ONE ROOT, MANY STRUCTURES: A CASE STUDY ON DUTCH *HEEL* 'WHOLE'

1. OUTLINE: In many languages roots expressing intactness (REI), such as the English √*whole*, can have various readings (Haspelmath 1995, Den Dikken 2002). I propose that these readings do not stem from the presence of several lexical items or features in the lexicon, but from the different syntactic positions such roots can occupy.

2. INTRODUCTION: MULTIPLE READINGS FOR WORDS EXPRESSING INTACTNESS

In Dutch, as in many languages, REIs can take up various readings. Den Dikken (2002) lists the following four readings associated with the Dutch root √*heel* 'whole' or its Flemish variant √*gans* 'whole': an adjective as in (1), a universal quantifier (UQ) which quantifies over a singular as in (2), a quantifier which refers to a high number Q_{many} as in (3) and an NPI as in (4). One way to account for this variation is by assuming multiple lexical items (cf. the grammaticalization approach of Haspelmath 1995 & Zimmermann 2003). I propose, however, that one lexical item suffices. Various readings of a REI can be derived if we assume (i) that a root is not listed with categorial features, (ii) that all readings are compatible with the REI's core meaning 'intactness/completeness' (iii) that the syntactic structure is fine-grained enough to yield the various readings (cf. Borer 2005). For expository reasons I restrict this talk to the adjectival and the two quantificational readings (cf. Den Dikken 2002 for the NPI).

3. READING #1: THE ADJECTIVE

If the REI is inserted under an aP (5) (Marantz 2001), it is interpreted as 'intact' or 'complete'. Not surprisingly, the REI shows typical adjectival properties in this structure. It gets adjectival inflection (the schwa in (1)), it can be coordinated with another adjective (1), it can be used both attributively (1) and predicatively (6) and it can undergo adjectival derivation, such as the addition of the reinforcing prefix *god* 'God' in (7)).

4. READING #2: Q_{MANY}: A PLURACTIONAL MARKER

4.1 Problem: At first sight, *heel* 'whole' seems to be an adjective in (3) as it bears adjectival inflection. As such, we expect it to denote simply intactness: cities that were intact were destroyed. However, this is not the most salient interpretation. Here, *heel* means 'many' rather than 'intact'. It also adds the notion that the act of destroying was done thoroughly. At first sight, it is not clear what causes the *many*-reading.

4.2 Proposal: I propose that the *many*-reading comes from a syntactic structure in which *heel* scopes overt the event (viz. 'destroy'). In other words, it becomes a pluractional marker. The interpretation that the destroying was done thoroughly comes from the denotations of √*heel*, viz. 'complete'.

4.3 Background (i) Pluractional markers indicate the frequency by which the event expressed by the verb occurred. Their default reading is a high frequency. (Lasersohn 1995). **(ii)** If an adjective moves to the D layer, it scopes and quantifies over the event in the VP. Hence, it gets interpreted as a pluractional marker (Zimmermann 2003) (e.g. '$[_{DP}$An occasional$_i$ $[_{AP}$ t_i $[_{NP}$ sailor$]]$ strolled by').

4.4 Data In the reading under discussion, *heel* has the following two adjectival properties: first, it shows adjectival inflection (3), second it can undergo adjectival derivation, such as the addition of the reinforcing prefix *god* 'God' (8). The following restrictions show, however, that *heel* cannot simply be analyzed as an adjective: (i) it gets a quantificational *many*-reading, instead of an adjectival *intact-complete* reading cf. (3), (ii) it cannot be coordinated with another adjective cf. (9), (iii) it only occurs with plural DPs, cf. (10), (iv) it only occurs in weak (i.e. indefinite) DPs (cf. Milsark 1977) cf. (11).

4.5 Analysis I propose that √*heel* in (3) merges under a°. It combines with the noun to indicate completeness. Then D° is merged and *heel* moves to D°. This movement accounts for the pluractional interpretation, cf. (12). This proposal accounts for the following facts (i-ii) and restrictions (iii). (i) Given that √*heel* merges under aP, it follows that it displays inflectional and derivational properties typically associated with adjectives. (ii) Given that *heel* moves to D°, the ban on coordination with another adjective follows from the Coordinate Structure Constraint. (iii) Moreover, I will show that the restriction to plural and indefinite DPs follow from semantic properties (cf. Zimmermann 2003 for a similar approach).

5. READING #3: THE UQ

5.1 Problem: Although the meaning of the UQ (2) resembles the adjectival meaning (1) closely, it does not behave like an adjective: it never gets adjectival inflection (13) or adjectival prefixes (14). It occurs to the left of the determiner (2), which is not a position for adjectives in Dutch. It thus clearly does not merge in an adjectival position in the DP. The question is then which syntactic position it does occupy. Furthermore, the use of the UQ is restricted to definite DPs (15). It is not clear where this restriction comes from.

5.2 Proposal I propose that √*heel* occupies the following syntactic positions: it merges very low in the countability domain of the DP, where it becomes interpreted as a UQ. Once the D-layer is merged, it raises to Spec,DP. I propose that it is restricted to definite DPs, as the UQ quantifies over a presupposed set, which is provided by the definiteness feature.

5.3 Background assumptions (i) The default reading for all nouns is mass and functional projections can be added to the NP to add semantic features to the noun (Borer 2005). **(ii)** *Heel* can merge in the Spec of a projection if it entertains a semantic specification relation with the head. Hence, it does not need any specific syntactic features to be licit in the Spec of a functional head **(iii)** A REI can point at the supremum of a closed scale (Kennedy & McNally 2005, Kennedy 2007, Winter & Rotstein 2004).

5.4 Data: Given that the UQ reading of *heel* originates in the noun's countability domain, I first present some countability facts. Dutch has, next to a mass reading, two different types of count readings: kind readings and unit readings. **(i) Kind readings:** A kind reading can be paraphrased as 'a kind of'. Semantically, it is odd to ask about the size of a kind, cf. (16). Furthermore, as a count reading, it allows for singular (18) and plural marking (19). It does not, however, allow for a diminutive (20), neither does it allow for the UQ *heel* (22). **(i) Unit readings:** A unit reading can be paraphrased as a 'piece/specimen/portion of'. Semantically, it is normal to ask about the size of a unit, cf. (17). It allows for singular (2) and plural marking (21), and can be combined with a diminutive (2) (cf. Wiltschko 2007) and the UQ *heel* (2).

5.5. Analysis (i) The syntax of UQsg *heel*: (a) For Dutch kind readings, I assume the presence of the functional projection DivP that is realized as number marking and that hosts the feature [Div] (Borer 2005). This feature serves to divide the mass stuff into countable items. **(b)** For Dutch unit readings, I propose an additional piece of structure, which can be realized as the diminutive. This projection assigns size to the countable item. Moreover, the UQ *heel* has a semantic specification relation with this head Size° (cf. infra). *Heel* therefore merges in Spec,SizeP. This accounts for the fact that only unit readings can co-occur with the UQ *heel*: they are the only count readings in which the Size° head is present. From Spec,SizeP, UQ *heel* further raises further to Spec,DP where it semantically specifies the restriction of the definite determiner (cf. infra) as is illustrated in (23). **(ii) Semantic relation between *heel* and Size°:** Let us define the semantics of the Size° head a closed scale that is defined as an interval of real numbers. This scale refers to the degree of completeness of the unit. The bottom of that scale refers to the individual, smallest parts, its middle to sets of parts and its top to the complete set of all parts of the unit (i.e. the complete unit). As *heel* merges in Spec,SizeP it can specify a value on that scale. More specifically, it points at the supremum of that scale. In other words, *heel* indicates that all the parts of the unit are present, i.e. that the unit is complete. At this point, it becomes interpreted as a UQ. **(iii) Semantic relation between *heel* and D°**: I propose that *heel* can only be interpreted as a UQ if it has a definite DP in its scope, given that UQs quantify over a presupposed set in natural language (Jaspers 2005, Seuren 2006), which is provided by the feature [def].

6. CONCLUSION:

In this talk I show that the various readings of Dutch √*heel* 'whole' (adjectival, pluractional and universal quantifier) follow from the different syntactic positions it can occupy. It occupies these positions for semantic reasons, hence we do not need to assume lexical features that determine its various positions in the structure.

(1) Ik verzamel enkel hel**e** en waardevoll**e** borden.
I collect only whole-**INDEF.PL.NEUTER** and precious-**INDEF.PL.N** plates
'I collect only intact and precious plates.'

(2) **heel** het chocolaatje [Dutch]
whole the chocolate
'the whole chocolate'

(3) Hel**e** steden werden verwoest.
whole-**INDEF.PL.F** cities became destroyed
'Many cities were completely destroyed.'

(4) Ik ken die hele vent niet.
I know that whole man not
'I don't know that man at all.'

(5) [DP [$_{D'}$ D° [$_{aP}$ [$_{a'}$ √heel [$_{nP}$ [$_{n'}$]]]]]]

(6) Die borden zijn nog heel.
those plates are still whole
'Those plates are still intact.'

(7) de godgans**e** oorlog
the God-whole-**DEF.SG.M** war
'the whole, damned war'

(8) Z'ee godganse dagen zitten bleiten.
she.has God.whole days sitting crying
'She has been crying whole days.'

(9) * Hele en mooie steden werden verwoest.
whole and pretty cities became destroyed

(10) * een hele stad werd verwoest.
a whole city became destroyed
(illicit under a *many* reading)

(11) * de hele steden werden verwoest
the whole cities became destroyed
(illicit under a *many* reading)

(12) [DP [$_{D'}$ D° hele [$_{aP}$ [$_{a'}$ √~~hele~~ [$_{DivP}$ [$_{Div'}$ steden [$_{nP}$ [$_{n'}$ √stad]]]]]]

(13) *hele de oorlog
whole- **DEF.SG.M** the war

(14) * godgans de oorlog
God.whole the war

(15) * heel een chocolaatje
whole a chocolate.DIM

(16) # How big is that kind of chocolate?

(17) How big is that piece of chocolate?

(18) Ze bestudeerde die chocolade.
She studied that chocolate
'She studied that kind of chocolate

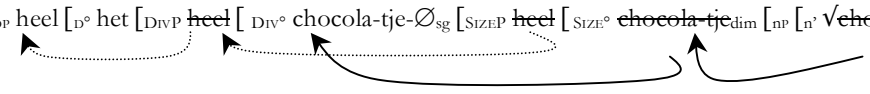
(19) Ze bestudeerde die chocolade-s
she studied those chocolate-PL
'She studied those kinds of chocolate'

(20) # Zij bestudeerde dat chocola-tje.
She studied that chocolate-DIM
(illicit under a kind reading)

(21) Zij at de chocola-tje-s op.
she ate the chocolate-DIM-PL PRT
'She ate the pieces of chocolate.'

(22) In deze speciale sessie over de Granny Smith verwelkomen we dr. Janssens
in this special session on the Granny Smith welcome we dr. Janssens
die (*heel) die appel heeft bestudeerd.
that whole that apple has studied
Intended: 'In this special session on the Granny Smith we welcome dr. Janssens who studied this kind of apple from a to z.'

(23) [$_{DP}$ heel [$_{D°}$ het [$_{DivP}$ ~~heel~~ [$_{Div°}$ chocola-tje-∅$_{sg}$ [$_{SIZEP}$ ~~heel~~ [$_{SIZE°}$ ~~chocola-tje~~$_{dim}$ [$_{nP}$ [$_{n'}$ √~~chocola~~]]]]]]]



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