1522-1542)

(34)   Ý tots los que escriuen de allà diuen que té Sa Majestat estremat desig de venir. La mort del duc de Milà ja la *deu aver* vostra senyoria sabuda. (*Estefania*: carta 94, 1522-1542)

(35)   Ý ayr ell *devia estar* de bona gana ý, sens dir-li res, dix: —Vós me dexistes que
         me queríades hablar largo sobre un negocio, agora lo podé... (*Estefania*: carta
         46, 1522-1542)

As one can observe, in these examples there is no evidence and there are no specific
circumstances that could allow to infer the SoA. For example, in (36), although there is
no specific evidence, there is some knowledge the S/G has that can lead him to the
information or the SoA: it is the line *«que·m diu escrigé ab lo fill del senyor de
Manises».* In (37) there is an inference that *«les provicions assí deuen ser barates»,*
based on the speaker's knowledge and his interpretation of the situation. That is, this
information becomes available not through the observation of objective evidence, as it
happens in specific inference, but through the interpretation of it made by the speaker.
Therefore, the locus of potency is the speaker's conceptualization, and there is a more
subjective construal:

(36)   aprés rebí altra lletra, feta l'endemà que vostra senyoria aribà aquí, que
         m'enviaren de Monçó, que **crec** *deu ser* la que·m diu escrigé ab lo fill del senyor
         de Manises. (*Estefania*: carta 10, 1522-1542)

(37)   e ab poca cosa que s'í ajuste poden en poble com Tortosa honrradament víurer,
         perquè **crech** yo que les provicions assí *deuen ser* barates. (Despuig, *Col·loquis*:
         78, 1557)

Again, subjective hedges co-occuring with the periphrasis are found much more
frequently in the 16th c.: *crec* 'I believe', *sospite* 'I suppose', *pense* 'I think' (see the
bold):

(38)   Ý també·m **sospite** que la intensió de don Juan *devia ser* la que vostra senyoria
         diu, ý, com no era la que devia, no és exit ab la sua, ni és raó que per avant
         alcanse lo que voldria (*Estefania*: carta 44, 1522-1542)

(39)   Vostra senyoria·l me comana. **Pense** que *deu ser* altre ab qui pensava enviar-la.
         (*Estefania*: carta 96, 1522-1542)

(40)   lliura a raó la quortera [...] poch a sinquanta, ý tot l'altra a ·quoranta_vuyt· e·[n]
         pres en dies pasats, que jo **crech** que *devia esser* a mitgant max. (*Illes XVI-26*:
         453, s. XVI)

In the 16th c., although generic inference prevails, there are still instances of specific
inference:

(41)   a més de les que féu a eixos quatre cavallers de qui avem de tractar, fas lo comte
         de Barcelona en la jornada de Tortosa, que segons lo citi fonch porfiat ý llarch,
         de créurer és que molta gent hi *degué suar*. (Despuig, *Col·loquis*: 112, 1557)

(42)   Ell n'és molt ben guarit, laós a Déu, però no m'à faltat una congoxa tras altra,
         que, com ve bona no ve sola, ý axí *deu ser* millor, pux nostre Senyor és stat
         servit de colocar en la sua santa glòria (*Estefania*: carta 86, 1522-1542)

(43)   pux Déu és servit que sia axí, asò *deu ser* lo millor. Ý per so, soplique a vostra senyoria que no li done asò fatiga, basten les altres que té. (*Estefania*: carta 112, 1522-1542)

A meaning close to the inference is a shade of approximation that we have documented in a few examples, an inference of the quantity that the speaker makes from some premises. This reading could be an elaboration of the specific inferential reading:

(44)   Donchs, recort-vos, mos senyors, los qui de honor sentiu: ab aquests mateixos dos voltes nos som combatuts; no penseu que ara sien més valents com tinguen poch recort de la trista mort dels seus e de tan gran scampament de sanch com la virtut de vosaltres ha fet en les persones de ells. Pensau ab quanta dolor e misèria *deuen star*. (*Tirant*: 672, 1460 [ms. 1490])

(45)   Cavallers valerosos, armats primer de gran sforç en lo noble coratge, aprés de armes tan ofensives que·n la vista sol de aquelles los enemichs aterren, ¡quant *deu ésser* gran la alegria de tots nosaltres, puix ajustats per una matexa intenció, ab hun mateix sforç e ànimo combatent, atengam la fi de aquella cosa per la qual lo morir no·s deu refusar! (*Tirant*: 1316, 1460 [ms. 1490])

A similar reading, within the sphere of generic inference, is the one that the following examples show:

(46)   Ara donchs, quants *deuen estar* los doctors, confessors, vèrgens e penidents! E donchs, quinya multitud *deuen ésser*! (Sant Vicent, *Sermons*: 223, 1410-1415 [ms. 1445-1449])

(47)   -Ells nos feren molta de honor e com fom dins la ciutat vem infinida gent per les torres e per les plaçes, finestres e terrats, que era una gran admiració de veure tanta gent armada, que, per Mafomet, yo arbitrava que *devien ésser* CC mília combatents, e aquest malvat de rey ha fets fer matar los lurs embaxadors sens que no u merexien. (*Tirant*: 135, 1460 [ms. 1490])

In this case it is a calculation, a numeric evaluation that is not based on the circumstantial elements, that is why we say that it is a development of a more subjective, generic inference.

Finally, in negative and interrogative sentences, there is an inferential shade of surprise or mirativity motivated by the opposite expectation of the speaker (Cf. Plungian 2001, 355):

(48)   per ço que les mies orelles no hagen de hoir que yo y sia stada consenta. E per ço los meus ulls, de vives làgrimes destil·len. ¿E com, senyora, no *deveu* vós *pensar* que la cosa no·s deu fer que bisbes e arquebisbes no u hajen de saber? (*Tirant*: 882, 1460 [ms. 1490])

It is interesting that the periphrasis appears in an interrogative sentence because, as we will see in the §8, this can show a greater subjectification and the predominance of a less inferential and more conjectural shade (Squartinti 2010).

6.4. Grammaticalization path

If we turn to the list of readings that the modal verb *deure* has developed, we notice that since the original prototypical meaning (deontic necessity) the construction has undergone the process of force attenuation and of the conceptual source of necessity, combined with progressive subjectification uncovering the conceptualization of the S/G that forms part of the locus of potency. This process has brought to the surface different readings that form the path of grammaticalization: from deontic necessity to peripheral, more subjective necessity, to transitional readings and to innovative inferential evidentiality:

DEONTIC NECESSITY > MORE SUBJECTIVE EXTERNAL NECESSITY > TRANSITIONAL READINGS > SPECIFIC INFERENTIAL EVIDENTIALITY > GENERIC INFERENTIAL EVIENTIALITY.

Although this path of semantic change follows general cross-linguistic tendencies (Bybee *et al.*, van der Auwera & Plungian, Traugott & Dasher), a more fine-grained analysis and detection of more specific readings offers a lot of possibilities to explain the semantic change. As it is done in Goossens' diachronic semantic study of the modal verb *must* in English, this chain of readings shows the importance of the gradual character of the linguistic change. In this respect the typology of inferential (specific and generic) evidential readings has allowed a more detailed description of the chain of semantic change and has shown the closeness of the readings in the semantic network of the category *deure* that forms a semantic continuum.

7. Grounding predications

In Cognitive Grammar framework, English modal verbs are considered grounding predications because they have maximal subjectification (type II) (Langacker 1990). This classification in Cognitive Grammar was restricted to English modal verbs, both with deontic and epistemic readings (Langacker 1991).[12] According to this model, modal verbs in Romance have not reached this degree of subjectification. However, as we have seen in the diachronic analysis of *deure*, this modal verb forms a rather subjective schema.

Different proposals have shown lately that grounding predications and maximal subjectification must be limited to epistemic modality or to inferential evidentiality because this meaning has a conceptual structure with a more subjective construe (Pelyvás 2000) than deontic modality. Furthermore, it has been argued that modal grounding cannot be restricted to the verbs of only one language. Regardless of formal differences, the contents and the conceptual construe of some modal verbs in other languages is similar to grounding predications of English modal verbs (Cornillie 2005, 2006, 2007; Mortelmans).

The periphrasis <*deure* + INF> with deontic reading profiles the interaction of forces, that is why in the conceptual schema the modal verb and the infinitive are salient. The construe of the scene is objective, and for this reason it cannot be considered a grounding predication. By contrast, in the evidential reading, the focus of the attention is only the infinitive, that is, *deure* profiles the infinitive, the state of

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[12] Langacker's argument in favour of the modal grounding being limited to English is that in this language modal verbs share morphological features and forms a rather homogeneous category: they do not have infinitive forms (**to should*), finite forms (**she mays*), and the verb that follows the modal verb has to be a bare one (non-inflected, non-infinitive: **she may plays*, **she may to play*).

affairs. We have argued that the inferential value is the result of the attenuation of the objective potency. Therefore, the activity of the conceptualizer comes into the focus. In this subjective construe (both in specific and in generic inference) *deure* grounds the state of affairs (profiled element) to the context. It means that we consider that the temporal anchor of tense and person morphemes of the verb *deure* (*devia, deuen*, etc.) becomes less important than the modal/evidential grounding of the (semi)auxiliar. As argued by Cornillie (2007, 234) for the modal verbs in Spanish, the periphrasis <*deure* + INF> can be considered a grounding predication in its evidential reading despite having a tense morpheme. This formal difference with regard to English modal verbs does not lessen the conceptual closeness of different evidential/epistemic periphrases in Romance and Germanic languages.

In addition to the conceptual difference between deontic modality and inferential evidentiality and (objective vs. subjective) perspective, there are other elements that reinforce this proposal. First, the fact that the tense morpheme changes its meaning in the evidential reading of the verb *deure* proves that the temporal grounding loses its power when compared to the periphrasis with the deontic reading (Mortelmans). Thus, in «Pensau ab quanta dolor e misèria *deuen star*» (*Tirant*: 672, 1460 [ms. 1490]) the present tense morpheme of *deuen* does not express a factual state of affairs, as it is characteristic of this verbal tense. In contrast, *deure* relates the designated entity to the subjective construe of the ground.

An distinctive feature related to the temporal anchor is that, according to the corpus data, the periphrases with evidential reading have less morphological flexibility.

Table 1. Verbal tenses of the verb *deure* in the periphrasis of necessity
and in the inferential periphrasis in the 16th c.

Reading	Present	Imperfect	Preterite (synthetic form)	Preterite	Conditional	Subjunctive
Deontic modality	51,38%	21,1%	-	-	15,6%	11,92%
Inferential evidentiality	60,78%	27,45%	11,76%	-	-	-

As one may observe in Table 1, the periphrases with evidential reading have a greater morphological restriction on the verb *deure* compared to those that express necessity.[13] In fact, in Modern Catalan, the verb with evidential reading admits only the present, imperfect and future forms (Gavarró & Laca, 2718).[14]

The tense morpheme also loses the importance in the grounding. While the deontic instances have all person forms,[15] the majority of evidential instances (more than 90%) are in the third person.[16] Grammaticalization entails loss of variability in tense, aspect, mode and person (Hopper & Traugott).

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[13] The data are from the texts of the 16th c., when the evidential reading was completely developed.

[14] In Valencian dialects of the regions la Marina Alta and la Marina Baixa the synthetic form of the preterite is preserved (Beltran, 87, Beltran & Herrero, 87).

[15] According to the data from the 16th c., the 1st person singular represents 8,3%, the 2nd person singular 3,7%, the 3rd singular 55%, the 1st person plural 7,3%, the 2nd plural 7,3% and the 3rd plural 18,3%.

[16] According to the data from the 16th c., the 1st person singular appears once (1,9%), the 2nd person plural three times (5,8%), the 3rd person singular 40 times (76,9%) and the 3rd person plural 8 times (15,4%). The evidential periphrasis does not appear in other person forms.

Another formal aspect to consider in favour of the grounding predication of the periphrasis is the fact that it is restricted in combining with aspectual verbs. The periphrasis cannot appear preceded by a temporal aspectual auxiliary verb *haver* o *ésser* to form compound tenses. It cannot be preceded by the past auxiliary *anar*, either. This combination is also impossible in Modern Catalan. Unlike the periphrasis <*haver de + * INF> (with the necessity reading) in Modern Catalan (§8), the periphrasis with the verb *deure* cannot appear in the analytic form of the preterite:[17]

(49)   Va haver d'anar al metge

(50)   *Va deure fer* els deures

In fact, it is unusual for the periphrasis to appear in a non-personal form. In some cases it appears in infinitive governed by a control verb:[18]

(51)   Ysaïes encara *deye deure pendre* aquesta via, jatsie no fos sabuda fins que Jesuchrist près mort e passió e se ·n pujà alt als cels, la qual no ere a ell coneguda. (Sant Vicent, *Sermons*: 295, 1410-1415 [ms. 1445-1449])

Or as an infinitive of the verb *semblar* 'seem':

(52)   axí en lo guiatge contengut en lo acte ab lo qual los dits hòmens foren als dits missatgers liurats, com en les altres coses, hi proveheixca lo que a vostra mercé *semblarà deure-s'í fer*. (Malla, *Memorial*: 314, 1420-1430 [ms. 1425-1449])

Importantly, in these cases the periphrases do not have inferential evidential reading, which reinforces the idea that the (evidential) verb *deure* profiles the state of affairs and for this reason, it cannot be focalized by another verb.

There is only one case where we find the verb *deure* in the participle form in a passive construction that, in contrast to all the other instances in the corpus, affects the modal verb and not the infinitive:

(53)   Respòs lo capità: -A mi, senyor, *és degut fer* semblants actes millor que altre, e a tant com als temerosos faça recobrar sforç e pendre ànimo. E què dech fer yo e los altres Sí·ns devem molt sforçar de bé a fer. (*Tirant*: 696, 1460 [ms. 1490])

But in this isolated example it also has a necessity reading.

An aspect that clearly points out the difference between a less grammaticalized periphrasis of necessity and an evidential one, more grammaticalized and subjective, is that in the first case the infinitive that combines with the verb *deure* can be omitted, implied by the context:

(54)   De açò no·n tinch a dar comte a tu ni a altri, car stime que <u>hé fet</u> lo que *devia*, que més conort és a mi yo haver dat qualsevulla linatge de mort a ma filla que si

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[17] This behaviour could be a sign of a greater grammaticalization of the periphrasis with the verb *deure* than with the verb *haver*. In fact, in Spanish, the periphrasis <*tener que + * INF> occurs more with the future aspectual verb *ir*, than the periphrasis with the verb *deber* (Cornillie 2007). In case of the evidential reading of *deber* it is ungrammatical: *Va a deber estar en casa.

[18] It is interesting to point out that such verbs as *dir* and *discernir*, do not function as control verbs in Modern Catalan. We do not find the periphrasis with *deure* in its infinitive form, either.

per tu o los teus, divant los meus ulls, la ves desonir. (*Tirant*: 728, 1460 [ms. 1490])

(55)   Jo <u>comens</u> -dix ell- allà hon *deig*, car Job no fou jueu, ans fou ben gentil; bé és veritat que fou de linatge de Esaú. (Metge, *Somni*: 86, 1398 [ms. s. XV])

By contrast, the verb *deure* in its evidential reading cannot appear without an infinitive (it cannot serve as a proform). It can be explained by the fact that *deure* cannot be salient in a conceptual schema but it makes salient a state of affairs. The construe of the reference point (Langacker 1993, 1999, Pelyvás 1996) means that the (semi-)auxiliary *deure* is salient at first, but the attention is quickly switched to the salient element – the state of affiars, the infinitive.[19]

Finally, an element that can guide us in the analysis is the status of the periphrasis in Modern Catalan. As we will see in the next paragraph, the periphrasis with the evidential reading seems to emphasize the differences pointed out for the necessity reading in Old Catalan. These data reinforce the hypothesis that we are dealing with a grounding predication.

8. The periphrasis <*deure* + Inf> in Modern Catalan

We have just seen some evidence of the conceptual schema of the inference periphrasis being similar to the grounding predications, and we can find even more if we look at some aspects of this periphrasis in Modern Catalan. Although one must be cautious working without a textual corpus base, the periphrasis still shows some interesting behaviours that could reveal that in Modern Catalan its grammaticalization has taken a step forward.

On the one hand, in Catalan spoken in the Valencian regions of la Marina Alta and la Marina Baixa the synthetic form of the preterite has been preserved almost exclusively in the periphrasis <*deure* + Inf> with evidential reading (Beltran 2011: 87; Beltran & Herrero 2011: 87). If we take into consideration that in these territories the periphrasis with the obligation reading still exists, the use of this verbal tense being restricted to the evidential reading points to the fossilization of the meaning.[20] It can be interpreted as a phonic erosion of the periphrasis that is even more cohesive and uniform.

The status of the grounding predication could probably be even more obvious in the periphrasis <*deure* + Inf> at the contemporary stage because one can guess that it has taken a step forward in the subjective construe of the conceptualization. While in case of specific and generic inferential reading there was a trace of objective force left (inference made from some evidence in the situation or some encyclopedic knowledge), the modern-day periphrasis could develop a more subjective reading, a **conjecture** (Squartini 2008), in which the force has disappeared completely and only the subjective process inherent to the conceptualization is left (Langacker 2006).

This reading can be found all over the Catalan-speaking territories:[21]

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[19] This behaviour is equivalent to that of the Spanish verb *deber* (Cornillie 2007).

[20] Moreover, in some dialects of this region, the inflection has changed by analogy with the 1st and the 3rd person. The stressed syllable has also changed: *degue, degues, degue, déguem, dégueu, deguen* o *dega, degues, dega, déguem dégueu, deguen*.
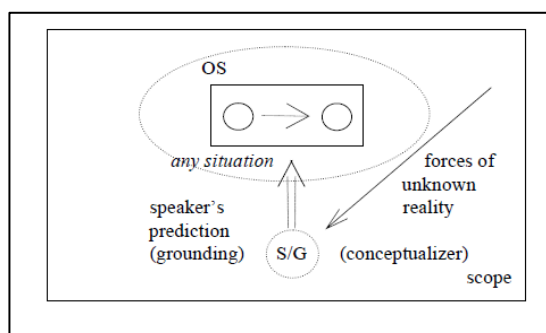
[21] In Modern Catalan, we have also documented specific and generic inferential readings of the periphrasis.

(56)   jaja les banderetes!! <u>a saber</u> d'on les *deguera arreplegar* la rouse (VV, els Poblets, Marina Alta, agost 2010)

(57)   [Una operació d'angines a una xiqueta de dos anys. Ara, de major, ho recorda] Una miqueta de mal em *degueren fer*, però <u>no me'n recorde</u> del dolor (VV, Ondara, Marina Alta, maig 2012)

(58)   Fa molt de temps que ho busquem we <u>no sabem</u> *on deu ser* (VV, Barcelona, febrer 2012)

(59)   [canten «En Joan Petit» amb un xiquet; com que el xiquet respon ballant la cançó, l'àvia diu:] <u>Suposo</u> que ho *deuen cantar* a classe (VV, Prats de Lluçanès, Lluçanès, novembre 2012

It is also found in literature of the 20th c. and the 21st c.:

(60)   ¿Quina edat *deu tenir*? *¿Deu anys* més que jo? Fa la impressió que està més marcida que no li correspondria per l'edat; we és natural, havent-se'n vist com se n'ha vistes. (*Incerta Glòria:* 68. 1969)

(61)   tanmateix podrien passar perfectament per pagesos suecs o flamencs, <u>qui sap</u> d'on *degueren vindre* els seus avantpassats potser de Normardina com els cavalls perxerons alts we d'anques tan amples we de potes peludes, tan diferents dels cavallets del país rabassuts we nerviosos. (*Purgatori*: 138. 2003)

(62)   Qui sap si m'he passat la vida volent despertar la gelosia dels altres perquè de menut no era jo qui la despertava sinó el meu germanet, això <u>em pareix</u> que *deu ser* el que pensa Bibiana. (*Purgatori*: 155. 2003)

As prompted by the underlined elements, often there are indications of doubt or ignorance that reinforce a more subjective reading of *deure*. It seems that the consistency of inference or prediction has decreased. That is why in some of these cases what was left of the objective force (the evidence) is lost and only the speaker's conceptualizing force comes into play, as it can be observed in the schema:

OS
○ → ○
any situation   forces of
                         unknown
speaker's   reality
prediction
(grounding)   S/G   (conceptualizer)
                              scope

Figure 7. Conceptual schema 7.
The periphrasis <*deure* + INF> with a m ore subjective inferential reading in Modern Catalan²²

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²² This schema was proposed by Pelyvás (2000) for the English epistemic modal verb *must*.

This reading is not equal either to the specific or to the generic inference. It is not based on the evidence from the situation but on the speculation of the speaker. If we consider it evidential, we could say that it is an inference of a hypothetical state of affairs, a reconstruction of a state of affairs that is often based on a doubt, that is, a conjecture. In some cases there is some logical aspect that makes the inference possible but anyway, it is the responsibility of the speaker (exclusive locus of potency); the conjecture or the hypothesis can be easily contradicted.

These semantic characteristics of the conjectural reading are connected with the fact that the periphrasis often appears in negative and interrogative sentences. This behaviour is different from what we found in Old Catalan and it is not shared by the modal equivalents of other modern Romance languages (*devoir* in French and *dovere* in Italian). This could point to the fact that in Catalan the periphrasis achieves a greater degree of subjectification and expresses a less prototypical inferential reading, a dubitative reading (Squartini 2010). Probably, this more subjective dubitative reading is closer to the epistemic modality than to evidential readings developed by *deure* in Old Catalan.

In the future research an analysis should be developed of the relation of this conjectural reading of the periphrasis with the conjectural or epistemic future that was formed in Old Catalan (Martines) and is still present, especially in Valencian variant of Catalan:

(63)   <u>Potser</u> en Casp en *sabrà* més (Carles Salvador, Ripoll: 124)

Maybe there is a coincidence in this reading between the conjectural future and the more subjective construe of the Modern periphrasis <*deure* + INF>.

In particular, it is important to pay attention to the differences between dialects with respect to the connection between the inferential reading of the periphrasis and the conjectural future. Probably, in Catalan Valencian the periphrasis <*deure* + INF> preserves a more inferential reading and is more reluctant to expressing a conjecture, as it happens with the same modal verb in French and Italian (Squartini 2010). This could happen due to the fact that the original deontic reading is still present in those languages. By contrast, the conjectural future and the periphrasis in such forms as *deguera/dega/degue* (cf. above) is restricted to more subjective conjectural uses, in which the force has faded away. This could explain the following instances in Catalan Valencian, with a reading of a subjective hypothesis,

(64)   Qui deu ser? No ho sé, <u>supose</u> que *serà* ma mare

(65)   *Qui deu ser? <u>Supose</u> que *deu ser* ma mare.

(66)   no sé qui em va dir l'altre dia que volia renovar-se el carnet, <u>no sé</u> al final que *degue fer* [a quin lloc hi va anar] (VV, Ondara, Marina Alta, novembre 2011)

while in Eastern Catalan the use of the periphrasis <*deure* + INF> in present, past and future is possible with a conjectural reading:[23]

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[23]Probably, the coexistence of the conjectural future and the evidential periphrasis with *deure* in Valencian variant of Catalan has had semantic consequences as to the meaning of these expressions. In contrast, the rest of the Catalan dialects, where the use of the conjectural future is rather limited the periphrasis <*deure* + INF> has probably evolved with some different nuances of the meaning. Here are

(67)   Qui deu ser? <u>Suposo</u> que *deu ser* ta mare

Summing up, the evolutional tendencies named above and the connection between the readings are to be considered in the future corpus research.

9. Conclusions

The diachronic description of the periphrasis <*deure* + INF> within the framework of cognitive semantics has revealed a number of modifications in the prototypical conceptual schema of the category. The use of force dynamics allows to illustrate this gradual semantic change in terms of attenuation of the control of potency. The social force of the necessity (deontic or external, depending on the periphrasis) gradually fades away, which reveals the activity of the conceptualizer who is inherent to the scene itself. Such force attenuation leads to a subjective conceptual construe, in which the S/G is the locus of potency. The subjectification implies that now not all the interaction of forces is salient, but the only focalized element is the state of affairs. In evidential innovative readings the speaker anchors the state of affairs to the reality as a hypothesis, a result of an inference.

All in all, the type of inference that the periphrases with evidential reading have still preserves some trace of objectivity. Specific inference is the reading closest to necessity because it is more objective: specific evidence provided by the context leads us to a certain state of affairs. It is obvious that in such a hypothesis the S/G does not interfere much. This reading will become more common in the 15th c. By contrast, generic inference that appears in the 16th c., when the evidential innovative reading becomes more widespread, is more subjective because it is not based on specific contextual evidence.

Summing up, a more and more subjective evidential reading has risen in some contexts, and the semasiological extension of the periphrasis has strengthened the evidential reading. However, while in the 15th c. the inference was specific (more objective), from the 16th c. on, the predominant evidential reading is a more subjective generic inference. In Modern Catalan we have also documented a more subjective reading, the conjecture. With all these data we have been able to offer a more fine-grained chain of semantic change:

DEONTIC NECESSITY (SCHEMA 1) > MORE SUBJECTIVE EXTERNAL DEONTIC NECESSITY (SCHEMAS 2, 3, 4) > TRANSITIONAL EVIDENTIAL READINGS > SPECIFIC INFERENCE (SCHEMA 5) > GENERIC INFERENCE (SCHEMA 6) > CONJECTURE (SCHEMA 7)

Moreover, in this article we have argued that the degree of grammaticalization and subjectification of the periphrasis <*deure* + INF> with inferential evidential reading, especially in the 16th c., provides enough evidence to consider it a grounding

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some examples to illustrate it. On the one hand, in Eastern Catalan dialects the periphrasis <*deure* + INF> is used with the verb *deure* in its future form, that is, the (semi-)auxiliary grounds, in the evidential or epistemic way, the future state of affairs. 1) *No es **deurà** poder baixar* [downloading process on a mobile device that is too long] (VV, Barcelona, gener 2013). 2) *-Només hi estarem vint minuts. -Més no perquè ells **deuran** haver de sopar* (VV, Barcelona, febrer 2013). 3) *-Sí, es nota* [the belly in a pregnant woman]. *Ara **deurà** anar més de pressa, oi?* (*Mecanoscrit*: 141). This use does not seem to be possible in Catalan Valencian. On the other hand, the dubitative expressions in Catalan Valencian appear in the synthetic form of the past tense and not in the imperfective form. In Catalan Valencian, we can hardly say the following: *?Supose que es **devien** haver superposat*, but this sentence is absolutely fine in the Central Catalan.

predication. We have verified a greater degree of cohesion in the evidential reading of the periphrasis than in its original reading of necessity; we have pointed out the inability of the inferential periphrasis <*deure* + Inf> to appear withouth the infinitive; we have shown that the inflection paradigm of the (semi-)auxiliary is reduced, etc. These facts support the hypothesis that evidential/ epistemic periphrases can also be real grounding predications, not reducing them to English modal verbs only, as it was stated in CG (Langacker 1990, 1991).

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