The Afrikaans final negative particle as a negative isotopic, VP-level clitic

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1 Introduction

(1) New facts:
   a. VP coordinations and final nie
   b. Conclusions:
      a. Syntax: Final nie is the realization of a polymorphic NegP (we need polymorphic syntactic categories); it can attach to many different XPs
      b. Syntax: Final nie often attaches low in the clause, at the VP level
      c. Morphology: nie is a clitic
      d. Morphology: Final nie is subject to morphological haplology, implemented as a radical impoverishment rule in Distributed Morphology
      e. Semantics: nie is a negative concord item (Biberauer 2007, Biberauer and Zeijlstra 2012), which are kinds of negative polarity items (Giannakidou 1998), licensed by negation, n-words and a small set of other elements; we need polymorphic, colored variables to model this

2 The most famous final negative particle in the world: Afrikaans nie

(3) In a clause that has at least one negative element (such as a negative quantificational NP like niemand ‘no-one’ or the sentential negative adverb nie ‘not’), the end of the clause is obligatorily marked by the pleonastic negative morpheme nie, glossed ‘NEG’ (see Donaldson 1993:401-419, den Besten 1987, Molnárfi 2001, Biberauer 2008: sentential negator = nie1; the final negative element = nie2)

(4) a. Niemand kom nie2, no-one comes NEG.
   ‘No-one is coming.’
   Donaldson 1993:402
   b. Dit is nie1 reg nie2, that is not right NEG.
   ‘That is not right.’
   ibid.
   c. Kon jy nie, die hek oopgekry nie2, could you not the gate opened NEG.
   ‘Couldn’t you get the gate open?’
   Donaldson 1993:245
   d. Ek kan sien dat jy hoegenaamd nie1 verstaan nie2, I can see that you totally not understand NEG.
   ‘I can see that you don’t understand at all.’
   Biberauer 2007:14

Previous lit: nie2 appears at a clause-edge, not a VP-edge.

- den Besten 1987 gives: S’ → COMP S . . . ([+NEG]).
- Molnárfi 2001 nie2 “must always [occur] on the right-periphery of the sentence” (Molnárfi 2001:105), and not at the right edge of the VP
- Biberauer 2007 proposes that nie2 heads a PolP and takes a CP as its complement: [PDP nie2[CP . . . ]] (with movement of the CP to the left of nie2)

2.1 Coordinations

Examples from T.H. LeRoux (1884-1970):2

- nie2 can occur independently in either the first conjunct or the second, or in both3

(6) Ek het my voorbeelde volstrek nie1 gesoek, maar hulle eenvoudig onder die lees opgeteken. (p. 187)
   I have my examples at all not sought.PART NEG but they simply under the reading noted.PART.
   ‘I did not seek out my examples at all, but simply noted them while reading.’

2 All examples are culled from the text of T.H. LeRoux’s Afrikaanse Taalstudies (1937, J.L.Van Schaik, Bpk., Pretoria; all page numbers after examples refer to the 1968 reprinted edition); all translations are mine.
3 I follow Biberauer 2007 in taking nie1 to be an adverb at the left edge of the VP.

1 Thanks to Theresa Biberauer and Erin Pretorius for discussion and insightful judgments on examples; all errors of translation and interpretation are my own.
Both nies can independently occur in coordinated VPs (or PredPs, or APs, as the case may be):

10. Dieet is nie; lekker nie2 en boonop nie1 maklik nie2.

\[
\text{diet is not fun } \quad \text{NEG and moreover not } \quad \text{easy } \quad \text{NEG.}
\]

‘Dieting is not fun and also not easy.’

- \(\text{nie2}\) is a VP-level element, not a TP- or CP-level one.

2.2 NIE2 and the Nachfeld

\(\text{nie2}\) often follows elements that occur in the Nachfeld:

11. Hulle kan maar nie1 loskom van hierdie sintaktiese fout nie2. (p. 186)

\[
\text{they can but not get away from this syntactic error } \quad \text{NEG}
\]

‘But they cannot get away from this syntactic error.’

Local extraposition (but see Neeleman and Weerman 2001):

12. CP

\[
\begin{align*}
\text{NP} & \text{ hulle} \\
\text{V} & \text{ kan} \\
\text{TP} & \text{ t_hulle} \\
\end{align*}
\]

Likewise for finite embedded CPs, whether declarative or interrogative, for adjunct CPs in conditionals and elsewhere, and for nonfinite CP complements:

13. a. Ek het nie1 gedink dat jy daar was nie2.

\[
\text{I have not thought that you there were } \quad \text{NEG}
\]

‘I did not think that you were there.’

(22) Dis die program waarvan dit nie₁ van belang is dat sy daarna gekyk het nie₂.
This is the program whereat it not of importance is that they look have NEG
‘This is the program at which it is not important that they have looked.’

Figure 1: Tree of (18)

nie₂ can also appear after the verb cluster but before ‘extraposed’ elements (23), also with extraction (24)

(23) Dit is die program waarvan dit nie₁ van belang is nie₂ dat sy daarna gekyk het.
This is the program whereof it not of importance is NEG that they there at watched has
‘This is the program about which it is not important that they have looked at it.’

(24) Dis die program waarna dit nie₁ van belang is nie₂ dat sy gekyk het.
This is the program whereat it not of importance is NEG that they look have
‘This is the program at which it is not important that they have looked.’
3 ‘NegP’ as a polymorphic wrapper

Final nie₂ can appear with constituent negation (see also Huddleston 2010:31)

(26) a. Die man, nie die vrou / nie₂ die, het fir my gebel.
   ‘The man called me, not the woman.’
   Oosthuizen 1998:89

b. Nie die GELD nie₂, maar die TYD pla hom.
   ‘Not the MONEY, but the TIME worries him.’
   Biberauer 2015:136

c. Ek is nie₁ vir ‘n oomblik nie₂ spy.
   ‘I am not for a moment NEG sorry’
   Biberauer 2007:47 fn 24

d. Nie die BOEK nie₂, maar die KOERANT wil ek hê.
   ‘Not the book, the newspaper WANT I have’
   Biberauer 2007:46 fn 24

e. Nie; ver van hier nie₂ het ek gelby.
   ‘I didn’t stay far from here.’
   Molnárfi 2001:104

This parallels the well known behavior of coordinators, many of which seem not to be sensitive to the syntactic category of the conjuncts; to model this, polymorphic coordination is standard, implemented with variables over syntactic categories (Steedman 1985, Sag et al. 1985) or over features on categories (Carpenter 1997:323) or category shifting (Winter 2001):

(27) and ⇒ Coorₜ(and) : AA/A

Coordination does not affect the category of the coordinates, nor their categorial features. Categorial features are what are selected for:

(28) Abby relied [on her wits and on her strength].

(29) Merge(α, β)

For any syntactic objects α, β, where α bears a nonempty selectional list \( \ell = <F_1, ..., F_n> \) of selectional features, and β bears a categorial feature \( F' \) that matches \( F_1 \), call α the head and

a. let \( \alpha = \{ \gamma, (\alpha - \ell, \beta) \} \) call γ the projection of α, and

b. if \( n > 1 \), let \( \ell = (F_2, ..., F_n) \), else let \( \ell = \emptyset \), and

c. let \( \gamma = [\text{CAT}\{\text{cat}(\alpha)\}] \)

(30) Set \( F \) of selectional features = \{ N, V, P, A, C, on, in, +wh, -Q, +pl, \( \sqrt{\text{ELL}}, \ldots \) \}.

This permits \( \text{c(category)- and l(lexical)-selection} \) (Pesetsky 1991)

(See Stabler 2013, Collins and Stabler 2016 for related definitions.)

(31) a. \( \text{and} \Rightarrow \text{CAT}[\alpha], \text{SEL}[[\alpha_1, ..., \alpha_n]] \), where \( n \geq 1 \)

b. Stablerian: \( \text{and}:: \alpha = \alpha_1 = \alpha_2 \ldots \alpha_n \), where \( n \geq 0 \) (Torr and Stabler 2016 write this as \( \text{and}::\alpha = \alpha \times x \))

(32) Polymorphic negation: Winter 2001:23 (see also Toosarvandani 2013:849)

Let \( \tau \) be a boolean type; let \( \neg_{\tau} \) be the standard propositional function.

\[
\neg_{\tau} = \begin{cases} 
\neg_{\tau} & \text{if } \tau = t \\
\lambda X.\neg Z_{\tau_1}.\neg Z_{\tau_2}(X(Z)) & \text{if } \tau = \sigma_1\sigma_2
\end{cases}
\]

(33) Polymorphic Neg:

a. nie \Rightarrow \text{CAT}[\alpha], \text{SEL}[\alpha]

b. nie:: \( \alpha = \alpha \)

(34) a. \( \text{=}(4a) \)
3.1 Clitic or affix?

Afrikaans has syllable-final devoicing of voiced obstruents (Coetzee 2014).

In its reduced form, *-ie, nie2 does not bleed devoicing:

(35) Beloftes moet nie gemaak word-ie. [wort-i]

promises must not made be-NEG

‘Promises must not be made.’

(Compare the parallel reasoning in Ackema and Neeleman 2004:150ff. for the Dutch element -achtig.)

4 The challenge: But why is final nie there at all?

(36) “The starting point for our analysis is that also assumed by Den Besten (1986), Robbers (1992), and Bell (2004a,b), namely that nie2 is always syntactically present in every negation structure.”

Biberauer 2007:19

(37) “nie2 is in fact a polarity element ... investigation of structures which permit the realisation of nie2 in the absence of a “true” negator reveals that the element they necessarily feature is one belonging to the class of (non)veridical operators, i.e., the class that Giannakidou (1999 et seq.) identifies as necessary to license a polarity item.”

Biberauer 2007:17 (also Biberauer and Zeijlstra 2012, who posit that nie2 and nie1 are uNeg)

The challenge for the syntactic analysis is to ensure that this is true.

(38) Options:

a. Pol or Σ is in the clausal spine

- fails to account for constituent negation uses
- fails to explain why the null (positive, default) version cannot occur: NPIs are not obligatory

b. nie2 provides something that the negative words need

4.1 Negative isotopes and constraints on composition

(39) nie2 is a dependent element and must be ‘licensed’ by some other element in the clause (Giannakidou 2006; for Afrikaans in particular Biberauer and Zeijlstra 2012).

(40) “[some] NPI[...]s can only combine with negative (i.e., antiveridical) predicates” (Giannakidou 2000:498)

(41) A “negative predicate” is the negative isotope of a predicate

Idea: Extend the colored λ-calculus of Gardent et al. 1998 to function application and abstraction: Variables and constants come in different colors, one of which is the ‘negative’ color. Functors can select or produce such different colors. (See Appendix; compare the dot type logic of Asher and Pustejovsky 2013, and the treatment of plurals in Carpenter 1997.)

- Idea: The function of nie2 is to create a negative isotope of its argument. Such isotopes are the appropriate inputs to the set of ‘licensers’ (nie1, niemand, niks, geen, ...).

(42) [[nie2]] = λf.┓

(43) a. [[niemand]] = λQx.¬∃x[person(x) ∧ Q(x)]

b. [[niks]] = λQx.¬∃x[thing(x) ∧ Q(x)]

c. [[nie1]] = λP,x.¬P

d. [[geen]] = λP,x.λQx,¬∃x[P(x) ∧ Q(x)]

(44) ¬∃x[person(x) ∧ came(x)]

Composition tree for (11) (after reconstruction of the head movement of the modal from C):

- requires a unpronounced negation high in the clause to trigger agreement: this negation should take wide scope (Potsdam 2013), and we need additional constraints to regulate its (non)appearance

b. nie2 provides something that the negative words need

• A welcome consequence: If Neg (or Pol, or Σ) were part of the clausal spine or verbal extended projection, then structures like (34a) would be in violation of the Final-Over-Final Constraint (FOFC, Biberauer et al. 2014)

Note that the correct claim the neg2 is a polarity item is incompatible with recent claims that all polarity items involve exhaustification; see Giannakidou 2017.
Lexical negation is too low (E. Pretorius, p.c.):

1. Dis onvoorstelbaar (*nie).
   'It is unimaginable.'
2. Die vertoning is ongepas vir kinders (*nie).
   'The show is unsuitable for children.'
3. Dit was onwaarskynlik dat hy sou wen (*nie).
   'It was unlikely that he would win.'
4. Dis onahanklik van die wet (*nie).
   'It is independent of the law.'

Hypothesis: Only non-negative denotations can denote propositions.
Consequence: all negativity must be removed by grammatical elements at or before the clausal level

- NPis in ‘extraposed’ CPs are not in the scope of nie₂ (thanks to E. Pretorius for judgments):

4.1.1 Not all semantically negative elements are licensors for nie₂

nie₂ is not licensed in without-clauses, unlike strong polarity items in many languages:

4.1.2 Standard Afrikaans is a double negative language

Variety A of Biberauer and Zeijlstra 2012 is the conservative variety, the standard language: n-words are negative quantifiers, and give rise to double negative (DN) readings.

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This can be modeled by a type-shift on the n-words in (52) to their non-negative counterparts as the relevant argument (while *sonder* ‘without’ does not): this is lexical semantic coding.

(58) a. \([\text{nouliks} ] = \lambda P \cdot \lambda x . \neg \text{barely}(P(x))\)

b. \([\text{weier} ] = \lambda P \cdot \lambda x . \text{refuse}(p(x))\)

4.1.3 Colloquial, spoken Afrikaans is a negative concord language

Variety B of Biberauer 2009, 2011, Biberauer and Zeijlstra 2012:

(59) a. Niemand \[\neg \exists x [\text{person}(x) \land \text{bought}(x, y)]\]

b. dat hy \[\neg \exists y [\text{thing}(y) \land \text{bought}(t_1, y)]\]

c. Ons \[\neg \exists x [\text{person}(x) \land \text{bought}(t_1, t_3)]\]

d. Ons \[\neg \exists y [\text{thing}(y) \land \text{bought}(t_1, t_3)]\]

As in other Germanic OV languages such as German, surface scope for elements in the Mittelfeld is preferred: this means that a quantificational noun phrase before negation will preferentially take scope over negation (see Frey 1993, Pafel 2005, Wurmbrand 2008, and Bobaljik and Wurmbrand 2012 for extensive discussion of the factors that are at play).

An indefinite subject can take scope over a clausemate negation:

(54) Tradisie speel by spellig ook ‘n rol en ten gevolge daarvan gebeur dit tradition plays by spelling also a role and to consequence therefrom happens this meermaal dat analoge gevalle tog nie \[\neg \exists y [\text{thing}(y) \land \text{bought}(x, y)]\]

times once that analogous cases nonetheless not similarly handled are NEG ‘Tradition also plays a role with spelling, and as a result, it often happens that analogous cases nonetheless are not handled in a like manner.’ (p. 71)

\[\exists x [\text{analogous.cases}(x) \land \neg \text{be.handled.similarly}(y)]\]

Biberauer 2007: object NPs scrambled over nie1, take scope over nie1, while object NPs that remain VP-internal take scope under nie1:

(55) ... dat ek nie; min mense ken \[\neg \exists y [\text{thing}(y) \land \text{bought}(x, y)]\]

that I \[\neg \exists y [\text{thing}(y) \land \text{bought}(x, y)]\]

... that I don’t know few people.’

(56) ... dat ek nie; min mense ken \[\neg \exists x [\text{person}(x) \land \text{bought}(t_1, t_3)]\]

that I \[\neg \exists x [\text{person}(x) \land \text{bought}(t_1, t_3)]\]

... that there are few people I don’t know.’

As Oosthuizen 1998:79 points out, and Biberauer 2007:17 discusses, nie2 can also be licensed by non-negative elements:

(57) a. Ek kan my nouliks/skaars inhou nie; \[\neg \exists x [\text{person}(x) \land \text{bought}(t_1, t_3)]\]

I can barely \[\neg \exists x [\text{person}(x) \land \text{bought}(t_1, t_3)]\]

‘I can barely contain myself.’ (i.e., I’m very excited.)

b. Ek weier om saam te kom nie; \[\neg \exists y [\text{thing}(y) \land \text{bought}(x, y)]\]

I refuse to com together to come NEG ‘I refuse to come together to come NEG ‘I refuse to come with.’

- This system predicts that colloquial Afrikaans will behave like a strict negative concord language (see Giannakidou and Zeijlstra 2017), but without a sentential negator supplying the negation (and not like a ‘negative spread’ language)

(61) *Niemand het niks gekoop.

'No-one bought anything.'

(50) a. \([\text{nouliks} ] = \lambda P \cdot \lambda x . \neg \text{barely}(P(x))\)

b. \([\text{weier} ] = \lambda P \cdot \lambda x . \text{refuse}(p(x))\)

- No combination of denotations for *niemand* and *niks* from (43) or (52) can give rise to a well-formed result
4.2 When nie₂ goes missing: Haplological effects

Biberauer 2008 nie₂ undergoes surface haplology:

(62) Julle kan nie₁, sê dat julle Suid-Afrika ken as julle nog nie₃, op ’n boereplaas was nie₂.

‘You can not say that you South-Africa know if you still not on a farm was NEG’

Donaldson 1993:237

(63) Daar moet nie₃ beloetes gemaak word wat nie₁ nagekom kan word nie₂.

‘There must not promises made be which not fulfilled can be NEG’

Donaldson 1993:380

Scrambling out of VP feeds haplology: den Besten 1987, Biberauer 2008 (Biberauer gives convincing arguments for taking the single remaining nie in such cases to be the initial negative particle, not the final one.)

(64) Hy aanvaar dit nie₁, he accepts this not

‘He doesn’t accept this.’

Donaldson 1993:224

(65) Hy het dit nie₁ aanvaar nie₂,

he has this not accepted NEG

‘He hasn’t accepted this.’

Donaldson 1993:224

(66) \[
\begin{array}{c}
\text{CP} \\
\text{hy}
\end{array}
\]

\[
\begin{array}{c}
\text{C} \\
\text{TP} \\
\text{aanvaar} \\
\text{t} \\
\text{VP}
\end{array}
\]

\[
\begin{array}{c}
\text{dit}_2 \\
\text{VP}
\end{array}
\]

\[
\begin{array}{c}
\text{nie}_1 \\
\text{nie}_2
\end{array}
\]

\[
\begin{array}{c}
\text{i}_2 \\
i
\end{array}
\]

(67) \(nie₂ \rightarrow \{ \emptyset | nie₁\}

(Richards 2010, Erlewine 2012, Nevins 2012 for haplological effects in non-phonological and non-local domains.)

4.3 Excrecent nie₂


(68) en dan het hy geweet dat hy hom nie losgeskud het nie₂ vir die herstel van sy energie

‘and then he knew that he could not free himself for the recovery of his energy’

Molnárfi 2001:117

(69) a. Dit moet [nie langer nie₂] as 3cm wees nie₂.

this must not longer NEG than 3cm be NEG

‘This must not be longer than 3cm.’

b. Ek is [nie vir ’n oomblik nie₂] bekommer daaroor nie₂.

I am not for a moment NEG concerned about that NEG

‘I’m not concerned about that for a moment.’

Compare excrecent that and if:

(70) a. It was clear that when the initial investigation had concluded that no crime had been committed, that the special prosecutor’s office would need to reduce its staffing significantly.

b. Many observers wondered if after an election season that had lasted more than fifteen months and had resulted in the election of a man with no apparent policy convictions other than global warming denialism, if the American polity and media would be able to bring to bear the kind of sustained attention to policy consequences that would ameliorate the impending Tammany-Hall-scale corruption and self-dealing.

5 Conclusions

1. Final nie can appear on the VP (and on other categories): it is a righthand phrasal clitic whose projected category is that of its complement (like adjuncts)

2. Its function is to create an appropriate argument for a negative functor (the set of ‘licensers’): a negative isotope.

3. There’s more than one way to build a ‘negative concord’ language.

References


Appendix: The colored λ-calculus

A.1 Gardent et al. 1998

The colored λ-calculus is a variant of the simply typed λ-calculus, where symbol occurrences can be annotated with so-called colors (color constants C = {A, B, ...} and color variables X = {a, b, ...}). Colors are indicated by superscripts labeling symbol occurrences.

(71) The set wffα of well-typed formulae of type α consists of

a. colored constants Cα, Bα, τα, ... of type α, i.e., triples consisting of a constant, a color, and a type, and

b. colored variables xα, yα, zα, ... of type α, i.e., triples consisting of a variable, a color, and a type, and

c. uncolored variables α, β, γ, ... of type α, and
d. (function) applications of the form Mβ→γ, Nβ, and
e. λ-abstractions of the form λαβ.Mγ, where α is a variable of type β and λαβ.Mγ is of type β → γ.

A formula M is well-formed iff it does not contain unbound variables and we call it c-monochrome if all constants and variables in M are annotated by a single color c ∈ X ∪ C.

A C-substitution σ (a well-colored substitution) is a pair (σc, σγ), where the term substitution σc maps colored variables (i.e., the pair Xc of a variable X and the color c) to formulae of appropriate types and the color substitution σγ maps color variables to colors. In order to be a legal C-substitution such a mapping σ must obey the following constraints:

(72) a. Erasure condition: If A and B are different colors, then |σ(XA)| = |σ(XB)|, where |M| is the color erasure of M, i.e., the formula obtained from M by erasing all color annotations in it.

b. Monochromicity condition: If c ∈ C is a color constant, then is σ(Xc) is c-monochrome.

β-reduction: (λxα(β)(β) ⇒ α[x → β], where β is free for x in α and τ ∈ Typ

A.2 My extensions

The set wff consists of the formulae defined by (71) and

(74) a. λ-γ: Reduction of the form λαβ.Mγd, where α is a variable of type β, λαβ.Mγ is of type β → γ, and where c, d ∈ X ∪ C.

Definition 1. Let there be a designated color c1 ∈ X ∪ C; call c1 the negative color.

Definition 2. A negative formula M is a formula that is c1-monochrome, written M < c1 or M<.

Definition 3. Any formula M such that M = |M| is an uncolored formula.

Definition 4. For any uncolored formula M, M is the negative isotope of M.

Replace (73) by the following:

(79) Color-sensitive β-reduction: (λαβ.α(β) ⇒ α[x → β], where β is free for x in α and τ ∈ Typ and c ∈ X ∪ C

1 Cf. labelled deductive systems, Gabbay 2014.