

Interjections as Structured Root Expressions

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1. Knowledge of interjections¹

Knowledge of interjections and their grammatical behavior is part of our knowledge of language. Yet, interjections belong to the least studied parts of speech, and according to some rightly so given that "Interjections are among the least important of speech elements;" Sapir (1921:5). At first sight, there seem to be good reasons for this lack of interest in interjections. From a syntactic perspective, their behavior does not seem to be particularly interesting. They appear to be syntactic isolates that do not connect to other categories within the clause. Also semantically, interjections differ from lexical categories such as nouns, verbs and adjectives. They are often, though not always as we will see, used to express an isolated emotion or sentiment on the part of the speaker. The nature of this expressive meaning seems harder to capture than the more descriptive meaning of nouns, verbs and adjectives. For some reason, the meaning of *wow!* seems harder to define than that of *amazing!* or *beautiful!*. And also the meaning of interjective *shit!* is harder to grasp than the noun *shit* in *the shit on your shoe*. Also at the sound level, interjections display "different" behavior, in the sense that sound properties are found in interjections that are not attested in other parts of speech. For example, the Dutch interjections *njah* (**/nja/**; meaning: 'I (the speaker) affirms X, but with hesitation'), *psst* (**/pʃt/**; meaning: 'I want to get your attention'), *sht* (**/ʃt/**; meaning: 'I want you to be quiet'), *pf* (**/pf/**; meaning: irony) display sequences of phonemes (here represented in boldface) that are not attested in other parts of speech in Dutch, such as nouns, verbs and adjectives. In other words, interjections have their own phonotactic properties.

In spite of this linguistically isolate behavior, it seems that interjections are nevertheless linguistically significant and worthwhile to investigate for a number of reasons.² First of all, the language learning child is able to identify interjections as language material in the noise that she hears in her environment. In other words, just like the sound sequences *cow*, *couch* and *loops* are identified as linguistically meaningful units, so are the interjections *wow!*, *ouch!*, and *oops!*. In short, interjections are acquired during language development and become part of our knowledge of language. If it is the linguist's task to describe and explain our knowledge of language (see Chomsky 1986), then interjections should also be part of that research agenda. Secondly, interjections are a part of speech that can be found cross-linguistically (De Groot 1963). In other words, it seems to be a universal part of speech. Thirdly, interjections may give us a mirror of a part of the mind that we are less familiar with, viz., our emotion system. Certain interjections highlight the affective or emotional state of a speaker. They constitute what Scherer (1994:170) calls *affect bursts*, that is "very brief, discrete, nonverbal expressions of affect in both face and voice as triggered by clearly identifiable events."³ These linguistic affect bursts differ from expressive signals in animal communication systems in an important way: they are innovative and free from control by external stimuli. One and the same emotion-eliciting event may trigger the use of different but yet appropriate interjections. For example, if you hit with a hammer on your thumb, you may express your negative feelings by using different interjections: e.g., *Darn!/Ouch!/Gee!/Argh!*. In other words, an emotion-triggering stimulus does not trigger a specific interjection. In this respect, the use of interjective expressions by human beings is radically different from the use of expressive signals in animal communication systems.

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² For a summary of the study of interjections in the history of linguistics, see De Boer (2008).

³ I think 'nonverbal' should be interpreted here as 'non-sentential/non-propositional'.

Besides these more general reasons for including interjections in the study of language, there are also linguistic-analytic reasons. As we will see in this article, it turns out that interjective expressions can have a complex structure. This raises the question as to what this structure looks like; i.e. what are the atoms from which the structured interjective expression is built and what are the mechanisms that underlie this structure building? In order to show the structured nature of interjective expressions, I will base myself on interjective expressions from Dutch, more specifically those interjections that have a sound-symbolic meaning.

The article is organized as follows: section 2 shows that interjections can be complex and that these complex interjections are structured expressions (i.e. they display constituency). In section 3 I argue that interjections are root categories, and that complex interjections are coordinations of roots. In section 4 evidence is presented in support of a syntactic, phrase structural analysis of complex interjections. That is, they are not complex words (more specifically, compounds). In section 5 I propose that their phrase structural organization is similar to that of coordinate structures. More specifically, they have a hierarchically organized (i.e., X-bar-theoretic) structure: i.e., ConjP. Section 6 presents arguments against a flat-structure analysis of complex interjections and in favor of a ConjP-analysis. In section 7 it will be shown that the externalization of complex interjections sometimes involves different types of phonological operations that augment the sound representation of the interjective expressions. Section 8 concludes the article.

2. On the constituency of complex interjections

In this section I will examine the internal syntax of interjections by focusing on sound symbolic ones, i.e., those interjections whose meaning is a sound-designating one. I will argue that these interjections can have a complex syntactic structure and, consequently, are structured expressions.

Let us start our investigation with the following examples (cf. Pauwels 1952):

- (1) a. *De auto reed boem tegen de muur aan.*
the car drove BANG against the wall PRT
- b. *Jan zakte krak door het ijs heen.*
Jan fell CRACK through the ice PRT
- c. *De kogel vloog zjoef over zijn hoofd.*
the bullet flew ZJOEF over his head
- d. *De vaas viel baf op de grond.*
the vase fell BAM onto the floor

The interjection can be substituted for by synonymous interjective words:

- (2) a. *De auto reed boem tegen de muur aan.*
the car drove BAM against the wall PRT
- b. *De auto reed knal tegen de muur aan.*
- c. *De auto reed boink tegen de muur aan.*

As shown by the following examples, it is also possible to have a sequence of interjections:

- (3) a. *Jan reed [boem] tegen de muur aan.*
Jan drove BAM against the wall PRT
'Jan drove bang against the wall.'
- b. *Jan reed [pats boem] tegen de muur aan.*
Jan drove WHAM BAM against the wall PRT
- c. *Jan reed [pats boem knal] tegen de muur aan.*
Jan drove WHAM BAM BANG against the wall PRT
- d. *Jan reed [pats boem knal boink] tegen de muur aan.*
Jan drove WHAM BAM BANG BOINK against the wall PRT

The order of these elements is not fixed, which suggests that these sequences of interjections are not unanalyzable, fixed patterns.⁴

- (4) *Jan reed* [pats boem knal boink] *tegen de muur aan*.
 [boem knal pats boink]
 [boink pats boem knal]

Importantly, the sequence of interjections in (3) and (4) constitutes a syntactic unit (i.e., a constituent). This constituency of the sequence of interjections cannot be shown, however, on the basis of standard constituency tests such as displacement (i.e., does the sequence of interjections behave as a unit with respect to reordering operations?) and substitution (i.e., can the sequence of interjections be replaced by a substituting pro-form?). Let us consider displacement first.

At first sight, the examples in (5), which are more or less acceptable, suggest that interjections can be displaced and that, consequently, displacement can be used as a test for constituency. As one can observe, the interjection immediately precedes the finite verb of the main clause, which is often taken to occupy the head position of CP (i.e., the well-known Verb-second property; see, among others, Den Besten (1983) and Koster (1975)). Thus, one might hypothesize that the interjection in (5) occupies the specifier position of the functional head C, which is the landing site for the displaced finite verb; see (6):

- (5) a. ^(?)Boem *reed de auto tegen de muur aan*.
 b. ^(?)Krak *zakte Jan door het ijs heen*.
 c. ^(?)Zjoef *vloog de kogel over zijn hoofd*.
 d. ^(?)Baf *viel de vaas op de grond*.

- (6) [_{CP} Boem [_C reed [_{TP} *de auto* ~~boem~~ *tegen de muur aan* ~~reed~~]]]

According to this line of reasoning the sequence of interjections preceding the finite verb in (7a) would constitute a syntactic unit occupying Spec,CP, as in the representation in (7b):

- (7) a. ^(?)*Pats, boem, knal, boink reed de auto tegen de muur aan*.
 b. [_{CP} Pats, boem, knal, boink [_C reed [_{TP} *de auto* ~~pats, boem, knal, boink~~ *tegen de muur aan* ~~reed~~]]]

The existence of the minimally different patterns in (8), however, raises the question as to whether the patterns in (5) and (7a) really involve displacement of an interjective expression to Spec,CP. In (8), the locative d(emonstrative)-word *daar* 'there' immediately precedes the finite verb and the interjection behaves more like a base-generated (i.e., E(externally)-merged) left-peripheral element, quite analogously to the vocative noun phrases in (9) that occur in a left peripheral position within the clause. See (10) for the relevant representations.

- (8) a. Boem, *daar reed de auto tegen de muur aan*.
 BAM there drove the car against the wall PRT
 b. Krak, *daar zakte Jan door het ijs heen*.
 CRACK, there fell Jan through the ice PRT
 c. Zjoef, *daar vloog de kogel over zijn hoofd*.
 ZJOEF, there flew the bullet over his head
 d. Baf, *daar viel de vaas op de grond*.
 BAM, there fell the vase onto the ground

⁴ In the case of frequently used two-membered interjections the order is often conventionalized. For example, the sequence ^{??}*boem pats* is odd compared to *pats boem*. See also note 21.

- (9) a. Jan, *daar rijdt iemand tegen je hek aan!*
 Jan, there drives someone against your gate PRT
 'Jan, someone just drove into your gate!'
 b. Jan, *daar vliegt een vogel over je hoofd!*
 Jan, there flies a bird above your head
 'Jan, there is a bird flying above your head!'
- (10) a. [_{CP} *Boem* [_{CP} *daar* [_C *reed* [_{TP} *de auto ~~daar~~ tegen de muur aan reed*]]]]] (8a)
 b. [_{CP} *Jan* [_{CP} *daar* [_C *rijdt* [_{TP} *iemand ~~daar~~ tegen je hek aan rijdt*]]]]] (9a)

One might hypothesize now that the patterns in (5) have the same syntactic structure as those in (8), the only difference being that in (5) the d-pronoun *daar* is phonetically empty; i.e., we have a null d-word:

- (11) [_{CP} *Boem* [_{CP} ~~*daar*~~ [_C *reed* [_{TP} *de auto ~~daar~~ tegen de muur aan reed*]]]]] (5a)

The possibility of dropping *daar* is reminiscent of the phenomenon of Topic-drop in Dutch (cf. Weerman 1989, Zwart 1993). A demonstrative word like *daar* can be omitted when it is topical, as is exemplified in (12), where the erased d-pronoun (~~*daar*~~) represents the base position of the fronted d-word.

- (12) a. A: *Weet jij de weg in Parijs?*
 know you the way in Paris
 B: *Jazeker! (Daar) heb ik jaren ~~daar~~ gewoond!*
 sure! (there) have I years lived
 b. A: *Ben jij wel eens in Parijs geweest?*
 are you PRT once in Paris been
 B: *Nee, (daar) ben ik nog nooit ~~daar~~ geweest.*
 no, (there) am I yet never been

In (12), the topical status of the locative-demonstrative *daar* is induced by the presence of the antecedent *in Parijs* in speaker A's utterance. Plausibly, the topical status of *daar* in (8) is induced by the situational or discourse context; *daar* refers to the situationally given or available locus where the event takes place.

Given the parallelism with the topic-drop phenomenon in (12), it does not seem implausible to say that the examples in (5) feature an empty d-word in Spec,CP; see (11). This implies that the left peripheral interjection has not been moved to Spec,CP but is rather base-generated in the left periphery of the main clause.

Further support for the idea that interjections cannot undergo displacement to Spec,CP and are simply base-generated in their surface position comes from patterns involving a long distance relationship. If interjections were accessible to A-bar movement to Spec,CP, one would expect them to be able to undergo long distance A-bar movement. As shown in (13a,b'), however, such a long distance relationship with a 'base position' is impossible.⁵ Under a base-generation analysis of interjections, one might try to interpret this locality effect in terms of scope, i.e., the sound interjection must be part of the (minimal) clausal domain that represents the event associated with the sound.

- (13) a. *Kees zei dat Jan boem tegen een muur was aangereden.*
 Kees said that Jan BAM against a wall was PRT-driven

⁵ The long distance pattern is also impossible when the main clause has the locative d-word *daar* in Spec,CP (Compare with (8a)):

- (i) **Boem daar zei Kees [dat de auto tegen een muur was aangereden].*
 BAM there said Kees that the car against a wall was PRT-driven

- a'. *Boem zei Kees [dat Jan tegen een muur was aangereden].
- b. Jan zei dat de kogels zjoef over zijn hoofd vlogen.
Jan said that the bullets ZJOEF over his head flew
- b.' *Zjoef zei Jan [dat de kogels over zijn hoofd vlogen].

So far, I have argued that interjections are not subject to displacement. Consequently, displacement cannot be used as a constituency test for a linear sequence of interjections, like in (3) and (4). Having shown this, I will now turn to substitution and argue that also this constituency test cannot be used for identifying a linear sequence of interjections as a constituent.

The impossibility of using substitution for determining whether a string of interjections forms a syntactic unit is exemplified in (15): it turns out that even simplex interjections cannot be substituted for by what seems to be the most appropriate pro-form, viz., the adverbial pro-form *zo* 'so'. This is illustrated in (14) and (15), where (14) shows the occurrence of the manner pro-form *zo* in clauses, and (15) the impossibility of substituting a sound-symbolic interjection by means of this pro-form.⁶

- (14) a. Jan reed zo tegen de muur aan.
Jan drove so against the wall PRT
'Jan drove right into the wall/Jan drove into the wall this way'
- b. Jan zakte zo door het ijs heen.
Jan fell so through the ice PRT
'Jan went right through the ice/Jan went through the ice this way'
- (15) a. *Janreed boem tegen een muur aan en Kees reed zo tegen een boom aan.
Jan drove BAM against a wall PRT and Kees drove so against a tree PRT
- b. *Jan zakte krak door het ijs heen en Kees zakte zo door de houten vloer heen.
Jan fell CRACK through the ice PRT and Kees went so through the wooden floor through.

Since substitution of an interjection by a pro-form does not work for simplex interjections, it obviously cannot be used as a constituency test for a linear sequence of interjections either.

Fortunately, a few other tests can be used for showing the constituency of the complex interjection patterns in (3) and (4). First of all, a test that hints at the constituency of the complex interjection is the one that states that the string of words should be able to stand alone as a fragment of sentence (Carnie 2008:18):

- (16) A: Hoe klonk het geluid van de botsing?
how sounded the noise of the collision
- B: [Pats, boem, knal, boink].
WHAM BAM BANG BOINK

A second piece of evidence for their constituency comes from the fact that two sequences of interjections can be coordinated. In other words, a complex interjection can function as a conjunct (i.e., a syntactic unit) in a coordinate structure:

⁶ As noted by Pauwels (1952), interjections can sometimes be paraphrased by an adjunct-PP headed by *met* 'with' (ib). In those examples, the *met*-PP can be substituted for by the pro-form *zo* (see (ic)).

- (i) a. Jan reed boem tegen de muur aan.
b. Jan reed [pp met een knal] tegen de muur aan.
Jan drove with a bang against the wall PRT
- c. Jan reed [met een knal] tegen de muur aan en Jo reed zo tegen het hek aan.
Jan drove with a bang against the wall PRT and Jo drove so against the gate PRT

- (17) a. *De opgestapelde blikken vielen* [[*knal, beng, doink*] en [*boem, pats, klets*]]
 the piled-up cans fell [BANG BAM BOINK and BAM BOINK WHACK]
kapot op de grond.
 broken onto the floor
- b. [[*Rinkel de kinkel*] en [*bam boem beng*]], *daar viel het glazen tafelblad*
 RINKEL DE KINKEL and BANG BAM BOINK, there fell the glass table-top
op de grond.
 onto the floor

A third test that suggests that the sequence of interjections in (3) and (4) forms a structural unit is based on "interruption": if a string of elements W, Y and Z forms a syntactic unit XP, then it is impossible to move an XP-external element to a position internal to XP. More specifically, it is impossible to intersperse the sequence of interjections with some XP-external element α , e.g., by means of displacement. Schematically:⁷

- (18)[_{XP} W (* α_i) Y (* α_i) Z] t_i
- where t is the trace (copy) of the displaced element α

This impenetrability of the sequence of interjections is illustrated in (19c), where the so-called R-pronoun *daar* is removed from within a PP (see Van Riemsdijk 1978) and moved to a position in between two interjections. As shown in (19a), it is possible for the R-pronoun to occupy a position following the sequence of interjective atoms. (19b) illustrates that the R-pronoun can also occupy a (PP-external) position preceding the complex interjection. As shown by (19c), what is not possible is placement of the R-pronoun in a position in between the various interjective atoms.⁸

- (19) a. *Jan is* [*pats boem knal boink*] *daar tegenaan gereden.*
 Jan has WHAM BAM BANG BOINK there against driven
 'Jan WHAM BAM BANG BOINK drove against it.'
- b. *Jan is* *daar_i (gisteren)* [*pats boem knal boink*] [t_i *tegenaan*] *gereden.*
 Jan has there (yesterday) WHAM BAM BANG BOINK against driven
 'Jan WHAM BAM BANG BOINK drove against it (yesterday).'
- c. *Jan is gisteren* [*pats (*daar_i) boem (*daar_i) knal (*daar_i) boink*] [t_i *tegenaan*] *gereden.*
 Jan has yesterday WHAM (there) BAM (there) BANG (there) BOINK
 against driven

Compare this with the placement of the R-pronoun *daar* with respect to a sequence of adverbial elements that function as modifiers within the clause:

⁷ At a more technical level, one may try to implement this restriction in terms of c-command. A displaced constituent must c-command its trace-position. If a constituent moves into a phrase XP, then this constituent no longer has c-command over its base position. This also explains the ill-formedness of (ib), where the complement of A (a non-case-assigning category) has been moved into the specifier position of the subject noun phrase, where it may receive genitive case. This displacement operation is illegitimate because the displaced element does not c-command its trace.

- (i) a. [*Teachers*] *were* [_{AP} *afraid John*] ("base structure")
 b. **[John's teachers] were* [_{AP} *afraid t_i*] (derived structure)
 intended reading: 'Teachers were afraid of John.'

⁸ As pointed out by a reviewer, it is sometimes possible to have two separate (complex) interjections with the R-pronoun in between. Consider, for example, (ib), which is a variant of (ia).

- (i) a. *Jan is gisteren zoef zoef zoef hupsakee er tegenaan gereden.*
 Jan is yesterday ZOEZ ZOEZ ZOEZ HUPSAKEE there against driven
 b. *Jan is gisteren zoef zoef zoef er_i hupsakee t_i tegenaan gereden*

- (20) a. *Jan is [waarschijnlijk] [toen] [hard] tegen de muur aan gereden.*
 Jan has probably then hard against the wall PRT driven
 'Jan probably then drove hard against the wall.'
 b. *Jan is waarschijnlijk toen hard daar tegen aan gereden.*
 c. *Jan is waarschijnlijk toen daar hard tegen aan gereden.*
 d. *Jan is waarschijnlijk daar toen hard tegen aan gereden.*
 e. *Jan is daar waarschijnlijk toen hard tegen aan gereden.*

These examples show that the R-pronoun can be placed in a position in between two adverbial elements. This follows from an analysis in which the adverbials are merged separately, i.e., not as a single complex unit, with different layers of the clausal structure (see, for example, Cinque (1999)). Schematically, where UP, WP, YP and ZP are layers in the clausal structure:

- (15)[_{ZP} [waarschijnlijk] [_{YP} [toen] [_{WP} [hard] [_{UP} [_{PP} daartegenaan] gereden]]]]]

A final phenomenon suggesting the constituency of a string of interjections as in (3)-(4) comes from their occurrence as "quotative" complements in the construction type *zo van X* ('so of X'), where *zo* is kind of a cataphoric adverb whose contents is provided by the quotative material following *van*. The represented direct speech approximates (i.e., 'is like') the contents of the speech (cf. (16a,b)) or facial expression (cf. (16c)) used by the agent (i.e., the subject of the matrix clause). Clearly, the complement of (*zo*) *van* is a syntactic unit, e.g., a clause (16a,b) or a noun phrase (16c).

- (16) a. *Mijn vader zei zo van "Drink niet teveel bier!"*
 my father said so of "Drink not too-much beer!"
 'My father said like: "Don't drink too much beer!"'
 b. *Hij vroeg zovan "Heb jij je huiswerk al gemaakt?!"*
 he asked so of "Have you your homework already made?"
 'He asked something like the following: "Have you finished your homework?"'
 c. *Hij keek me aan met een blik zo van: "Wat een eikel!"*
 he looked-at me PRT with a gaze so of: "What a jerk!"
 'He looked at me with a gaze expressing: "What a jerk!"'

As exemplified in (17), (complex) interjections can also occupy the X-slot of the *zo van X*-construction. This suggests that the sequence of interjections forms a syntactic unit.

- (17) a. *Jan reed [zo van [pats boem knal]] tegen een muur aan.*
 Jan drove so of WHAM BAM BANG against a wall PRT
 b. *De opgestapelde blikken vielen [zo van [knal, beng, doink]] op de grond.*
 the piled-up cans fell so of BANG BAM BOINK onto the ground

In sum, although certain constituency tests cannot be used for showing the constituency of a string of interjections like (3), there are a number of other tests that support an analysis according to which a sequence of interjections forms a syntactic unit (a constituent).

Besides complex interjections like those in (3), which consist of a range of different interjective words, there are also complex interjections that are entirely built up on the basis of the same lexical item. This reduplicative pattern is exemplified in (18b) and (19b):

- (18) a. *Jan sloeg [boem] op de trommel.*
 Jan hit BAM on the drum
 b. *Jan sloeg [boem boem boem] op de trommel.*
 Jan hit BAM BAM BAM on the drum

- (19) a. *De kogels vlogen [zjoef] over zijn hoofd.*
 the bullets flew ZJOEF over his head
 b. *De kogels vlogen [zjoef, zjoef, zoef] over zijn hoofd.*
 the bullets flew ZJOEF ZJOEF ZJOEF over his head

Interestingly, besides the pattern in (18b,19b), in which the interjections are juxtaposed, we find patterns in which they are separated from each other by means of a linking element *de*:

- (20) a. *Jan sloeg [boemer de boem] op de trommel.*
 Jan hit BOEMER DE BOEM on the drum
 b. *Jan sloeg [boemer de boemer de boemer de boem] op de trommel.*

In order to show that this sound symbolic interjective pattern manifests itself in various guises, I add a few more examples:⁹

- (21) a. *Jan viel holder de bolder (de bolder de bolder ..) de bolder naar beneden.*
 Jan fell HOLDER DE BOLDER (DEBOLDER DE BOLDER ..) DE BOLDER to downstairs
 b. *Jan zakte krakker (de krakker de krakker..) de krak door de stoel.*
 Jan went KRAKKER (DEKRAKKER DE KRAKKER..) DE KRAK through the chair
 c. *De hakken tikten klikker (de klikker de klikker..) de klak op de vloer.*
 the heels tapped KLIKKER (DE KLIKKER DE KLIKKER..) DE KLAK on the floor
 d. *De ruit brak rinkel (de kinkel de kinkel..) de kinkel in stukken.*
 the window broke RINKEL (DE KINKEL DE KINKEL..) DE KINKEL into pieces
 e. *Ze reden hobbel (de bobbel de bobbel ..) de bobbel over de keienweg.*
 they drove HOBBEL (DEBOBBEL DE BOBBEL ..) DE BOBBEL across the stone-way

Also with these examples, it is impossible for a displaced element (e.g., the R-pronoun *daar*) to interrupt the sequence of interjections. This is shown in (22) for the iterative pattern lacking the linking element *de*, and in (23) for the pattern featuring the linker *de*. This non-interruptability suggests that the string of interjections constitutes a syntactic unit XP that cannot be penetrated by XP-external material.

- (22) a. *Jan sloeg boem boem boem [pp daar op].*
 Jan hit BOEM BOEM BOEM there on
 'Jan BAM BAM BAM hit on it.'
 b. *Jan sloeg boem (*daar_i) boem (*daar_i) boem [pp t_i op].*
 c. *Jan sloeg daar_i boem boem boem [pp t_i op].*
- (23) a. *Jan sloeg boemer de boemer de boem [pp daar op].*
 Jan hit BOEMER DE BOEMER DE BOEM there on
 'Jan BAM BAM BAM hit on it.'
 b. *Jan sloeg boemer de (*daar_i) boemer de (*daar_i) boem [pp t_i op].*
 c. *Jan sloeg boemer (*daar_i) de boemer (*daar_i) de boem [pp t_i op].*
 d. *Jan sloeg daar_i boemer de boemer de boem [pp t_i op].*

There is another important property exemplified by the patterns in (21), and also by those in (18b) and (19b). The complex interjective expressions can be arbitrarily long; i.e., they display the property of discrete infinity.

⁹ In these complex interjective expressions containing the linking element *de*, there is a strong preference for the non-final members to end in *-er*: *boemer de boem* versus **boem de boem*; *krakker de krak* versus **krak de krak*. The pattern *rinkel de kinkel* does not have a counterpart in which *-el* is absent on the first interjective atom: **rink de kinkel*. In section 7 I will briefly come back to the possible "role" of *-er* and *-el* in these complex interjective expressions.

In section 5 I will propose that the complex interjective expressions in (3), (4), (18b), (19b), (20) and (21) have a hierarchically organized, right-branching (tail-)recursive structure and are built by a generative procedure (Merge) that takes interjective atoms as its input. More specifically, I will argue that these interjective expressions have a coordinate structure, as is illustrated in (24a) for the pattern *pats boem knal boink* in (24b) and in (24b) for the pattern *boemer de boemer de boemer de boem* in (20b). As shown by these representations, the coordinate structures (ConjP) (i) *knal boink*, (ii) *boem, knal, boink*, (iii) *boemer de boem* and (iv) *boemer de boemer de boem* are embedded within a larger coordinate structure (ConjP). Notice further that in (24a), the coordinate structure is asyndetic (i.e., there is no overt coordinating conjunction), whereas in (24b) it is not, given the presence of the overt connecting element *de*.

- (24) a. [_{ConjP} *pats* [_{Conj}' [_{Conj} \emptyset] [_{ConjP} *boem* [_{Conj}' [_{Conj} \emptyset] [_{ConjP} *knal* [_{Conj}' [_{Conj} \emptyset] [_{ConjP} *boink*]]]]]]]]]
 b. [_{ConjP} *boemer* [_{Conj}' [_{Conj} *de* [_{ConjP} *boemer* [_{Conj}' [_{Conj} *de*] [_{ConjP} *boemer* [_{Conj}' [_{Conj} *de*] [_{ConjP} *boem*]]]]]]]]]]]

Summarizing, on the basis of diagnostic tests such as substitution (2), independent occurrence (16), coordination (17), reduplication (18-19) and (unbounded) expansion with added interjective atoms (e.g., (21)), I have tried to show that complex interjective expressions, which appear to be fixed unanalyzable units, can be structurally decomposed into smaller units (interjective atoms). The combination of these units yields a complex interjective expression that I take to have a hierarchically organized recursive structure (cf. section 5). This structural decomposition of Dutch interjective expressions brings us to the next question: what is the categorial nature of the interjective atoms that function as constituents in complex interjective expressions? This question will be addressed in the next section.

3. Sound-symbolic atoms as roots

In the spirit of Borer's Exo-Skeletal Model (2005a,b) and much recent work on Distributed Morphology (Halle and Marantz 1993, Harley and Noyer 1999), I will assume that interjective atoms such as *boemer, rinkel, pats, boem, boink, et cetera* are roots, i.e., lexical vocabulary items that are not specified for categorial information (or any other formal-syntactic features).¹⁰ According to these theories, the categorial status is determined by the structure on top of the root. In DM, for example, it is a categorial marker (e.g., *n, v*) that merges with the root and determines the categorial nature of the projected structure. The root $\sqrt{\text{dog}}$ becomes nominal by combining with a categorial head *n*^o: [_n *n* [$\sqrt{\text{dog}}$]]. In Borer's Exo-Skeletal Model, it is not an empty categorial head that determines the categorial status of the 'nominal projection' but rather a functional category like the definite article *the* as in *the dog*: [_{DP} [_D *the*] [$\sqrt{\text{dog}}$]].

Some further illustrations that functional material 'brings in' categorial information is given in (25) for the Dutch root $\sqrt{\text{wit}}$ 'white'. In (25a), the nominal nature of the phrasal structure *het wit* is determined by the definite article *het*. In (25b), the verbal nature of *witte* is determined by the past tense morphology (T) *-te* on $\sqrt{\text{wit}}$. In (25c), it is the attributive adjectival inflection *-e* that determines the adjectival nature of *witte*.

- (25) a. *Marie is in het wit.*
 Marie is in the white
 'Marie is dressed in white.'
 b. *Marie witte de kamer.*
 Marie whitewashed the room
 c. *Marie droeg een witte jurk.*
 Marie wore a white dress

¹⁰ See also Myers (1984) for the idea that inflection determines category in cases of conversion. For criticism of this approach to conversion, see Don (1993).

Along similar lines, an interjective root atom like *tsjoek* can be ‘assigned’ categorial status on the basis of locally available functional material. For example, the numeral *twee* and the plural morphology *-s* in (26a) define the nominal nature (and count interpretation) of the phrasal expression *twee tsjoeks*. The past tense morphology *-te* (i.e., T) in (26b) defines the verbal character of *tsjoekte*.¹¹ Along the same lines, a sound symbolic expression like *roemer de boem* can get a nominal (27a) or verbal (27b) ‘flavor’.¹²

- (26) a. *Na [twee tsjoeks] stond de trein stil.*
 after two TSJOEK.PL stood the train still
 ‘After two chuffs the train stopped.’
 b. *De trein [tsjoekte] het station uit.*
 the train TSJOEK.PST.3.SG the station out
 ‘The train cuffed out of the railway station’
- (27) a. *Na [twee roemer de boems] begon de drumband te marcheren.*
 after two ROEMER DE BOEM.PL began the marching-band to march
 b. *De drummer [roemer de boemt] de hele dag.*
 the drummer ROEMER DE BOEM.PRES.3.SG the entire day

On the basis of the above-mentioned facts, I conclude that interjective atoms constitute (bare) roots ($\sqrt{\quad}$). In this respect they differ from other so-called parts of speech, such as nouns, verbs, adjectives and prepositions, which constitute complex syntactic objects of the type $f\text{-}\sqrt{\quad}$ (i.e., functional

¹¹ See also De Belder (2011:10) for the root status of interjections and for the idea that the structural environment determines the categorial status of the root. Her example:

- (i) *Ik hoef al [dat ge-hé] niet.*
 I need all that GE-HÉ not
 ‘I don’t like that saying *hi* all the time.’

¹² A reviewer points out that attachment of plural morphology and tense morphology can also be found with elements that seem to have a categorial value already, since they are complete phrases.

- (i) *Twee ik-weet-het-niet-meer-s is er een teveel* (CP used as noun)
 two I-know-it-not-anymore-PL is there one too-many
 ‘Two I-don’t-knows’ is one too many.’
 (ii) *Jan ik-weet-het-niet-meer-t de hele dag.* (CP used as verb)
 Jan I-know-it-not-anymore-PRES.1.SG the entire day

On the basis of (i)-(ii), one might conclude that the combinability of an element with plural or tense morphology does not tell us very much about the categorial, or category-less, status of that element. If so, the combinability of an interjection with tense/plural morphology would not necessarily lead to the conclusion that they are roots.

Although an in-depth analysis of the patterns in (i)-(ii) falls beyond the scope of this article, it may be useful to point out here that in the literature two approaches towards the definition of roots can be found: (i) an approach that takes roots to be lexically defined (e.g., Borer 2005a,b) and (ii) an approach that takes them to be structurally defined (e.g., Halle and Marantz 1993, Harley and Noyer 1999). According to the former approach, a root is defined lexically by the merger of a vocabulary item that does not contain any syntactic features; according to the latter approach, a root is defined structurally if it is a terminal node that does not contain any category-specific features. Under the structural approach, a Root-feature functions as a placeholder that signals to the post-syntactic mechanisms (late insertion) that vocabulary material can be inserted in this position. Since the root position is defined in purely structural terms, it is irrelevant whether the vocabulary material realizing this position carries any syntactic features. As De Belder (2011:41-45), for example, points out, functional vocabulary items (e.g., pronouns, subordinators) can be used in a root-position, as in *Er zijn nog twee waarom* (lit.: there are still two why-s; ‘There are still two why-questions that need to be answered’). Importantly, the syntactic features (e.g., the +wh-feature of *waarom*) of the late-inserted vocabulary item *waarom* do not play any role in the syntax of the containing clause. Along the same lines, one might try to analyze the ‘clausal roots’ in (i) and (ii). Essentially, these expressions provide lexical contents to the root-feature. The syntactic features (e.g., categorial features like C) of the ‘clausal’ root do not play any (morpho)syntactic role within the sentence of which it is a part.

category + root): $n-\sqrt{\quad}$, $v-\sqrt{\quad}$, $a-\sqrt{\quad}$, $p-\sqrt{\quad}$. This root-status of interjections may also be one of the reasons that it is often quite difficult to paraphrase the exact meaning of interjections (see Kaplan 1999, Kratzer 1999). For example, the meaning of *Wow!* seems less transparent than the meaning of *cow*, and also the meaning of the interjection *boy* in *Boy, is he smart!* is less transparent than the meaning of *boy* in *The boy is smart*. The presence of functional material "narrows down" the meaning of the root; very roughly, you get an object-reading (nouns), event-reading (verbs), property-reading (adjectives) or location-reading (prepositions). Absence of this f-layer in an interjective linguistic expression arguably makes its descriptive meaning less transparent.

Another consequence of my interpretation of interjections as being roots is that we get a slightly different perspective on so-called 'secondary interjections', i.e., interjections that are said to be derived from lexical categories such as verbs and nouns; see, for example, Ameka (1992), Wilkins (1992), and Poggi (2009) for discussion.¹³ In Dutch, for example, words such as *jonge(n)* (lit.: 'boy') and *kut* (lit.: 'cunt') can be used as interjections; see (28). The sentences in (28) contain the interjections *kijk* (lit.: 'look') and *zeg* (lit.: 'say'). Rather than saying that these are interjections "derived from" (i.e., grammaticalized on the basis of) nouns and verbs, we might simply say that they are simply roots that haven't turned into nouns and verbs by means of a category-defining functional head (n, v).¹⁴

- (28) a. *Kut, ik ben mijn jas vergeten!*
 cunt (lit.), I have my coat forgotten
 'Damn, I forgot to take my coat with me!'
 b. *Jonge(n), wat hebben wij gelachen!*
 boy, what have we laughed
 'Boy, did we laugh!'

- (29) a. *Kijk, dat vond ik nog eens aardig!*
 look (lit.) that found I PRT PRT kind
 'Well, that was quite nice of her!'
 b. *Zeg, nu heb je wel genoeg gehad!*
 say (lit.) now have you PRT enough had
 'Well, you've had enough now!'

So far, I have argued that complex interjective expressions can be structurally decomposed into smaller units (atoms) and that these units are roots. This state of affairs raises an interesting question: if the computational atoms for building complex interjective expressions are roots, how do we ever get such a complex structure, since roots are generally taken to be invisible to syntactic computational operations (Chomsky 2011a,b)?¹⁵ One might hypothesize that roots can combine at the level of words and that complex interjective expressions form compounds rather than syntactic (i.e., phrasal) units.

¹³ In the linguistics literature a *primary interjection* is defined as an interjection that does not have a lexical category as its basis: e.g., *Wow!*, *Oops!*, *Mmm!*

¹⁴ Notice that these secondary interjections display the property of iteration, which under my analysis involves an asyndetic coordinated structure (See (24a)):

- (i) a. [Kut, kut, kut], *ik ben mijn jas vergeten!* (cf. (28a))
 b. [Kijk, kijk, kijk], *dat vond ik nog eens aardig!* (cf. (29a))

¹⁵ One might try to relate the idea that interjections —being roots— lack syntactic combinatorial properties to their distributionally free behavior. If they lack syntactic combinatorial properties, you can more or less stick them in ("interject") anywhere at the level of clauses and other types of phrasal expressions.

In Chomsky (2001), the interjective nature of an expression is associated with the absence of what he calls an 'edge-feature'. An edge-feature (EF) of a Lexical Item (LI) is a feature that allows the LI to enter into a computation, merging with some syntactic object SO. As Chomsky notes: "If an LI lacks EF, it can only be a full expression in itself; an interjection." In later work (e.g., Chomsky 2007:8), Chomsky proposes that the possibility of an element Z to enter into further computation depends on the *label* of Z; see also Chomsky (2011a,b).

- Dit is mijn TROM.*
this is my drum
- b. *holder de BOLDER.*
Jan is op ZOLDER.
Jan is in attic ('Jan is in the attic.')
- c. *pief paf POEF.* [Sound of shooting]
Jij bent de BOEF.
you are the villain
- d. *rinkel de KINKEL.*
wat een geRINKEL!
what a chinking ('what chinking!')

In short, interjective expressions display the same nuclear stress pattern as other phrasal expressions in Dutch. That is, nuclear stress falls on the most deeply embedded element on the recursive side (Cinque 1993). In the coordinate structures in (24), this is the interjective atom that is the most deeply embedded conjunct within the hierarchically organized coordinate structure; see also sections 5 and 6.

5. Complex sound interjective expressions as coordinate structures

Having argued that complex interjective expressions have a phrasal syntax, we can now investigate what their syntax looks like. In this section I will develop an analysis, already hinted at at the end of section 2, according to which complex interjective expressions are coordinations of roots. Following Thiersch (1993, 1994), Kayne (1994) and Johannessen (1998), among others, I will assume that a coordinate conjunction (Conj) projects a constituent structure containing a complement position and a specifier position. For a coordination like *Pieter en Koen*, in which two proper names (DPs) are coordinated, this yields the syntactic configuration in (34a). When we apply this structural analysis to an interjective expression like *boemer de boem*, we get the configuration in (34b):

- (34) a. [_{ConjP} [_{DP} *Pieter*] [_{Conj'} [_{Conj} *en*] [_{DP} *Koen*]]]
b. [_{ConjP} [_√ *boemer*] [_{Conj'} [_{Conj} *de*] [_√ *boem*]]]

Recall from section 2 that I analyzed interjective atoms as roots. Now why would a coordinating conjunction (Conj) be an adequate functional element for building complex structures on the basis of roots? An important characteristic of coordinators is that they connect constituents of the same kind to form a larger constituent of that same kind.¹⁷ For example, in (35a), two DPs —*de hond* and *de kater*— are connected to each other and form a larger constituent that has DP-like properties. That is, the coordinate structure as a whole displays the grammatical behavior that is characteristic of its coordinates. Thus, *de hond en de kater* displays the same grammatical behavior as its conjuncts *de hond* and *de kater*.¹⁸ For example, if two coordinated DPs bear accusative case, as exemplified by the German example in (35b), then this case property is also associated with the entire coordinate structure:

¹⁷ It should be noted here that categorial identity is not always necessary, as in *Bill is [[a democrat] and [proud of it]]*. Importantly, the coordinated phrases must be of the same semantic type; *in casu*, the noun phrase and the adjective phrase both function as predicates. See Sturm (1986) for a discussion of coordination of categorially distinct phrases.

¹⁸ I abstract away here from the fact that coordination of two singular (sg) DPs yields a coordinate structure that has plural (PL) interpretation; see (i). What is important for us is that the coordinate structure has number-properties, just like its DP-conjuncts.

(i) [_{ConjP/pl} [_{DP/sg} *De hond*] *en* [_{DP/sg} *de kater*]] *vochten met elkaar.*
the dog and the tomcat fought-PL with each-other

- (35) a. *Jan heeft* [_{ConjP} [_{DP} [_D *de*] $\sqrt{\text{hond}}$]] [_{Conj} *en* [_{DP} [_D *de*] $\sqrt{\text{kater}}$]] *geslagen*.
 Jan has the dog and the tom-cat beaten
 b. *Jan hat* [_{ConjP} [_{DP} [_D *den*_{acc}] $\sqrt{\text{Hund}}$]] [_{Conj} *und* [_{DP} [_D *den*_{acc}] $\sqrt{\text{Kater}}$]] *geschlagen*.

This inheritance behavior of the coordinate structure can be accounted for by taking coordinate conjunctions to be underspecified feature bundles that act as identity operators with respect to certain grammatical features, such as categorial features, case features and the bar-level property (cf. Thiersch 1993, 1994; see also Johannessen 1998:Chapter 5). Thus, [X1 and X2] “is-an” X. This means that [DP1 and DP2] “is-a” DP, and that [$\sqrt{\quad}$ and $\sqrt{\quad}$] “is-a” $\sqrt{\quad}$. In other words, the conjunction does not project its lexical nature onto the projected structure. Or to put it differently, coordinators do not have a labeling function (Chomsky 2011a,b). In this respect, the functional category Conjunction differs from other functional heads such as *v*, *C*(omplementizer), *n* and *D*, which do have a labeling function. This inability to label structures possibly makes conjunctions excellent candidates for connecting roots. The complex structure that results from coordination of roots “is-a” root. This possibly also explains why it is possible to have complex roots such as *roemer de boem* as input to attachment of plural morphology (27a) or present tense morphology (27b). The structural configuration that corresponds to these forms is given in (36).¹⁹

¹⁹ One might object to the idea of root-level coordination on the basis of examples like (i) which show that inflectional morphology —e.g., tense morphology (ia), and adjectival inflection (ib)— cannot be attached to a coordination of roots:

- (i) a. **De verpleegster* [[*was en weeg*]_t] *de baby*. (OK: *wast en weegt*)
 the nurse wash and weigh -s the baby
 'The nurse washes and weighs the baby.'
 b. **een* [[*mooi en snel*]_e] *auto* (OK: *mooie en snelle*)
 a beautiful and fast -e car
 'a beautiful and fast car'

It should be noted, though, that patterns of coordination exist in which right peripheral attachment of inflectional morphology to a root-level coordination is more, or even fully, acceptable (see (iia,b); (iia) is drawn from the internet). An important characteristic of these coordinations is that the two members form a fixed combination. In other words, they have an idiomatic flavor.

- (ii) a. *Ex-bondscoach José de Cauwer* *wik en weegt* *de kansen van de Belgische ploeg*.
 former-national-coach José de Cauwer think and weigh-s the chances of the Belgian team
 'Former national coach José De Cauwer weighs up the chances of the Belgian team.'
 b. *Geef een kort en bondige* *beschrijving van de voortgang*.
 give a short and brief-e description of the progress
 'Give a very brief description of the progress that has been made.'

Another type of expression that hints at the possibility of root-level coordination are expressions such as *vader-en-moeder-tje* (father-and-mother-DIM) and *cowboy-en-indiaan-tje* (cowboy-and-indian-DIM) in (iii), which refer to children's games. In these examples, diminutive morphology gets attached to the coordinations *vader-en-moeder* and *cowboy-en-indiaan*, respectively.

- (iii) *Piet en Ellen spelen vader-en-moedertje / cowboy-en-indiaantje*
 Piet and Ellen play father-and-mother-DIM / cowboy-and-indian-DIM

For the purposes of my article it is sufficient to show that root-level coordination with addition of inflection outside the coordination is possible to a certain extent, namely in the case of idiomatic coordinations and other fixed combinations of coordinated elements. The question, of course, remains as to why the patterns in (i) are ill-formed. The fact that the two coordinated elements do not correspond to a single “meaning unit” seems to be relevant. I will leave an in-depth analysis of this issue for future research

(36) [[ConjP [$\sqrt{\text{roemer}}$] [Conj' [Conj *de*] [$\sqrt{\text{boem}}$]]] -s/-t]²⁰

Now that I have argued that conjunctions are appropriate functional categories for building complex structures on the basis of roots, let us see whether there is any further support for this coordination analysis of complex interjective expressions. In what follows I will discuss a number of phenomena that hint at the presence of an underlying coordinate structure in the case of complex interjective expressions.

First of all, the Dutch coordinator *en* 'and' is a linking element that combines two elements that intuitively have an "equal" status semantically; that is, one element is not semantically more prominent than the other, as for example in predicate-argument relationships, where the predicate is semantically more prominent in the sense that it selects its arguments, or modifier-modifiee relationships, where the modifier is less prominent than the modifiee in the sense of being optional. Thus, the nominal elements *Pieter* and *Koen* in the coordinate structure *Pieter en Koen* (as in *Pieter en Koen slapen* 'Pieter and Koen sleep') are "semantically symmetric", i.e., one of the elements does not have an asymmetric role (argument, modifier) with respect to the other element. Similarly, *holder* and *bolder* in an expression like *holder de bolder* arguably have a semantically equal status; see section 6, though, for some formal phenomena that hint at an asymmetric relationship between the two interjective atoms.²¹

A second parallel between coordination and the *(d)e*-pattern concerns the possibility of extending the pattern in an unbounded fashion. In other words, the property of discrete infinity applies to both patterns. Coordination displays the property of recursion in the sense that a well-formed coordinate pattern can be used as a building block in an even bigger coordinate structure. In other words, language allows for recursively constructing more and more nested coordinate structures. Along the same lines, a sound-symbolic interjective expression can be used as a building block in an even bigger interjective expression.

- (37) a. [*Roemer en Koen*]
 b. [*Wouter en [Roemer en Koen]*]
 c. [*Pieter en [Wouter en [Roemer en Koen]]]*]

- (38) a. [*boemer [de boem]*]
 b. [*boemer de [boemer de boem]*]
 c. [*boemer de [boemer de [boemer de boem]]]*]

²⁰ For the sake of simplicity, I have labeled the projections of the coordinator with the X-bar theoretic labels Conj' and ConjP. Crucially, the labeling information is determined by the conjuncts. If these are roots, then the entire configuration (ConjP) is a root syntactic object. Consequently, tense morphology can attach to this complex root.

²¹ It should be noted that *holder de bolder*, as opposed to the coordinate structure *Pieter en Wouter* has a fixed order. Thus, *Wouter en Pieter* is a possible pattern in present-day Dutch, but *bolder de holder* is not. This more restrictive order does not mean that a coordinate-like analysis of *holder de bolder* should be excluded. Also in coordinations of names we sometimes find order restrictions. In English, for example, *Laurel and Hardy* (comic duo) and *Simon and Garfunkel* (singer-song writers) have a fixed order. In Dutch, we find similar fixed patterns of coordination: *Peppi en Kokki* (comic duo) and *Suske en Wiske* (duo in comic magazines). Language comparison also makes clear that the order seems quite arbitrary: Dutch *pijl en boog* (arrow and bow) vs. ^{??}*boog en pijl*, but English *bow and arrow*; also, Dutch *peper en zout* (pepper and salt) vs. ^{??}*zout en peper*, but English *salt and pepper*. Also coordinations in idiomatic expressions display a fixed order. The Dutch idiomatic expression *in zak en as zitten* (in bag and ash sit, 'to be very sad and disappointed'), for example, does not permit the reverse order of the two conjuncts: **in as en zak zitten*.

What is important is that these "fixed" coordinations display properties of "normal" coordinations. For example, the requirement that in a monosyndetic coordination the conjunct appear in between the last two coordinated elements, holds both in "normal" coordinations (e.g. *John, Peter, Bill and Harry* versus **John, Peter and Bill, Harry*) and "fixed" coordinations (e.g. *Crosby, Stills, Nash and Young* versus **Crosby, Stills and Nash, Young*).

A third similarity concerns the possibility of creating iterative patterns, i.e., patterns in which one atom is used repeatedly. In (39), this iterative use is illustrated for coordinate patterns. Iteration here encodes the aspectual property of ‘delimitedness’ (unboundedness); see Verkuyl (1993). In (39a,b), there was no end to the event of crying and raining, respectively. It went on for an indefinite period of time.

- (39) a. *Jan huilde en huilde en huilde.*
 Jan cried, and cried and cried.
 ‘Jan was crying all the time.’
 b. *Het regende en regende en regende.*
 it rained and rained and rained
 ‘It kept on raining.’

In (40), the phenomenon of iteration is exemplified for interjective expressions:

- (40) a. *boemer de boemer de boemer de boem*
 b. *rinkel de kinkel de kinkel de kinkel*

This iterative use of a sound symbolic interjective atom has the effect that the length (and possibly intensity) of the sound event (i.e., the roll of drums, the sound of breaking glass) is represented.

A fourth property that the complex interjective patterns featuring *de* and the coordinate structures featuring *en* share is the possibility of leaving the linking element —*de* in interjective expressions and *en* in coordinate expressions—phonetically unrealized between some of the conjuncts. In (41), for example, there is no overt coordinator present in between the first three conjuncts. The coordinator *en* only appears in between the last two conjuncts. Given the single occurrence of *en* in this complex coordinate structure in (41), this coordination pattern can be characterized as monosyndetic coordination. Along the same lines, we may call complex interjections like (42a,b) monosyndetic interjective expressions. With the exception of the last two interjective atoms, the atoms are not separated from each other by means of the connecting element *de*.

- (41) a. *Jan huilde, huilde, huilde **en** huilde.*
 b. *Het regende, regende, regende **en** regende.*

- (42) a. *boemer boemer boemer **de** boem*
 b. *rinkel rinkel rinkel **de** kinkel*

As noted in Munn (1993) and Kayne (1994), there is a contrast in well-formedness between the partially asyndetic coordination in (43a) and the one in (43b).

- (43) a. *I saw [John, Bill and Sam].*
 b. **I saw [John and Bill, Sam].*

As shown in (44), the same contrast is found in Dutch:

- (44) a. *Ik zag [Roemer, Pieter en Koen].*
 I saw Roemer, Pieter and Koen
 b. **Ik zag [Roemer en Pieter, Koen].*

If complex sound symbolic expressions have a coordinate-like structure, we may expect to find a similar contrast. Interestingly, for all Dutch speakers whom I have asked for their judgments, there is a subtle but clear contrast in acceptability between the a-examples and the b-examples in (45)-(46). For some speakers, this contrast seems to be slightly less strong, though, than the contrast between the a-

examples and b-examples in (44).²² I will interpret the contrasts in (45) and (46) as corroborating evidence for the coordinate-like structure of complex interjective expressions.

- (45) a. *Ze reden*[?] *hobbel, bobbel de bobbel over het keienpad.*
they drove HOBBEL, BOBBEL DE BOBBEL across the stone-road
b. *Ze reden*^{*} *hobbel de bobbel, bobbel over het keienpad*
- (46) a. *Het glazen tafelblad viel*[?] *rinkel, kinkel de kinkel kapot op de grond.*
The glass table-top fell RINKELKINKEL DE KINKEL broken onto the floor
b. *Het glazen tafelblad viel*^{*} *rinkel de kinkel, kinkel kapot op de grond.*

A fifth similarity between iterative coordinate patterns featuring *en* and sound symbolic expressions featuring *de* concerns the prosodic phrasing of those structures. More specifically, they are prosodically “flat” in the sense that the atoms connected by the linkers *en* and *de* are separated by prosodic boundaries of equal strength, which, following Wagner (2005, 2010), I will indicate with the pipe symbol ‘|’. This “balanced” prosodic pattern causes a rhythmic effect. Furthermore, the last atom of the complex iterative structure is phonologically the most prominent one; that is, it carries the nuclear stress of the complex expression. Starting with this last prosodic property, consider the following examples:²³

- (47) a. *Pieter en | KOEN |*
‘Pieter and Koen’
b. *Roemer en | Pieter en | KOEN |*
‘Roemer and Pieter and Koen’
c. *Roemer en | Pieter en | Wouter en | KOEN |*
‘Roemer and Pieter and Wouter and Koen’
- (48) a. *roemer de | BOEM |*
b. *roemer de | boemer de | BOEM |*
c. *roemer de | boemer de | boemer de | BOEM |*

The examples in (47) show that the last conjunct (*KOEN*) is always accented (indicated here by capitals), and the b-examples show that the last interjective atom (*BOEM*) is phonologically the most prominent.

Given the parallelism between coordinate structures like *Roemer en Koen* and complex interjections like *roemer de boem*, I conclude that the latter have an internal syntax that is similar to that of the former construction type. Thus, complex sound symbolic interjections are coordinate structures. The interjective atoms constitute the conjuncts of the complex structure. Following, among others, Thiersch (1993, 1994), Kayne (1994) and Johannessen (1998), I will assume that a coordinate conjunction (Conj) like *en* projects a phrasal structure containing a complement position and a specifier position. Thus, (47a) has the structure in (49a), (47b) the structure in (49b), and (47c) the one in (49c).

- (49) a. [_{ConjP} *Pieter* [_{Conj'} [_{Conj} *en*] *KOEN*]]
b. [_{ConjP} *Roemer* [_{Conj'} [_{Conj} *en*] [_{ConjP} *Pieter* [_{Conj'} [_{Conj} *en*] [_{ConjP} *KOEN*]]]]]]
c. [_{ConjP} *Roemer* [_{Conj'} [_{Conj} *en*] [_{ConjP} *Pieter* [_{Conj'} [_{Conj} *en*] [_{ConjP} *Wouter* [_{Conj'} [_{Conj} *en*] [_{ConjP} *KOEN*]]]]]]]]]]

Patterns (49b,c) are recursive in the sense that the Conj-head *en* takes a phrasal ConjP as its complement. In other words, we have a self-embedded structure: a ConjP is embedded within a larger

²² As a reviewer points out, this weakening of the contrast may be due to the fact that (45a) and (46a) are rather marginal to begin with compared to the examples of partially asyndetic coordinations as in (44a). The reviewer agrees that (45a) and (46a) are better than the examples (45b) and (46b).

²³ See also Wagner (2010: section 5.4) for the statement that prosodically flat structures have a nuclear accent on the last element in the sequence.

ConjP. Under the assumption that asyndetic coordinations have the same structure but are headed by a silent Conj-head, here represented as \emptyset , we have the following hierarchical structure for an asyndetic coordination like *Roemer, Pieter, Koen*:

- (50) [_{ConjP} *Roemer* [_{Conj'} [_{Conj} \emptyset] [_{ConjP} *Pieter* [_{Conj'} [_{Conj} \emptyset] [_{ConjP} *KOEN*]]]]]]

The conjunct that carries nuclear accent is the most deeply embedded conjunct on the recursive side. The idea that nuclear stress placement is directly related to structural embeddedness was proposed in Cinque (1993).

Given the parallelism in placement of nuclear stress in complex sound symbolic interjections (cf. (48)) and coordinate structures (cf. (47)), we may assign the following structures to the examples (48a,b,c):

- (51) a. [_{ConjP} *roemer* [_{Conj'} [_{Conj} *de*] *BOEM*]]
 b. [_{ConjP} *roemer* [_{Conj'} [_{Conj} *de*] [_{ConjP} *boemer* [_{Conj'} [_{Conj} *de*] [_{ConjP} *BOEM*]]]]]]
 c. [_{ConjP} *roemer* [_{Conj'} [_{Conj} *de*] [_{ConjP} *boemer* [_{Conj'} [_{Conj} *de*] [_{ConjP} *boemer* [_{Conj'} [_{Conj} *de*] *BOEM*]]]]]]]]

The asyndetic complex expressions in (3c) and (18b) arguably have the same structural representation, with the only difference that the Conj-head is silent; i.e., Conj does not externalize as *de*.²⁴

- (52) a. [_{ConjP} *pats* [_{Conj'} [_{Conj} \emptyset] [_{ConjP} *boem* [_{Conj'} [_{Conj} \emptyset] [_{ConjP} *KNAL*]]]]]] (= 3c)
 b. [_{ConjP} *boem* [_{Conj'} [_{Conj} \emptyset] [_{ConjP} *boem* [_{Conj'} [_{Conj} \emptyset] [_{ConjP} *BOEM*]]]]]] (= 18b)

6. Against a flat structural analysis

In section 5 I have tried to give evidence for the structured nature of complex interjective expressions by drawing a parallel with syntactic coordinations. I crucially built on the hypothesis that coordinations involve a hierarchically organized phrase structure (ConjP) in which the Conj is the head and the conjuncts are in hierarchically different positions; one is the specifier and one is the complement of ConjP (cf. (51a)). The question arises as to whether there is any independent support for the hierarchically asymmetric placement of the interjective atoms that make up the complex interjections. That is, is there any evidence that in an expression like *roemer de boem* the first interjective atom is in a hierarchically higher position (viz. Spec,ConjP) than the second interjective atom, which is in the complement position of Conj. Of course, the same question can be raised for the interjective atoms in (51b,c), each of which occupies a different hierarchical position in a structure involving multiple coordination. In view of the iterative nature of certain interjective expressions (e.g., the repetitive pattern *boem boem boem*), one might, for example, propose that the interjective atoms are not in hierarchically asymmetric relation with respect to each other but simply constitute a linear arrangement of elements at the same level of depth (cf. Uriagereka 2008, Karlsson 2010). Under such a syntax-less analysis, the complex interjective expressions in (51) and (52) would simply have a flat structure, as in (53) and (54):

- (53) a. [*roemer de boem*]
 b. [*roemer de boemer de boem*]
 c. [*roemer de boemer de boemer de boem*]
 (54) a. [*pats boem knal*]
 b. [*boem boem boem*]

²⁴ See also Van den Toorn (1960) for the idea that complex interjections such as *o jee* ('Oh gush!') and *ach ach* (expression of pity) involve coordination of interjections.

So, what argues in favor of the hierarchical ConjP-structures in (51)-(52) and against the flat structures in (53)-(54)? One type of phenomenon that Johannessen (1998) takes to support a hierarchical structure in which the two conjuncts are in hierarchically different syntactic positions (i.e., specifier and complement) is what she calls 'unbalanced coordination'. Unbalancedness holds when one of the conjuncts displays expected, normal grammatical behavior with respect to some grammatical property (e.g., case, agreement), while the other displays deviant behavior. For example, in Stavanger Norwegian, conjoined subject-pronouns display asymmetric behavior as regards case: the first conjoined pronoun bears the expected nominative case (*han*), while the second pronoun is marked by accusative case (*meg*); cf. Johannessen (1998:18). In other words, only the specifier conjunct receives the grammatical feature (*in casu* nominative case assigned by T) associated with the whole ConjP (cf. Johannessen 1998:8).

- (55) [*Han og meg*] *var sammen om det*
 he.NOM and me.ACC were together about it
 'He and I were in it together.'

Besides unbalancedness of the receiving type, Johannessen distinguishes unbalancedness of the assigning type (see Johannessen 1989:8): one conjunct assigns a grammatical property to some ConjP-external element, in spite of it possibly having conflicting features with other conjuncts. This is exemplified for Czech in (56), where the first conjunct determines (i.e., "assigns") the agreement properties of the finite verb (Johannessen 1998:9):

- (56) *Pujdu tam [já a ty]*
 will.go.1.Sg. there I and you
 'You and I will go there.'

As Johannessen (1998:143-154) shows, unbalancedness is also attested in coordinated constructions with more than two conjunctions. Under a ConjP-analysis, multiple coordination may look as follows: [_{ConjP1} Spec [_{Conj} Conj ConjP2]]. Johannessen (p. 144) notes that there is usually only one conjunct with normal features (e.g., case, agreement) in each multiple ConjP. One of the examples she gives in support of this comes from English presentation constructions. As shown in (57), the verb agrees only with the first conjunct—i.e., the specifier (*a man*) of the (highest) ConjP.

- (57) *There is/*are [a man, a woman, and a cat] waiting outside.*

The question now arises as to whether signs of unbalancedness (of the receiving type or assigning type) can be identified within complex interjections. That is, are there patterns in which the interjective atom in the specifier position displays grammatical behavior that is different from that of the interjective atom in the complement position. Importantly, Johannessen's unbalanced coordination typically involves a relationship between one ConjP-internal conjunct and a ConjP-external element (e.g., the finite verb). Since interjective expressions typically behave like isolates as far as their external syntax is concerned—i.e., they do not seem to enter into any specific morphosyntactic dependency with some clause-internal element—it is quite difficult to test the phenomenon of unbalancedness on the basis of their external syntax. One might explore, though, the possibility of unbalancedness at the syntax-phonology interface level. As Johannessen (1998:24) points out, also phonological features may be distributed unevenly in a ConjP. The example she gives comes from the phenomenon of soft mutation in Welsh: some words get a different consonant when preceded by certain categories. As shown in (58), only the first conjunct is subject to soft mutation: *fara* is a mutated form of *bara*, while *menym* has the citation form, and thus is not mutated into *fenyn*.

- (58) *Bwytais i [fara, menyf a chaws]*
 ate I bread butter and cheese
 'I ate bread, butter and cheese.'

Interestingly, certain signs of unbalancedness can be found at the phonological level in Dutch complex interjective expressions. Consider, first, the following simplex interjections:

- (59) a. *jonge! Wat ben jij dom!* (amazement)
 JONGE what are you stupid
 'Boy, you are so stupid!'
 b. *ja! Wat moet ik hiervan denken?* (doubt)
 yes! what must I here-of think
 'Well, what should I think of this?!'

The interjections *jonge* and *ja* can be phonologically augmented by adding an alveolar stop /t/ at the beginning of the sound sequence: *tjonge!* and *tja!* The stop that is added at the beginning of the sound sequence contributes to the expressive/affective flavor of the interjective expression. When we now turn to complex interjective expressions, we see something interesting happen: besides the 'bare' reduplicative patterns (60a,b), we can have the (partially) augmented reduplicative in (61a,b), but not those in (62) and (63).

- (60) a. *jonge, jonge, jonge! Wat ben jij dom!*
 b. *ja, ja, ja! Wat moet ik hiervan denken?*
 (61) a. *tjonge, jonge, jonge! Wat ben jij dom!*
 b. *tja, ja, ja! Wat moet ik hiervan zeggen?!*
 (62) a. **jonge, tjonge, jonge!*
 b. **ja, tja, ja!*
 (63) a. **jonge, jonge, tjonge!*
 b. **ja, ja, tja!*

What these examples show is that if one of the interjective atoms gets augmented phonologically by /t/, this sound augmentation can only be applied to the first interjective atom, as in (61). Adopting a ConjP-analysis of complex interjections, I can interpret this phenomenon of phonological augmentation as another illustration of Johannessen's unbalanced coordination. In the mapping from syntax onto phonology, only the first conjunct (i.e., the highest specifier-conjunct) gets augmented phonologically. Under a (non-binary branching) flat structure analysis, one would have to postulate an additional linearity principle to account for this phonological augmentation rule.

This special status of the first interjective atom in a complex interjective expression is also suggested by certain other phenomena. Consider, for example, the following minimal pairs:

- (64) a. *rinkel de kinkel* (sound of breaking glass)
 b. *rinkel de kinkel de kinkel*
 c. *??rinkel de rinkel de kinkel*
 (65) a. *holder de bolder* (sound of something that falls down, e.g. from the stairs)
 b. *holder de bolder de bolder*
 c. *??holder de holder de bolder*
 (66) a. *hobbel de bobbel* (sound of something that moves on a bumpy road)
 b. *hobbel de bobbel de bobbel*
 c. *??hobbel de hobbel de bobbel*

The a-examples are complex interjections with two interjective atoms. The b-examples show that reduplication can apply to the second interjective atom, resulting in a pattern in which the first interjective element has a unique form (e.g., *rinkel*, *holder*, *hobbel*). The c-examples show that patterns in which the first interjective atom is reduplicated and the last atom has a unique form are considered less acceptable. This uniqueness of the first interjective atom is again compatible with a phrase structural analysis in which the first interjective atom occupies the specifier position of the highest ConjP. In other words, the phenomenon illustrated in (64)-(65) fits in the patterns of unbalanced coordination that are observed in Johannessen (1998).

Another phenomenon that possibly hints at the special status of the first interjective element may be called "expressive concord". To explain what I mean by this consider first the examples in (67) and (68):

- (67) a. *roemer de boem* (sound of a drum)
 b. **roem de boemer*
- (68) a. *hieper de piep (hoera)* (expression of joy)
 'hip hip hurray!'
 b. **hiep de pieper (hoera)*

These examples show that in a bi-atomic interjective expression (*roemer de boem*, *hieper de piep*), the sequence *er* (pronounced as /əɾ/) typically occurs on the first atom.²⁵ Given this observation, one might propose that in more complex expressions like those in (69a,b), the *er* that appears on the intermediate interjective atoms is somehow dependent on the *er* of the first interjective atom (*roemer/hieper*). One might interpret this sharing of the *er*-property as a kind of concord phenomenon. From the perspective of the ConjP-hypothesis, one could interpret this concord in terms of the structural relation of c-command: the interjective in the highest specifier position enters into a concord relationship with the interjective atoms in its c-command domain (except for the last interjective atom: *boem/piep*). This is represented in (70a,b), where the boldface **er** indicates the "base form" and the underscored er's the concurring elements.

- (69) a. *roemer de boemer de boemer de boem*
 b. *hieper de pieper de pieper de piep (hoera)*
- (70) a. [_{ConjP} **roemer** [_{Conj}' [_{Conj} *de*] [_{ConjP} boemer [_{Conj}' [_{Conj} *de*] [_{ConjP} boemer [_{Conj}' [_{Conj} *de*] *boem*]]]]]]]]
 b. [_{ConjP} **hieper** [_{Conj}' [_{Conj} *de*] [_{ConjP} pieper [_{Conj}' [_{Conj} *de*] [_{ConjP} pieper [_{Conj}' [_{Conj} *de*] *piep*]]]]]]]]

So far, I have discussed some features of unbalancedness in the domain of complex interjections. Following Johannessen's interpretation of unbalanced coordination as an indication of a hierarchically organized coordinate structure, I will take the above-mentioned phenomena also to be suggestive of a hierarchical organization of complex interjective expressions (see (51)-(52)). In what follows I will discuss two more arguments that seem to support a hierarchical organization of complex interjective expressions; one argument is syntactic, the other phonological.

A syntactic argument that seems to favor a hierarchical analysis of complex interjections over a flat-structural analysis comes from patterns involving echo-question formation by means of the wh-word *WAT* 'what'. As shown in (71), the echo-wh-word used by speaker B "refers" to a string of elements in speaker A's utterance that B has not heard or understood properly. This string of elements typically corresponds to a syntactic unit (i.e., a constituent).

- (71) Speaker A: [*twee* [*foto's* [*van* [*koffers* [*op* [*wieltjes*]]]]]]]]
 two pictures of suitcases on wheels
- Speaker B:
- a. *twee foto's van koffers op WAT?* (WAT = *wieltjes*)
 two pictures of suitcases on WHAT
- b. *twee foto's van WAT?* (WAT = *koffers op wieljes*)
 two pictures of WHAT
- c. *twee WAT?* (WAT = *foto's van koffers op wieljes*)
 two WHAT

If the echo-wh-word *WAT* typically replaces a string of words that correspond to a syntactic constituent, then the following interjective expressions of which a part has been questioned by the

²⁵ In certain interjective expressions, the coordination is balanced in the sense that both interjective atoms carry -*er*/-*el*; e.g., *holder de bolder* and *rinkel de kinkel*.

echo-wh-word WAT hint at a hierarchical organization of the interjective atoms that make up the complex interjective expression.

(72) Speaker A: *roemer de boemer de boem*

Speaker B:

a. *roemer de boemer de WAT?*

(WAT = *boem*)

b. *roemer de WAT?*

(WAT = *boemer de boem*)

As a final argument in support of a hierarchical organization of complex interjective expressions I mention (again) the assignment of phonological stress. Under a flat-structure analysis of complex interjective expressions stress assignment must be regulated by a separate phonological rule, namely one that places phonological prominence on the last interjective atom in a concatenation (i.e., a linearly ordered sequence) of interjective atoms (e.g., *boem boem BOEM*; *boemer de boemer de BOEM*; *pats boem KNAL*). Besides the question as to why string-based stress assignment would have this “(linearly) rightmost” effect, it is clear that this linear rule of stress placement would be redundant with respect to the phrase structure sensitive rule of nuclear stress placement. An approach in which we can do without this "extra" string-based phonological rule seems preferable.

Summarizing, in sections 5 and 6 I have argued that complex sound interjections display similarities to coordinate patterns. In a way, complex interjections are lists of interjective atoms. It was proposed that the syntax of complex interjections is the same as that of patterns of coordination: a conjunction (connector) heads a phrasal projection containing a complement and a specifier. In coordinations, we have a lexical conjunction *en*, whereas in complex interjections, we may find the conjoining element *de*. When the conjunction remains phonetically empty, we have an asyndetic pattern. According to this analysis, the atoms of complex interjective expressions should not be treated like beads on a string. Complex interjections are structured expressions that have a nested structure; that is, they display recursive embedding. I further argued that interjective atoms are roots and that a coordinator is an optimal functional element for building a complex syntactic object on the basis of roots. The outcome of conjoining two roots *is* a complex root expression.

7. Augmentative sounds

In the previous sections I have argued that complex interjective expressions have a coordinate structure and that the coordinated interjective elements are roots. In certain interjective expressions, we have an asyndetic coordination in the sense that there is no overt conjoining element in between the two interjective atoms (e.g., [_{ConjP} *boem* [_{Conj'} [_{Conj} \emptyset] *boem*])). In other expressions, we find an overt linking element between the two interjective atoms, as in *boemer de boem*. So far I have interpreted this element as a realization of the coordinator: [_{ConjP} *boemer* [_{Conj'} [_{Conj} *de*] *boem*]]. In this section I will try to give a more precise characterization of this connecting element. What I will propose is that the sounds *d* and *e* (i.e., /ə/; schwa) are augmentative sounds that contribute an emphatic/expressive flavor to the externalized interjective expression (cf. Overdiep 1937:113-114, 157-161, Corver 2004, 2006). The alveolar obstruent /d/ will be analyzed as a paragogic sound that gets attached at the end of certain interjective atoms. The schwa-sound will be analyzed as an externalization of the functional head Conj.

I start my discussion with the sound schwa (i.e., /ə/). As shown in (73)-(74), schwa occurs "on its own" as a linking sound in certain sound symbolic expressions involving reduplication of lexical material. Consider, for example, the following patterns:

(73) a. *De trein reed [tsjoek tsjoek tsjoek] het station uit.*

the train drove TSJOEK TSJOEK TSJOEK the railway-station out

b. *De trein reed [tsjoek e tsjoek] het station uit.*

c. *De trein reed [tsjoek e tsjoek e tsjoek e tsjoek] het station uit.*

(74) a. *De telefoon rinkelde [tring tring tring].*

the phone rang TRING TRING TRING

- b. *De telefoon rinkelde [tring e ling].*
 the phone rang TRING E LING
- c. *De telefoon rinkelde [tring e ling e ling e ling].*
 the phone rang TRING E LING E LING E LING

Adopting the coordination analysis discussed in section 5, a sequence like *tring e ling* and *tring e ling e ling* can be represented as in (75a) and (75b), respectively:

- (75) a. [_{ConjP} *tring* [_{Conj'} [_{Conj} -e] *ling*]]
 b. [_{ConjP} *tring* [_{Conj'} [_{Conj} -e] [_{ConjP} *ling* [_{Conj'} [_{Conj} -e] [*ling*]]]]]]

Now what about the alveolar obstruent /d/, as in *rinkel de kinkel* and *roemer de boem*? I propose that /d/ is a paragodic alveolar obstruent that can be inserted at the end of certain interjective atoms, viz., those ending in *-el* and *-er*. The insertion of a paragodic alveolar obstruent at the end of a word results from a general tendency in Dutch dialects to end in a segment that is as consonantal as possible (see Corver and Van Oostendorp 2005). These paragodic alveolar sounds are typically attached to words ending with *n*, *l*, and *r*. Van Haeringen (1938) gives the following examples of Dutch words containing a paragodic dental: *iemand* 'someone' (*iemand* < *ieman*), *dubbeld* 'double' (*dubbeld* < *dubbel*), *sedert* 'since' (*sedert* < *seder*).^{26 27} In the context of our discussion of interjective expressions, especially the last two examples are relevant since interjective atoms like *rinkel* (see (21d)) and *boemer* (see (20)), respectively, also end with the sound sequence *el* (i.e., /əl/) and *er* (i.e., /ər/).

Also in dialectal varieties of Dutch, the insertion of a paragodic alveolar obstruent at the end of words ending with /əl/ or /ər/ is quite common. Van Oostendorp (2000), for example, notes that in Utrecht Dutch we find words like *brommert* and *gozert*, which result from attachment of the voiceless alveolar stop /t/ to the words *brommer* 'moped' and *gozer* 'bloke', respectively. Ter Laan (1953:138-143) gives the following examples from Groningen Dutch:

- (76) a. *Ik kom der moar enkelt.* (paragodic *t* after (*e*)*l*)
 I come there just only-*t*
 'I just come there now and then.'
- b. *Wiegert* (paragodic *t* after (*e*)*r*)
 Wieger-*t*
 'Wieger' (= proper name)

As noted by Van Haeringen (1938), a paragodic alveolar obstruent can sometimes get an expressive value (with intensifying meaning). An example of this is the insertion of *-d*, pronounced as a voiceless alveolar stop /t/, after the agentive nominalizing suffix *-er* with words like *knoeier* 'bungler', *vreter* 'greedy-guts', *suffer* 'dullard'. Thus, we get forms such as: *een knoeierd* ('a bungler'),

²⁶ The words *iemand* and *sedert* are part of the Standard Dutch lexicon, the word *dubbeld* is archaic but is still found in various Dutch dialects (see e.g., Ter Laan (1953:142) for Groningen Dutch).

²⁷ As shown by the examples, the alveolar obstruent is sometimes orthographically represented as *d* or *t*. They are all pronounced as /t/, i.e., as a voiceless alveolar stop, in those examples. In the examples I give, I use the orthography that is used in the written sources that I consulted. It should be noted here that (variants of) Dutch has a phonological devoicing rule that states that voiced obstruents become voiceless at the end of a word. This final obstruent devoicing rule is also known under the German name of *Auslautverhärtung*. For example, it is generally assumed that *iemand* 'someone' has an underlying phonological representation with a /d/ sound at the end, which actually is also used in the orthographic representation. This phoneme /d/ surfaces, for example, when *iemand* gets the plural morpheme *-en* attached to it, resulting in a structure in which the dental obstruent is no longer at the word end (see (i)). Thus the /t/ pronounced at the end of the singular form *iemand* results from final obstruent devoicing.

- (i) *Met twee iemanden mag je nooit spreken, namelijk Jan en Bob.*
 with two omeones may you never talk, namely Jan and Bob
 'You are not allowed to talk to two specific persons, namely Jan and Bob.'

een vreterd ('a greedy-guts') and *een sufferd* ('a dullard'). It does not seem implausible that the paragogic *d* found in complex interjective expressions also contributes to the expressive and intensifying meaning of the interjective expressions.

The insertion of a paragogic alveolar obstruent is also attested with substantively used (possessive, demonstrative and interrogative) pronominals in various dialects of Dutch (see Corver and Van Oostendorp 2005; Ter Laan 1953:138-139; Overdiep 1937:280-284). Consider, for example, the following equivalents of English *mine* in a number of Dutch variants:

- (77) *Mijn broertje vindt zijn fiets de mooiste, maar ik ...*
 my brother-DIM finds his bike the beautiful-SUPERL, but I ...
 'My brother finds his bike the most beautiful one, but I ...
- a. *de mijne* (Standard Dutch)
 the my-*e*
 'mine'
- b. *mient* (Onstwedde Dutch)
 my-*t*
- c. *miende* (Giethoorn Dutch)
 my-*d-e*
- d. *de miende* (Hooghalen Dutch)
 the my-*d-e*

The Standard Dutch pattern in (77a) features a schwa right after the possessive pronoun *mijn*, which is the form of the attributively used possessive pronoun (as in *mijn fiets* 'my bike'). The Onstwedde Dutch form *mient* has a paragogic *t* (i.e., a voiceless alveolar stop /t/) right after the possessive pronoun *mien*. In the Giethoorn Dutch and Hooghalen Dutch examples, we find a pattern that displays both a paragogic voiced alveolar stop (viz., /d/) and a schwa (/ə/). (77c) and (77d) differ from each other in the absence versus presence of the definite article before the possessive pronominal form.

Superficially, the sound sequence *de* (i.e. /də/) in (77c) and (77d) is similar to the sequence *de* (i.e., /də/) in *boemer de boem* and *holder de bolder*. The question arises as to whether the grammatical make-up of forms such as (*de*) *miende* may give us insight into the internal make-up of the sequences *roemer de* and *rinkel de*. Although a full-fledged analysis of the internal syntax of substantively used possessive pronominal forms is beyond the scope of the present article, I would like to propose that the schwa in (*de*) *miende* is the same schwa as the one in Standard Dutch *de mijne*. For the latter form, Corver and Van Koppen (2011) argue that *e* is a weak pro-form that spells out the functional head *n* (i.e., little *n*). More specifically, they assign the representation in (78a) to the pattern *de mijne*. I propose that the pattern (*de*) *miende*, featuring the paragogic dental obstruent right after the possessive pronoun, has the form in (78b):

- (78) a. [DP *de* [_{PosP} *mijn* [_{nP} [_n *e*] NP_o]]] (*de mijne*)
 b. [DP (*de*) [_{PosP} *miend* [_{nP} [_n *e*] NP_o]]] ((*de*) *miende*)

According to this analysis of substantively used possessive pronominals in Dutch the sound schwa can function as a weak pro-form that realizes (i.e., externalizes) a functional head (*in casu n*). In this pattern of NP-ellipsis (i.e., the NP-complement, or better the root, remains phonetically unrealized), the categorial flavor of the elided material is recoverable on the basis of the spelled out functional head *n*.

In the spirit of this approach towards substantively used pronominals, I would like to propose that *e* (i.e., schwa) in patterns like *boemer de boem*, *rinkel de kinkel* and *tsjoek e tsjoek* spell out the functional head Conj. This means that *boemer de boem*, for example, starts out as the syntactic (coordinate) structure in (79a) and is mapped onto a sound representation (externalization) involving two phonological processes, viz., insertion of the paragogic sound /d/ after the interjective root *boemer* and insertion of /ə/ as a PF-realization of the functional head Conj (see (79b)). Prosodically, this sequence of sounds is mapped onto a syllabically organized structure like (79c), in which the two augmentative sounds /d/ and /ə/ form together a syllable:

- (79) a. [_{ConjP} *boemer* [_{Conj} Conj *boem*]]
 b. [_{ConjP} *boemer***d** [_{Conj} [_{Conj} **e**] *boem*]] (e = /ə/)
 c. [_σ *boe*] [_σ *mer*] [_σ *de*] [_σ *boem*]

It does not seem implausible to put this occurrence of schwa on a par with what I descriptively call augmentative schwa, i.e., the schwa that is added to an element for emphatic and expressive purposes. As exemplified in (80) and (81), certain pronouns and degree words can be phonologically augmented by means of schwa in (variants of) Dutch (see Corver 2004, 2006).

- (80) a. *ik* (I) a.' *ikke* (I-e)
 b. *dat* (that) b.' *datte* (that-e)
 c. *wat?* (what) c.' *watte?* (what-e)
- (81) a. *Ik vond die som zo verrekt(e) moeilijk.*
 I found that sum so damned(e) difficult
 'I found that sum very difficult to solve.'
 b. *Ik vind Jan zo verdomd(e) aardig.*
 I find Jan so damned(e) nice
 'I find Jan a really nice man.'

I propose that the augmentative schwa in these examples spells out (i.e., externalizes) a functional head position. More specifically:

- (82) a. [_{nP} [_n -e] [_{nP} *ik*]]
 b. [_{DegP} *zo* [_{QP} *verrekt* [_{Q'} [_Q -e] [_{AP} *moeilijk*]]]]

I take the augmented pronominal form *ikke* to be derived by means of N (i.e., root)-to-n movement, where n externalizes as schwa. In (82b), the degree modifier *verrekt* occupies the specifier position of QP (see Corver 1997a,b). The Q-head (optionally) externalizes as schwa, yielding a doubly filled XP-configuration; that is, both the Spec-position and the head position are pronounced. Analogously to the augmentative schwas in the structural environments in (82), I take the schwa that appears in complex interjective expressions to be a "minimal" sound that realizes a functional head, viz., Conj.

Let me finish this section with a brief and more speculative remark about the sequences /ər/ and /əl/, which typically precede the augmentative sound combination *d+e* (see also note 9). As is clear from the examples in (83), these complex interjective expressions have a frequentative/repetitive meaning to them. This repetitive meaning is, first of all, linguistically encoded by the iterative use of an interjective atom (e.g., *bolder* in *holder de bolder de bolder de bolder* and *kinkel* in *rinkel de kinkel de kinkel*). But also the elements *-er* and *-el* in expressions like *holder de bolder* and *rinkel de kinkel*, respectively, seem to contribute to this frequentative/repetitive meaning. As exemplified in (83), the sound sequence *er* also occurs in verbs that have a frequentative/repetitive meaning (see also Van Langendonck 1979):

- (83) *fladderen* 'to flutter', *flodderen* 'to flounder', *debbereren* (dialectal) 'to potter', *bibbereren* 'to shiver',
ploeteren 'to dabble', *dabbereren* 'to stamp', *lebbereren* 'to sip', *snotteren* 'to snivel'.

That *-el* contributes a frequentative/repetitive meaning aspect is suggested by minimal pairs such as *huppen* ('to hop') vs. *huppelen* ('to hop (repeatedly)') and *duiken* ('to plunge/dive') vs. *duikelen* ('to tumble/somersault').²⁸

Summarizing, I have argued that complex interjective expressions like *boemer de boem* and *rinkel de kinkel* consist of two coordinated roots and that a paragogic alveolar obstruent (/d/) is attached at the end of the first root and that a schwa spells out the functional head Conj. Prosodically,

²⁸ I would like to thank Marcel den Dikken for the pointing out the minimal pair *huppen* vs. *huppelen*.

the sound sequence /də/ surfaces as a syllabic unit (i.e., [_σ də]). I further proposed, building on Van Haeringen (1938), Overdiep (1937) and Corver (2004), that these instances of /d/ and /ə/ can be characterized as "augmentative sounds" having an expressive/emphatic flavor.

8. Conclusion

As noted in section 1, Sapir (1921:5) argued that "Interjections are among the least important of speech elements." De Groot (1963) argued exactly the opposite: "The interjection is one of the most important and most curious word classes" (taken from the English summary at the end of his article written in Dutch). Although I don't consider the question about the ranking of interjections on the scale of importance to be very relevant, I have tried to show, on the basis of a case study on complex interjections in Dutch, that interjective expressions are worthwhile to investigate from a syntactic point of view. In this article, in which I focused on the internal syntax of interjective expressions rather than on their external syntax, I have argued (i) that complex interjective expressions are structured expressions, (ii) that their structure is phrase-structural rather than "word-structural" (i.e., compound-like), (iii) that their phrasal organization is based on coordination (i.e., ConjP), and (iv) that the computational atoms of complex interjective expressions —i.e., the simplex interjective atoms— are roots (i.e., $\sqrt{\quad}$). Thus, complex interjections of the type discussed in this paper have the following structure: [_{ConjP} $\sqrt{\quad}$ [_{Conj'} Conj $\sqrt{\quad}$]]. It was further shown that Conj sometimes surfaces overtly as the sound schwa, which in certain phonological contexts was accompanied by the phonological process of *d*-insertion after roots ending in *-er/-el*. I have tried to lay bare certain properties of complex interjections in Dutch. On the basis of my discussion, I hope to have shown that interjections deserve further reflections.

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