Interpreting argumental n-words as answers to negative wh-questions·

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Abstract

This paper aims to provide an explanation of the lexical characterization and final semantic interpretation associated with isolated argumental n-words in Question-Answer pairs in Negative Concord languages, namely Catalan and Spanish. We argue that there are two competing lexical variants of n-words in these languages: a polarity variant and a negative existential quantifier variant. Accessibility to these two lexical characterizations of n-words is correlated with one of the two possible final interpretations of isolated argumental n-words when used as fragment answers to negative wh-questions. Following a Structured Meaning approach to the semantics of Question-Answer pairs, we present a new analysis of n-words as focus constituents with respect to background wh-questions according to which a final single negation reading can only be inferred from n-words conceived as indefinite polarity items, whereas a Double Negation reading is inferred from negative quantifiers.

Keywords: argumental n-words, indefinite polarity items, indefinite negative quantifiers, Question-Answer pairs, Catalan, Spanish

1. Fragment answers, compositionality and ellipsis

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In this paper we investigate why in Negative Concord (NC) languages such as Catalan and Spanish isolated argumental n-words (e.g., Spanish *nadie* 'nobody', Catalan *res* 'nothing') (Laka 1990) may be interpreted as conveying both single negation and Double Negation (DN) when used as fragment answers to negative wh-questions. To contextualise this puzzle, in Section 1.1 we briefly introduce the behaviour of negative quantifiers (e.g., *nobody, nothing*) in this same context in languages like Standard English and German, and show that they are expected to yield only a DN interpretation. By contrast, in Section 1.2 we present the empirically and theoretically challenging fact that Catalan and Spanish isolated n-words can yield both a single negation reading and a DN reading, a property that is not expected and, furthermore, is not explained under current syntactic and semantic approaches to the distribution of n-words and the interpretation of NC readings.

The rest of the article is organised as follows. In Section 2, a number of theoretical assumptions about the lexical and syntactic status of argumental n-words in Catalan and Spanish are introduced. In Section 3, we show that neither the combination of a formal analysis of NC as syntactic Agree (Zeijlstra 2004 and ff.) with an ellipsis analysis of fragment answers (Merchant 2001, 2004), nor a semantic ellipsis account (Giannakidou 2000, 2006) can accommodate the two potential interpretations that Catalan and Spanish n-words may have when used as fragment answers to negative wh-questions. In Section 4, we offer a new analysis within a Structured Meaning approach (von Stechow 1991; Krifka 2001, 2004, 2007, 2011) that allows us to derive both the single negation and the DN reading that Catalan and Spanish isolated argumental n-words used as answers to negative wh-questions may have. Finally, Section 5 concludes the paper.

48

49 *1.1. Negative quantifiers in DN languages*

50 In DN languages such as Standard English, German, Dutch and Afrikaans, when
51 negative indefinites such as *nobody* or *nothing* and their equivalents in the
52 aforementioned languages are used in isolation as answers to a negative wh-
53 question, a DN reading obtains, as shown in (1) and (2). Notice that the negative
54 questions in (1) and (2) are biased in the sense that they require non-neutral
55 contexts: a contrast set (of individuals who indeed did the homework, or of things
56 they read) needs to be established in order to make them felicitous questions (cf.
57 Han 1999, Romero and Han 2004, Asher and Reese 2005, Reese 2006). On the
58 other hand, these negative questions are felicitous if there is compelling contextual
59 evidence against *p*, in the sense that, in (1), not everybody did the homework (¬∀),
60 that is, that someone didn't, or, in (2), they have not read everything, that is,
61 something was not read.

62 (1) Q: Who did*n't* do the homework? (English)
63 A: *Nobody*. (= Nobody didn't do the homework;
64 → Everybody did the homework)

65 (2) Q: Was haben sie *nicht* gelesen? (German)
66 what have they not read
67 'What didn't they read?'
68 A: *Nichts*.
69 nothing
70 'Nothing' (= They didn't read nothing;
71 → They read everything)

Negative indefinites such as *nobody* and *nichts* are commonly assumed to contribute negation on their own in so-called DN languages, but this idea has been implemented in various ways within the generative tradition.[1] In the '90s some well-established proposals analysed these lexical items as negative quantifiers (Zanuttini 1991; Haegeman and Zanuttini 1991, 1996; Haegeman 1995; Haegeman and Lohndal 2010). In more recent analyses they are argued to be either non-negative indefinites associated with a licensing abstract negative operator (Op¬) that carries an interpretable negative feature [iNEG] (Penka 2011; Penka and Zeiljstra 2005, 2010; Zeijlstra 2011), or inherently negative words bearing an [iNEG] feature (Biberauer and Zeijlstra 2012). Discussing which position is superior is beyond the scope of this paper. Rather, it will be assumed that negative indefinites in DN languages always carry one instance of logical negation (¬).

Within the generative tradition the analysis of the answers in (1) and (2) has been claimed to support an ellipsis account of fragment answers, according to which part of the question is copied into the syntactic structure corresponding to the answer. Since sentential negative markers in English and German (*not/n't* and *nicht*, respectively) are also assumed to introduce an instance of logical negation, the copy operation depicted in the answers is predicted to result in DN (since the negative quantifier takes wide scope over negation) and is hence expected to receive a positive reading (¬∃¬ ⇒ ∀). This is indeed the case, as indicated by the paraphrases included in parentheses in (1) and (2).

In the Minimalist Program (Chomsky 1995, 2001 and ff.), fragment answers with a negative quantifier seem to be necessarily derived by means of ellipsis (Merchant 2001, 2004). This analysis postulates that the negative indefinite moves

[1] See Longobardi (2014, and previous work) for a criticism of the typological macroparametric distinction between DN and NC languages.

at narrow syntax to Spec, Foc(us) P(hrase) and that, finally, part of the structure is PF-deleted. This movement-then-deletion approach is illustrated –although somewhat simplified– in (3a, b), where the copied material and ellipsis are indicated by the square brackets and the strikethrough, respectively. According to this analysis of the answers in (1b) and (2b), represented in (3), a focused constituent is assumed to have syntactically moved to the left periphery of the clause, to a position above the c-command domain of the ellipsis-licensing head. [E] refers to a formal feature that Foc^0 carries in an elliptical structure. It is read at the PF interface in such a way that the whole syntactic structure dominated by it is elided.

(3) a. Q: Who didn't do the homework?

A: [$_{FocP}$ nobody$_i$ [E] [$_{TP}$ ~~t$_i$ didn't do the homework~~]] 'Everybody.'

b. Q: Was haben sie nicht gelesen?

A: [$_{FocP}$ nichts$_i$ [E] [$_{TP}$ ~~haben sie nicht gelesen t$_i$~~]] 'Everything.'

Within such an ellipsis account, a pronounced fragment is an instance of clausal ellipsis, and the meaning of *nobody* and *nichts* in combination with a copied sentential negative marker contributes compositionally to a DN reading, as it naturally follows from the lexical and syntactic properties of these elliptical structures.[2] At LF, the syntax of the answer is assumed to correspond strictly to the syntax of the negative wh-question and the principle of Compositionality is

[2] It should be noted, however, that this type of analysis can only account for those languages for which narrow syntactic movement to Focus can be postulated. We thank C. Poletto (p.c.) for this comment.

See Weir (2014) for discussion of the hypothesis that fragments do move to Focus, but only at the PF component, since they are interpreted *in situ.*

believed to govern the interpretation of the answer. At PF, the material in the scope of the feature [E] is PF-deleted and, hence, not phonologically realised.[3]

In so-called DN languages it is also possible to object to the negative assumption (i.e., in (1) the presupposition *Somebody didn't do the homework*) activated by the negative wh-question by means of a different kind of ellipsis, the target meaning being single negation rather than DN. To convey this meaning, these languages resort not to clausal ellipsis, but rather either to full sentences, as in (4Aa) and (5A), or, at most, to sentences with VP-ellipsis only, as in (4Ab).[4]

(4) Q: Who did*n't* do the homework? (English)

A: a. *Nobody* did it.

b. *Nobody* did.

(5) Q: Wer hat die Hausaufgabe *nicht* gemacht? (German)

who has the homework not made

'Who didn't do the homework?'

A: *Niemand* hat sie gemacht.

nobody has she made

'Nobody did it.'

The answers in (4A) and (5A) do not involve clausal ellipsis and therefore no material is copied from the question onto the syntactic structure of the answer. The

[3] This classical movement-then-deletion account of ellipsis is in line with theories in which PF "spells out" LF, that is, theories that introduce constraints on a particular type of correspondence between LF and PF representations: LF (broadly construed) is calculated first and determines PF (surface word order), and therefore scope at LF is matched by precedence at PF (Bobalijk 1995, 2002; Bobalijk and Wurmbrand 2012; a. o.).

[4] We thank G. Kaiser, B. Gherke and K. Hartmann (p.c.) for sharing with us their intuitions on the German data. It seems that in this language prosodic stress on both the wh-word and the negative marker of the question favours a DN reading in the answer.

This observation is interesting because it supports the claim made for many other languages that any explanation of DN must involve both prosody and syntax. See, among others, Corblin (1995, 1996) and Vinet (1998) for French; Corblin and Tovena (2003) for French and Italian; Zanuttini (1991, 1997), Godard and Marandin (2007) for Italian; Baltazani (2006) for Greek; Molnár (1998), Puskás (2006) for Hungarian; Huddlestone (2010) for Afrikaans; Tomioka (2010) for Japanese; Espinal and Prieto (2011) and Espinal at al. (2015) for Catalan.

135 structure corresponding to these answers excludes the possibility of obtaining a DN
136 reading, while allowing the answer to express single negation, as conveyed by the
137 logical negation of the negative quantifier. It seems, therefore, that so-called DN
138 languages tend to avoid clausal ellipsis when the intended interpretation of the
139 negative indefinite does not match the one that results from the syntax of fragment
140 answers, which is necessarily DN if the wh-question is negative.

141 Contrary to what happens in Standard English and German, in NC languages
142 (e.g., Catalan, Spanish) answering a negative wh-question with an isolated n-word
143 mostly results in NC, but the sentences do not show VP-ellipsis. In the next section
144 we will show that the possibility of obtaining a single negation reading, which
145 corresponds to the default interpretation for a population of native speakers, calls
146 into question not only the analysis that must be attributed to n-words, but also the
147 analysis of argumental n-words as fragment answers. The reason for this claim is
148 that if isolated n-words were considered negative quantifiers in all natural
149 languages, they should only license a DN reading under a standard clausal ellipsis
150 account.

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152 *1.2. N-words as answers to negative wh-questions in Catalan and Spanish*

153 Argumental n-words such as Spanish *nadie* ('nobody') and *nada* ('nothing') and
154 Catalan *ningú* ('nobody') and *res* ('nothing') are most commonly interpreted as
155 conveying single negation. This is illustrated in (6) and (7) for Spanish.[5]

156 (6) Q: ¿Quién *no* llevaba gafas?[6] (Spanish)

[5] In French, by contrast, the most natural interpretation for *personne* and *rien* in similar contexts is DN, which suggests that these expressions are not the same type of n-word we find in Spanish and Catalan. We thank M. Labelle (p.c.) for pointing out this contrast to us.

[6] Interestingly, as pointed out to us by a native speaker, if special prominence is placed on the sentential negative marker in the question, as indicated by the capitals in *¿Quién NO llevaba gafas?* (lit. who not wore glasses 'Who was not wearing glasses?'), a DN reading for the reply *Nadie* is

who not wore glasses

'Who wasn't wearing glasses?'

A: *Nadie*.

nobody (= Nobody was wearing glasses)

(7) Q: ¿Qué *no* han leído los estudiantes? (Spanish)

what not have read the students

'What didn't the students read?'

A: *Nada*.

nothing (= The students didn't read anything)

In relation to these kind of data composed of a negative wh-question and an n-word isolated answer, we refer the reader to a number of perception experimental studies run with native speakers of Catalan and Spanish (Espinal and Prieto 2011, Prieto et al. 2013, Espinal et al. 2015) that aimed to foster on our knowledge of the interaction between syntax and prosody. In these studies participants had to indicate whether they interpreted an n-word in the answer to a negative wh-question as expressing either a single negation reading (i.e., 'nobody' / 'nothing') or a DN reading (i.e., 'everybody' / 'everything'). Specifically, the result we would like to focus on in this paper, as it is both empirically and theoretically challenging, is that, when the intonation contour of the isolated answer was unmarked (i.e., had a fall boundary tone, also described as L+H*L% in Cat_ToBI and Sp_ToBI), participants associated the argumental n-word with a single negation reading only 57.5% of the time in the case of Catalan speakers, and 66% of the time in the case of Spanish speakers, not 100% of the processed items, as we would have expected in NC

favoured. We believe that DN is inferred in this case as the output of the following PF-LF interaction: stress on the sentential negative marker in the question gives the instruction to copy the negative clause in the question onto the answer, thus resulting in DN.

languages in which n-words are indefinite expressions.[7] Furthermore, the proportion of DN responses in the interpretation of Catalan *ningú/res* and Spanish *nadie/nada* is surprising, as single negation is the only possible interpretation that is in accordance with the description of n-words in traditional/prescriptive grammars and in some descriptive/theoretical studies for Catalan (cf. Fabra 1956; Solà 1973; Vallduví 1994; Espinal 2000, 2002) and for Spanish (cf. Bosque 1980, Sánchez 1999, RAE 2009). Hence, the aim of the present article is to provide an analysis of isolated argumental n-words in these languages that accounts for the fact that, in the absence of a marked prosodic contour (that is, in the absence of any linguistic trigger of a denial interpretation), a compositionally-driven DN interpretation is not discarded in either of these NC languages.

2. Theoretical assumptions

[7] See Espinal et al. (2015) for a full discussion of the experimental conditions and statistical significance of the mean perceived DN of the results we refer to. Participants had to rate two target n-words (*ningú/res* in Catalan and *nadie/nada* in Spanish) produced in a Q-A discourse context by two pairs of subjects as meaning either 'nobody/nothing' or 'everybody/everything'. The hypotheses tested in this paper were that n-words associated with two distinct intonation contours, either a rise-fall pitch contour consisting of a rising pitch accent followed by a final fall boundary tone (L+H* L%) or a rising pitch accent associated with the stressed syllable followed by a low-rising boundary tone (L+H* L!H%), both in isolation and in preverbal position, had different interpretations and that the latter intonation was responsible for triggering an increase in DN interpretations.

Examples of the sort of data that Catalan and Spanish speakers were presented with are given in (i) and (ii), respectively.

(i) Q: Qui *no* ha menjat postres?
who not has eaten dessert
'Who has not eaten dessert?'
A: *Ningú*.
nobody

(ii) Q. A fecha de hoy ¿qué *no* nos han mandado?
at date of today what not us have sent
'As of today, what haven't they sent us?'
A. *Nada.*
nothing

See also Espinal and Prieto (2011), Prieto et al. (2013) and Espinal et al. (2015) for arguments in support of the correlation between a marked prosody (and gesture) and a marked interpretation such as denial, and Horn (1989) and Geurts (1998), for general discussion on metalinguistic negation and mechanisms of denial.

In the upcoming sections, a number of theoretical assumptions about the nature of n-words are introduced. Likewise, we consider the syntactic and semantic status of isolated n-words when they occur as answers to wh-questions.

A new analysis for interpreting isolated argumental n-words in the Romance languages under study in this paper is based on the assumption that these items come in two lexical variants. One variant of these items consists of indefinite expressions characterized semantically with a polarity feature, a variant we will refer to as *n-words*$_1$. A competing variant (Kroch 2000) for n-words is variably available, and is characterized semantically as a negative existential quantifier; we will refer to these items as *n-words*$_2$.[8]

This lexical characterization is related to the fact that, for a population of Catalan and Spanish native speakers, n-words are basically assumed to be PIs that nevertheless can be associated with an uninterpretable negative formal feature in the syntax to guarantee a single negation or NC reading (by means of an Agree-chain with an interpretable matching feature), no matter whether they occur in preverbal or postverbal position. However, for another population of native speakers of Catalan and Spanish, n-words can also be increasingly characterized as indefinite negative quantifiers, that is, as inherently negative words that do not participate in NC structures, which may license a DN reading. This is argued in Section 2.1. Later on, in Section 4 we will relate these two variants to either the

[8] See Herburger (2001) for an antecedent of the hypothesis that n-words in Spanish are lexically ambiguous between polarity items and inherent negative expressions (referred to as *negative elements*). She assumes that while polarity n-words are non-negative existential quantifiers that need to be licensed in downward entailing contexts, n-words in answers to wh-questions are negative elements that are inherently negative and create downward entailing contexts. Herburger's account predicts that, when used as answers to negative wh-questions, isolated n-words in Spanish will be interpreted as conveying a DN reading.

See Déprez et al. (2015) for an experimental investigation of Catalan n-words that provides empirical independent support for the ambiguous status of these lexical items.

single negation or the DN interpretation associated with isolated argumental n-words when used as answers to negative wh-questions.

Furthermore, n-words that occur as answers to questions are assumed to sit in a syntactic Focus position, regardless of whether they license a NC or a DN interpretation. This is argued for in Section 2.2 by evaluating the behaviour of preverbal n-words –which isolated n-words resemble most– with respect to their distribution, as well as left periphery and information structure considerations.

2.1. N-words as indefinite polarity items and as indefinite negative quantifiers

As has been extensively discussed in the literature, n-words in NC languages may display an ambivalent syntactic behaviour: they have been claimed to behave like negative quantifiers when occurring preverbally and in isolation, but as polarity items when occurring postverbally (Laka 1990; Ladusaw 1992; Déprez 1997 and ff.; Giannakidou 1998, 1999; Herburger 2001; Zeijlstra 2004; a. o.). That is, n-words in so-called NC languages can be in the scope of the sentential negative marker without yielding DN.

Following the microparametric approach developed in Labelle and Espinal (2014), our lexical characterization of n-words in Catalan and Spanish relies on a semantic feature, Chierchia's (2006: 559) [+σ], and a syntactic feature, Zeijlstra's (2004 and ff.) [uNEG]. While the [+σ] feature stands for a strong scalar feature, taken to be responsible for PIs activating a process of domain widening (i.e., PIs are scalar elements that activate alternatives within smaller domains; hence, they are felicitous in downward entailing contexts, see Ladusaw 1980), the [uNEG] feature guarantees that n-words establish a syntactic dependency relation with negation. Consider the example in (8).

(8) Los estudiantes *no* han leído *nada*. (Spanish)

the students not have read nothing

'The students didn't read anything.'

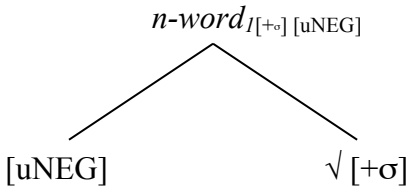
In (8) *nada* is a PI, inherently characterized as [+σ], which is a requirement for its interpretation as a (negative) PI. As such, it basically means *some*, with the addition that it forces us to consider not only the current (pragmatic) context, but the largest contextually relevant domain (e.g., by saying *The students didn't read anything,* the speaker includes not only a contextually salient set corresponding to, for example, *textbooks*, but a larger set including *journal articles, book chapters,* etc.), thus it is domain-widening. Furthermore, *nada* (like English *any*) activates alternatives within smaller domains, which means that it introduces the implicature that a statement containing *any* is the pragmatically strongest statement possible in context (e.g., if *The students didn't read anything,* a fortiori*, The students didn't read a textbook*). It is the feature [+σ], where σ stands for *strong*, that is assumed to be responsible for the activation of alternatives of scalar items.[9]

We assume that n-words, more precisely *n-words*$_1$, are lexical roots semantically characterized by an abstract [+σ] feature. As such, *n-words*$_1$ will require a covert exhaustifier σ operator in a c-commanding position to be properly licensed (Chierchia 2006; cf. Giannakidou 1998). Furthermore, in (8), *nada* is a PI licensed by the negative marker, and the two items (the negative marker and the n-word) are in a syntactic relationship mediated by Agree that guarantees a NC reading. In order to formalize the distinction between being polar sensitive to some exhaustifying operator on the one hand, and participating in an Agree relationship

[9] See Longobardi (2014) for an alternative operational rule that assigns [+ANY] to a lexical head when "that phrase is interpreted as an existentially bound variable in the immediate scope of a distinct negative (non-veridical) operator and nowhere else" (Longobardi 2014: 226).

on the other, we assume (following Espinal and Tubau in press) that a polar n-word may acquire, in the course of the syntactic derivation, a formal [uNEG] feature that makes it syntactically dependent on a matching interpretable feature. In this view, *n-words*$_1$ are the output of merging indefinite polarity roots defined [+σ] with a formal syntactic [uNEG] feature at syntax, as shown in (9).[10] We depart from Zeijlstra's (2004 and ff.) lexical endowment of an inherent [uNEG] feature in order to claim explicitly that only the NC reading, but not semantic polarity, is syntactically-driven.

(9)



This merge operation applies under the assumption that [uNEG] heads select items specified [+σ], but notice that not all polar roots need to be syntactically specified [uNEG]. For instance, French *qui/quoi que ce soit* (lit. who/whatever it may be) 'anybody/anything' and Romanian *cine știe ce* (lit. who knows what) 'anything' occur in non-negative polar contexts (and are hence specified as [+σ]), but cannot occur in negative contexts, thus supporting the claim that they do not merge with a [uNEG] feature (Espinal and Tubau in press).

Polarity items defined [+σ] will require a σ operator adjoined to a conditional or an interrogative operator for their interpretation. Alternatively, a lexical item encoding semantic negation, such as verbs that express fear and doubt, prepositions that express the concepts of 'before' and 'until', and other contexts licensing expletive negation, can also host the licensing σ operator.

[10] For the idea that word formation is a syntactic process (i.e., it follows the same syntactic rules that are used to build up clauses) see the Distributed Morphology model (Halle and Marantz 1993, Embick and Noyer 2007, a. o.).

The relationship between [+σ] and the Op σ is a semantic dependency (cf. Giannakidou 1998). However, when a root defined [+σ] merges with [uNEG] a syntactic requirement comes into play. Given that [uNEG] is an uninterpretable syntactic feature, it must be checked (i.e., deleted) before the derivation is sent to the interfaces. The feature [uNEG] needs to establish a relation of Agree with a matching syntactic [iNEG] feature to be checked. Such a feature is provided either by the overt negative operator [iNEG] (i.e., the negative marker *no*), which signals the scope of negation (Zeijlstra 2004: 271), or by a covert negative operator, which is inserted when the n-word occupies a position that outscopes NegP (Zeijlstra 2004: 259).[11]

Accordingly, following Zeijlstra (2004, 2012), Haegeman and Lohndal (2010), and Biberauer and Zeijlstra (2012), we assume that Catalan and Spanish n-words participate in an (Inverse) Agree relation with a negative operator that carries an [iNEG] feature.[12] Following this approach, the Spanish example in (8) can be schematically analysed as in (10).

(10) Los estudiantes $no_{[iNEG]}$ han leído $nada_{[+\sigma][uNEG]}$.

[11] A reviewer asks why a sentence such as **Juan ha comido nada* (lit. Juan has eaten nothing) is not grammatical in Spanish. That is, what prevents an abstract negative operator from rescuing such a sentence? We follow Zeijlstra (2004: 271) in assuming that the overt negative operator marks the scope of negation. Hence, either it is clear that negation is sentential by means of the presence of preverbal n-words, or the negative marker must be overt. Likewise, another reviewer asks why postverbal n-words cannot occur without an overt licenser if a negative quantifier variant (*n-word*$_2$) is available in Spanish and Catalan. Our answer relies on the fact that this still emergent negative quantifier variant is inherently specified as [uFoc] and, as such, it can only be appropriately licensed after movement to a left peripheral Focus position: *NADA ha comido Juan* (lit. nothing has eaten Juan). See also Déprez et al. (2015).

[12] Unlike Chomsky's (2000, 2001) formulation of Agree, where a Probe c-commands a Goal, the constituent that is assumed to carry an uninterpretable feature, Inverse/Reverse Agree is formalized as in (i) in Zeijlstra (2012: 514), where the Goal c-commands the Probe.

(i) *Inverse/Reverse Agree:*

α can agree with β iff:

a. α carries at least one uninterpretable feature and β carries a matching interpretable feature.
b. β c-commands α.
c. β is the closest goal to α.

Let us now consider preverbal n-words, as in (11a). If, under the present assumption, n-words are lexical roots characterized as PIs (i.e., defined by a [+σ] feature), when they occur in preverbal position an abstract negative operator, Op¬, specified as [iNEG], is postulated to license the n-word specified as [uNEG]. This Last Resort operation is required in order to guarantee their negative interpretation as n-words, as shown in (11b) (Zeijlstra 2004).

(11) a. *Nadie* llevaba gafas (Spanish)
nobody wore glasses
'Nobody was wearing glasses.'

b. [Op_{σ} [$Op^{\neg}{}_{[iNEG]}$ [$nadie_{[+\sigma][uNEG]}$ llevaba gafas]]]

Summing up, our assumptions regarding n-words are as follows. For a population of native speakers, n-words are lexically specified as indefinite PIs, semantically characterized by a strong scalar feature [+σ] that forces their interpretation in a domain-widening context. Conceived as polar roots, these items may merge in the course of the derivation with an abstract syntactic [uNEG] feature. Once this merge has occurred, it imposes on the resulting *n-words*$_{I}$ the requirement that they participate in an Agree chain with an [iNEG] operator, thus resulting in a single negation or a concordant reading. Whether they occur postverbally, preverbally or in isolation, such *n-words*$_{I}$ entail semantically a numeral zero meaning (we will come back to this claim in Section 4).[13]

[13] See Déprez (1997) for the original analysis of French *rien* and *personne* as negative expressions whose quantificational force is identified with the numeral zero: "the assumption that the numeral that n-word incorporates means *zero* provides a straightforward explanation as to why answers with n-words are always interpreted negatively" (p. 123). This means that for this author negating a zero numeral produces the cancelling effect of DN (Déprez 2000: 269).

(i) Je *n*'ai *pas* vu *personne*. (French)
I NEG.have not seen zero.person
'I did not see nobody.'
(⇒ I saw at least one person)

Although we will not make any strong claim about French n-words in this paper, we suspect that their semantic characterization cannot be exactly the same as the one postulated for the two

However, a second population of native speakers of Catalan and Spanish seem to have in their grammar a competing lexical variant for n-words, which we will call henceforth *n-words*$_2$. This emergent variant (in the sense of not showing the basic polar meaning of n-words in these NC languages) is lexically characterized as being inherently negative, and its meaning corresponds to a negative quantifier, defined semantically as ¬∃ (similar to negative quantifiers as defined in first-order logic). This variant, encoding an inherent semantic negation, does not require any sort of syntactic checking to be negative and therefore does not participate in NC structures.[14] Furthermore, in line with the work of Zanuttini (1991) and Déprez (1997), an *n-word*$_2$ is decomposable into a negative component and a quantificational one, and when it combines with an external negative operator it necessarily conveys a DN reading.

In Sections 3 and 4 we will return to the importance of the ambiguity of argumental n-words that we postulate in order to explain their interpretation when they occur as isolated answers to negative wh-questions. For the time being we will consider in the next section their syntactic distribution in comparison to preverbal

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Romance languages studied in this article. This is supported by the fact that the corresponding Catalan and Spanish examples in (ii) and (iii) do not license a DN meaning.

(ii) *No* he visto a *nadie*. (Spanish)
not have seen DOM anybody
'I did not see anybody.'

(iii) *No* he vist *pas* a *ningú*. (Catalan)
not have seen not DOM anybody
'I did not see anybody.'

See also footnote 5 above.

[14] The emergence of this *n-word*$_2$ variant raises the question of what prevents a negative quantifier from merging with [uNEG]. The answer follows from an assumption we have specified above, namely that a [uNEG] feature selects for polar roots specified [+σ]. If negative quantifiers merged with [uNEG], the prediction would be that they should occur in NC constructions, but this does not seem to be the case, since when two negative quantifiers co-occur in a clause, DN is predicted to arise. One possible way out of this puzzle is to assume, in keeping with Déprez's (1992) and de Swart and Sag's (2002) approach to n-words, that an operation of resumption is responsible for the NC reading of sequences of negative quantifiers (whereas an operation of iteration accounts for DN readings). But see Déprez et al. (2015) for arguments against the validity of a resumption analysis in Catalan.

n-words and their interpretation when we take into account left peripheral and Topic-Focus information structure considerations (cf. Chafe 1976, Vallduví 1993, Krifka 2007).

2.2. Preverbal and isolated n-words as Focus

In this section we address the syntactic and informational status of isolated argumental n-words used as answers to negative wh-questions, regardless of whether they are finally interpreted as conveying a single negation or given a DN interpretation. In similarity with preverbal n-words, which occupy a left-peripheral position in a cartographic approach to clause structure (Rizzi 1997, Cinque and Rizzi 2008, a. o.), isolated n-words are also candidates to occupy a syntactic position at the left periphery of the clause. First, if n-words in fragment answers are assumed to be part of larger structures that have undergone clausal ellipsis (see Section 1), it is not surprising that they behave similarly to preverbal n-words. Second, given that isolated n-words are the answer to wh-constituent questions, from the two available candidate positions –Topic or Focus– that have been postulated for them following the Split-CP hypothesis, they are expected to sit in Focus.[15] Third, as happens with preverbal n-words, which generally fail the tests of Topichood (Vallduví 1993, Espinal 2007, for Catalan; RAE 2009, for Spanish) and, hence, can never be prototypical Topics, isolated n-words cannot be Topics either. As shown in the Catalan examples in (12) and (13), preverbal n-words and isolated n-words can be preceded by Topic constituents but not followed by them (Vallduví 1993; Espinal 2007: 62 and 63). The same seems to apply to Spanish.

(12) a. [$_{\text{Topic}}$ A mi], [$_{\text{Focus}}$ *ningú*] no em deu *res*.

[15] See also Holmberg (2013) for an account of answer particles ('yes' and 'no') as sitting in Focus.

to me nobody not me owe nothing

'Nobody owes me anything.'

b. *[$_{Focus}$ *Ningú*] [*Topic* a mi] no em deu *res*.

nobody to me not me owe nothing

(13) Q. Qui no et deu *res*?

who not you owes nothing

'Who doesn't owe you anything?'

A. a. [$_{Topic}$ A mi], [$_{Focus}$ *ningú*].

to me nobody

'To me, nobody' (= Nobody owes me anything)

b. *[$_{Focus}$ *Ningú*], [$_{Topic}$ a mi]

Thus, it is plausible to assume that preverbal and isolated n-words sit in Focus.[16]

Besides these syntactic arguments, from a semantic point of view isolated n-words, used as answers to negative wh-questions, have a meaning that contrasts with the necessary specific interpretation characteristic of Topic constituents (Cohen and Erteschik-Shir 2002).[17] This interpretation is compatible with the indefinite meaning of n-words, be it the indefinite PI variant (*n-word$_1$*) or the indefinite negative quantifier variant (*n-word$_2$*). When isolated n-words in answers are indefinite PIs, they must be interpreted in relation to a wh-domain constituted

[16] Some arguments in support of the claim that preverbal n-words fail the tests of Topichood, taken from Vallduví (1993) and Espinal (2007), are the following: when a contrastive context is built into the wh-question, the n-word is diagnosed as a Contrastive Focus rather than as a Topic; n-words cannot appear to the left of fronted wh-questions as Topics do; unlike left-detached complements, n-words do not allow a coindexed clitic attached to the verb; unlike left-detachment, which allows several fronted constituents, preverbal argumental n-words are usually reduced to one single constituent (with the exception of specific n-word combinations with adjuncts; e.g., *mai* 'never'); unlike subjects from embedded clauses, n-words cannot be left-adjoined to the matrix sentential node; and unlike preverbal subjects, n-words are not interpreted as informational links to a previous discourse.

[17] According to Kiss's (1998) distinction between identificational focus and information focus, isolated n-words should be said to express exhaustive identification and, therefore, to function as identificational focus, which is identified as the exhaustive subset of the set of contextually or situationally given elements for which the predicate phrase actually holds. See also Szabolcsi (1981), who regards exhaustive listing as the predominant semantic characteristic of Focus.

by a set of individual entities. As a result, the variable n-word is under the scope of the negative logical operator occurring in the background question, thus entailing that no individual of the set of relevant entity-type denoting expressions can be interpreted as an argument of the predicate provided by the background question. When isolated n-words in answers are indefinite negative quantifiers, by contrast, they must be interpreted in relation to a wh-domain formed by a set of generalized quantifier expressions, and the output interpretation is therefore that the negative generalized quantifier applies as a function to the predicate provided by the discourse question.[18]

To sum up, in this section we have presented the two main theoretical assumptions that guide our analysis of argumental n-words used as answers to negative wh-questions. First, we have analysed n-words as lexically ambiguous between PIs, which can participate in a syntactic relation of NC (*n-words*$_1$), and indefinite negative quantifiers (*n-words*$_2$), which cannot. Second, we have argued that preverbal and isolated argumental n-words must be considered Focus constituents, and that interpretively they function as Focus. This is why in answers to constituent wh-questions, our analysis of isolated argumental n-words (which are in Focus) leads to a Background-Focus structure along the lines which will be developed in Section 4.

3. Isolated argumental n-words analysed in terms of ellipsis

[18] We will come back to this issue, namely the two possible ways of conceiving the wh-domain (as either a set of entities of type ⟨e⟩ or a set of generalized quantifiers of type ⟨⟨e,t⟩t⟩), in Section 4.

For the time being, we would like to point out that positive universal quantifiers such as Spanish *todo el mundo* lit. all the world 'everybody' or Catalan *tothom* 'everybody' would not be felicitous as answers to negative wh-questions; they are only so to positive ones. The inability of ordinary universals to scope over negation has also been observed for Greek (Veloudis 1982, Giannakidou 2000) and Hungarian (Szabolcsi 1981), but is less clear in English (Beghelli and Stowell 1997).

Before presenting our own analysis, in this section we evaluate the extent to which it is possible to explain the interpretation(s) that n-words may have as answers to negative wh-questions in NC languages in terms of ellipsis. In Section 3.1 an ellipsis account *à la* Merchant (2001, 2004) is combined with an analysis of NC *à la* Zeijlstra (2004 and ff.). In Section 3.2 we evaluate the predictions of a semantic ellipsis account. It will be shown that, as they stand, neither of these approaches allows us to account for the single negation reading of n-words in Catalan and Spanish answers to negative wh-questions.

3.1. A syntactic ellipsis account

In this section we will show that, combining Zeijlstra's (2004, and ff.) analysis of NC in Romance –conceived as syntactic Agree– with Merchant's (2001, 2004) clausal ellipsis account of fragment answers, DN is predicted to be the only possible interpretation associated with Catalan and Spanish n-words used as answers to negative wh-questions. This follows from the presence of two [iNEG] features in the syntactic structure: one in the covert $Op\neg_{[iNEG]}$ that licenses the isolated n-word moved to a syntactic Focus position, and another one that is copied from the negative wh-question, as shown in (14) and (15).[19] These structures would be postulated for the Spanish fragment answers in (6A) and (7A), respectively, repeated here for convenience as (16A) and (17A).[20, 21]

[19] As already pointed out by Biberauer and Zeijlstra (2012: 352) for Italian, under a syntactically-oriented approach Spanish sequences of the sort *Nada ... no*, and *Nadie no...*, are predicted to be ungrammatical because $no_{[iNEG]}$ does not c-command the preverbal n-word [uNEG]. Such a configuration triggers the presence of a covert c-commanding $Op\neg_{[iNEG]}$, DN being the only possible interpretation that can be obtained.

[20] One could assume that object and subject n-words should be interpreted differently, since object n-words could in principle have their [uNEG] feature checked prior to Focus movement. The prediction would be that object n-words should preferably license a single negation reading, whereas subject n-words should license a positive one. However, in Espinal et al. (2015) no subject-object difference has been observed in Catalan, and only a slight difference in Spanish. This difference,

(14) [Op¬$_{[iNEG]}$ [$_{FocP}$ nadie $_{[uNEG]}$ [E] [$_{TP}$ ~~t$_i$ no$_{[iNEG]}$ llevaba gafas~~]]]

(15) [Op¬$_{[iNEG]}$ [$_{FocP}$ nada$_i$ $_{[uNEG]}$ [E] [$_{TP}$ ~~los estudiantes no$_{[iNEG]}$ han leído t$_i$~~]]]

(16) Q: ¿Quién *no* llevaba gafas?
who not wore glasses
'Who wasn't wearing glasses?'
A: *Nadie*.
nobody (= Nobody was wearing glasses)

(17) Q: ¿Qué *no* han leído los estudiantes?
what not have read the students
'What didn't the students read?'
A: *Nada*.
nothing (= The students didn't read anything)

Recall that the analysis of fragment answers as complete sentences that have undergone ellipsis (Merchant 2001, 2004; Merchant et al. 2013) proceeds in two steps: first, the fragment is A'-moved from its first Merge position to a functional category in the left periphery, which results in the need for a last resort Op¬$_{[iNEG]}$ that c-commands a [uNEG] feature of the n-word, so that Agree can delete it; second, PF-deletion of the rest of the clause applies.[22]

For the present purposes what is crucial is that following this combined syntactic analysis of argumental isolated n-words as fragment answers, the single

nonetheless, would support that objects are less often interpreted as conveying DN when compared to subjects. We thank M. Labelle (p.c.) for pointing this out to us.

[21] In the syntactic representations of this section we omit, for simplicity, the semantic binding of the [+σ] feature.

[22] The arguments gathered in Merchant (2004) to sustain the movement part of his analysis of fragments are many and varied: preposition stranding, the distribution of pronominals in various languages, islands, complementizer deletion, c-selectional effects in raising and control infinitivals, restrictions in predicate answers in English, the distribution of polarity items in English, Greek and Irish, generic objects in Turkish and caseless fragments in Korean and Japanese. The evidence for ellipsis is also vast: connectivity effects involving case-matching in a variety of languages, Greek anaphoric dependencies, binding and the distribution of scope and bound pronouns in English.

440 negation interpretation illustrated in (16A) and (17A) cannot be explained
441 straightforwardly, unless an extra assumption (i.e., that the negated part of the
442 negative question *may but does not have to* license the elided part) is introduced in
443 the discussion (Zeijlstra 2004).[23]

444 Among NC languages, the situation in Catalan poses an additional challenge
445 for an account that combines syntactic Agree and ellipsis. As illustrated in (18), for
446 a population of native speakers of Catalan the sentential negative marker optionally
447 co-occurs with preverbal n-words.

448 (18) *Ningú* (*no*) porta ulleres. (Catalan)
449 nobody not wears glasses
450 'Nobody is wearing glasses.'

451 The optionality of *no* has been a serious puzzle for all theories of NC that have
452 attempted to account for the Catalan data. Both van der Wouden and Zwarts (1993)
453 and, more recently, Zeijlstra (2004) have postulated the existence of two dialects of
454 Catalan in an attempt to account for such optionality. The latter, in particular,
455 assumes that this language manifests in "one variety that is a Strict NC variation
456 (Catalan I), and one variety that exhibits Non-Strict NC behaviour (Catalan II)"
457 (Zeijlstra 2004: 133).[24] This same author further assumes that there is a crucial
458 difference between the two varieties of Catalan with respect to the featural content

[23] A reader might suggest that if it is assumed that the n-word reconstructs to its base-generated position under the scope of negation instead of remaining in Spec,FocP, the NC reading of the fragment answer can be straightforwardly explained. However, as has been shown in Section 2.2, n-words as answers to negative wh-questions must be considered instances of (identificational) focus. In addition, if reconstruction of n-words in Spec,FocP were possible, we would expect the reconstructed answer (e.g. *No llevaba gafas nadie*, lit. not wore glasses nobody, 'Nobody was wearing glasses') to be acceptable as an answer to a wh-question such as (16Q). However, in such a context it is not appropriate to use a postverbal n-word with a falling boundary tone. Sentences where the n-word occurs in postverbal position (e.g., *Los estudiantes no han leído nada*, lit. the students not have read nothing, 'The students didn't read anything') are also inappropriate as answers to wh-questions about the object argument.

[24] NC is referred to as Strict if the sentential negative marker always co-occurs with the n-words in all contexts. Conversely, NC is Non-Strict if the sentential negative marker co-occurs with postverbal n-words, but needs to be absent when n-words occur preverbally (Giannakidou 1998).

of the sentential negative marker: while in Catalan I (i.e., the variety where a preverbal n-word is followed by *no*), the sentential negative marker is assumed to bear a [uNEG] feature, in Catalan II (i.e., the variety where a preverbal n-word is not followed by *no*) it is assumed to carry an [iNEG] feature. As illustrated in (19), a Catalan I sentence containing a preverbal n-word and the sentential negative marker would accordingly be analysed with a covert Op¬, defined as [iNEG], simultaneously licensing the preverbal n-word and the sentential negative marker, both characterised as [uNEG].[25]

(19) Op¬$_{[iNEG]}$ ningú $_{[uNEG]}$ no $_{[uNEG]}$ porta ulleres (Catalan I)

In Catalan II, by contrast, as shown in (20), there is no overt sentential negative marker co-occurring with preverbal n-words and, hence, a covert Op¬$_{[iNEG]}$ licenses the n-word.[26]

(20) Op¬$_{[iNEG]}$ ningú $_{[uNEG]}$ porta ulleres (Catalan II)

By itself, however, Zeijlstra's analysis does not predict the possible DN interpretation that a population of native speakers of Catalan may attribute to

[25] In contrast to Zeijlstra's proposal, we assume that in all varieties of Catalan single negation corresponds to an overt sentential negative marker that always carries an [iNEG] feature. Regarding the population of speakers of this language that optionally use *no* with preverbal n-words (a variety that does not correspond to a Strict NC language), we postulate that the speakers' lexicon has, in addition to a no_1 variant characterized [iNEG], a polarity-like no_2 (lit. not) marker, characterized [+σ], that we postulate both for NC structures of the sort preverbal n-words + *no* + V and in prototypical pleonastic or expletive negation contexts (cf. Jespersen 1917, a. o.). The fact that no_2 needs an antiveridical operator as a licenser explains why it cannot appear in non-veridical contexts such as those introduced by conditional or interrogative operators.

See Longobardi (2014) for the hypothesis that Catalan *no* is ambiguous, a topic which we will not develop any further because it is beyond the scope of the present article. See Déprez et al. (2015) for empirical support for the lexical ambiguity of n-words, and the possible ambiguity of *no* in Catalan.

[26] Following Zeijlstra (2004), given that the sentential negative marker is defined as [uNEG] in Catalan I, an Op¬ with a licensing [iNEG] feature is required even when there is no n-word present in the derivation. This is illustrated in (ia). In Catalan II, by contrast, the sentential negative marker carries an [iNEG] feature, as illustrated in (ib).

(i) En Joan *no* porta ulleres
the John not wears glasses
'John isn't wearing glasses.'
a. En Joan *Op*¬$_{[iNEG]}$ no$_{[uNEG]}$ porta ulleres (Catalan I)
b. En Joan no$_{[iNEG]}$ porta ulleres (Catalan II)

In Zeijlstra's (2004) account, Catalan I is assumed to align with Strict NC languages like Romanian, while Catalan II is assumed to align with Non-Strict NC languages like Spanish.

isolated n-words in answers to negative wh-questions (see Section 1.2). See example (21).

(21) Q: Qui *no* porta ulleres?
who not wears glasses
'Who is not wearing glasses?'
A: *Ningú*.
nobody (= Nobody is wearing glasses / Everybody is wearing glasses)

However, in combination with Merchant's (2001, 2004) deletion under ellipsis a DN interpretation is the only reading that is predicted to arise in Catalan.

Following such a syntactic analysis, consider the structure in (22) for isolated n-words in Catalan I (Zeijlstra's Strict NC variety). The Op¬$_{[iNEG]}$ that licenses the n-word in Focus (inherently specified with a [uNEG] feature; cf. our *n-words$_1$* variant) and the Op¬$_{[iNEG]}$ that licenses the sentential negative marker copied from the negative wh-question would cancel each other out, thus yielding a DN reading, contrary to the only possible interpretation that one population of speakers associate with this sentence.

(22) [Op¬$_{[iNEG]}$ [$_{FocP}$ ningú$_{i\ [uNEG]}$ [E] [$_{TP}$ ~~t$_i$ Op¬$_{[iNEG]}$ no $_{[uNEG]}$ porta ulleres~~]]]

In Catalan II (Zeijlstra's Non-Strict NC variety), two instances of [iNEG] (one in the Op¬ and one in the copied sentential negative marker) would also co-occur. As shown in (23), a DN reading would again be the only possible interpretation for the isolated n-word.

(23) [Op¬$_{[iNEG]}$ [$_{FocP}$ Ningú$_{i\ [uNEG]}$ [E] [$_{TP}$ ~~t$_i$ no $_{[iNEG]}$ porta ulleres~~]]]

In conclusion, a purely syntactically-oriented account that combines an analysis of n-words merging with a [uNEG] feature at narrow syntax with an analysis of isolated n-words as subject to syntactic clausal ellipsis cannot account

for the single negation interpretation of Catalan and Spanish isolated n-words, unless for these languages it is claimed that VP-ellipsis may apply too (as we discussed for English and German (4) and (5)). The problem is that we do not have any sort of evidence from Catalan or Spanish to claim that isolated n-words are sometimes the output of clausal ellipsis (with negation in the TP domain, which would guarantee a DN reading) and other times the output of VP-ellipsis (which would guarantee a single negation reading). Furthermore, a syntactic ellipsis account would not be able to explain the fact that a single negation interpretation for isolated argumental n-words is generally preferred by native speakers in both Catalan and Spanish.[27]

Similarly, if an ellipsis account is combined with the assumption that n-words are inherently negative quantifiers (our *n-words*$_2$ variant), the result is not any better, for we continue to obtain only a DN reading. In that case, in contrast to the structures in (22) and (23) above, having an n-word semantically defined as ¬∃ would constitute a first source of negation, whereas the negative operator (either covert or overt, specified as [iNEG]) associated with the negative question would

[27] An additional problem for this syntactically-oriented approach appears when Romanian data are considered. In Romanian, a Romance Strict NC language, the n-word in (iA) can only receive a single negation interpretation. However, when combining Zeijlstra (2004) and Merchant (2001, 2004), we would predict the structure seen in (ii).

(i) Q: Ce *nu* au citit studenţii? (Romanian)
what not have read the students
'What didn't the students read?'
A: *Nimic*.
nothing (= The students didn't read anything)

(ii) [*Op*¬ [iNEG] [FocP nimic$_i$ [uNEG] [E] [~~TP *Op*¬ [iNEG]~~ [~~TP studenţii nu [uNEG]~~ ~~au citit~~]]]]

Following the models under discussion, this structure contains two Op¬ specified as [iNEG], one that licenses *nimic* and another one that licenses *nu*. These operators are predicted to cancel each other out, thus yielding a positive interpretation for (iA). Contrary to this theoretical prediction, our informants agree on the claim that a DN reading cannot possibly be obtained for isolated n-words even if a special marked intonation is provided. Incidentally, one of our informants (E. Ciutescu, p.c.) reports that n-words in Romanian can only be interpreted as conveying DN when they are part of a full structure with two n-words and the sentential negative marker (n-word + *nu* + V + n-word), and some special stress is added to the first n-word, thus confirming Falaus' (2007) claims for this language.

515 constitute a second source of negation. Both negations would cancel each other out,
516 thus resulting in DN.
517 In the next section we consider a semantic ellipsis account for n-words acting
518 as fragment answers to negative wh-questions. We show that this account suffers
519 from similar shortcomings.
520
521 *3.2. A semantic ellipsis account*
522 Apart from the limitations that have been raised in the previous section, the analysis
523 of fragment answers as complete sentences that have undergone ellipsis (Merchant
524 2001, 2004; Merchant et al. 2013) has some additional problems. First, establishing
525 what constitutes the antecedent of a fragment is not uncontroversial, since it has
526 been regarded as a question either of syntactic LF isomorphism (cf. Watanabe
527 2004) or of semantic propositional isomorphism (cf. Giannakidou 2000, 2006).
528 The first solution will have the same problems as a narrow syntactic analysis
529 has both for n-words of the type *n-word*$_1$ (i.e., n-words merging a [uNEG] feature)
530 and for n-words of the type *n-word*$_2$ (i.e., negative existential quantifiers). More
531 specifically, although applying syntactic LF isomorphism to Catalan and Spanish
532 may correctly predict the meaning of isolated n-word answers produced with an
533 unmarked intonation contour, the grammatical motivation for copying more or less
534 syntactic material from the question into the answer looks like a stipulation. Thus,
535 under such an ellipsis account, the DN and single negation readings should be
536 argued to follow from two different LFs in association with n-words of the type *n-*
537 *word*$_1$; that is, the DN reading would result from (24Aa), which contains the
538 sentential negative marker present in the antecedent question, and the single

539 negation reading would follow from (24Ab), which does not contain a sentential
540 negative marker in the discourse context.
541 (24) Q: ¿Quién [$_{NegP}$ no $_{[iNEG]}$ [$_{TP}$ ha comido postre]]? (Spanish)
542 who not has eaten dessert
543 'Who didn't eat dessert?'
544 A: a. [Op¬$_{[iNEG]}$ [$_{FocP}$ nadie $_{[uNEG]}$ [$_{NegP}$ no $_{[iNEG]}$ ha comido postre]]]
545 nobody not has eaten dessert
546 b. [Op¬$_{[iNEG]}$ [$_{FocP}$ nadie $_{[uNEG]}$ [$_{TP}$ ha comido postre]]]
547 nobody has eaten dessert
548 Assuming that n-words are negative quantifiers (i.e., of the type *n-word*$_2$)
549 would require the same operation for the right readings to emerge: if the sentential
550 negative marker is present in the antecedent question, the negative quantifier would
551 convey a DN reading; if the sentential negative marker is absent, the negative
552 quantifier would lead to a single negation reading. However, what remains
553 uncertain in this type of analysis is how speakers determine exactly which material
554 from the antecedent question gets copied onto the answer (either NegP or TP).
555 Let us now consider whether the two meanings of the fragment answers in (24)
556 can be composed by applying a semantic propositional isomorphism.
557 Defendants of this approach, such as Giannakidou (2000, 2006), assume in line
558 with Karttunen (1977) that questions denote the set of their true answers.
559 Giannakidou's (2006) idea is that the "negative meaning in elliptical fragments then
560 arises not as an inherent contribution of the n-words, but rather as the result of their
561 being associated with negation at the level at which ellipsis is resolved" (p. 363). In
562 other words, following Merchant (2001), Giannakidou claims that the elliptical
563 proposition is licensed semantically if it can be inferred from the antecedent

question. Hence, an answer such as *nadie* to a negative wh-question such as (24Q) would have to be interpreted as being the elliptical counterpart of one of the answers in the wh-set in (25), namely the last one in the set.

(25) Wh-set of answers: {Juan didn't eat dessert, Pedro didn't eat dessert, someone didn't eat dessert, everybody didn't eat dessert, nobody didn't eat dessert}

At this point we must consider what sort of negation is expressed in negative wh-questions of the sort exemplified in (24Q). Following Ladd (1981), Romero and Han (2004), and Reese (2006), we claim that these type of negative wh-questions can only express *inner / inside* negation, as supported by the morphosyntactic distribution of the negative PI *tampoco* 'either' (vs. the positive PI *también* 'too'). Therefore, we hold that these negative wh-questions are not ambiguous.

(26) ¿Quién *no* ha comido postre *tampoco* /**también*? (Spanish)
who not has eaten dessert either too
'Who didn't eat dessert either /*too?'

Moreover, questions containing inner negation are negatively biased and require a non-neutral context, in the sense that the question is about the proposition that *Someone didn't eat dessert* (see also the discussion around examples (1) and (2) above), which means that this type of question is felicitous when there is compelling contextual evidence against *p* (*p* being in this particular case *Everybody ate dessert*) (cf. Büring and Gunlogson 2000).

Giannakidou (2006) postulates that n-words can be either universal quantifiers or existential ones, with the idea that the universal negation is equivalent to the existential version. That is, $\forall x$ [PERSON(x) $\rightarrow$ $\neg$eat(dessert,x)] is equivalent to $\neg\exists x$ [PERSON(x) & eat(dessert,x)] for *Nadie ha comido postre*. However, in (24) the

prediction would be that the isolated argumental n-word *Nadie* stands for *Nadie no ha comido postre* lit. nobody not has eaten dessert, which contains the inherent negation driven by the n-word (¬∃, our *n-word*$_2$) plus the inner negation conveyed by the negative question. That is, *Nadie* would stand for the following logical representation: ¬∃x [PERSON(x) & ¬eat(dessert,x)]. Accordingly, *Nadie* as an answer to *¿Quién no ha comido postre?* could only be interpreted as conveying a DN reading.[28, 29]

3.3. Summary

To sum up, in this section we have reviewed three different analyses for fragment answers, and we have shown that only one of them (the one based on LF isomorphism) can account for the two possible readings that Spanish (and Catalan) speakers attribute to isolated argumental n-words as answers to negative wh-questions, but only under the dubious assumption that there is a grammatical criterion for deciding how much material from the question gets copied. The other two approaches (the syntactic ellipsis account and the semantic propositional isomorphism) can only predict the DN reading, which means that a not insignificant amount of data still remains to be explained.[30]

[28] As discussed in Reese (2006: 336), a similar problem arises from the semantic approach of Romero and Han (2004) inside negative polar questions, where the proposition in the scope of the VERUM operator is ¬φ. If a *no* answer negates the embedded proposition, then it should convey φ rather than ¬φ.

[29] Giannakidou's (2000: 501) analysis for a Strict NC language like Greek makes a distinction between ordinary universal quantifiers (e.g., *kathe* 'every'), which cannot take scope over negation, and more specific universal quantifiers (e.g., KANENAS 'nobody') that are lexically specified as universals that take scope over negation. The universal-over-negation reading of universal emphatics is achieved by Quantifier Raising at LF. However, the analysis of emphatic quantifiers in Greek cannot be extended to n-words in Catalan and Spanish; this is an additional argument for exploring a new account for the interpretation of n-words in Catalan and Spanish.

[30] See also de Swart (2010: 30-34) for an overview of the arguments in favour of and against an ellipsis account of fragment answers.

607 This discussion leads us to consider that an alternative analysis of isolated
608 argumental n-words as answers to negative wh-questions needs to be developed.
609 This new analysis should account not only for the marked DN reading that one
610 population of Catalan and Spanish speakers associate with n-words, but, crucially,
611 also for the unmarked single negation reading that another population of Catalan
612 and Spanish speakers associate with isolated n-words.
613 We have additionally argued that, since the negative wh-questions under study
614 contain an inner negation, we are dealing not with cases of denial but rather with
615 NC vs. DN contrasts at the level of Question-Answer pairs.
616
617 **4. Towards a new analysis for interpreting argumental n-words**
618 Recall from Section 1.2 that the main goal of this paper is to account for the
619 'surprising' single negation reading that Catalan and Spanish isolated argumental n-
620 words may express when they are used as answers to negative wh-questions. In
621 Section 2 we argued that for one population of speakers of these languages n-words
622 are mainly indefinite PIs, characterized inherently with a [+σ] semantic formal
623 feature. For these speakers n-words become syntactically negative only after merge
624 with a formal [uNEG] feature, and an Agree relation is established with a negative
625 operator characterized with a formal [iNEG] feature. We pursue the idea that polar
626 n-words that are in an Agree-chain with a negative operator specified [iNEG] entail
627 semantically a numeral zero meaning. In this section we will show how this
628 inference is obtained.
629 Recall also from Section 2.1 that a second population of speakers has access to
630 n-words characterized as indefinite negative existential quantifiers. This variant,
631 which corresponds to a generalized quantifier defined semantically as

$\lambda P \neg \exists x[P(x)]$, can neither merge with [uNEG] nor participate in NC (see footnote 13).

We assume from Section 2.2 that the isolated argumental n-word answer corresponds to the wh-part of the constituent question and is identified with a syntactic Focus position, independently of whether the argumental n-word is an indefinite PI or an indefinite negative quantifier.

In this section we explore an analysis of isolated n-words as focus answers to background negative questions along the lines of the semantic ellipsis account that follows from the Structured Meaning approach developed by von Stechow (1991) and Krifka (2001, 2004, 2007, 2011). We distinguish between an analysis of isolated n-words conceived as indefinite PIs and an analysis of isolated n-words as existential negative quantifiers. We postulate a congruency criterion on Question-Answer pairs as defined in Krifka (2004). By combining the lexical ambiguity of n-words with the congruency criterion, we explain that the single negation reading of isolated n-words correlates with the polarity variant, whereas the DN reading correlates with the negative quantifier variant.

The idea in the Structured Meaning approach is that "a wh-question sets the background for an answer, which, in turn, determines the focus of the answer" (von Stechow 1991: 38). Accordingly, the meaning of a fragment answer, like the meaning of a full sentence, is organized into a *background* (B) part and a *focus* part (i.e., a ⟨B,F⟩ information structure). Isolated n-words used as fragment answers must be considered focus with respect to background questions, and, as focus constituents, they determine a structured meaning. Furthermore, the isolated n-words, as focus, are an element of the domain of the question. That is, with respect to the wh-constituent question, the n-word answer indicates the existence of a set of

657 alternatives of the denotation (Krifka 2007): the alternative denotations must be
658 comparable to the denotation of the expression in focus, and must be of the same
659 type (entities ⟨e⟩, or generalized quantifiers ⟨⟨e,t⟩t⟩), and of the same ontological
660 sort (persons, things, places, etc.).[31]

661 This Structured Meaning approach to Question-Answer pairs, applied to the
662 meaning of isolated answers to constituent questions, predicts: (i) that the n-word
663 that appears in the Answer indicates the existence of a wh-set of potential answers
664 and triggers a set of alternatives for interpretation; and (ii) that the n-word Answer
665 must be congruent with respect to the Question.

666 Regarding the first of these predictions, it should be noted that since native
667 speakers of Spanish (and Catalan) take n-words as being either indefinite PIs or
668 indefinite negative quantifiers, and n-words are always the focus of the information
669 structure, two different wh-domains may be relevant when interpreting a Question-
670 Answer pair such as the one given in (24), repeated in (27) for convenience, namely
671 (28a) or (28b). In (28a) the wh-domain is constituted by a set of entities of type ⟨e⟩:
672 *j* stands for the denotation of *Juan*, *m* stands for the denotation of *María*, and –
673 among others– $x_{[+\sigma]}$ stands for the denotation of the indefinite expression $nadie_1$, a
674 variable inherently specified with the semantic [+σ] feature. By contrast, in (28b)
675 the wh-domain is formed by a set of generalized quantifiers of type ⟨⟨e,t⟩t⟩:
676 *λR[R(j)]* denotes the set of sets of which *Juan* is a member, *λQ[Q(m)]* denotes the

[31] Krifka (2007) opposes the term *expression focus* (ia) to *denotation focus* (ib), defined in the following terms:
(i) A property F of an expression α is a Focus property iff F signals
a. that alternatives of (parts of) the expression α or
b. alternatives of the denotation of (parts of) α
are relevant for the interpretation of α.

set of sets of which *María* is a member, and –among others– $\lambda P \neg \exists x[P(x)]$ is the semantic interpretation of the negative existential quantifier *nadie*$_2$.[32]

(27) Q: ¿Quién *no* ha comido postre? (Spanish)

who not has eaten dessert

'Who didn't eat dessert?'

A: *Nadie*.

anybody // nobody

(28) a. Wh-domain$_1$: M = {j, m, ..., $x_{[+_o]}$}

b. Wh-domain$_2$: M = {λR[R(j)], λQ[Q(m)], …, λP¬∃x[P(x)]}

Regarding the second prediction, in a Structured Meaning approach to the meaning of Answers, the latter are conceived as congruent or incongruent with respect to the Question. But what does it mean to be a 'congruent answer'? And, more specifically, what is a congruent answer to a negative wh-question? According to Krifka (2008) "the obvious congruence criterion in this representation is that the question meaning should correspond to the background of the answer, in the sense that the question meaning differs from the background of the answer only insofar as it might have more restricted domains. (…) In addition, the focus must be an element of the domain of the question" (Krifka 2008: 149).[33] N-words do not escape this congruence criterion. However, in addition, n-words satisfy the negative bias of negative wh-questions in the following terms.

[32] A reviewer is concerned about the accessibility of these two domains by native speakers that have the two variants in their lexicon. We think that access to either one or the other of these two indefinite variants is free, and that the final choice made determines whether a single negation or a DN is compositionally composed.

[33] These two conditions are represented as follows (Krifka 2008: 149):

(i) A question – answer pair Q - A with meanings ⟦Q⟧ and ⟦A⟧ = <B,F> is congruent if and only if:

a. ⟦Q⟧⊆ B

b. F ∈ DOM(⟦Q⟧)

Negative wh-questions are interpreted as requests regarding a negative proposition and restrict future moves. Along the lines of Cohen and Krifka (2011) and Krifka (to appear), negative wh-questions are speech acts that can be seen as functions from input commitments to output commitments. Input commitments correspond to the set of commitment states that constitute the commitment space with respect to which the negative wh-question must be interpreted, and they include the commitment state that there is compelling contextual evidence against *p*. Going back to the relevant question in (27), its meaning can be defined as in (29).[34]

(29) $\langle \ldots, C \rangle + \text{REQUEST}_{S1,S2}(\text{ASS}(\neg p))$

where $\neg p = [\neg \text{ATE}(\text{DESSERT})(\text{WHO})]$

and $\exists c \in C \mid c: \exists x\, [\neg \text{ATE}(\text{DESSERT})(x)]$

Output commitments relate to the expected negative reply of such a negative question.[35]

With respect to the meaning of the question as expressed in (29), depending on whether the wh-domain is (28a) or (28b), the final interpretation associated with the isolated n-word used as a fragment answer is going to be single negation or DN. Furthermore, in both cases the Answer is going to be congruent relative to the Question, in accordance with Krifka's criterion.

How are the two meanings composed? When the wh-domain is of the type in (28a) the interpretation of the focus answer in (27A) has the structured property in (30), with a B(ackground) part that comes from the meaning of the question and a

[34] C is a commitment space, a set of commitment states; c is a specific commitment state corresponding to the presupposition of the negative wh-question; REQUEST corresponds to a request question between S1, the speaker, and S2, the hearer; this REQUEST operation applies to an assertion ASS of a negative proposition.

[35] It would not be appropriate as a future move to the question in (27) to reply, for example, *todos* 'everyone'. This positive universal quantifier in the reply would pragmatically clash with the negative question. See note 18 above.

F(ocus) part that is a member of the domain of the question. In this logical formula the B part is the functor and the F part is the argument.

(30) $\langle \lambda x[\neg \text{ATE}(\text{DESSERT})(x)], \langle x_{[+_o]} \rangle \rangle$

Notice that the B part contains a logical negative operator, and the F contains the lexical meaning associated with *n-words*$_1$ when conceived as PIs: they contribute a variable that in the case of *nadie*$_1$ has additional properties: being countable and of the person ontological sort, which must be taken as additional felicity conditions on the interpretation of the variable. Since this variable is under the scope of the only negative logical operator occurring in the B part, an inference that follows is that *quantity(x)=0*. This inference is not part of the lexical meaning of the variable x, since it is deduced only when the variable it introduces is under the scope of the negative logical operator occurring in the B part.[36] In that case the negative propositional antecedent corresponding to the B question combines at the level of logical representation with the lexical endowment of an *n-word*$_1$, yielding a single negation reading.

We therefore explain the possible single negation reading of the Spanish isolated n-word in (27) (like the previous ones in (6) and (7)) by inferring the negative meaning of *n-words*$_1$, when used as focused answers, from their being under the scope of a negative logical operator coming from the background discourse. In this way the single negation interpretation for isolated argumental n-

[36] The claim that this entailment is not part of the lexical endowment of the n-word is due to the fact that n-words of the type PI (*n-word*$_1$), mainly in Catalan, can also occur in other polarity contexts (interrogatives, conditionals) where the inferred *quantity(x)* might be 0, 1 or more than 1.

(i) a. Has vist *res*?
have.2SG seen anything
'Did you see anything?'
b. Si veus *res*, avisa'm.
if see.2SG anything tell.me
'If you see anything, let me know.'

words as fragment answers to negative wh-questions is semantically predicted to be possible, although it is not the output of syntactic NC.

Suppose, by contrast, that the wh-domain with respect to which the answer to the negative wh-question in (27) is computed is that given in (28b). In that case, the logical representation corresponding to the ⟨B,F⟩ information structure would require a more elaborate form in which the F part (the generalized quantifier) is the functor, and the B part (the structured property corresponding to the wh-question) is the argument. In (31) we use script $\wp$ as a symbol for such higher-order generalized quantifiers that take the B part as their argument.

(31) $\lambda\wp\,.\,\wp\,\{\lambda x[\neg \text{ATE}(\text{DESSERT})(x)]\}$

By applying the contents of the negative existential quantifier to this formula, the semantic derivation is as shown in (32).

(32) $\lambda\wp\,.\,\wp\,\{\lambda x[\neg \text{ATE}(\text{DESSERT})(x)]\}\ (\lambda P\neg\exists y[P(y)])$

$= \lambda P\neg\exists y[P(y)]\{\lambda x[\neg \text{ATE}(\text{DESSERT})(x)]\}$

$= \neg\exists y[\lambda x[\neg \text{ATE}(\text{DESSERT})(x)](y)]$

$= \neg\exists y[\neg \text{ATE}(\text{DESSERT})(y)]$

In this case the B part contains a logical negative operator, and the F contains a logical negative operator too, which is overtly expressed in the case of English *nobody*: *¬body* but covertly expressed in the case of Spanish (and Catalan) *n-words*$_2$, when conceived as negative existential quantifiers such as *nadie*$_2$: $\lambda P\neg\exists x[P(x)]$. The output interpretation of such an Answer, given the computation in (32), conveys compositionally a DN reading, which is inferred only by some segment of the population of the languages we here describe (see Section 1.2 above).

To sum up, in this section we have shown that argumental n-words used as fragment answers to negative wh-questions impose special restrictions on Question-Answer pairs, depending on whether their lexical semantics is that corresponding to indefinite polarity variables $x_{[+_\sigma]}$ of type ⟨e⟩, or to indefinite negative existential quantifiers $\lambda P \neg \exists x[P(x)]$ of type ⟨⟨e,t⟩t⟩. We have argued that isolated argumental n-words that convey a single negation reading correspond to *n-words*$_1$, whereas those that convey a DN reading correspond to *n-words*$_2$. That is, for those speakers that treat n-words as indefinite PIs (the *n-word*$_1$ variant), isolated argumental n-words used as fragment answers to negative wh-questions are interpreted as conveying a single negation reading, since n-words contribute a variable in F that cannot cancel the logical negative operator in B, but can entail a numeral zero interpretation. Conversely, for those speakers that treat n-words as negative quantifiers, isolated argumental n-words (in the competing *n-word*$_2$ variant) are interpreted as conveying a DN reading when they occur as answers to negative wh-questions. That is, when used as fragment answers to negative wh-questions, only *n-words*$_2$ contribute a negative operator in F that cancels the logical negative operator in B.

5. Conclusions

In this article our point of departure was the empirical fact that in Catalan and Spanish two possible interpretations may be attributed to isolated argumental n-words when used with a falling boundary tone (i.e., the unmarked one) as fragment answers to negative wh-questions (Espinal et al. 2015).

We have argued that n-words come in two types: the PI variant, which may acquire a formal [uNEG] feature when it occurs in negative syntactic contexts,

yielding a NC structure, and the negative quantifier variant, which does not participate in NC structures. We have semantically characterized *n-words*$_1$ as variables carrying a polarity-sensitive formal feature (i.e., $x_{[+\sigma]}$), and *n-words*$_2$ as negative generalized quantifiers (i.e., $\lambda P \neg \exists x[P(x)]$).

We have argued that a population of speakers have access to the *n-word*$_1$ variant; this variant is licensed in polarity contexts, and in NC configurations mediated by syntactic Agree. Another population of speakers have access to the *n-word*$_1$ variant but also to a competing *n-word*$_2$ variant. This variant does not participate in NC structures, but it guarantees a possible DN reading when n-words combine with a second negative logical operator, triggered by either a sentential negative marker or an additional negative quantifier.

We have also argued that isolated n-words are in Focus when they are used as fragment answers, no matter whether they correspond to indefinite variables or indefinite negative quantifiers, and no matter whether the final interpretation is single negation or DN.

We have discussed the shortcomings of both syntactic and semantic ellipsis accounts when it comes to explaining the possibility of a single negation interpretation for isolated n-words when used as fragment answers to negative wh-questions in Catalan and Spanish. Negative wh-questions express inner negation, and convey a backgrounded attribute against *p*. With respect to this non-neutral biased context, an n-word answer is congruent since it is an element of the domain of the wh-question. The n-word answer indicates the existence of a set of alternatives of the denotation, either a set of entities of type ⟨e⟩ or a set of generalized quantifiers of type ⟨⟨e,t⟩t⟩.

812 Finally, following a Structured Meaning approach to the semantics of
813 Question-Answer pairs, we have presented a new account of the two possible
814 readings that native speakers of Catalan and Spanish assign to isolated argumental
815 n-words used as answers to negative wh-questions. We have correlated the two
816 lexical characterizations of n-words with the two possible final interpretations that
817 can be inferred, namely the single negation reading (which combines the logical
818 negative operator in the wh-question with the *n-word*$_1$ variant), and the
819 compositional DN reading (which follows from the cancellation of a logical
820 negative operator in the wh-question by the negative quantifier variant of an *n-*
821 *word*$_2$). Furthermore, we have shown that the possible single negation reading
822 assigned to isolated *n-words*$_1$ is not the output of syntactic NC but rather an
823 inference driven when these items are interpreted against background negative wh-
824 questions that are requests regarding a negative proposition.
825
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