Not a Negation? A Logico-Philosophical Perspective on the Ugaritic Particles *lā/ ʾal*

Cristina Barés Gómez[1] · **Matthieu Fontaine**[1]

Abstract

The negative particles *lā/ ʾal* in Ugaritic change from positive to negative in modal contexts, conditional, questions, disjunctions, etc. They have usually been studied from a Semitic and linguistic points of view. On the basis of their occurrence in Ugaritic texts, we pretend to explain their uncommon behaviour from a philosophical and logico-semantic perspective. Is it possible to translate this linguistic structure in our Modern languages? Starting from a general view of their use in Ugaritic language, we claim that this phenomenon can be more clearly understood in relation to modality. We interpret these negation as a negative evidential paradigm and we explain how they change in different contexts. Methodologically, we make use of formal tools of Dynamic Epistemic Logic in order to provide a more fine-grained understanding of these negations, and their dynamics.

Keywords Ancient near east · Language · Ugaritic · Negation · Formal semantics

1 Introduction: *lā/ ʾal* Particles and the Ugaritic

As stressed by Horn (1989–2001, p. xiii), "despite the simplicity of the one-place connective of propositional logic ($\sim p$ is true if and only if p is not true) and how the laws of inference in which it participates (e.g., the Law of Double Negation: from $\sim\sim p$ infer p, and vice versa), the form and function of negative statements in ordinary language are far from simple and transparent)". According to the classical logico-analytic tradition, propositions are usually claimed to be true if they correspond to a state of affair. How we handle propositions and determine their truth undeniably plays a role in building worldviews. Of course, even in the analytic tradition, there are deep disagreements on how to understand truth. By contrast with the classical approach, intuitionists emphasize the fundamental role of proof-processes and thus relate the construction of worldview to the construction of proofs. This is of importance not only for the definition of truth, but also for the distinction between falsity and negation. Indeed, not having a proof of falsity does not mean to have a proof of truth: this is the basis for the rejection of the classical elimination of double negation. This immediately shows the polysemy of negation in language, even in the context of logic and analytic philosophy. It is worth noting that negation also relates to deep philosophical and ontological issues. A persistent problem, since Parmenides, Meinong, Russell, Quine, among others, is the question of whether we should first assume that something is, in some sense, in order to deny its existence. Then, should we first presuppose that a state of affairs obtains in order to deny its truth, and consequently to assert meaningfully the negation of the related proposition? Whatever the answer, this will impact the speakers ontology and their worldview.

In this paper, we focus on Semitic languages and the complex articulation of negation and evidentiality; in particular, by proposing a innovative understanding of the negative particles lā/ʾal in Ugaritic. Interesting is the fact that it involves another perspective on the use of negation in worldviews building, since negation must be understood in relation to the transmission of information and the specification of the source of knowledge within a given community, and not only the determination of truth and falsity or the correspondence to states of affairs. Our contribution thus brings the study of language in Non-Westernworld into the

✉ Cristina Barés Gómez
cbares@us.es

Matthieu Fontaine
mfontaine@us.es

1 D. Filosofía, Lógica y Filosofía de la Ciencia, University of Seville, Seville, Spain

analytic tradition and pretends to shed light on problems of translation of Ugaritic negations. Therefore, our proposal is twofold. On the one hand, we put forward an evidential paradigm to understand negation in Ugaritic, which is characterized by a strange dynamic behavior explained below. On the other hand, and following Horn's insight, we show that our understanding of negation should not be restricted to the one-place propositional connective of the logical tradition. Beyond proof-theoretic and ontological issues mentioned in the preceding paragraph, we now extend the picture with a dynamic epistemic framework.

More concretely, there are languages in which something cannot be asserted unless in relation with the source of information; these languages contain a specific grammatical category usually referred to as "Evidentiality". If negation is to be understood in the context of an evidential paradigm, it is also indubitably linked to the speakers' cognition. According to Aikhenvald (2004, p. 9), "[a] strong argument in favor of the importance of evidentials for human cognition lies in their metalinguistic valuation and speaker's awareness of their necessity". But this also makes evidentiality difficult to understand from an Indo-European perspective, overall when it is linked to the use of negation. Indeed, the assertive force in Western languages is a pragmatic issue. The reason an agent has to utter a sentence with the force of an assertion is not made explicit. The assertive force is a matter of use. With evidentiality, the reasons the agent has to utter a sentence are made explicit. Consequently, evidential assertions are tightly linked to semantic issues; i.e. the meaning of the explicit evidential expression. Of course, pragmatic considerations cannot be avoided: the expression of an evidential is a sentence, which is itself asserted. This yields a linguistic framework in which the processes of transmission of information are fundamental, and which can be modelled with reference to the dynamic epistemic semantics for evidentiality defined by Barés Gómez et al. (2021). Building worldview becomes a social matter based upon the transmission of information and the source of knowledge.

In this context, assertions and negations are associated with different kinds of knowledge and experience, but also with the way a community communicate them. Communication involves language, certain aspects and uses of which can be clarified by means of modern formal tools. The present work has its roots in Ancient Near East studies, and it covers Sirio-Palestinian cultures, in particular Ugaritic language and culture around II millenniun b.C. It is based on already existent semitician translations and analysis of Correspondance letters and Poetry texts found in Ras Shamra, Syria. It also consists in complementing Ancient Near East studies by means of a philosophical, epistemological, and formal analysis of language. More

precisely, we hypothesize an original explanation of the dynamic of the negative *lā/'al* particles in Ugaritic, set from a modern formal semantics perspective. Although we study this linguistic phenomenon from an analytical perspective, we need to widen the approach in order to consider the evolution of the linguistic genealogical tree, cultural aspects (i.e. the ternary model of communication between the sender of a letter, the scribe and the addressee). The methodology is therefore transversal: it combines compared Semitic, ancient language of Ancient Near East studies (Ugaritic grammars, but also other grammars from its genealogical tree), and general linguistic studies (e.g. on negation and modality) on the one hand, with a logical, epistemological and philosophical perspective on the other hand. We aim at clarifying not only an Ancient linguistic practice, but also how to understand differently a particle usually approached in terms of logical connective.

A transversal methodology is also required to tackle difficulties of interpretation inherent to Semitic studies, in which the source of information is usually problematic. Nowadays, there exists no Ugaritic speaker who could confirm or deny the theories put forward by the linguists. Most of the language aspects remain unknown or doubtful, and the researcher's interpretations are far from being consensual. Comparative linguistic with genetically related languages such as Hebrew or Akkadian, by means of which many structures have been understood, is essential. In particular, we face the difficulty of establishing clear relations between semantics and pragmatics; e.g. for the *lā/'al* particles in Ugaritic, whose dynamic behaviour gave a hard time to the semiticians: they are indeed negative particles that change from positive to negative, and vice versa, depending on the contexts.

Another complication resides in the conservation state of the writing samples of Ugaritic, most of them being partially destroyed. Moreover, the fact that the vowels are not explicitly written down makes their reading difficult. Nevertheless, despite a number of awkwardness and oddities, there are sufficiently available sources to understand reasonably Ugaritic and to translate considerable parts of the texts. This is precisely where we pretend to intervene. We put forward an original understanding of the *lā/'al* particles, from a philosophical perspective, which makes sense beyond the divergences among the already existent translations and interpretations, jeopardized by their dynamic behaviour. It is worth noting that our work is not a piece of semitician translation or interpretation, and that we will partly rely on the work of experts in the field.

One possible explanation of the dynamic of the *lā/'al* particles is that their meaning actually changes in determined contexts, even if we do not know why. Another possible explanation is that there are two different particles, a positive and a negative one. However, since the vowels are not written down, we cannot differentiate them.[1] Based on the first interpretation, endorsed by a number of researchers (Aartun 1978; Segert 1984; Sivan 1997; Tropper 2000; del Olmo Lete and Sanmartín 2004), we clarify their dynamic structure by making use of formal tools of Dynamic Epistemic Logic (DEL). It is worth noting that this work does not consist in a mere exercise of formalization or a modern reading of Ugaritic particles. It is an attempt to understand their logico-linguistic structure by preserving their original structure in view of revealing the relevant underlying worldviews. Consequently, we do not look for the dissolution of the strange behaviour of these particles, but the overcoming of our resistance to understand it.

Another important issue is the relation of the *lā/ 'al* particles with the well-known particles *l*+vowel (lV) and vowel + *l* (Vl) in several Semitic languages. The lV/Vl particles seem to convey an asseverative or a hypothetical force to the proposition, or even a "focus" (Cohen 2005). Up to now, the literature has mainly been concerned with the asseverative, positive, particles. However, a deeper analysis of the negative particles and their relations with the positives is required. Indeed, these particles (positive and negative) usually behave peculiarly in contexts such as conditionals, disjunctions, questions, modal constructions, and the definition of their semantics remains problematic.

In what follows, we focus on four examples of Ugaritic negative particles and their different translations. We specify why these particles do not work as any known type of negation in natural language. This negation has not been found in other languages, either in logic, and of course, it does not fit with classical logic negation (Sect. 3). Then, we relate them to the lV/Vl particles in comparative Semitic studies and Ugaritic grammars (Sect. 4). Our hypothesis is that this negation belongs to a negative evidential paradigm (Sect. 5), which works at the same level as the asseverative paradigm in Semitic languages, the semantics of which can be spelled out in the context of Dynamic Epistemic Logic (Sect. 6). Finally, we explain why their dynamic does not fit with already existent theories on polarity items and modal

concord, and we propose to combine their semantics to a pragmatic account of language (Sect. 7).

2 Negation in Ugaritic: *lā/'al* Negation

The particles *lā/'al* have a dual behaviour[2] and deal with verbal modality. We will analyse them in the context of correspondence texts.[3]

lā[4]: Sometimes, this particle occurs possibly as a proclitic particle, and other times as a separate clear particle with an explicit word separator.

- *lā* - negative. Adverb of negation in nominal or verbal sentences, although this demonstrated with certainty only in verbal sentences.[5] This function of the particle appears in: (a) Verbal sentences in indicative mood. This is the most frequent use of the negative particle. (b) Verbal sentences with modal value. All these occurrences have been found in interrogative context, rhetoric questions, and there are not examples from Ugaritic epistolary texts (Tropper 2000, pp. 815–816). (c) Nominal sentences.

Example 1 **UDB 2.39 • RS 18.038**[6]

00-2.39:10   w . -[...] . adny . l . yḫsr • w . [ank y]d' . l . yd't • ht […]l . špš . b'lk

10-2.39:10   w ₒk[rgm] . adny . l . yḫsr • w b['ly . y]d' . l . yd't • ht[. t]k n[.]l . špš . b'lk

---

[2] Three types of particles may be used in negative statements: (1) *modal negation, lā/'al* particles; (2) *predicative, bl* particle (Aartun 1978, p. 26 ff.; Tropper 2000, §87.3, p. 817 ff.; and del Olmo Lete and Sanmartín 1996, p. 108.); (3) and *existential,* particle *im,* whose positive dual is *it* (Aartun 1978, p. 20 ff.; Tropper 2000 §88, p. 819 ff..; and del Olmo Lete and Sanmartín 1996, pp. 37–38 for *in/im* and p. 60 for *it.*).

[3] Notice that these texts are written to be read, that is to say they are linked to their utterance; that is why their communication and the transmission of information cannot be neglected in their analysis.

[4] See (Aartun 1978, pp. 22–25 and 33–35; Sivan 1997, p. 183 ff.; Watson 1991; del Olmo Lete and Sanmartín 1996, p. 237 ff.; Tropper 2000, pp. 814–816 and 808–810; del Olmo Lete and Sanmartín 2004, pp. 482–485. See Cunchillos and Vita 1993, 1995; Cunchillos 1996; Cunchillos 2000.

[5] Usually the nominal ones are denied with *bl*.

[6] The numeration comes from the Ugaritic Data Bank (UDB) which usually corresponds to the one of KTU (Dietrich et al. 1976). We also mention the Ras Shambra mission numeration. Other numerations: DO 4781 = KTU 2.39 = PRU 5,60 = UT 2060 = COS 9 (3.45I). Collations 00 = KTU; 10 = (de Moor 1979); 11 = (Pardee 1981); R1 = LH.

---

[1] See Pardee in Woodard (2008) p. 26. In this work, we consider the first explanation (the same particles) also supported by several researchers.

11-2.39:10 w . $\overset{o}{d}$[r' , 1 .]$\overset{o}{a}$ $d$ny . 1 . y$\underline{b}$sr ● a $\overset{o}{t}$[. hn . y]
d' . **l . yd'ț** ● h t [.]$\overset{o}{a}$ t[.]l$\overset{o}{.}$ špš . b'lk

Negative particle and verb in a perfective aspect, but it has not always been interpreted as negative[7]. "You have not recognized (this)".

- *lā*—positive. It brings emphasis on nominal and verbal sentences. Most of the documents in which this particle occurs are poetic texts, whence the difficulty to differentiate negation and affirmation. This particle with affirmative function appears in: (a) Sentences with the verb on indicative, but they are dubious interpretations. (b) Sentences with the verb in volitive. (c) With nominal sentences. These are the most doubtful cases.

Example 2   UDB 2.21 • RS 15.174[8]

00-2.21:10-11   *hn . km . rgmt* ● $\overset{o}{i}$ky . **l . ilak** ● *[…]*$\overset{o}{n}$(?) .
'my

In most of the cases, this particle is interpreted positively[9], although it is sometimes interpreted negatively[10]. The verb seems to be an imperfective: "I will not send/ I will certainly send".

'al[11]*:* This particle seems to be negative in sentences with a verb in volitive or imperative form, although it has also been interpreted positively in other cases of volitive.

- *'al* - negative: "not; (that) not". It occurs in volitive sentences: (a) Not + short prefixed conjugation. 2nd pers. imperative. (b) (That) not, + prefixed conjugation 3rd pers. volitive. (c) In interrogative contexts, such interpretation is doubtful.[12]

Example 3   UDB 2.30 • RS 16.379[13]

00-2.30:21   *ilak . w . at* ● $\overset{o}{u}$ *my* . **al . td$\underline{h}$** $\overset{o}{l}$ ● *w . ap .*
mhkm

10-2.30:21   *ilak . w . at* ● *umy .* **al . td$\underline{h}$**$\overset{o}{s}$ ● *w . ap .*
mhkm

The morphological structure is of *'al* + imperative, volitive, energic or modal sentence, negation of the modal. Negative particle with verb in imperfective form[14]: "Do not fear/ do not be agitated"

- *'al*—positive: "sure, yes". It is difficult to differentiate it from the negative *'al*. When it occurs in volitive contexts, it is usually in rhetorical questions.[15] Most of the examples come from poetry. (a) Yes, + prefixed conjugation 1st pers. cohortative[16]. (b) 2nd pers. with volitive, several examples which are not from epistolary texts. (c) With a prefixed conjugation, 3rd pers., usually interpreted as a negation. Nevertheless, when the context is interrogative, their interpretation is made difficult.

Example 4   KTU 1.4[17]:

---

[7] "qu'il ne sait rien" (Virolleaud 1965, p. 85); "and I fully recognize my master" (de Moor 1979, p. 651); "And this (I(?)) surely know" (Ahl 1980, p. 440); "You, for your part, behold, you have not recognized (this)" (Pardee 1981, p. 152); "no sé/sabes/sabe (ella)" (del Olmo Lete and Sanmartín 1996, p. 238); "You, for your part, behold, you have not recognized (this)" (Watson 1991, p. 181); "you for your part, have not recognized" (Pardee 2002, p. 95); "I/you/she does not know" in del Olmo Lete and Sanmartín (2004), p. 484.

[8] DO 4029 = KTU 2.21 = PRU 2,16 = UT 1016. Collations 00 = KTU, R1 = LH, see UDB.

[9] "En cuanto a mi, yo me encargo" Cunchillos (1989a, pp. 118, 121–122); "ces choses/cela comme tu avais dit, quant moi, j'envoie/ j'enverrai un message(r)" Cunchillos (1981a, b, p. 45), the same opinion is held by Watson (1991, p. 184). In other cases, both interpretations are proposed: "I/you spoke not/surely I sent" Ahl (1980, p. 420).

[10] Aartun (1978, p. 25); "cómo no voy a enviar?" del Olmo Lete and Sanmartín (1996, p. 238); "how I am not going to send" in del Olmo Lete and Sanmartín (2004, p. 484).

[11] See (Aartun 1978, pp. 20–22 and 31; del Olmo Lete and Sanmartín 1996, pp. 22–23; Tropper 2000 pp. 729, 805–807 and 816–817; del Olmo Lete and Sanmartín 2004, pp. 46 and 47).

[12] See Tropper (2000 pp. 729 and 816).

[13] DO 4387 = KTU 2.30 = PRU 2,13 = UT 1013 = COS 6 (3.45F) = MOU 25. Collations 00 =KTU.

[14] Collation 00: "Et toi, ma mère, ne t'inquiète pas" (Virolleaud 1957, p. 29); "du sollst dich nicht fürchten" 2p yusive (Aartun 1978, p. 22); "Mais toi, ma mère, ne crains pas" (Cunchillos 1979, p. 74); "So you, my mother, do not fear!" (Ahl 1980, p. 429); "ma mère, ne t'inquiète pas" (Lipinski 1981, p. 94); "Toi, ma mère, ne crains pas" (Cunchillos 1989b, p. 324); "Pero tú, mi madre, no temas" (Cunchillos 1989a, p. 132). With the collation 10: "my mother, do not be agitated" (Pardee 1984, p. 225); "no temas" negation of prohibitions (del Olmo Lete and Sanmartín 1996, p. 22); "do not fear!", negation of the yusive (Sivan 1997, p. 183); "... davon berichte mir...Und du, meine Mutter, hab' keine Angst!" (Tropper 2000, p. 729); "Now you, my mother, do not be agitated" (Pardee 2002, p. 92); "ma mère, ne sois pas agitée" (Bordreuil and Pardee 2004, p. 85); "my mother, do not be afraid" (del Olmo Lete and Sanmartín 2004, p. 46).

[15] According to Tropper (2000, pp. 804 ff.) and del Olmo Lete and Sanmartín (1996, p. 23), this is probably an elliptic syntagm or a suprasegmental idiom, a rhetorical question.

[16] There are only two uncertain occurrences in the texts 1.4:VII:45 and 1.3:V:22.

[17] See Tropper (2000, p. 805) and del Olmo Lete and Sanmartín (1996, p. 23).

00-1. 4:VII:45 *dll . al . ilak . l bn*[18] It seems that this is a *'al* + indicative and that the particle is interpreted positively[19]: "sure, I should send a message to the son (...)"

3 Negation in Natural Languages and the *lV* and *Vl* Particles in Semitic Languages

How the *lā/'al* particles are used? What are their semantics and pragmatics? Before proposing an answer, we compare them with different negations we usually find in natural language. We do not pretend to be exhaustive, but only to set the context in which the peculiar status of these particles may be highlighted.

Portner's (2009) classification for modality allows a distinction between various negations of natural language, depending on their syntactic field of action: sub-sentential, sentential or discursive. The scalar theory of negation (Horn 2001) and the polarity items (Hoeksema et al. 2001) constitute some of the best known studies of negation in natural language at sub-sentential level. At first glance, the *lā/'al* particles, which determine a scale in relation with other elements, might be understood in terms of scalar particles. They would thus have modal scale, but in the absence of deeper studies of modality in Ugaritic language, we let it as an open question. Moreover, as it will be clear later, if this was the case, the scalarity would be derived from the relation between two intensional operators, but this is not exactly what these theories claim. At the sub-sentential level, the *lā/'al* particles might also be explained in terms of polar items, since they change their polarity in relation with other elements, veridical or non-veridical contexts. Nevertheless, this explanation must also be rejected. Indeed, even if their behaviour is similar to the bi-polar items at several levels, the *lā/'al* particles are not semantically empty. The negation is not inherent to other items or the contexts, as it happens with polarity items, but to the *lā/'al* particles themselves. Moreover, these particles do not only act at sub-sentential level, but also at sentential and discursive ones.

From the perspective of the sentential level in Ugaritic, there are not two negations. So, the dynamic from positive to negative cannot be explained in terms of a concordance between two negations. Rather, it could be a kind of modal concord involving negation and non-affirmative states, which would result in a positive. It could also be understood in terms of negative concord, closer to paratactic negation

(Jespersen 1917; van der Wouden 1997). But this would not fit with the fact that in Ugaritic it is not attested that such a modal concord does not seem to appear in the same clause.

The last level of negation, the metalinguistic or modal negation[20], acts at a discursive level. It is a modal negation that determines the whole sentence. The *lā/'al* Ugaritic negations also work at a discursive level and share features with metalinguistic negation. Nevertheless, in order to understand the Ugaritic negation, we have to take into account the three levels of language, as well as some other features of other negations we find in other languages. This is precisely our point in this paper; i.e. that the *lā/'al* particles must be accounted for within what we call a negative evidential paradigm.

The problems of the semantics of negation in Ugaritic could be extended to the semantic problems of the *l* + vowel and vowel + *l* particles present in all Semitic languages[21]. Following Huehnergard (1983), the particles *lV* have been divided on the basis of their formal and semantic structure in two types: the proclitic particle *l-*, usually with a precative value and frequently united to the verb; and the independent particle *lV*, with emphatic/asseverative value.

Another relevant study is Testen (1998), whose starting point is Arabic, but which also includes Ugaritic, Akkadian, Aramaic, Amorite, South-Arabic, Biblical Hebrew, Ge'ez and the modern Ethiopian languages. The phonological data of language evolution suggests that the proclitic particle *l-* should be followed by *a*, yielding *la-*[22]. Nevertheless, Testen (1998) sets the hypothesis of the form *l-* without vowels. The determination of the vowels derives from the precative paradigm; that is, from the verb which follows. The first semantics of the particle *l-* is the status mark, a structure of deictic asseveration, which would be similar to the English "do" used as a modal asseverative paradigm (Testen 1998; Cohen 2005). This protosemitic particle corresponds to the two particles of Huehnergard (1983)'s study. In this paper, our hypothesis is that a more precise semantics can be achieved by first recognizing that this particle is the mark of a subjective epistemic modality; that is, an asseverative paradigm that works as a status marker, a subjective hypothesis or an epistemic disjunction. This asseverative paradigm, well-known in Semitic languages, must be studied in relation to the negative particles *l*V/V*l* , both having a similar non-normal (or non-classical in logical terms) behaviour. Indeed, it seems that this negation corresponds to a negative paradigm similar to the asseverative one, as we will show it in Ugaritic. The negation *lV* and the two particles *Vl* (positive and negative) are added here to the previous

---

[18] A 2777 = CTA 4 = KTU 1.4 = M 8221 = RS 3.347+3.341+3.323+2.8 = UT 51. See UDB.

[19] "de cierto, un correo voy a enviar (al hijo ...)", del Olmo Lete and Sanmartín (1996, p. 23) and "Ich sollte gewiss einen Boten zum Sohn (...), schicken...", Tropper (2000, p. 806)

[20] See (Horn 2001, pp. 362–444).

[21] See (Lipinski 2001, pp. 455–457).

[22] See Testen (1998, pp. 124–127) and Huehnergard (1983).

studies of Huehnergard and Testen. In order to understand the semantics of the positive and negative particle, we study them altogether. This is how four types of particles are now differentiated:

1. Particle *lV* positive: mark of asseverative paradigm, mark of status, or hypothesis in conditionals. Here, we follow Huehnergard (1983) and Testen (1998); Cohen (2005). See also Cohen (2005) for Akkadian.

2. Particle *lā* negative: difficult to identify in written sources because of the lack of vocalization, as mentioned previously. For example, *lā* is used in Akkadian[23] to deny sentences (subordinates before subjunctive, conditionals with only the protasis) and words. In oaths, it has a positive value before a subjunctive. In old Akkadian, it is used as *ula*; *lā...lā,* "neither ... nor..." In Canaano-Akkadian, it is used to deny in its long form *lā*, as well as its short *la* in declarative and past sentences[24]. This particle is used as positive in two cases with an energic verb.[25] With *šumma*, it is negative and reinforces the *šumma,* but in past sentences in conditional protasis, it is a rhetoric question or an affirmation. In oaths, it is positive as in Akkadian *šumma lā*, and *šumma* is negative.[26] In Hebrew *lā* denies the imperfective and infinitive.[27] The oath has the same structure as in Akkadian and Canaano-Akkadian, the positives are with *lā* and the negative in this case with *m* or *ky* instead of *šumma*.[28]

3. Particles *Vl* negative: usually with modal sentences. For example, *ul* in Akkadian[29] is used to deny principal sentences and questions without interrogative pronouns. In Canaano-Akkadian, *ul* is a negative particle with declarative sentences, but also with questions and rhetoric questions[30]. The vetitives (negative desires) usually appear with *ul* instead of the Babylonian *ay/ē*.

4. Particles *Vl* positive: usually in rhetorical questions. Like *ul* in Akkadian, when considered as a positive disjunction. *'al* in Hebrew is the negation with cohortative and yusive.[31]

This overview of the lV/Vl particles, positive and negative, in Semitic languages contextualizes the complex semantics of the Ugaritic *lā/'al* particles. In what follows, we set the hypothesis of a negative paradigm in Ugaritic, by specifying the semantics of the *lā/'al* particles, in order to show how this paradigm could explain their peculiar behavior; i.e. the change from positive to negative and vice versa.

4 Ugaritic *lā/ 'al* as a Negative Paradigm

The Ugaritic particles *lā/'al* may constitute a negative paradigm. This means that they work like a general evidential paradigm, dual to the asseverative paradigm that uses direct evidence, but without specifying the source of information (Barés Gómez et al. 2021). Although the asseverative paradigm is not attested in Ugaritic, it is quite common in Semitic languages genetically related to the Ugaritic; e.g. the Akkadian (Huehnergard 1983; Cohen 2005; Wasserman 2012). Usually, an evidential system is defined through the opposition of different evidentials. The asseverative paradigm can be considered as a general type of evidential: it is concerned with asseverations expressing the fact that an agent has direct evidence of something, without the need for this agent to specify the source of evidence; e.g. if the pieces of evidence have been seen or heard. In order to asseverate what an agent knows, evidence has to be direct. But, in the negative paradigm of the Ugaritic particles *lā/'al*, the agent informs that she has no direct evidence.

The main feature of an asseverative paradigm is the structure of an affirmation, stronger than the simple affirmation expressed by means of a declarative sentence. This paradigm is frequently expressed through asseverative particles that reinforce the statement and convey the certainty of the speaker regarding what she utters. Usually, when there is an asseverative paradigm in a language, no other kind of evidentiality is used. But, when there are different kinds of evidentials, there is almost always at least one direct evidential—with direct evidence—and another indirect one–second hand or inferred evidence. An evidential paradigm with more than one evidential is a special structure able to differentiate several kinds of evidence, as well as different sources of information (Barés Gómez et al. 2021). An asseverative paradigm is nothing but a general evidentiality with only the direct evidence, and without determining the underlying sensitive source. The asseverative paradigm behaves similarly to the evidentiality structure. Usually, it does not appear within the scope of a negation because what is expected for is the agent's certainty, not her denial. Several authors have affirmed that the Semitic *l* is a structure similar to an

[23] See (Civil et al. 1973, pp. 1–5; Black et al. 2000, p. 173; von Soden 1995 §122a, p. 220; Huehnergard 1997 p. 199; Malbran-Labat and Vita 2005 pp. 112–114; Buccellati 1996, pp. 185, 421–422).

[24] See (Rainey 1996, pp. 207 and 212).

[25] See (Rainey 1996, p. 215).

[26] See (Rainey 1996, pp. 185 and 225–226).

[27] See (Ross 2001, p. 152).

[28] See (Ross 2001, pp. 357–358).

[29] See (Black et al. 2000, p. 420) y von Soden (1995§122b, pp. 220–221 and §151, pp. 252–253); Huehnergard (1997, pp. 28, 146–147, 199); Buccelati (1996, pp. 421–422); Biggs et al. (2010, pp. 65–69).

[30] See (Rainey 1996, pp. 204, 209).

[31] See (Ross 2001, p. 152).

asseverative paradigm[32]. Nevertheless, this interpretation is restricted to the cases where the *l* is affirmative.

In the case of *lā/'al* in Ugaritic, there are frequent changes between affirmation and negation. The negative and the positive structures are the two sides of the same coin and cannot be thought of independently. The strong connection between the asseverative paradigm in Semitic language and the negation in Ugaritic gives rise to the idea of a negative paradigm. When speaking of negation in terms of a determined modality within a negative paradigm, at the same level as an asseverative paradigm, we obtain a modal structure—the negative paradigm—that allows us to explain the dynamic of the *lā/'al* particles. Nevertheless, the asseverative paradigm does not exist in Ugaritic language (at least, there is no evidence of its existence), unlike other languages such as Akkadian in which its presence is attested. Thus, it is worth noting that the affirmation found in *lā/'al* particles—i.e. its positive function—does not constitute an asseverative paradigm, but forms part of the negative paradigm[33]. Therefore, our interpretation relies on a negative paradigm, rather than on an asseverative one.

These *lā/'al* particles also occur in rhetorical questions; i.e., at a discursive level. The negative paradigm would thus explain how they act at the pragmatic level, as the asseverative one does, as well as at the sub-sentential and sentential levels. However, how modality can be identified in Ugaritic language? The dynamic of the *lā/'al* particles in Ugaritic, from positive to negative and vice versa, occurs in modal or non-affirmative contexts. But the determination of the mood in Ugaritic is also problematic, since the vowels are not written down. Hopefully, modality is also expressed in Ugaritic by means of verbal paraphrases[34], even though the most of the relations with the *lā/'al* particles come from the mood.

Two verbal forms (aspect) can be distinguished: perfect and imperfect, expressed by the suffixed conjugation and the prefixed conjugation (long and short). These conjugations are represented by means of the verbal forms *qtl* and *yqtl*[35].

Qtl is the perfect aspect, suffixed conjugation, and it is used for past tenses, ended actions. Depending on the language, it can also express different times. In Ugaritic, it can be used for presents and optatives[36]. *Yqtl* is the imperfect aspect, not ended action, prefixed conjugation, and it can be long with a vowel in the end or short without vowels. It is used for presents and futures. Both can also express some kind of modality.

Regarding Ugaritic modality, it is difficult to differentiate in writing between sub-sentential modality (verbal mood), sentential modality (as to know, to believe...), discursive (questions, etc.), and even between modal and non-modal. An indicative mood[37] corresponds to declarative sentences. The volitive or injunctive mood[38] is the second verbal mood in Ugaritic, which expresses desires and commands. A volitive modality can also express ability or chance[39]. This mood, as well as indicative, is expressed by different conjugations. Nevertheless, in most of the cases, it comes in a prefixed conjugation *yqtl*. Another sub-sentential modality is the energic mood *YQTL-AN* (NA) that is frequently used in poetic texts[40]. We can differentiate it by its morphological form at the end (-*n*), but not always. This energic form adds a specific nuance, an emphasis, so that it is really a mood. This could appear in the different conjugations as an extension of them.

The sentential modality in Ugaritic is not devoid of problems either.[41] The sentential modals as *may*, *can*, *to know*, are not specified in the verbal form and they lack a mood for their determination. It seems that they always appear with a long prefixed conjugation, usually in indicative with imperfect aspect. Nevertheless, the modal nuances are derived by the context, so they are never sure. This is the same case with discursive modality, questions (rhetorical or not), exclamations, etc.; all of them being determined by the context.

5 A Dynamic Epistemic Logic Approach to *lā/'al*

We have previously emphasized the importance of communication and transmission of evidence in Ugaritic, which must now be reflected in the semantics of the *lā/'al* particles.

---

[32] The Semitic *l* is considered as a part of an asseverative paradigm in languages as Akkadian or Arabic, see for example (Cohen 2005; Testen 1998).

[33] It might have been possible that some of the occurrences of the positive *l* particle in Ugaritic would have formed part of an asseverative paradigm. However, the existence of an asseverative paradigm in Ugaritic has not been attested by semiticians. Again, the difficulty is also related to the absence of vocalization in the language, which prevents from distinguishing explicitly between *lā/ 'al* and *lu/ul*. Notice that our hypothesis is only related to a negative paradigm, not an asseverative one in Ugaritic. Nevertheless, from a logical point of view, nothing precludes the existence of such an asseverative/negative paradigm, as it exists in other languages genetically related with Ugaritic.

[34] See (Tropper 2000 §77, pp. 719 ff).

[35] For a detailed study about the aspect in Ugaritic, see (Bordreuil

Footnote 35 (continued)

and Pardee 2004; Cunchillos 1992; Cunchillos and Zamora 1995; Sivan 1997; Segert 1984; Tropper 2000).

[36] See (Segert 1984, p. 98).

[37] See (Tropper 2000 §77.2, p. 719).

[38] See (Tropper 2000 §77.3 p. 720 ff).

[39] See (Portner 2009, §4.4.1, pp. 196 ff).

[40] See (Segert 1984, p. 56 ; Sivan 1997, p. 98 and Tropper 2000 § 77.4, pp. 730 ff).

[41] See (Tropper 2000 §77.5, pp. 734 ff).

Indeed, the Ugaritic epistolography texts were written to be read to the addressee by the scribe. This underlying ternary chain of communication—involving the sender, the scribe and the addressee—motivates the choice of DEL as a relevant formal tool to clarify the dynamic structure of the $l\bar{a}/'al$ particles. Indeed, DEL has been designed precisely for the purpose of modelling the transmission of information conceived in terms of public announcement between epistemic agents and is therefore particularly well suited for the job. In this paper, we cannot provide all the details of DEL[42] and must restrict ourselves to a brief explanation of its main operators. In particular, we consider a negative paradigm in which the dynamic of the $l\bar{a}/'al$ particles can be modelled by making use of the epistemic and the public announcement operators.

Let a be an agent, such that $a \in A$, with A the set of epistemic agents: the intended meaning of $K_a\varphi$ is "the agent a knows φ". The intended meaning of $\neg K_a\neg\varphi$, also written $\hat{K}_a\varphi$, is "the agent a does not know that $\neg\varphi$", which simply means that φ is consistent with a's knowledge.

We interpret these operators in a model $\langle S, R, V \rangle$ that consists of a set S of states s (also called alternatives or possible worlds)[43], an accessibility relation R between those states, and a valuation V that assigns to every propositional letter p a set of states s in which p is true.

$R(s)$, such that $R(s) \subseteq S$, is the set of states $s' \in S$ such that sRs'; i.e. the set of states s' accessible from s. The epistemic state of an agent a maybe represented by means of a set $R_a(s)$ of states compatible with a's knowledge; i.e. the set of states accessible to a from s. For any $s' \in S$, $s' \in R_a(s)$ if all that is known by a in s is true in s'. That is, $K_a\varphi$ in s if and only if φ is true in every $s' \in R_a(s)$; and $\hat{K}_a\varphi$ in s if and only if there is an $s' \in R_a(s)$ in which φ is true, while $\neg\varphi$ might be true in another $s'' \in R_a(s)$. It is worth noting that the states are not states that an agent knows or might know, but states compatible with her knowledge. That is, the epistemic (intentional) relation is a relation between an agent and a proposition, which is in turn represented by a set of accessible states in which what is known is true. It is not a relation between an agent and states.

Interestingly, DEL also handles multiagency: for each group B of agents such that $B \subseteq A$: "everybody in B Knows φ" is written as $E_B\varphi$. And $E_B\varphi$ if and only for φ is true in every $s' \in R_B(s)$, where $R_B(s)$ is the union of the set $R_b(s)$ with $b \in B$.

The public announcement operator is the dynamic operator $[\varphi]\psi$, whose intended meaning is "after the announcement of φ, another formula ψ holds", "after the announcement of φ, we obtain ψ", or "after the update of φ, we have

ψ". The operator $[\varphi]$ has a force of necessity, so that the formula $[\varphi]\psi$ expresses that "after every announcement of φ, ψ holds". Its dual is $<\varphi>\psi$, whose intended meaning is "after some true announcement of φ, ψ holds". Once a public announcement has been made, every agent knows the content of the public announcement. Thus, for every $a \in A$, let $R_a(s)$ be the set of states compatible with a's knowledge before the public announcement of φ. The public announcement of φ has the effect of cutting the modal framework in order to exclude from $R_a(s)$ all the states in which φ is not true. That is, the public announcement of φ has the effect of producing a $R'_a(s)$ by restricting $R_a(s)$ to the states in which φ is true. It is a dynamic operator, which provides not only the actualization (utterance), but also the transmission of information accounted for by means of two states: an incoming epistemic state (represented by $R_a(s)$) and an outcoming epistemic state (represented by $R'_a(s)$).

We now define the semantics of these operators as follows, by providing their truth-conditions relative to a pair M, s:

$M, s \vDash p$ iff $s \in V(p)$

$M, s \vDash K_a\varphi$ iff for all $t \in S$: $t \in R_a(s)$ implies $M, t \vDash \varphi$

$M, s \vDash E_B\varphi$ iff for all $t \in S$: $t \in R_B(s)$ implies $M, t \vDash \varphi$

$M, s \vDash [\varphi]\psi$ iff $M, s \vDash \varphi$ implies $M \mid \varphi, s \vDash \psi$

$M, s \vDash <\varphi>\psi$ iff $M, s \vDash \varphi$ y $M \mid \varphi, s \vDash \psi$

Notice that $V(p) \subseteq S$, it is the set of states s in which p is true. Then, $M \mid \varphi$ holds for the result of cutting the model after the announcement of φ; i.e. the model that results when we delete all the states in which φ is not true. The other connectives receive a standard interpretation. The accessibility relation must be reflexive (system T), given that if an agent a knows that φ in s, then φ must be true in s; therefore, $K_a\varphi \rightarrow \varphi$ is a valid formula (we cannot know something that is not true). These operators of DEL may now be used to model the communication of knowledge between agents in their linguistic interactions, whether it be with or without transmitting pieces of evidence (the so-called evidential and negative paradigms, respectively).

The $l\bar{a}$ particle has a negative function when it is accompanied by an indicative mood. Because of the difficulty to determine the mood in Ugaritic, semiticians have been led to determine the verbal mood by the context. On the basis of a widespread interpretation regarding the verbal mood among the semiticians (see Sect. 3), we now come to the formal semantic analysis.

We consider the sentence of l + indicative mood previously discussed as an example of $l\bar{a}$ with negative function. This kind of negation may now be interpreted as a negative paradigm structure, at the same level at which the asseverative structures have been interpreted in Semitic languages. This structure will be formalized as follows:

- $<\neg K_a\varphi> E_B \neg K_a\varphi$

---

[42] See (van Ditmarsch et al. 2008) for a complete presentation of the syntax and the semantics.

[43] States are nothing but partial descriptions of states of affair.

Indeed, the negative paradigm does not correspond to a classical negation. It is a negative-epistemic intensional structure where what is negated is not the principal verb, but an epistemic modality that introduces the agent's perspective inside the sentence as a "nexus focus" in negative. And it is precisely the negation of the agent's knowledge which allows us to explain the different combinations produced at the sub-sentential, sentential and discursive levels. At a sub-sentential level, the scope of the negation is the verbal mood: it is a modal negation by means of which the agent affirms that she does not know φ, but which does not preclude the possibility for φ to be true, in accordance with the semantics defined above. That is, the agent is only claiming she cannot affirm φ because she has no evidence of φ, whence the dynamic from negative to positive of the negative particles. By making a public announcement, information is communicated and the model changes. An agent who affirms she has no evidence of φ is not negating the possibility of φ and still considers that φ is as possible as $\neg\varphi$. So that $< \neg K_a\varphi > E_B \neg K_a\varphi$ is the formal expression of the public announcement of the agent's ignorance; as in the example 1:

- Example 1: Before, it was translated as "You have not recognized (this)". Now it will be: "I, the agent a, does not have evidence of (you have recognized (this))".

The case of the *'al* particle can be formalized as follows:

- $< \neg \hat{K}_a\varphi > E_B \neg \hat{K}_a\varphi$

Nevertheless, its lexicalization with indicative is not equivalent to an operator with a force of necessity, but a negation of possibility that allows a translation by means of a rhetorical question, as in the following example:

- Example 4: Before it was translated as "sure, I should send a message to the son". Now it will be: "Wouldn't it be possible (that I, the agent a, have evidence for) I sent a message to the son?"

The translation of *'al* has thus the form of "Isn't it possible I have evidence for...".

6 From Positive to Negative

The *lā* particle is a negation of evidence, and the *'al* particle a negation of a possible evidence. But, why does the former change from negative to positive, and the latter from positive to negative?

The *lā* particle has two functions: negative and positive. The negative is a negation of evidence. Usually, it changes to positive in connection with a verbal modality, when the

verb mood is not indicative. This might be a kind of modal concord (Geurts and Huitink 2006; Zeijlstra 2007; Huitink 2008; Anand and Brasoveanu 2010; Grosz 2010), in which two modals merge into one. However, this would explain this linguistic phenomenon in terms of scopes of identical modals, while the modals are different in Ugaritic.

It cannot be a syntactic concord either, because the contribution of the two modals to the whole sentences in which they appear are different, so that their semantic difference must be taken into account. Moreover, the modality acts at the three levels of the sentence, and it also relates to the pragmatic level, as in Anand and Brasoveanu (2010), and the graduation of modality, as in Grosz (2010).

The dynamic of the *lā* particle is therefore accounted for in terms of a modality concord, through a general modality operator. Unlike the usual option which consists in losing the negation (one modal) in the semantics followed in Ugaritic studies, both of them will be maintained. Let us now explain this change from positive to negative, and vice versa, by means of concrete examples.

We first introduce a modal operator, which relates to the negative modality of *lā*. The intended meaning of $\sqcap_a\varphi$ is "the agent a wants/desires/commands/points out with emphasis/believes... φ". Its semantics is defined with respect to a serial structure in which, for every state $s \in S$, there is always a state $s' \in S$ such that $s' \in R(s)$. This is the well-known system D, which is characterized by the validity of $\Box\varphi \rightarrow \Diamond\varphi$.

Definition 5 Giving a model M, with R serial.

- $M, s \vDash \sqcap_a\varphi$ iff for all $t \in S : t \in R_a(s)$ implies $M, s \vDash \varphi$[44]

It is worth noting that the only difference with the K operator is the restriction concerning the accessibility relation. It is serial, but not reflexive. That is, it is assumed that for any $s \in S$ there is always a $s' \in S$ such that $s' \in R(s)$, but not that $s \in R(s)$ for any $s \in S$. Indeed, if an agent a desires or believes φ, for example, she may not have evidence of φ, and φ needs not be actually true despite her desires or beliefs. This general operator is thus weaker than K, which may nonetheless occur in the scope of the operator $\sqcap$. This explains why a negative knowledge turns out to be positive when it occurs in the scope of the general modal operator. This is how the modification of the sentential, the sub-sentential and the discursive modalities in Ugaritic by the negative evidential modality can be accounted for. The scope

---

[44] In Barés Gómez (2013), the semantics of this operator is defined with respect to a subset of S derived from the conversational context. We can avoid this sophistication here.

of the modalities makes concordance, which results in different translations.

The following example is thus formulated by giving to the operator $\sqcap$ a wide scope with respect to K:

- Example 2: Before it was translated as "I will certainly send". Now, it will be: "I, the agent a, will certainly send it (although I, the agent a, can have evidence that I, the agent a, did not send it)"[45]
- $< \sqcap_a(\hat{K}_a \neg \varphi) > E_B \sqcap_a(\hat{K}_a \neg \varphi)$

Given the general intended meaning of $\sqcap_a$, this formalization may also hold for sentences like "the agent a desires φ, although she can have evidence of $\neg \varphi$". The general modality is established first, whereas the particle $l\bar{a}$ establishes some limits and specifies that the agent has no evidence for what she considers also possible $\neg \varphi$. The change from negative to positive is not so obvious as with a double classical negation, since the change from the *modal* to the $l\bar{a} + modal$ is a modal operator with the force of a possibility ($\hat{K}$) with a negative proposition. The modality is not changed, it is only specified that the agent has no evidence.

The *'al + modal* particle expresses a negation. The structure of the *'al* positive in relation to a modal produces a change from positive to negative. The semantics of *'al* has been explained in terms of a public announcement of the negation of a modal epistemic operator $\hat{K}$. Now it interacts with the general modal operator $\sqcap$, and its structure can be formalized as follows:

- $< \sqcap_a(K_a \neg \varphi) > E_B \sqcap_a (K_a \neg \varphi)$

A change in the operator K is produced. It is something that has been analysed by Anand and Brasoveanu (2010) as an implicature. In our example:

- Example 3: Before it was translated as "Do not fear, do not be agitated!". Now, it will be: "my mother, may I have evidence that you do not fear" $< \sqcap_a(K_a \neg \varphi) > E_B \sqcap_a(K_a \neg \varphi)$

Thus, we get a structure of *'al + modal* which changes to negative. The analysis of $l\bar{a} + modal$ produces a weakening of the modality in $\sqcap$. In this case, the particle *'al* is not a modality of the negative sentence with force of possibility, but with a force of necessity. This produces a stronger change in the structure of $\sqcap$, which can be explained in terms of a wide scope of the $\sqcap$ operator. In this case, the two

utterances might be united without problems of translations in one that modifies in a higher level the sentence with the $\sqcap$ operator.

7 Conclusion

The dynamic semantics of Ugaritic negation expressed by means of the *lā/'al* particles had always remained unclear. Their dynamic behaviour, from positive to negative and vice versa, depends on their apparition, or not, in sentences with some kind of modality, or not (non-veridical contexts). In this paper, we focused on four occurrences of these particles: three of them from Ugaritic correspondence texts and another from poetry. On the basis of already existent semitician studies and translations, we eventually put forward a new semantic explanation defined from a logico-philosophical perspective. The application of modern formal tools, namely the operators of DEL, allows explaining the dynamics of the *lā/'al* particles within a negative paradigm, by means of which the lack of evidence can be expressed.

Indeed, the *lā/'al* particles do not fit with any structure of negation which can be found in natural languages. Nonetheless, certain aspects of these negations help to understand their behaviour. In Semitic languages, there exists an asseverative paradigm, in which several particles that have the form *lV* and *Vl* act as a kind of "nexus focus" or asseveration. These positive particles cannot be separate from the negative part of the particle *lV* and *Vl*, and they must be handled together in one general perspective. That is why we hypothesized a negative paradigm in Ugaritic, by means of which the behaviour of the *lV/Vl* negative particles is explained. This paradigm may be related to the well known asseverative paradigm in Semitic languages, at least as a possible kind of its counterparts. However, it must be emphasized that we only hypothesize a negative paradigm, not the asseverative one (that has never been attested in Ugaritic language).

Finally, the dynamic structure of the *lā/'al* particles, and their changes when they interact with the general modality operator, has been clarified by means of a formal semantics grounded in DEL. The conclusion is that the *lā/'al* particles cannot be translated as a normal (or classical) negation, as it is usually proposed in Semitic studies. They are constitutive of an intensional paradigm by means of which what is expressed is the ignorance, and the lack of evidence, of an agent. They form part of the expression of attitudes of knowledge in natural language, or better said the lack of knowledge.

In relation to the wider issues of language and building worldviews, we therefore reach two main results. On the one hand, this study sheds light on epistemic stances of Ugaritic people, how they conceive the world and their society; in particular, through the possibility of denying evidence. On

---

[45] What is meant here might not depend entirely on the agent, given the ternary structure of correspondance; as previously explained. See for example (Cunchillos 1989a, b; Hawley 2003).

the other hand, this proposal would not have been possible without analytic philosophy and modern formal tools, by means of which some of our resistances (due to our classical reading of negation) in interpreting Ancient languages can be overcome.

References

Aartun K (1978) Die Partikeln des Ugaritischen. Alter Orient und Altes Testament, Neukirchen-Vluyn

Ahl SW (1980)*Epistolary texts from Ugarit*. PhD thesis, Brandeis University, Ann Arbor, Michigan, U.S.A.- London, England

Aikhenvald AY (2004) Evidentiality. Oxford University Press, Oxford

Anand P, Brasoveanu A (2010) Modal concord as modal modification. In: Sinn und Bedeutung, vol. 14

Barés Gómez C (2013) Lógica dinámica epistémica para la evidencialidad negativa, volume 5 of Cuadernos de lógica, epistemología y lenguaje. College Publications, London

Barés Gómez C, Fontaine M, Nepomuceno A (2021) Knowledge in action: logico-philosophical approach to linguistic evidentiality. Logic J IGPL. https://doi.org/10.1093/jigpal/jzz040

Biggs RD, Brinkman JA, Civil M, Farber W, Gelb IJ, Oppenheim AL, Reiner E, Roth MT, Stolper MW (eds) (2010) The Assyrian dictionary: U and W, vol 20. Oriental Institute of the University of Chicago, Chicago, IL

Black J, George A, Postgate N (eds) (2000) A concise dictionary of Akkadian. Harrassowitz Verlag, Wiesbaden

Bordreuil P, Pardee D (2004) Manuel d'Ougaritique, vol 2. Paul Geuthner, Paris

Buccellati G (1996) A structural grammar of Babylonian. Harrassowitz Verlag, Wiesbaden

Civil M, Gelb IJ, Oppenheim AL, Reiner E (eds) (1973) The Assyrian dictionary: L. Oriental Institute of the University of Chicago, Chicago, IL

Cohen E (2005) The modal system of Old Babilonian. Eisenbrauns, Winona Lake, IN

Cunchillos JL (1981a) Le texte ugaritique ktu.2.30. Anu de Filol 5 1979:73–76

Cunchillos JL (1981b) Ktu 2.21- lettre addressé à la reine ibrkd a trasmis le message de la reine. Ugarit-Forschungen 13 1980:45–48

Cunchillos JL (1989a) Estudios de Epistolografía Ugarítica. Institución San Jerónimo para la Investigación Bíblica, Valencia

Cunchillos JL (1989b) Textes Ougaritiques: Correspondance, vol II. Les éditions du cerf, Paris

Cunchillos JL (1992) Manual de Estudios Ugaríticos. CSIC, Madrid

Cunchillos JL (2000) Hermeneumatica. CSIC, Madrid

Cunchillos JL, Vita JP (1996) Banco de Datos Filológicos Semíticos Noroccidentales III: generador de Segmentaciones, Restituciones y Concordancias. CSIC, Madrid

Cunchillos JL, Vita JP (1993) Banco de Datos Filológicos Semíticos Noroccidentales I: Textos Ugaríticos, vol 1. CSIC, Madrid

Cunchillos JL, Vita JP (1995) Banco de Datos Filológicos Semíticos Noroccidentales II: Concordancia de Palabras Ugaríticas en morfología desplegada. CSIC, Madrid

Cunchillos JL, Zamora JA (1995) Gramática Ugarítica elemental. CSIC, Madrid

de Moor JC (1979) Contributions to the ugaritic lexicon. Ugarit-Forschungen 11:650–651

del Olmo Lete G, Sanmartín J (1996) Diccionario de la Lengua Ugarítica. Aula Orientalis-Suplementa, Barcelona

del Olmo Lete G, Sanmartín J (2004) A dictionary of Ugaritic Language in the Alphabetic Tradition. Brill, Leiden

Dietrich M, Loretz O, Sanmartín J (1976) KTU. Die keilalphabetischen Texte aus Ugarit. Alter Orient und Altes Testament, Neukirchen-Vluyn

Geurts B, Huitink J (2006) Modal concord. Concord and the syntax-semantics interface. ESSLLI, Málaga

Grosz p (2010) Grading modality. A new approach to modal concord and its relatives. In *Sinn und Bedeutung 14*

Hawley R (2003) Studies in Ugaritic Epistolography. UMI Microform 3088741, Chicago, online edition

Hoeksema J, Rullmann H, van der Wouden T, Sánchez-Valencia V (eds) (2001) Perspectives on negation and polarity items. Jhon Benjamins Publishing Company, Amsterdam

Horn LR (1989-2001) A natural history of negation. CSLI Publications, Chicago

Huehnergard J (1983) Asseverative *la and hypothetical *lu/law in semitic. JAOS 103:569–593

Huehnergard J (1997) A Grammar of Akkadian. Scholars Press, Atlanta

Huitink J (2008) Modal conditional and compositionality. PhD thesis, Nijmegen

Jespersen O (1917) Negation in English and other languages. Bianco Lunos Bogtrykkeri. AF Host, Copenhagen

Lipinski E (1981) Ahat-milki, reine d'ugarit et la guerre du mukis. Orient Lovan Period OLP 12:93–96

Lipinski E (2001) Semitic Languages outline of a comparative grammar, 2nd edn. Peeters Publishers, Leuven

Malbran-Labat F, Vita JP (2005) Manual de Lengua Acadia. IEIOP, CSIC, Zaragoza

Pardee D (1981) A further note on pru 5 n. 60. epigraphic in nature. Ugarit-Forschungen 13, pp. 152–153

Pardee D (1984) Further studies in ugaritic epistolography. Archivfür Orienrforschung (AfO) 31:225–226

Pardee D (2002) The context of scripture: archival documents from the Biblical World, volume III, chapter Ugaritic Letters. Brill, Leiden

Portner P (2009) Modality. Oxford University Press, New York

Rainey AF (1996) Canaanite in The Amarna Tablets. A linguistic analysis of the mixed diali used by the scribes from Canaan. Volume III. Morphosyntactic analysis of the particles and adverbs. Handbook of Oriental Studies. Brill, Leiden

Ross AP (2001) Introducing Biblical Hebrew. Baker Academic, Ada

Segert S (1984) A basic Grammar of the Ugaritic Language with selected texts and glossary. University of California press, Berkeley

Sivan D (1997) A Grammar of the Ugaritic Language. Handbook of oriental studies. Brill, Leiden

Testen DD (1998) Parallels in Semitic Linguistics. The development of Arabic la- and related semitic particles. Brill, Leiden

Tropper J (2000) Ugaritische Grammatik. Alter Orient und Altes Testament, Münster

van der Wouden T (1997) Negative contexts. Collocation, polarity and multiple negation. Routledge, London

van Ditmarsch H, van der Hoek W, Kooi B (2008) Dynamic epistemic logic. Springer, Dordrecht

Virolleaud C (1957) Le Palais Royal dUgarit II. MIssion de Ras Shamra, Paris

Virolleaud C (1965) Le Palais Royal dUgarit V. Mission de Ras Shamra, Paris

von Soden W (1995) Grundriss der Akkadischen. Grammatik Analecta Orientalia. Editrice Pontificio Instituto Biblico, Roma

Wasserman N (2012) Most probably. Epistemic modality in Old Babylonian. Eisenbrauns, Ann Arbor

Watson W (1991) The negative adverbs l and lm+l in ugaritic. JNWSL 17:173–188

Woodard RD (2008) The ancient languages of Syria-Palestine and Arabia. Cambridge University Press, Cambridge

Zeijlstra H (2007) Modal concord. SALT XVII 317–332. Cornell University, Ithaca, NY