

A compositional analysis of French negation

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“*Rien, ce n'est pas rien! La preuve, c'est que l'on peut le soustraire. Exemple: rien moins rien = moins que rien! Une fois rien, c'est rien; deux fois rien, ce n'est pas beaucoup; mais pour trois fois rien, on peut déjà s'acheter quelque chose, et pour pas cher.*”

(Raymond Devos)

Abstract

In French negation, the clitic *ne* is paired with n-words such as *pas* ‘not’, *rien* ‘nothing/something’ or *personne* ‘nobody/somebody’. Paradoxically, neither the clitic *ne*, nor many n-words intrinsically express negation. The clitic *ne* can be used non-negatively in a variety of contexts where it is known as ‘expletive’ *ne*. Similarly, n-words such as *rien* ‘nothing/something’ and *personne* ‘nobody/somebody’ can be used non-negatively in interrogative and other NPI-licensing contexts. How then can the combination of two intrinsically non-negative elements lead to the expression of negation? A second set of French n-words (e.g. *pas* ‘step/not’ *plus* ‘no longer’ and *guère* ‘scarcely’) can only be used in negative contexts where they are licensed by *ne*. Diachronically or synchronically, these n-words always refer to the smallest unit of a quantity, a sequence, or a scale. I address the question how both sets of data can be accommodated in a single, compositional analysis. I propose that clitic *ne* actually means ‘not even’, and show how this meaning combines with that of both sets of French n-words to yield negation.

Keywords:

Negation, NPI, French, minifier, minimizer, choice function, n-word, partially ordered set.

1. Introduction*

It is well known that French negation is split over two words: clitic *ne* is paired with n-words such as *pas* ‘not’, *rien* ‘nothing/something’ or *personne* ‘nobody/somebody’. The theoretical debate centers on which one of these two elements expresses negation. I will argue that clitic *ne* expresses a specific type of negation that combines in slightly different ways with the semantics of two sets of French n-words. In section 2, I describe the paradox of French negation: although neither the clitic *ne* nor n-words like *rien* ‘nothing/something’ or *personne* ‘nobody/somebody’ seem to intrinsically express negation, their combination somehow

* A first version of this paper dates back to 2006 and included a large section on expletive negation. I presented it at various places over the years, and would like to thank audiences at the universities of Geneva, Leiden, Tübingen, Lille III, and Oxford. On the advice of Marcel den Dikken, I divided that original paper in two parts, leaving the part on expletive negation as a separate section. In this paper, I concentrate on how the combination of *ne* and n-words yields negation in French. I would like to thank Crit Cremers and especially Monica Evans-Lau for valuable help with the formalization of the analysis.

manages to do so. In section 3, I describe a second set of French n-words: *pas* ‘step/not’, *plus* ‘no longer’, and *guère* ‘scarcely’. These can only be used negatively and must be licensed by *ne*. Diachronically or synchronically, these n-words are minimizers and always refer to the smallest unit of a quantity, a sequence, or a scale. In section 4, I address the question how both sets of data can be accommodated in a single, compositional analysis. I argue that clitic *ne* actually means ‘not even one’, and develop a novel semantic analysis that combines this meaning with that of both sets of French n-words to yield negation. In section 5, I discuss some further implications of the analysis for gradable modification of n-words such as *rien* ‘nothing/something’ or *personne* ‘nobody/somebody’, double negation, and the Jespersen cycle.

2. The paradox of French negation

In this paper, I will strictly concentrate on the distribution of negative words in the standard or *bon usage* variety of French. Perhaps somewhat arbitrarily, I synchronically define this variety of French as the language spoken and written between circa 1830 and 1960 by the upper (middle) classes in France and other francophone countries. This variety of French has been extensively documented in descriptive grammars (e.g. Grevisse 1980, Le Bidois & Le Bidois 1971, Togeby 1984). The properties of negation in this variety are minutely described in these grammars, as well as in monographs such as Gaatone (1971) and Muller (1991). The data I consider here are fully documented in these studies. Today, *bon usage* French survives mainly in written form. This definition of *bon usage* French (henceforth, French, for short) is not meant in any way to suggest that it constitutes the central, current variety of the language.¹

In French, negation is expressed by pairing up the clitic *ne* with n-words such as *pas* ‘not’, *rien* ‘nothing/something’, *jamais* ‘(n)ever/ no (single) moment’, *personne* ‘nobody/ somebody’ or *aucun* ‘no/ any’.² The clitic *ne* is optional in other varieties of French.

- (1) a. Jean **ne** vient **pas/ jamais**
 Jean NEG.CL comes not/ never
 ‘Jean isn’t coming/ Jean never comes’
- b. Jean **ne** voit **rien/ personne/ aucun** **visiteur**
 Jean NEG.CL sees anything/ anybody/ any visitor
 ‘Jean doesn’t see anything/ anybody/ any visitor’

Paradoxically, however, neither clitic *ne*, nor a subset of n-words including *rien* ‘nothing/something’, *jamais* ‘(n)ever/ no (single) moment’, or *personne* ‘nobody/ somebody’,

¹ This definition might seem superfluous or even appear slightly pedantic. However, I found it necessary to clearly delineate the data discussed, because some reviewers have expressed doubts whether n-words can be used non-negatively at all in contemporary French. *Bon usage* French as defined does feature such uses.

² The translations for *rien* and *personne* as ‘nothing/ something’ and ‘nobody/ somebody’ rather than ‘anything’ or ‘anyone’ are intended to avoid confusion: although French *rien* and *personne* function in NPI contexts, they cannot be used as Free Choice Items, unlike English *any-* compounds.

inherently possess a strictly negative meaning in French. On the one hand, the clitic *ne* is used non-negatively in various contexts. In (2), it is used as a morpheme for restriction. The cases in (3)-(5) are usually referred to as so-called ‘spurious’ or ‘expletive’ *ne*. They involve certain subjunctive contexts and include comparatives (3ab), a subset of conjunctions (*avant que* ‘before’, *à moins que* ‘unless’, *de peur/ crainte que* ‘for fear of’ *plutôt que* ‘rather’) (4), and a restricted set of embedded contexts (5):³

- (2) Jean **ne** voit que Marie (restrictive focus)
 Jean NEG.CL sees COMP Marie
 ‘Jean only sees Marie’
- (3) a. Jean est plus malin que Pierre **ne** l’est (comparative clauses)
 Jean is more smart COMP Pierre NEG.CL it.CL is
 ‘Jean is smarter than Pierre is’
 b. Les Français boivent moins de vin qu’ils **n**’en produisent
 The French drink less wine than they NEG.CL of-it.CL produce
 ‘The French drink less wine than they produce’
- (4) a. Il a barricadé la porte de peur/ crainte qu’on **n**’entre chez lui (fear)
 He has blocked the door of fear that they NEG.CL enter with him
 ‘He blocked the door for fear that people might come in’
 b. Je viendrai à moins que Jean **ne** soit là (conditional)
 I will-come to less that Jean NEG.CL is.SUBJ there
 ‘I will come unless Jean is there’
 c. Il faut avant tout observer plutôt que de **ne** tirer des (comparative)
 conclusions hasardeuses
 It is-necessary before all observe rather than of NEG.CL draw
 rash conclusions
 ‘More than anything else, it is necessary to observe rather than
 to draw rash conclusions’
 d. Il est parti avant que nous **n**’ayons mangé (temporal *before*)
 He is left before that we NEG.CL have eaten
 ‘He left before we ate’
- (5) a. Marie craint que Susanne **ne** revienne (fear)
 Marie fears that Susanne NEG.CL returns.SUBJ
 ‘Marie is afraid that Susanne might return’
 b. Jean a évité/ empêché/ pris garde que Lucienne **ne** tombe (avoidance)
 Jean has avoided/ prevented/ taken care that Lucienne NEG.CL fall.SUBJ
 ‘Jean prevented Lucienne from falling’

³ Note that *douter* ‘doubt’ and *nier* ‘deny’ only license expletive *ne* in interrogative and negative contexts as in (5cd). For a complete overview of *ne*-licensing contexts see Muller (1991:Ch.VIII). As pointed out by an anonymous NLLT reviewer, it is worth mentioning that Latin verbs such as *fear*, *prohibit*, *refuse*, *dissuade*, and *doubt* select the negative complementizer *ne*, suggesting a truly ancient origin of expletive negation.

- c. Nie/ doute-t-il que je **ne** dise la vérité? (doubt/ denial)
Denies/ doubts he that I NEG.CL tell.SUBJ the truth?
Does he doubt/ deny that I am telling the truth?
- d. Je ne nie/ doute pas que vous **ne** disiez la vérité
I NEG.CL deny/ doubt NEG that you.HON NEG.CL tell.SUBJ the truth
'I do not deny/ doubt that you are telling the truth'

On the other hand, a subset of French n-words can occur with a non-negative meaning in *bon usage* French. The morphemes *rien* 'nothing/something', *jamais* '(n)ever/ no (single) moment', *personne* 'nobody/somebody', *aucun* 'no/ some', and – somewhat archaically – *nul* 'no/ some' can be used non-negatively in interrogative and other weak NPI-licensing contexts.⁴

- (6) a. Avez-vous **jamais** vu **rien** de pareil?
have you ever seen anything of similar
'Did you ever see anything like it?'
- b. Il le sait mieux que **personne**.
He it.CL knows better than anyone
'He knows it better than anyone.'
- c. Y a-t-il **aucun** doute à ce sujet?
Is there NEG.CL LOC have ANY doubt on that subject
'Is there is any doubt on that account?'
- d. "A ce bruit, les autres gardes s'éveillent soudain et s'enfuient, avant que **nul** d'entre eux eût pu distinguer le nombre des assaillants" (*Guerre des Juifs*, Flavius Josephus, traduction René Harmand, 1911, Leroux, Paris)
'At that noise, the other guards suddenly wake up and flee, before any of them had been able to find out the number of attackers.'

⁴ The examples in the text do not cover the full extent of negative polarity contexts that can give rise to non-negative readings. Two anonymous NLLT reviewers also point out that present-day speakers of French show a great deal of individual variation regarding the non-negative meaning of *rien* 'nothing/something', *jamais* '(n)ever', and *personne* 'nobody/somebody', as well as with respect to the NPI-licensing contexts in which these non-negative meanings arise. For example, some speakers only have a non-negative meaning for *jamais* '(n)ever', while other speakers obtain the non-negative meaning of *personne* 'nobody/somebody' more easily in interrogative contexts than in the complement of *avant que* 'before'. I believe that this kind of interpretive variation for n-words precisely is an argument against their status as purely negative words, and in favor of their status as NPIs, since it is well known that crosslinguistically, NPIs are subject to individual variation as a function of their context, whereas purely negative words are not. As one NLLT reviewer suggests, corpus or sociolinguistic studies are necessary to adequately describe the factors that facilitate or hamper for each negative expression the relevant readings, and the historical evolution of such expressions from non-negative to negative meaning should be carefully tracked (see Martineau & Déprez (2004) and Déprez & Martineau (2004). Such a study is beyond the scope of this article.

These examples show that it is hard to lexically attribute a strictly negative meaning either to clitic *ne* or to the relevant weak NPIs.⁵ This observation therefore leads to a paradox that can be formulated as follows:

- (7) In a subset of cases of bipartite negation in French, where neither of the two elements involved intrinsically express negation proper, their combination nevertheless manages to express negation compositionally.

It is interesting to note in this context that most of these weak NPIs have a diachronic origin with a positive meaning. Hansen (2012) observes that with the exception of *nul* ('no/ some' < Latin: NULLUM 'no(ne)') and the derived locative adverbial *nulle part* ('nowhere/ somewhere' < Lat. NULLA PARTE 'no place'), the French n-words that can function non-negatively as weak NPIs are all etymologically positive: *personne* 'nobody/ somebody' < Latin: PERSONA(M) 'character', *rien* 'nothing/ something' < Latin: REM 'thing', *aucun* 'no/ some' < Latin: ALIQUIS UNUS 'someone', and *jamais* ('(n)ever') < Old French: *ja mais* < Latin: IAM MAGIS 'from now on'. I will refer to this observation as Hansen's (2012) generalization.

3. Minimizers and other small units

French n-words that can only show up in negative contexts where they are licensed by *ne* include *pas* 'not', *plus* 'no longer', and *guère* 'scarcely'.

- (8) a. Jean **ne** vient **pas/ plus**.
 Jean NEG.CL comes NEG/ no longer
 'Jean isn't coming (any longer).'
- b. Cela **n**'est **guère** surprenant.
 That NEG.CL is hardly surprising
 'That is hardly surprising.'

I will argue that these n-words are all minimizers in the sense of Bolinger (1972): expressions referring to a small or negligible quantity of little value. Diachronically, *pas* 'not' had the meaning of 'step' and was only combined with verbs of motion to indicating minimal or no motion: *je ne marche pas* 'I do not walk a step'. In later stages, the meaning of motion disappeared, allowing *pas* 'not' to combine with a wider range of verbs. Today, *pas* 'not' is generally assumed to simply express the negation of an eventuality: (8a) is taken to mean that it is not the case that John is coming. Nevertheless, I believe *pas* 'not' can still be analyzed as

⁵ French is not the only language where n-words can have a non-negative meaning, and where a negative marker can be interpreted non-negatively. In Catalan, n-words such as *res* 'nothing/ something' or *ningú* 'nobody/somebody' also only acquire a negative meaning in the context of the negation marker *no* (Gili 1974:84-85). The Catalan negative marker *no* can be used without negative import in the same syntactic contexts as French, including comparatives, the complement of verbs of fear, and avoidance, conditional, and temporal clauses (cf. Espinal 1991, 1992, 2000ab, 2007 and p.c.). The Catalan facts show that the observations for French are not just a figment of the French prescriptive imagination, as is sometimes suggested.

a minimizer if it is viewed as the smallest interval⁶ of an eventuality. The combination *ne...pas* in *Jean ne vient pas* then has the compositional meaning ‘not even the smallest interval of the eventuality of Jean’s coming was realized’. Although this interpretation is slightly more complex than simple negation, it achieves the same result, and has several advantages. First of all, it is fully compositional. Secondly, it is more in line with the origin of *pas* as a minimizer. Finally, it corresponds better to the idea that the meaning of *pas* ‘step’ was simply bleached, from an actual minimal step to a more abstract minimal interval of an eventuality, leaving intact its grammatical role as a minimizer. By contrast, an analysis that treats *pas* ‘not’ as simple negation has to account for an additional syntactic change from minimizer to strict negation.

Earlier stages of French included many more minimizers, such as *mie* ‘crumb’, *point* ‘point’, *goutte* ‘drop’, or *mot* ‘word’ (Nicot 1606:317, Möhren 1980, Price 1962, 1990, Hansen 2009). Just like *pas* ‘step’, these minimizers were originally associated with specific verbs in Old French: *ne manger mie* ‘not to eat a crumb’, *ne boire goutte* ‘not to drink a drop’. These n-words progressively lost their original semantics enabling them to associate with other verbs (Price 1962, 1990; Wilmet 2003). Today, they have either disappeared or become very archaic in French. They still appear in fixed expressions such as *ne souffler mot* ‘to not breathe a word’. Nevertheless, they robustly survive to this day in northern Romance dialects such as Picard (Dagnac 2014).

Elements such as *plus* ‘no longer’ and *guère* ‘scarcely’ cannot be viewed as minimizers in the classical, etymological sense of a small or negligible quantity. However, they share with minimizers the property of referring to the smallest unit of an implied larger whole, a series or sequence, or a scale. Although *plus* originally means ‘more’ outside of negation, as in (9a), as an n-word it is restricted to the temporal meaning ‘no longer’, thus referring to the negation of the smallest interval of continuation, as in (9b).

- (9) a. Elle a fait plus
She has done more
‘She did more’
b. Elle ne vient plus
She NEG.CL comes no.longer
‘She is no longer coming’

The combination of *ne... plus* therefore carries the meaning of ‘not even a moment longer’. A similar argument must be made for *guère* ‘scarcely/ rarely’. Etymologically, *guère* refers to a large quantity or a high degree, according to the *Trésor de la langue française*. Therefore *guère* ‘rarely’ could be glossed as ‘not much/ not often’ when it is combined with negative *ne* ‘not’. However, it seems that *guère* ‘scarcely’ synchronically functions as ‘almost nothing/

⁶ Or, alternatively, the smallest moment of an interval of an eventuality, in the sense of Taylor 1977.

rarely’ rather than as ‘not much/ not often’. To prove that point, I will first compare sentences involving *pas souvent* ‘not often’ (10a) and with *rarement* ‘rarely’ (10b). The sentence with *pas souvent* ‘not often’ in (10a) can be felicitously followed by the corrective continuation between parentheses on the second line. However, this same continuation is infelicitous when *rarement* ‘rarely’ is used as in (10b):

- (10) a. Il n’est pas souvent malade, ...
 He NEG.CL is not often ill
 ‘He is not often ill.’
 (mais c’est vrai qu’il est malade à des intervalles réguliers.)
 ‘...but it is true that he is ill at regular intervals.’
- b. Il est rarement malade, ...
 ‘He is rarely ill.’
 (# mais c’est vrai qu’il est malade à des intervalles réguliers.)
 ‘...but it is true that he is ill at regular intervals.’

This is because *pas souvent* ‘not often’ refers to a small number of instances of illness, and still allows such instances to be regular. By contrast, *rarement* ‘rarely’ refers to the smallest possible number of instances, excluding regularity. When *guère* ‘scarcely’ is submitted to this test, it appears to pattern with *rarement* ‘rarely’ rather than with *pas souvent* ‘not often’:

- (11) Il n’est guère malade, ...
 He NEG.CL is rarely ill
 ‘He is rarely ill.’
 (# mais c’est vrai qu’il est malade à des intervalles réguliers)
 ‘...but it is true that he is ill at regular intervals.’

We can therefore conclude that *guère* ‘scarcely’ is like the other French n-words that fail to function non-negatively as weak NPIs, and refers to the smallest possible quantity or degree. These observations allow us to formulate the following generalization:

- (12) French n-words that cannot occur without the negative clitic *ne* (and therefore cannot function non-negatively as e.g. weak NPIs) always refer to the smallest unit of a larger whole, a sequence, or a scale.

This generalization complements the one formulated by Hansen (2012:79):

- (13) *Hansen’s Generalization:*
 With the exception of *nul* ‘no/some’ and *nulle part* ‘nowhere/ somewhere’, French n-words that can function non-negatively as weak NPIs are all etymologically positive: *personne* ‘nobody/ somebody’, *rien* ‘nothing/ something’, *aucun* ‘no/some’, and *jamais* (‘(n)ever’) (Hansen 2012).

In short, there seem to be two sets of n-words in French with seemingly very different semantic properties. These observations raise two questions:

- (14) a. What is the factor that unites both sets of French n-words with respect to negation?
 b. How can the paradox in (7) be resolved? How can two elements that do not intrinsically express negation, combine to compositionally express negation?

Traditionally, the paradox in (7) has been explained by attributing negative force to either the clitic or the NPI-element. Some scholars grant negative status to *ne* and NPI status to *rien* ‘nothing/something’, *jamais* ‘(n)ever/ no (single) moment’, or *personne* ‘nobody/somebody’ (Muller 1991, Déprez 1997). In addition, Muller (1991:Ch8) makes a careful and intricate attempt to analyze the cases of ‘expletive’ *ne* as cases of full-fledged negation. Rowlett (1998) solves the paradox in (7) by positing a non-overt negative operator.

Other scholars refuse to grant n-words such as *rien* ‘nothing/something’, *jamais* ‘(n)ever/ no (single) moment’, or *personne* ‘nobody/somebody’ a status as NPI-elements. They view these n-words as exclusively bearing negative force. They also point to the set of n-words that cannot occur without *ne* to argue that these must synchronically be endowed with negative force. They implicitly or explicitly argue that since clitic *ne* is optional in spoken French anyway, its contribution cannot be essential. This allows them to shove expletive *ne* under the carpet. For instance, de Swart (1999) and Sag & de Swart (2002) claim that the clitic *ne* is semantically vacuous. Likewise, they suggest that use of *personne* ‘nobody/somebody’ or *rien* ‘nothing/ something’ as non-negative NPIs is archaic, and not a part of modern French, in which n-words are purely negative (see also Mathieu 2001). This solution of course does not make the facts of *bon usage* variant of French or other variants of Romance go away. If *ne* is semantically vacuous, the lingering question remains what factors determine the very particular and well circumscribed distribution of ‘expletive’ *ne*, which has been insightfully analyzed by Muller (1991).

In this paper, I will adopt an entirely novel position that is at the same time a traditional one. I claim that *ne* means ‘not even one’ rather than ‘not’. I also partly side with those scholars who grant negative status to n-words such as *personne* ‘nobody/somebody’ or *rien* ‘nothing/ something’. However, I differ from them in claiming that negation is only included as a part of these n-words: they are not intrinsically and completely negative themselves. Finally, I claim that n-words like *pas* ‘not’, *plus* ‘no longer’, and *guère* ‘scarcely’ are not negative at all, but should be viewed as minimizers, denoting minimal units of a larger whole, series, or scale. In the next section, I will sketch a formalization of these ideas that allows for an answer to the two questions in (14).

4. The analysis

I claim that clitic *ne* makes a specific semantic contribution that combines with both sets of French n-words. I make the following assumptions:

- (15) a. The clitic *ne* has the meaning of ‘not even one’. Since *ne* includes ‘even’ in its meaning, it requires an ordered domain to operate over. The function of *ne* is to negate the smallest or lowest element in that ordered domain. This can be formally represented by a choice function (cf. Reinhart 1997, Winter 1997). I define *ne* as a choice function $CH(f)$ negating the *smallest possible element in a set of (partially) ordered alternatives* in its domain. I will therefore call *ne* a *minifier* in order to distinguish it from polar negations like *no* and *not*.
- b. n-words such as *pas* ‘step’, *plus* ‘no longer’ and *guère* ‘scarcely’ semantically denote the smallest units of larger wholes, sequences, or scales. This ‘smallest unit’ property allows these n-words to function as ordered domains that the choice function *ne* can operate over.
- c. n-words like *rien* ‘nothing/something’, *jamais* ‘(n)ever// no (single) moment’, and *personne* ‘nobody/somebody’ semantically denote partially ordered sets of indefinite entities for which the *infimum* is defined as the empty set. The ordering defined by the partially ordered set functions as the domain for various choice functions $CH(f)$, including negative *ne* and other NPI-licensing operators.

Let us now see how (15a) and (15b) combine to yield negation in the case of (16a). I informally present the compositional meaning of (16a) in (16b). Recall I proposed an interpretation of *pas* ‘not’ as a minimizer in section 2 above: *pas* ‘not’ refers to the smallest possible interval of an eventuality. Minifier *ne* negates that smallest interval, deriving the negative interpretation of (16a). This analysis is formally represented in (16c) with the choice function selecting *pas* to negate it.

- (16) a. Jean **ne** vient **pas**
 Jean NEG.CL comes not
 ‘Jean isn’t coming.’
- b. ‘There is not even (*ne*) the smallest interval (*pas*) of the eventuality of Jean coming.’
- c. $\llbracket \text{pas} \rrbracket$ (i.e. the smallest interval of an eventuality)
 $\exists f [CH(f) \wedge \text{come}' (f \llbracket \text{pas} \rrbracket = \neg \llbracket \text{pas} \rrbracket)]$

A similar analysis can be construed for *plus* ‘no longer’ if it is analyzed as the smallest possible unit of continuation, and *guère* ‘scarcely’ when viewed as the smallest possible quantity or degree.

This analysis can be considered an update of a quite classical account of minimizers: *John doesn't have a red cent* means that John doesn't have even have the smallest possible amount of a larger sum of money. Horn (1989:254) refers to Pott (1857:410) as one of the first to propose that minimizers implicitly refer to “*nicht einmal das*” ‘not even that’. What is new in my account is that I attribute the ‘even’ part of the meaning to *ne*, and that the ordering presupposed by ‘even’ inside *ne* requires the domain over which *ne* operates to be ordered as well.

How can this account now be extended to n-words such as *rien* ‘nothing/ something’, *jamais* ‘(n)ever/ / no (single) moment’, and *personne* ‘nobody/ somebody’? These n-words can occur non-negatively in NPI-licensing contexts. The main ingredient for understanding the behavior of these n-words lies in my proposal in (15c) that they semantically denote partially ordered sets.

Since the notion of partially ordered set may not be familiar to everyone, I will borrow a mnemonic device from Harbour (2014), who proposed an insightful example using the possible combinations of pizza toppings. Pizzas generally consist of a base made of baked dough, tomato sauce, and mozzarella. This base can receive a variety of toppings. Let us assume a scenario in which there are only three toppings to choose from: olives, onions, and peppers. This allows for eight possible pizza combinations: three with one topping (olives, onion, or peppers), three with two (olives and onion, olives and peppers, or onion and peppers), one with all three toppings, and one without any. These options are visualized in the Hasse diagram of Figure 1. The rows reflect cardinality: the top row pizza has three toppings, those on the next row have two, those on the penultimate row have a single one, and the bottom row (the *infimum*) has none. The lines between the rows relate toppings in a subset/superset relation. As a result, there is an ordering in terms of the number of toppings in each combination.

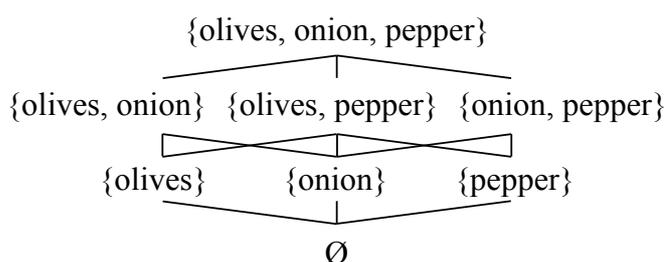


Figure 1: Hasse diagram of pizza toppings (based on Harbour 2014)

Now let us turn first to the indefinite, non-negative meaning of *personne* ‘nobody/ somebody’ in an NPI licensing context as in (17):

- (17) Je doute que **personne** réussisse à résoudre ce problème
 I doubt that anyone succeed.SUBJ to solve that problem
 ‘I doubt that anyone will manage to solve that problem.’

Imagine a scenario where (17) is uttered in a context where there are only three people present, Anne, Bernard, and Claire, and I make it clear that their capacity to solve the problem is put in doubt. In such a scenario, (17) also means that I doubt the possibility of any combination of these three people to solve the problem, since *personne* is not inherently limited to individuals. As a result, the set of possible interpretations for *personne* ‘nobody/ somebody’ can be represented in the same way as pizza toppings, i.e. as in Figure 2 where the empty set \emptyset corresponds to ‘nobody’:

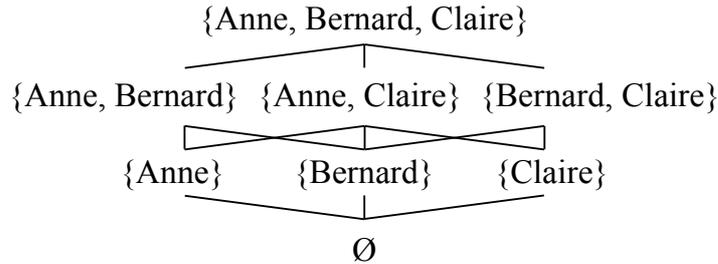


Figure 2: An example of a partially ordered set for *personne* ‘nobody/ somebody’

With the denotation of *personne* ‘nobody/ somebody’ a partially ordered set of indefinite individuals (say A, B and C instead of Anne, Bernard, and Claire), the analysis of (17) can be presented informally as in (18a), and more formally as in (18b):

- (18) a. ‘I doubt that any choice or combination of individual(s) will manage to solve the problem.’
 b. $\llbracket \text{personne} \rrbracket = P$, a partially ordered set
 $A \subset P$ and $A = \{\{a\}, \{b\}, \{c\}, \{a, b\}, \{b, c\}, \{a, c\}, \{a, b, c\} \dots\}$
 (i.e. A can be any subset of P)
 $\exists f[CH(f) \wedge \text{solve}' (f(P) = A)]$

The analysis in (18) thus derives the non-negative, indefinite reading of *personne* ‘nobody/ somebody’: it can be interpreted as any individual or combination of individuals in the partially ordered set.

In a sentence that contains the minifier *ne*, as in (19), the meaning of *ne* is ‘not even one’, as stated in (15a). The ordering required by ‘not even one’ will select the smallest subsets of the partially ordered set and negate these. Informally stated, this results in the interpretation that not even a single individual managed to solve the problem, as in (19b). Formally speaking, as choice function, *ne* selects the singletons contained in the partially ordered set and negates these. Since the larger subsets are made up of the negated singletons, they will also be negated. The result of this operation is that the interpretation of the partially ordered set is restricted to the empty set, deriving the negative interpretation of ‘nobody’. This is formalized in (19c).

- (19) a. Personne n’a réussi à résoudre le problème.

- Nobody NEG.CL has managed to solve the problem
 ‘Nobody managed to solve the problem.’
- b. ‘Not even a single individual managed to solve the problem.’
- c. $\llbracket \text{personne} \rrbracket = P$, a partially ordered set
 $B \subset P$ and $B = \{\{a\}, \{b\}, \{c\}, \dots\}$ (i.e. singletons)
 $\exists f[CH(f) \wedge \text{solve}'(f(B) = \neg B)]$

The clitic *ne* thus does not express total negation: rather, its meaning of ‘not even one’ selects the singleton sets within the larger denotation of French n-words and negates only those. In this way, the negative interpretation of n-words that can function non-negatively is derived.⁷ Under this analysis, both the NPI-licensing context provided by the matrix verb *douter* ‘doubt’ in (17) and the minifier *ne* in (19) are viewed as NPI-licensors that involve choice functions. The only difference is that minifier *ne* restricts the domain of the choice function to the negation of the singleton sets in its domain, thus triggering a negative interpretation.

The difference between ‘smallest unit’ n-words and weak NPIs therefore lies in the way in which the smallest possible element required by minifier *ne* is satisfied. Both types of n-words represent an ordering, as required by *ne*. In the case of NPIs like *rien* ‘nothing/ something’, *jamais* ‘(n)ever/ no (single) moment’, and *personne* ‘nobody/ somebody’, the smallest possible element of that ordering is represented in the internal, partially ordered structure of the set. By contrast, ‘smallest unit’ n-words satisfy this requirement by their inherent reference to denote the smallest possible unit a larger whole, a sequence, or a scale.

5. Further implications

5.1. Gradable modification

The unified analysis of the negative and non-negative interpretations of n-words proposed here has an interesting consequence. It is well known that the negative interpretations of these elements behave as universal quantifiers, while the non-negative interpretations behave as existential quantifiers. Like universal quantifiers, n-words can be modified by *almost/ absolutely* under negation. However, as for existentials generally, such modification fails in non-negative contexts (Quer 1993, 1994 for Catalan, see also Giannakidou & Zeijlstra 2017)

- (20) a. J’ai rencontré (presque) tout le monde/ (*presque) quelqu’un
 I have met almost everybody/ *almost someone

⁷ An NLLT reviewer asks how this analysis would exclude French NPIs such as *quoi que ce soit* ‘anything’ from functioning in the same way as *rien* ‘nothing’. In other words, what rules out (i)?

- (i) Il n’est *(pas) arrivé quoi que ce soit de grave
 It NEG.CL is (not) arrived what that it may-be of serious
 ‘Nothing serious happened.’

I propose that French NPIs such as *quoi que ce soit* ‘anything’ have exactly the same partially ordered set structure as *rien* ‘nothing/ something’ in Figure 1, with one difference: these NPIs lack the empty set. As a result, they are ruled out as potential domains for minifier *ne*: after *ne* applies, there is no empty set in the partially ordered set that can provide the negative meaning. See Muller (2012) for an insightful discussion of the various types of French NPIs.

- b. Je n'ai rencontré (presque) personne
 'I NEG.CL have met (almost) nobody'
 I haven't met anybody'
- c. Max est parti avant que (*presque) personne ne puisse le retenir
 Max is left before that (almost) anyone could him retain
 'Max left before anyone could prevent him from doing so.'

In the context of the analysis presented here, the gradability of *personne* in a negative context can be attributed to the effects of the 'minification' operated by *ne*. The clitic *ne* selects the smallest possible positive sets in its domain, the singleton sets. This operation can be assumed to gradably order the other subsets of the partially ordered set in a downward ordering. In other words, the minifying operation of *ne* over the set structure of *personne* makes the downward ordering of the set visible for gradable modification from outside by *almost/ absolutely*. Without this minifying operation, the downwardly oriented order between the subsets of the partially ordered set is not accessible for modification by *almost/ absolutely*. This is because outside a negative context, all subsets of the partially ordered set are equally available for the non-negative NPI-licensing choice function.

5.2. Double negation

The analysis proposed here also explains why the combination of 'smallest unit' *pas* and weak NPI n-words *rien/ personne* leads to a reading of double negation in (20): the operation carried out by *ne* is different in both cases: minification over NPI n-words operates over sets of elements, picking out the singleton sets, while minification over 'smallest unit' words such as *pas* is an operation over single elements which are lexically specified as the smallest unit of a larger whole, a sequence, or a scale. Since there are two distinct operations of negation, a double negation results.

- (21) a. Personne n'est pas arrivé (double negation/ *negative concord)
 'Nobody didn't come.'
- b. Ce n'est pas rien (double negation/ *negative concord)
 'It is not nothing.' (Muller 1991:259)

By contrast, two occurrences of *personne* 'nobody/somebody' in a single sentence, as in (22), can be interpreted either as a single negation (by negative concord), or as a double negation (Corblin 1996, Corblin, Déprez, de Swart, & Tovena 2004):

- (22) Personne n'aime personne (double negation/ negative concord)
 'Nobody loves anyone/ nobody.'

The negative concord reading can easily be explained: minifier *ne* unselectively operates over different NPIs to yield a single negation. This translates Déprez's (1999) idea that in negative concord, the n-words are in the same scope domain. The question then is how the double

negation reading is derived. Corblin, Déprez, de Swart, & Tovena (2004) observe that a double negation reading is enhanced by stress on one of the two n-words:

- (23) a. PERSONNE // ne dit rien à personne. (=Corblin, Déprez, de Swart
NOBODY NE says nothing to nobody, & Tovena 2004:425(15))
b. Personne ne dit rien // à PERSONNE.
Nobody NE says nothing to nobody

Corblin, Déprez, de Swart, & Tovena (2004) conclude that stress takes the stressed n-word out of the scope domain of negation. In terms of the analysis developed here, it means that the stressed n-word is taken out of the scope of the minifier *ne*. This entails that only the unstressed n-word is in the scope of *ne*, causing it to receive a negative interpretation. However, it is still unclear how the stressed n-word receives its own negative interpretation, so that double negation ensues.

I would like to speculate that stress can act in a similar way to minifier *ne*.⁸ Let us assume that like *ne*, stress singles out the smallest possible set in the domain of *personne* ‘nobody/somebody’. Let us further assume that stress differs from *ne* in that it is able to select the very lowest set in the partially ordered set denoting *personne* ‘nobody/somebody’, namely the empty set.⁹ After all, stress is not negative itself, and does not mean ‘not even one’. Under these assumptions, stress can indeed compositionally derive the negative meaning of *personne* ‘nobody/somebody’. The same analysis then would apply to the fact that *personne* ‘nobody/ somebody’ can occur as an answer to a question in the absence of *ne*, as in (24):

- (24) Q: Qui n’a rien dit à personne? (=Corblin, Déprez, de Swart
‘Who said nothing to nobody?’ & Tovena 2004:425(16))
A: Personne
‘Nobody’

In this case as well, double negation obtains. Since the answer to a question receives (Information) Focus, it is the Focus reading that licenses the negative interpretation of *personne* ‘nobody/ someone’ in this case. In other words, these cases do not show that n-words are intrinsically negative in French: they show that Focus and stress contexts can act as minifiers in a way similar to, but distinct from, minifier *ne*.

⁸ Stress works in the same way as high degree modifiers such as *absolument* ‘absolutely’:

i. Je n’ai vu absolument personne.
‘I saw absolutely nobody.’

Note also that the non-negative interpretations of n-words resist both stress/ Focus and modifiers:

ii. *Avant que le jeune homme ait RIEN/ absolument rien pu dire
before COMP the young man had.SUBJ (absolutely) anything been-able say
‘before the young man had been able to say anything’

⁹ Note that this idea cannot be formalized in terms of choice functions, because choice functions cannot operate over the empty set. This is why I will leave this idea for further research.

This proposal is not as farfetched as it seems: stress often serves to single out the highest element in a given set of alternatives. For instance, stress results in a high degree reading of *laid* ‘ugly’ in (25):

- (25) Philippe est LAID!
 ‘Philippe is very ugly’

The fact that stress singles out the smallest set in the partially ordered set provided by *personne* ‘no-one/someone’ rather than the largest one, has to do with the semantic structure of the partially ordered set. Its negative orientation forces a polarity reversal: the highest degree on a negative scale corresponds to the lowest element in that set.¹⁰ Note that in most other analyses, the fact that stress or Focus interacts with negation by ‘taking out’ the n-word from the scope of negation remains a mere observation: there is no intrinsic relationship between the two phenomena. By contrast, the analysis presented here views stress and Focus as fulfilling essentially the same function as minifier *ne*, explaining their interaction.¹¹

5.3. The Jespersen cycle

The analysis has also broader implications for our understanding of the Jespersen cycle. In Old French, preverbal *ne* was able to function alone as the standard marker of clause negation. At a slightly later stage, *ne* could be ‘reinforced’ by a variety of minimizers including *pas* ‘step’ *mie* ‘crumb’, *point* ‘point’, *goutte* ‘drop’, and *mot* ‘word’, which quickly grammaticalized as negative particles no longer referring to their original meaning (Möhren 1980, Price 1962, 1990, Hansen 2009). Nicot (1606:317) probably contains the oldest reference to the idea that minimizers ‘reinforce’ a weakening negation: “*Goutte: quia res est minuta, sermoni vernaculo additur ad majorem negationem*” ‘drop: because the thing is small, it is added to enhance negation in vernacular speech’.¹²

The idea behind ‘reinforcement’ of negation clearly is that the original *ne* was no longer ‘strong’ enough to express negation by itself. But how exactly the original ‘strong’ negation was ‘weakened’ is never made explicit. I propose that the analysis of *ne* as a minifier provides an answer. Old French *ne* originally represented full, contradictory negation, and ‘weakened’ into a minifier with the meaning of ‘not even one’, which is more akin to

¹⁰ The attentive reader will notice that with adjectives such as *laid* ‘ugly’, stress only results in a high value in the range of degrees afforded by the adjective, while with n-words, stress selects the maximal (i.e. lowest) value in the range determined by the partially ordered set of the n-word. This difference has nothing to do with a different function of stress itself, but with the nature of the range that stress selects over. Adjectives such as *laid* ‘ugly’ are open-ended and have no lowest bound, therefore the lowest bound cannot be reached by an operator of high degree, and a high degree rather than a maximal reading results.

¹¹ It is important to point out that not all types of Focus are able to perform the function of selecting the smallest possible set in the restrictions of n-words. I leave a closer examination of the exact type of Focus that is at work here for further research.

¹² Horn (1989:452) attributes this idea “as far back as” Pott (1857:10), but it is clearly much older.

contrary negation (see Horn 1989).¹³ The interpretation of *ne* in terms of contrary/contradictory opposition perhaps deserves some additional clarification. In Horn's (1989:270) terms, a contradictory opposition excludes any middle term. For example, it opposes black to nonblack, or odd to even. By contrast, contrary oppositions do not exclude middle terms: between black and white, good and bad, intermediate values can be found. In other words, and simplifying a little, contradictory oppositions are polar, while contrary oppositions are gradable. The distinction between contrary and contradictory negation can be best understood through a comparison of the negative affixes *-in/-un* and *non-*.

(26)	<i>contrary (gradable)</i>		<i>contradictory (polar)</i>
a.	inhuman	b.	non-human
	unchristian		non-christian
	un-American		non-American
	immoral		non-moral

Following Jespersen (1917) and others, Horn (1989) observes that contrary *in-/un-* derivations have a pejorative meaning, while the *non-* derived counterpart is evaluatively neutral. Only humans can be inhuman, i.e. display not even the lowest possible degree of humanity, thereby excluding most properties of humanity. By contrast, *non-human* simply refers to the complement of all things human. Similarly, *immoral* refers to the absence of even the lowest possible degree of morality, thereby excluding most properties of morality, while *non-moral* simply is beyond the domain of morality. Contrary negation is gradable, and *in-/un-* derivations can be modified by degree expressions; while derivations with *non-* cannot be so modified: *extremely immoral/ inhuman* vs. # *extremely non-moral/ non-human*; *the level of immorality* vs. **the level of non-morality*. In terms of the contrary/ contradictory distinction, minifier *ne* clearly has a number of aspects in common with contrary negation, and probably developed from a 'stronger' strictly contradictory negation. If this is correct, it is perhaps not quite accurate to view the obligatory presence of minimizers as a 'reinforcement' of negation. Rather, minimizers should then be viewed as completing the contrary negative orientation expressed by the minifier by referring to the smallest possible unit.

6. Conclusion

In this article, I have argued for a strictly compositional analysis of French negation. French *ne* means 'not even one', and can be viewed as a minifier that requires an ordered domain to operate over. I proposed that this meaning can be formalized as a choice function $CH(f)$ that selects the *smallest possible element in a set of alternatives* in its domain. This selection can be satisfied in two ways. With n-words like *rien* 'nothing/ something', *jamais* '(n)ever/ / no (single) moment', and *personne* 'nobody/ somebody', minifier *ne* negates the smallest positive sets (the singletons) in the partially ordered set denoted by these n-words. By

¹³ The first to claim that French *ne* has properties of contrary negation was Schapansky (2002). The analysis proposed here is quite different from hers in scope and execution.

contrast, n-words that refer to ‘smallest units, such as *pas* ‘step’ *nul* ‘zero’, *plus* ‘no longer’ and *guère* ‘scarcely’, directly satisfy the ordering requirement of the minifier *ne* by virtue of their lexical semantics. The prediction of the proposed analysis is that a minifier analysis of French *ne* should also account for French ‘expletive’ *ne*. This is explored in Author (2017), who reinterprets Muller’s (1991) analysis of ‘expletive’ *ne* along these lines.

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