A Head Raising Analysis of Relative Clauses in Dutch

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1. Introduction.

In this paper, I would like to discuss the properties of relative clauses in Dutch and dialects of Dutch in the light of the *head raising analysis* proposed in Kayne (1994) (based on earlier proposals by Vergnaud 1974).[1]

In the head raising analysis, the head noun of the relative clause (*man* in (1)) is taken to originate inside the relative clause (2):

(1) the man I love
(2) the [$_{CP}$ I love man]

The relative construction in (1) is derived from (2) by raising the noun phrase *man* to the specifier position of CP:

(3) the [$_{CP}$ man$_i$ I love t$_i$]

This analysis differs from the traditional *adjunction* analysis entertained in Chomsky (1977:98), in which the relative clause is adjoined to the noun phrase headed by *man*:

(4) the man [CP I love]

The complement of *love* in (4) is taken to be an operator element, which moves to the specifier position of CP in a way comparable to the head noun in (3):

(5) the man [$_{CP}$ OP$_i$ I love t$_i$]

This paper discusses in more detail the morphology and syntax of the elements appearing in the left periphery of the relative clause in Dutch. Following recent research on the

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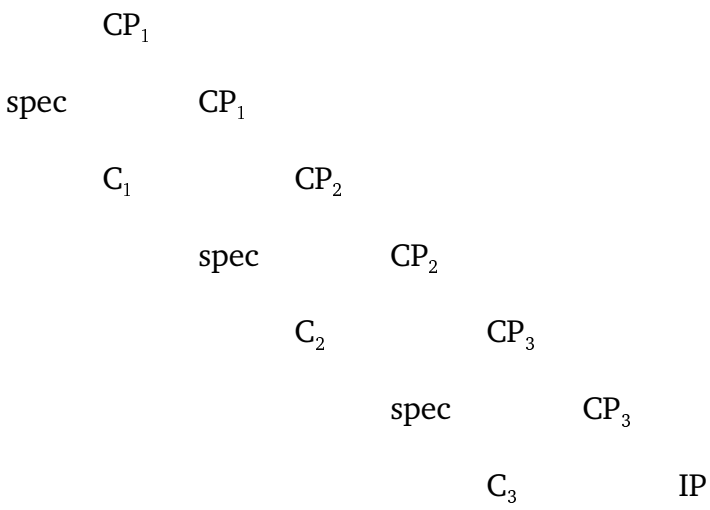
structure of CP in Germanic (esp. Hoekstra 1993), I assume that CP consists of three layers of complementizer phrases, as illustrated in (6):

(6)



In Hoekstra's (1993) analysis, the three heads C_1, C_2, and C_3 in Dutch are occupied by the complementizers *als* `if', *of* `whether', and *dat* `that', respectively. I will show that these three elements also show up in relative constructions in (dialects of) Dutch, albeit that *als* is represented by a related element, *zo* `thus'. These observations will allow us to lay out the structure of the relative clause in Dutch in more detail.

Relative pronouns in Dutch can be of a (morphologically) interrogative type (built on the root *w-*, as in (7a)), or of a demonstrative type (built on the root *d-*, as in (7b)):

(7)	a.	de straat	*waar*	jij woont
		the street	where	you live
	b.	de man	*die*	ik bemin
		the man	that	I love

I propose that CP_2 and CP_3 provide designated landing sites for the interrogative and demonstrative relative pronouns, respectively. These pronouns are actually determiner elements heading a DP, referred to as DP_{REL}. The DP_{REL} is generated in an argument position inside the relative clause, and contains the head noun. The head noun moves along with the DP_{REL} to one of the designated specifier positions in CP, as in the analysis of Kayne (1994) (cf. (7b)):

(8) $[_{DP}$ de $[_{CP1}$ $[_{CP3}$ $[_{IP}$ ik bemin $[_{DPrel}$ die $[_{NP}$ man]]]]]]

In addition, following Bianchi (1995), I propose that the head noun ultimately moves out of the DP_{REL} to the specifier position of a higher phrase, CP_1. One of the objectives of this paper is to corroborate this analysis of relative clauses, building on work by Kayne and Bianchi, by providing a semantic motivation for the movement of the head noun to the highest specifier position in the relative clause:

(9) $[_{DP}$ de $[_{CP1}$ $[_{CP3}$ $[_{DPrel}$ die $[_{NP}$ man $]]_i$ $[_{IP}$ ik bemin t_i $]]]]$

The discussion in what follows is exploratory, and in no way intends to present a fair case for either the traditional or the head raising analysis. Its objective is to describe the phenomena of Dutch in terms of the head raising analysis, and to propose certain modifications of the head raising analysis as far as they may be required in order to make sense of the morphological and syntactic properties of relative clauses in Dutch.

2. An initial problem.

Let me start off by presenting a problem from the domain of relative clause constructions of Dutch which favors the head raising analysis of Kayne (1994).

In Dutch, there are two expressions for ``everything" (Latin *omnia*), namely *al* and *alles*. Historically, *alles* is the genetive Case form of *al*. *Al* is a noun, which in present day Dutch is used only in the expression *het Al* ``the Universe", and in certain idiomatic expressions (such as *al met al* `all in all'). The common form for *omnia* in Dutch is *alles*, and *al* cannot be used as an autonomous argument expression:

(10)	a.	Ik	heb	alles/*al	
		I	have	everything	
	b.	Alles/*al	is	vergeefs	
		all	is	in-vain	

However, *al* may appear as an argument expression if modified by an amount relative clause:

(11)	a.	Ik	heb	alles/al	wat	ik	wil	
		I	have	all	REL	I	want	
	b.	Alles/al	wat	ik	doe	is	vergeefs	
		all	REL	I	do	is	in-vain	

This is only possible if *al* and the relative pronoun are adjacent:

(12)	a.	..dat	ik	alles/*al	heb	wat	ik	wil
		that	I	all	have	REL	I	want
	b.	Alles/*al	is	vergeefs	wat	ik	doe	
		all	is	in-vain	REL	I	do	

If we adopt the adjunction analysis of relative clauses (cf. (4)), it remains unclear why the presence of an adjunct clause licenses *al* as an autonomous argument expression. Adjuncts are generally optional, and are not expected to have this licensing effect. Moreover, the ungrammaticality of (12a) with *al* suggests that the explanation cannot be semantic. The range of *al/alles* is delimited in the same way in (11) and (12).

The adjacency of *al* and the relative particle *wat* suggests that *al* and *wat* form some kind of collocation. Let us first try to understand why *al* requires an element like *wat* in its immediate vicinity in order to be licit. It will then turn out that only the head raising analysis provides a structure in which *al* and *wat* may form the required collocation.

Consider first *alles* `everything'. *Alles* consists of two morphemes, the element *al* and a genitive ending. Both morphemes have in common that they are not autonomously referring expressions. *Al* is a grammaticalized element that can only refer in the petrified expression *het Al* `the Universe'. The genitive ending obviously cannot refer.

Postma (1995) describes these grammatical and grammaticalized elements as being ``in zero semantics". Core cases of zero semantics (ZS) elements are determiners and inflectional affixes. Postma makes the interesting observation that elements of universal quantification always require a collocation of two zero semantics morphemes. For example, *everyone* consists of *every* and *one*, both elements in zero semantics. Another, more spectacular example is given in (13), from Dutch:

(13) Ik zag geen kip
I saw no chicken
``I didn't see any chickens/anything."

As the translation of (13) indicates, *geen kip* may have a literal interpretation ``no chicken" or a universal quantification interpretation ``nothing". In the latter case, *kip* has lost its referential meaning, and is in zero semantics. Since the determiner *geen* is also in zero semantics, it is again the collocation of two zero semantics morphemes that makes the universal quantification interpretation possible.

From this point of view it is understandable that *al* by itself cannot mean ``everything". In order to make the universal quantification interpretation available, it needs a second zero semantics morpheme in its immediate environment. The genitive suffix in *alles* provides this second zero semantics morpheme. The grammaticality of (14) suggests that the relative determiner *wat* serves the same purpose:

(14) al wat ik wil
all REL I want

Wat provides the second zero semantics morpheme needed to generate the interpretation of universal quantification. The structure of universal quantifiers is illustrated in (15):

(15)

	structure	interpretation
al	ZS	no interpretation
al-les	ZS + ZS	everything
al-le	ZS + ZS	all
al-len	ZS + ZS	everyone
al-wat	ZS + ZS	everything
ieder-een	ZS + ZS	everyone

The contrast between (10a) and (11a) can now be explained. *Al* can only be used in combination with a relative clause, because the relative clause brings in the determiner needed to create the ZS+ZS configuration that is required for universal quantification. (*Alles* does not require a relative clause, since it is already a ZS+ZS structure, cf. (15).) Similarly, we understand why extraposition of the *wat*-clause (cf. (12)) is impossible with *al* but not with *alles*.

Consider how the two analyses of relative clauses, the adjunction analysis and the head raising analysis, allow us to describe *al wat* as a ZS+ZS collocation. We expect the analysis of relative clauses to provide us with a structural configuration in which the elements *al* and *wat* can interact. The relation between *al* and *wat* should be of a well-known type, ideally a specifier-head relation or a sisterhood relation (where `sisterhood' is understood in structural terms, not in linear terms).

In the adjunction analysis, *wat* should probably be analyzed as an overt counterpart to the empty operator in (5). Assuming *al* to be the head noun, this yields the following structure:

(16)

	NP			
NP		CP		
N	*wat*		C'	
al		C		IP

The relation between *al* and *wat* in (16) is not one of the well-defined syntactic relations *sisterhood, specifier-head agreement, dominance, c-command*, or even *government*. This means that the adjunction analysis does not yield a structure that makes us understand how *al* and *wat* can combine to yield the interpretation of universal quantification.

Consider next the head raising analysis of relative clauses of the type in (14). As will be discussed in more detail below, *wat* is not a complementizer but a relative determiner, comparable to English *which*. Let us continue to assume that *al* is the head noun of the relative construction. In the head raising analysis, then, the head noun *al* is generated inside a DP_{REL}, which is itself generated as an argument inside the relative clause:

(17) $[_{CP}\ [_{IP}$ ik wil $[_{DPrel}$ wat $[_{NP}$ al]]]]

The DP_{REL} is raised to a designated specifier position in the layered CP system in the left periphery of the relative clause (cf. (6)). As we will see below, the licensing position for a DP_{REL} headed by a relative pronoun with interrogative morphology is the specifier position of CP_2:

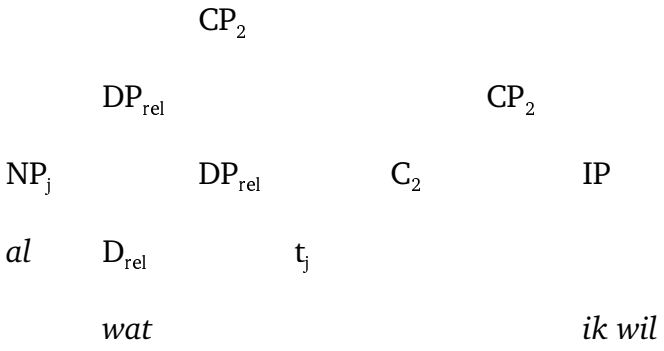
(18) $[_{CP2}\ [_{DPrel}$ wat $[_{NP}$ al $]]_i\ [_{IP}$ ik wil $t_i\ ]]$

Except for the labeling of the CP_2, this analysis is exactly the one proposed by Kayne for relative constructions with interrogative relative pronouns in English of the type in (19):

(19) the man who I love

Kayne proposes that the order of the head noun *man* and the relative pronoun *who* is derived by moving the head noun to the specifier position of the DP_{REL}. Applying this final step to the structure in (18) yields the correct word order in the Dutch example (14) as well:

(20)



In the resulting configuration (20), *al* and *wat* are in a specifier-head relation. This is a well-established structural relation allowing elements to interact. We may hypothesize that this specifier-head relation makes it possible for the two zero semantics elements *al* and *wat* to combine, yielding the interpretation of universal quantification.

Thus, the head raising analysis of relative clauses allows us to understand why the elements *al* and *wat* may ``click", whereas the adjunction analysis leaves the collocational character of *al wat* a complete mystery.

In the remainder of this article, I will assume that the head raising analysis is essentially correct. We will return to the extraposition possibilities in the *al(les) wat*-construction (cf. (12)) in section 4. In the next section, I will turn to a more detailed analysis of the structure of the left periphery of relative clauses in Dutch.

3. The Three Layers of CP.

Dutch has three complementizers introducing finite clauses, *als*, *of*, and *dat* (see De Rooy 1965, Hoekstra 1993). In their core meanings, *als*, *of*, and *dat* are conditional/temporal, interrogative, and declarative, respectively:

(21) a. Ik ben weg *als* hij belt
I am away if/when he calls
``If/when he calls, I'm gone."

b. Ik vraag me af *of* hij belt
I ask me off if he calls
``I wonder if he'll call."

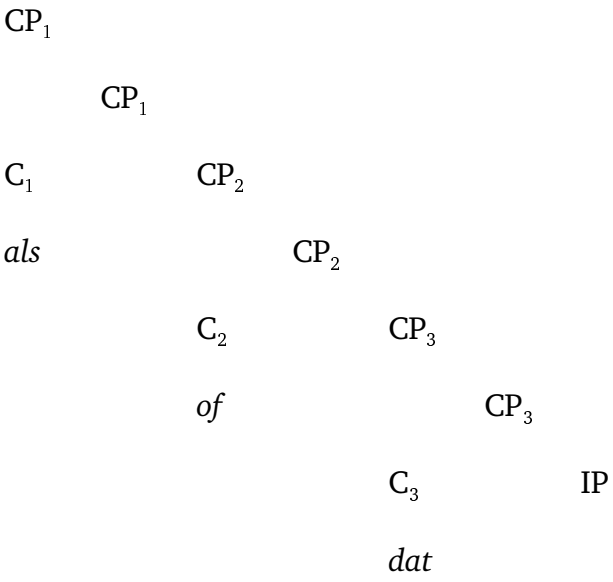
c. Ik denk niet *dat* hij belt
I think not that he calls
``I don't think he'll call."

However, the complementizers are often used in combination, especially in substandard Dutch, in which case the respective core meanings may be somewhat bleached:

(22) a. Ik denk niet asdat [<alsdat] hij belt
I think not as-that he calls (=(21c))
b. Ik vraag me af ofdat hij belt
I ask me off if-that he calls (=(21b))

Hoekstra (1993) argues that the left periphery of finite clauses in Dutch consists of three ``CP-layers" headed by *als*, *of*, and *dat*, respectively:

(23)



Part of this structure has been argued for at various places in the recent literature (Müller and Sternefeld 1993, Zwart 1993, Hoekstra and Zwart 1994, Bianchi 1995, among others). Here, I merely intend to discuss whether a case can be made that the structure in (23) is (or may be) present in Dutch relative clauses in full fledged form.

I will discuss the three heads *als*, *of*, and *dat* one by one, starting with *dat*.

3.1 *Dat*

Dutch does not have the *that*-relative construction of English (*the man that I love*). That is, the relative pronoun is never fully replaced by the complementizer *dat*. However, there is abundant evidence of the presence of a complementizer *dat* in relative constructions in Dutch dialects. Unlike present day English, but like in earlier stages of English (cf. Mustanoja 1960:197, Maling 1978), the complementizer *dat* cooccurs with a relative pronoun.

In the following examples, certain phonological peculiarities have been glossed over:

(24) *Aalsters* (South Brabant, Vanacker 1948:143)

Wie *dat* er nou trouwt zijn stommerike
REL that there now marries are stupid-ones
``People who still get married these days are stupid."

(25) *Twents* (East Netherlands, Wanink 1948:33)
D'n heer den *t* doa geet
the man REL that there goes
``the gentlemen who goes over there"

(26) *Kruinings* (Zeeland, Dek 1934:14)
't jongsje dat *à* histeren van 't dek evalen is
the kid REL that yesterday of the deck fallen is
``the kid that fell off the deck yesterday"

(27) *South East Flemish* (Teirlinck 1924:186)
al wa dad ek doe
all REL that I do
``All I do."

The combination of relative pronoun and *that* is obligatory in Frisian, with the complementizer reduced to a clitic '*t* (Tiersma 1985:132, see also De Boer 1950:130-134):

(28) in frou dy '*t* ik ken Frisian
a woman REL that I know

The complementizer *dat* always follows the relative pronoun, as well as all other complementizers that may appear in the relative construction. This confirms the hypothesis that the phrase headed by *dat* is lowest in the CP-system (24).

3.2 *Of*

Relative clauses with *of* in the dialects of Dutch are not nearly as common as relative clauses with *dat*. Still, a number of examples can be supplied:

(29) *Maastreechs* (Limburg, Dumoulin and Coumans 1986:113)
de vrouw die wad of iech gezeen had
the woman REL what if I seen had
``the woman I had seen"

(30) *Katwijks* (Coast of Holland, Overdiep 1940:230)
wie of tie vis kóft, die skreef tat óp
REL if that fish bought that-one wrote that up
``whoever bought that fish made a note of that"

(31) *Amsterdams* (North Holland, Hoekstra 1994:316)

de vrouw	of	die	ik	gezien heb
the woman	if	REL	I	seen have

``the woman I saw''

Hoekstra (1994:316) notes that (29) appears to be the only example in the literature where *of* is preceded by a demonstrative relative pronoun. Thus, the following is not attested:

(32) *

de vrouw	die	of	ik	gezien heb
the woman	REL	if	I	seen have

I would like to propose that *diewad* in (29) is a single complex relative pronoun, headed by the wh-element *wat*. (A similar analysis is presumably correct for the Bavarian relative pronoun complex *derwo* (Bayer 1984).)

If so, we can make the generalization that *of* can only have wh-elements in its specifier position. This ties in with the use of *of* as interrogative complementizer in (21b).

If relative pronouns in Dutch are generally demonstrative, as seems to be the case, we may understand why the complementizer *of* is relatively rare in relative constructions. A potential exception is free relatives, which are introduced by wh-pronouns:

(33)

Wie/*die	dit leest	is gek
REL	this reads	is crazy

``Who reads this is crazy.''

The example from Katwijks (30) suggests that in this context we may find more instances of *of* in relative constructions.

The Amsterdams example in (31) is apparently extremely rare, perhaps because the relative particles (the complementizer *of* and the relative pronoun *die*) are distributed over two CP-projections (CP_2 and CP_3 in (23)).

We can also make the generalization that C_2 and C_3 provide designated landing sites for wh-words and demonstrative words (d-words), respectively. A similar conclusion was also reached in Hoekstra and Zwart (1994), where long distance interrogatives allow the semantically anomalous appearance of a wh-complementizer in the embedded clause, and long distance topicalization constructions do not:

(34) a.

Wie_i	denk je	t_i	(of)	dat	ik	t_i	gezien heb
who	think you		if	that	I		seen have

``Who do you think I saw?''

b.

Dat_i	denk ik	t_i	(*of)	dat	ik	t_i	gezien heb
that	think I		if	that	I		seen have

``I think I saw that.''

Of in (34b) is excluded because *dat* is a d-word rather than a wh-word, which uses the specifier position associated with *dat* (C_3) as its intermediate landing site. In (34a), on the other hand, *of* is allowed, suggesting that CP_2 is present, making available an intermediate landing site for the wh-element *wie*.

3.3 *Als*

As far as I have been able to ascertain, *als* is not used as a relative complementizer in the dialects of Dutch, nor in older stages of Dutch.[2] However, if Vercoullie (1925:11) is correct in deriving *als* from *alzo*, where *al* is an intensifying prefix attached to *zo* `so', it may be that we have to look for cases of *zo* rather than cases of *als*.

It turns out that *zo* is used as a relative complementizer in Middle Dutch, ``semantically identical to the relative particle *dat*'' (Verdam 1911:553), apparently under High German influence (Stoett 1977:33, see Paul 1920:238 for High German):

(35) *Middle Dutch* (Stoett 1977:33)
die rike so ontreet
the rich-one REL rode off
``the rich man who rode off''

(36) *High German* (Paul 1920:238)
bittet für den so euch beleidigen
pray for those REL you insult
``pray for those who insult you''

According to all sources, the use of *zo* as a relative complementizer in Middle Dutch is rare. Still, if we link *zo* via *als* to C_1, these few occurrences (and the more frequent High German ones) cease to be mysterious.

In section 4, I will argue that C_1 is the head that hosts the head noun in its specifier position in restrictive relative clauses.

3.4 Zero complementizers

Even if none of the complementizers *als/zo*, *of*, and *dat* are present, it can be argued that at least part of the structure in (32) is there. In particular, certain effects of the presence of complementizers are felt, even if no overt complementizer is visible.

First, relative clauses with or without overt complementizers show the word order of embedded clauses:

[2] Bob de Jong (p.c.) suggests that the *à* element in the Kruinings complementizer *dat à* in (26) is really *als* rather than *dat*, as I have assumed. The data in Dek (1934) suggest that *à* stands for both *dat* and *als* (as well as for *al* `already', in fact). However, Dek (1934:14) consistently glosses *à* in relative clauses as `dat'.

(37) a. de man die ons *niet* *kon zien*
the man REL us not could see
``the man who couldn't see us"

b. ..dat die man ons *niet* *kon zien*
that that man us not could see
``..that that man couldn't see us."

(38) a. * de man die *kon* ons *niet* *zien*
the man REL could us not see

b. * ..dat die man *kon* ons *niet* *zien*
that that man could us not see

(39) a. De man *kon* ons *niet* *zien*
the man could us not see
``The man could not see us."

b. Die man die *kon* ons *niet* *zien*
the man that-one could us not see
``The man could not see us."

In (37), the finite verb *kon* `could' follows the negation element *niet*, and is part of a verb cluster with the infinitive *zien* `see' ((37a), relative clause, (37b), embedded complement clause). The examples in (38) show that the finite verb cannot move to the left in relative clauses (38a) and embedded clauses (38b). As can be seen, relative clauses and embedded clauses pattern alike, and differ from subject initial main clauses (39a) and left dislocation constructions (39b).

In this respect, relative clauses are comparable to embedded questions, which often do not have an overt complementizer:

(40) a. Ik vroeg me af wie (of dat) ons niet *kon* zien
I asked me off who if that us not could see
``I wondered who couldn't see us."

b. * Ik vroeg me af wie (of dat) *kon* ons niet zien
I asked me off who if that could us not see

In (40a), the finite verb *kon* `could' appears to the right of the negation element *niet*, and is part of a verb cluster with the infinitive *zien* `see'. In (40b) the finite verb has been moved out of the verb cluster to a position to the left of the negation element. The result is ungrammatical.

It has been a common notion of Germanic generative syntax since Koster (1975) and Den Besten (1977) that the absence of finite verb movement to the left is related to the presence of a complementizer. A complementizer blocks movement of the finite verb. I will not here discuss the various implementations of this idea (see Vikner 1995 and Zwart 1993, 1997 for recent discussion). But assuming the generalization to be correct, the embedded clause word order in relative clauses and embedded interrogatives suggests that a genuine complementizer is always present, even though the complementizer may be phonetically empty.

A second indication that relative clauses without overt complementizer feature an empty complementizer is the presence of complementizer agreement effects in

relative clauses without overt complementizer. The following are three examples of complementizer agreement in relative clauses in Dutch dialects, one with (41) and two without overt complementizer (42)-(43) (*dast* in (42) is an inflected neuter relative pronoun, not a complementizer):

(41) *Kruinings* (Zeeland, Dek 1934:15)

a.	die	à	flink	werkt
	REL	that-SG	hard	works-SG
	``who works hard''			
b.	die	an	flink	werken
	REL	that-PL	hard	work-PL
	``who work hard''			

(42) *Gronings* (North East Netherlands, Ter Laan 1953:57)

a.	't kind	dat	dood	is	
	the child	REL	dead	is	
	``the child that is dead''				
b.	't klaid	dast	doar	aan	hest
	the clothes	REL-2SG	there	on	have-2SG
	``the clothes that you're wearing''				

(43) *South Hollandic* (Van Haeringen 1939)

a.	een jonge	die	werke	wil
	a boy	REL-SG	work	wants-SG
	``a guy who wants to work''			
b.	jonges	die-e	werke	wille
	boys	REL-PL	work	want-PL
	``guys who want to work''			

Hoekstra and Marácz (1989) and Zwart (1993, 1997) have argued that complementizer agreement is a morphological reflex of movement to C of a lower functional head, associated with subject-verb agreement (INFL of Chomsky 1986, AgrS of Chomsky 1991):

(44)

[$_{CP}$	C	[$_{AgrSP}$	AgrS	...]]
	|_____			

If so, the complementizer agreement in (42)-(43) suggests that the relevant C-positions must be present, even if the complementizers themselves are not phonetically present. (See Zwart 1997:256f for more discussion.)

Note that the situation where C is occupied by a phonetically empty complementizer appears to be the unmarked situation in relative clauses in Dutch and dialects of Dutch.

3.5 Conclusion

In this section I have discussed the three-layered CP hypothesis of Hoekstra (1993). It turns out that there is reason to believe that relative clauses in Dutch potentially involve all three complementizers *als (zo)*, *of*, and *dat*. This is clearest with *of* and *dat*, which appear regularly in the left periphery of relative clauses in dialects of Dutch. *Als/zo* does not occur overtly in relative clauses in (dialects of) present day Dutch, but possibly the element *so* appearing in relative clauses in Middle Dutch must be equated with the C_1 complementizer *als*.

The complementizers *als/zo*, *of*, and *dat* are morphologically easily distinguished from the various relative pronouns appearing in relative constructions. These are all either demonstrative (*die* nonneuter and plural, *dat* neuter singular, *daar* locative) or interrogative (*wie*, *wat*, *waar*). These demonstrative and interrogative pronouns appear in topicalizations/left dislocations (cf. (39b)) and wh-questions as well, and are considered to occupy the specifier position of a [+d] CP and a [+wh] CP, respectively (Hoekstra and Zwart 1994, Zwart 1997, Zwart, to appear). We therefore get a clear picture of the status of the various elements appearing in relative constructions in Dutch:

(45) $[_{DP}$ D $[_{CP1}$ C_1 $[_{CP2}$ *wie/wat/waar of* $[_{CP3}$ *die/dat/daar dat* $[_{IP}$ ...]]]]]

The only part of (45) that is not as clear is the status of CP_1. We will turn to a discussion of this highest CP-level next.

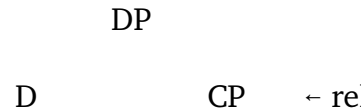
4. The Position of the Head Noun

4.1 Recapitulation

Let us recapitulate the various steps in the derivation of relative constructions in Dutch, according to the head raising analysis.

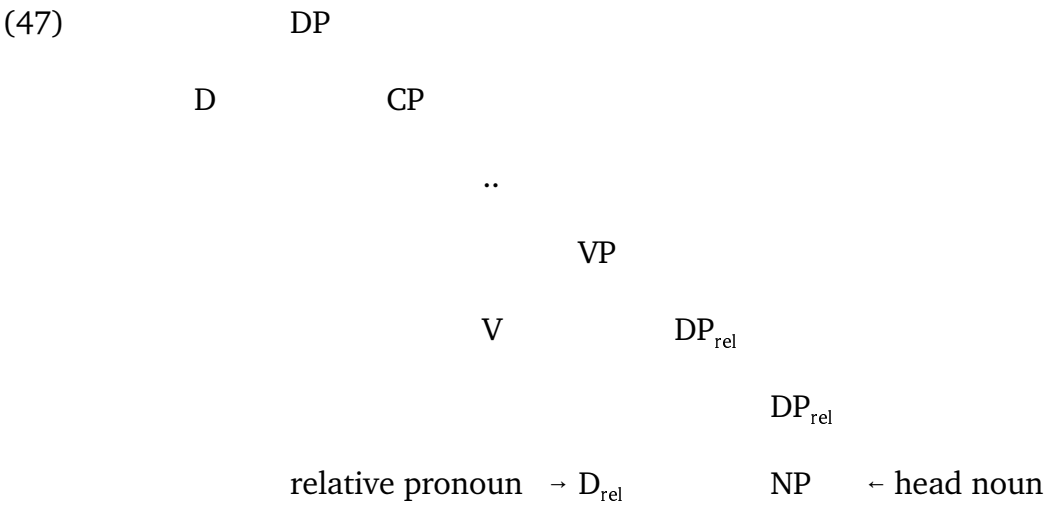
1. the relative clause is generated as the sister of the determiner which is intuitively associated with the head noun:

(46)



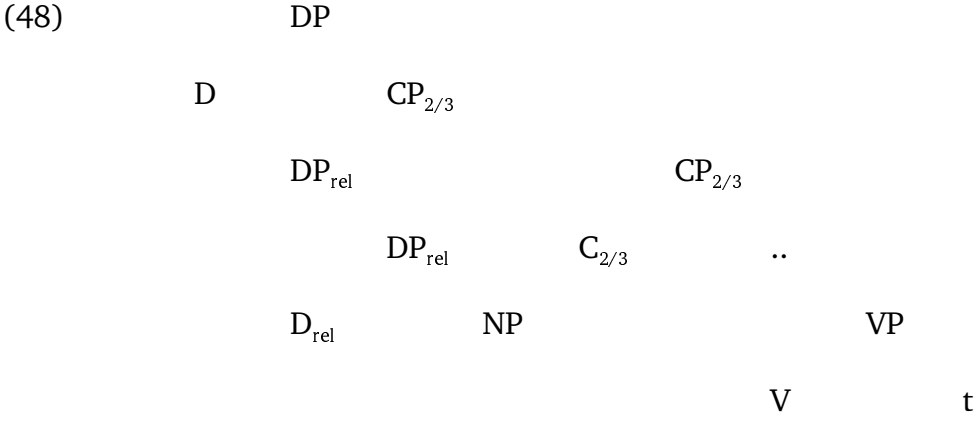
2. the head noun is generated inside a DP_{REL} which is itself generated as an argument of the verb in the relative clause:

(47)



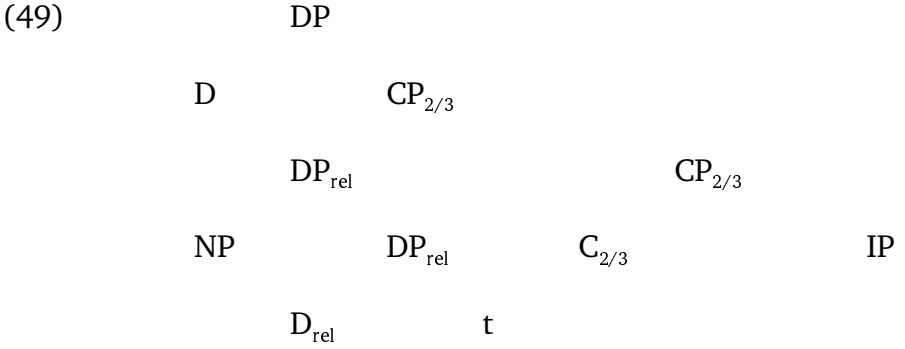
3. The relative determiner (relative pronoun) can be either of the interrogative type [carrying the feature [+wh]) or of the demonstrative type (carrying the feature [+d]). These features trigger movement to the specifier position of either a [+wh] CP (CP_2 in (23)) or a [+d] CP (CP_3 in (23)):

(48)



4. The head noun moves to the specifier position of DP_{REL} (cf. (20)):

(49)



These steps yield the correct order of elements in the relative construction:

(50)

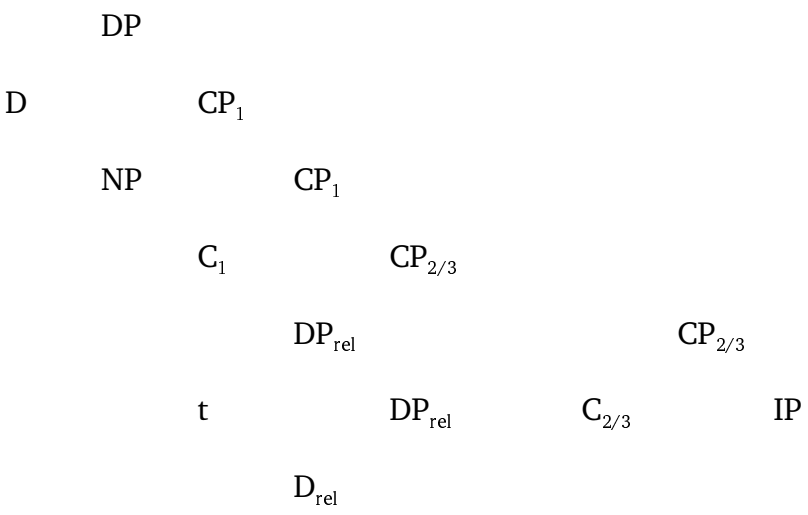
det.	noun	rel.pron.	comp.	rest
de	*man*	*die*	*(dat)*	*ik zag*
the	man	who	that	I saw

So far, the analysis follows Kayne (1994), with the exception of the further articulation of the CP-system.

However, as also argued in Bianchi (1995), there is reason to believe that a final step must be added to the derivation. This step takes the head noun out of the DP_{REL} into the specifier of a higher functional projection. I will argue here and in the next section that this functional projection is CP_1 of the structure in (23):

5. The head noun moves to the specifier position of CP_1:

(51)



The following subsection lists three arguments in support of the additional movement of the head noun to Spec,CP_1.

4.2 Arguments for movement of the head noun to Spec,CP_1

4.2.1 Head final relative clauses in Latin

This argument is due to Bianchi (1995:193).

One of the key assets of the head raising analysis is that it allows for a unified description of head initial and head final relative clauses. Head initial relative clauses are of the familiar type discussed so far: the head noun occupies a left peripheral position inside the relative clause (or, in the adjunction analysis, precedes the relative clause). In head final relative clauses, the head noun occupies a right peripheral position in the relative clause (or follows the relative clause, cf. Cole 1987 and Basilico 1996 for discussion). The following is an example from Quechua (Cole 1987):

(52) nuna ranti-shaq-n bestya alli bestya-m ka-rqo-n
man buy-PERFECT-3 horse-NOM good horse-EVID be-PAST-3
``The horse that the man bought was a good horse."

Clauses in Quechua are strictly verb final, suggesting that the head noun *bestya* `horse' has been displaced.[3]

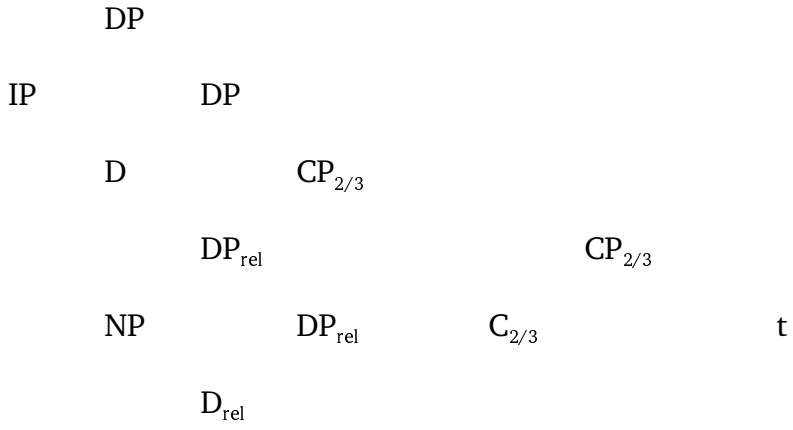
Kayne (1994:96) proposes to describe head final relative constructions as involving the same derivational steps as head initial relative constructions, with an additional step moving the IP of the relative clause into the specifier position of the topmost DP.

For reasons that will become clear below, I will list this IP-movement as step 6, i.e. following step 5:

6. The relative clause IP moves to the specifier position of the top DP.

Starting from (49), this yields the structure in (53):

(53)



This changes the order of elements from (50) to (54):

(54)	rest	det.	noun	rel.pron.	comp.
	ik zag de	*man*	*die*	*dat*	
	I saw	the	man	who	that

The determiner, the relative pronoun (D_{REL}), and the complementizer are not expressed in the Quechua construction. Apart from that, the Quechua word order matches the word order in (54):

[3] In the glosses, EVID = evidential, NOM = nominative. Quechua also has a head internal relative construction in which the head noun precedes *ranti-shaq-n* `bought', albeit in accusative rather than nominative case. I will not discuss head internal relative clauses here, which Kayne (1994:96) analyzes as a subcase of head final relative clauses.

(55)

rest	(det)	noun	(rel.pron)	(comp)
nuna rantishaqn		*bestya*		
man bought		horse		

This analysis predicts, though, that in languages where the relative pronoun is overtly expressed, it will follow the head noun in a head final relative construction. This can be tested in Latin, which has both head initial (56a) and head final (56b) relative constructions:[4]

(56) a.

odorare	hanc pallam	quam	ego habeo
smell-IMP	this-ACC mantle-ACC	which-ACC	I hold

b.

odorare	hanc	quam	ego habeo	pallam
smell-IMP	this-ACC	which-ACC	I hold	mantle-ACC

``Smell this mantle which I am holding here."

Let us ignore the demonstrative pronoun *hanc* `this', which must be generated higher than DP if this analysis of head final relative clauses is to be successful.

In the analysis proposed by Kayne (1994), (56b) must be derived from (65a) by moving what we have indicated as the ``rest" of the relative clause to Spec,DP, stranding the head noun in Spec,CP (as illustrated in (53)):

(57)

rest	(det)	noun	rel.pron.	(comp)
ego habeo		*pallam*	*quam*	
I hold		mantle	which	

However, if the rest of the relative clause equals IP, we predict the word order in (57), which is ungrammatical, and we fail to derive the correct word order of (56a).

This suggests that the ``rest" of the relative clause comprises more than IP, and includes at least the relative pronoun (D_{REL}) *quam*. But in the structure in (53), *quam* sits in the specifier position of CP_2 (*quam* being a determiner of the [+wh] type), together with the head noun *pallam*. In other words, *quam* does not form a constituent with the IP to the exclusion of the head noun.

The additional movement of the head noun to a higher specifier position proposed as step 5 above (following Bianchi 1995) overcomes this problem. If step 6 applies to the structure in (51), the constituent moving to Spec,DP to yield the head final relative construction could be $CP_{2/3}$, stranding the head noun in the specifier position of CP_1:

(58) *hanc* $[_{DP}\ [_{CP2}\ [_{DPrel}\ t_i\ \textit{quam}\ ]_j\ C_2\ [_{IP}\ \textit{ego habeo}\ t_j\ ]]]_k\ D\ [_{CP1}\ \textit{pallam}\ C_1\ t_k\ ]]$

[4] In the glosses, IMP = imperative, ACC = accusative.

This forms the first argument supporting movement of the head noun out of DP_{REL} to the specifier position of CP_1.

4.2.2 Extraposition in Dutch

A second argument supporting additional movement of the head noun derives from the possibility or impossibility of relative clause extraposition in Dutch.

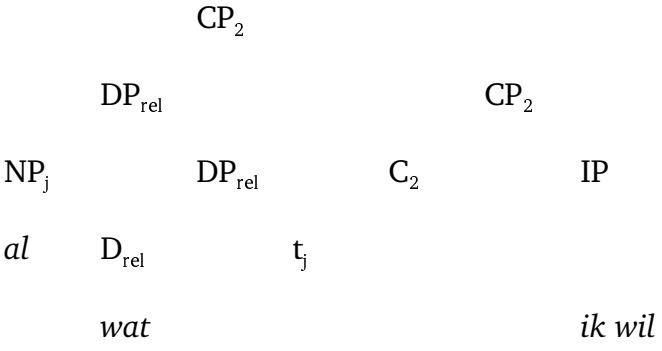
Recall from the discussion of relative clauses headed by *al* versus *alles* (both meaning `everything', see section 2), that relative clause extraposition is allowed only with *alles*, not with *al*:

(59) a. Ik heb alles/al wat ik wil
I have all what I want
``I have everything I want."

b. ..dat ik alles/*al heb wat ik wil
that I all have what I want
``..that I have everything I want."

In section 2, I have described *al wat* as sitting in a specifier-head configuration inside the DP_{REL}, which has itself moved to the specifier position of CP_2. See the structure in (20), repeated here as (60):

(60)



It is clear from this structure that the sequence *wat ik wil* `what I want' does not form a constituent to the exclusion of the head noun *al* `all'. This immediately explains the impossibility of extraposition with *al* in (59b).

At the same time, this conclusion implies that (60) does not correctly describe the structure of the variant of (59) with *alles*, since the construction with *alles* does allow extraposition of the string *wat ik wil*.

The proposed additional movement of the head noun *alles* to the specifier position of CP_1 again overcomes the problem:

(61) $[_{DP}\ [_{CP1}\ [_{NP}\ \textit{alles}\ ]_i\ C_1\ [_{CP2}\ [_{DPrel}\ t_i\ \textit{wat}\ ]_j\ C_2\ [_{IP}\ \textit{ik wil}\ t_j\ ]]]]$

Starting from the structure in (61), extraposition can be derived by moving CP_2, stranding the head noun *alles* in Spec,CP_1.

As before, this derivation is excluded with *al* because *al* and *wat* must be in a specifier-head agreement configuration in order for *al* to be interpretable as contributing to universal quantification.

The status of extraposition in the framework of Kayne (1994) is somewhat unclear. For reasons that do not concern us here, the framework disallows rightward movement. Kayne (1994) proposes to describe extraposition as involving leftward movement of the head noun, stranding the ``extraposed" clause:

(62)	dat	ik	*alles*	heb	[*t*	wat ik wil]
	that	I	everything	have		what I want

This analysis differs from the one proposed here, in that extraposition is derived by the additional movement of the head noun itself, whereas in the analysis proposed here, the additional movement of the head noun takes place within the relative clause, and merely feeds extraposition.

As Koster (1996) shows, Dutch offers compelling evidence that extraposition is not derived by leftward movement of the head noun. This is clear from constructions in which the head noun is in a PP:

(63)	a.	Hij	heeft gesproken	[met	[de [[man	die]	alles wist]]]
		he	has spoken	with	the man	REL	everything knew
	b.	Hij	heeft met	de man	gesproken	die	alles wist
		he	has with	the man	spoken	REL	everything knew

``He talked to the man who knew everything."

The brackets in (63a) reflect Kayne's analysis. It is clear that leftward movement of *met de man* `with the man' in order to derive (63b) involves movement of a non-constituent. The analysis proposed here, in which the head noun has been moved out of the DP_{REL} headed by the relative pronoun *die*, does not affect this conclusion: movement of *met de man* would still involve movement of a non-constituent.

If extraposition is to be derived via leftward movement, the only possibility seems to be that the relative clause, including the relative pronoun, moves to the left, skipping the head noun and the top determiner (as well as the preposition in (63)), followed again by another leftward movement of the PP just skipped by the relative clause (see Barbiers 1995 for discussion of the various possibilities):

(64) a. [$CP_{2/3}$ [$_{PP}$ P [$_{DP}$ D [$_{CP1}$ NP t]]]]

b. [$_{PP}$ P [$_{DP}$ D [$_{CP1}$ NP t]]] [$CP_{2/3}$ t]

Such a derivation can only succeed if the head noun has been moved out of the DP_{REL} before `extraposition' applies. The additional movement of the head noun to Spec,CP_1 proposed here achieves just that.

4.2.3 Relative constructions with *amba* in Kiswahili.

A third argument supporting the proposed movement of the head noun out of DP_{REL} to Spec,CP_1 is provided by the order of elements in the Kiswahili relative construction with *amba* (cf. Barrett-Keach 1985).

In Kiswahili (a Bantu language spoken in Tanzania, and in large parts of East Africa as a *lingua franca*), relative clauses contain a pronominal element consisting of a subject marker and a suffix *-o*. The subject marker is a gender/number marker also used on the verb to mark (noun class) agreement with the subject. In relative clauses, the subject marker agrees with the head noun. The *-o* ending appears to have a deictic, referential function (cf. Polomé 1967:60).

The following are examples of these pronominal elements taken from various noun classes:

(65)	class	subject marker	relative element	
	2	wa	o	< wa+o
	4	i	yo	< i+o
	7	ki	cho	< ki+o

I will refer to the relative element as `relative pronoun' (pace Barrett-Keach 1985:43f).

The relative pronoun is suffixed to what appears to be a relative complementizer *amba*:[5]

(66)	kitabu	amba	cho	wa-li-ki-som-a
	$book_7$		REL_7	SM_2 PAST OM_7 read IND
	``the book they read''			

In (66), the head noun *kitabu* `book' agrees with the relative pronoun *cho* and with the object marker *ki* on the verb.

Amba is taken to derive from the root *amb* `say'. It is apparently morphologically related to *kwamba*, which is used as a complimentizer, and may actually surface in relative clauses:

(67)	kitabu	amba	cho	kwamba	wa-li-ki-som-a

[5] Kiswahili has two other ways of constructing relative clauses, which do not involve the element *amba*. These constructions involve either infixation or suffixation of the relative pronoun to the verb. I will not discuss these constructions here.

The following abbreviations are used in the glosses: SM = subject marker, OM = object marker, IND = indicative mood. The noun classes of the various elements are indicated in subscript.

book$_7$ REL$_7$ COMP SM$_2$ PAST OM$_7$ read IND
``the book they read''

Barrett-Keach (1985) proposes that *amba* still functions as a verb for phrase structure purposes, projecting a VP and selecting an embedded clause complement. But in the absence of *morphological* evidence that *amba* functions as a verb, I prefer to treat it on a par with *kwamba*, as one of the complementizers in the CP system.

Applying the head raising analysis to the Kiswahili *amba* relative construction leads to the following description. The relative determiner D_{REL} is probably best represented by the relative pronoun. The various steps in the derivation listed in section 4.1 can then be illustrated as follows:

(68) 1/2. D *amba* *kwamba* *walikisoma* *cho kitabu*

3. D *amba* [*cho kitabu*]$_i$ *kwamba* *walikisoma* t_i

4. D *amba* [[*kitabu*]$_j$ *cho* t_j] *kwamba* *walikisoma*

These four steps taken from Kayne (1994) do not yield the correct order of elements, as *amba* and the relative pronoun *cho* are still separated by the head noun *kitabu*. The proposed fifth step takes the head noun to the specifier of *amba*, yielding the correct order of elements:

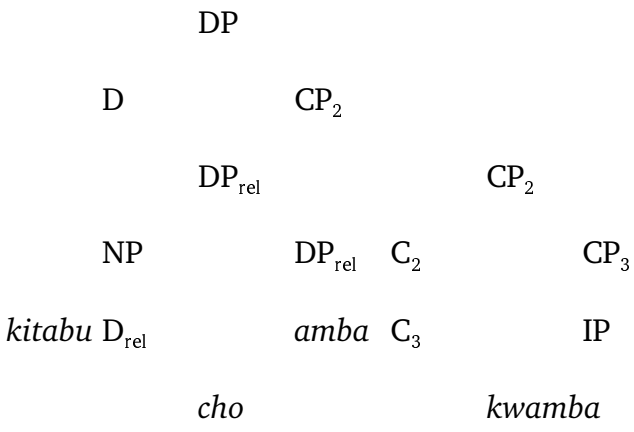
(68) 5. D [*kitabu*]$_k$ *amba* [t_k *cho*] *kwamba walikisoma*

This suggests that the derivation of relative clauses involves a step moving the head noun to the left of the complementizer.

In the description proposed here, *kwamba* and *amba* are both complementizers, *kwamba* presumably comparable to the Dutch [+d] C_3 complementizer *dat* (in view of the deictic/referential nature of the relative pronoun in its specifier position), and *amba* comparable to the Dutch C_1 complementizer *als/zo*. I have no evidence that *amba* should be located in C_1, but the only alternative would seem to be that *amba* is in C_2. Then if DP_{REL} (including the head noun and the relative pronoun) is moved to Spec,CP_3 in step 3 (cf. (68)), we would still have to conclude that some movement takes the head noun out of DP_{rel} across *amba*.

Alternatively, still pursuing the idea that *amba* is not in C_1 but in C_2, DP_{REL} could be moved to Spec,CP_2, i.e. to the specifier of *amba* itself. This would make it very difficult to derive the correct order *amba-cho*. The required movements are illustrated in (69), neither of them very attractive:

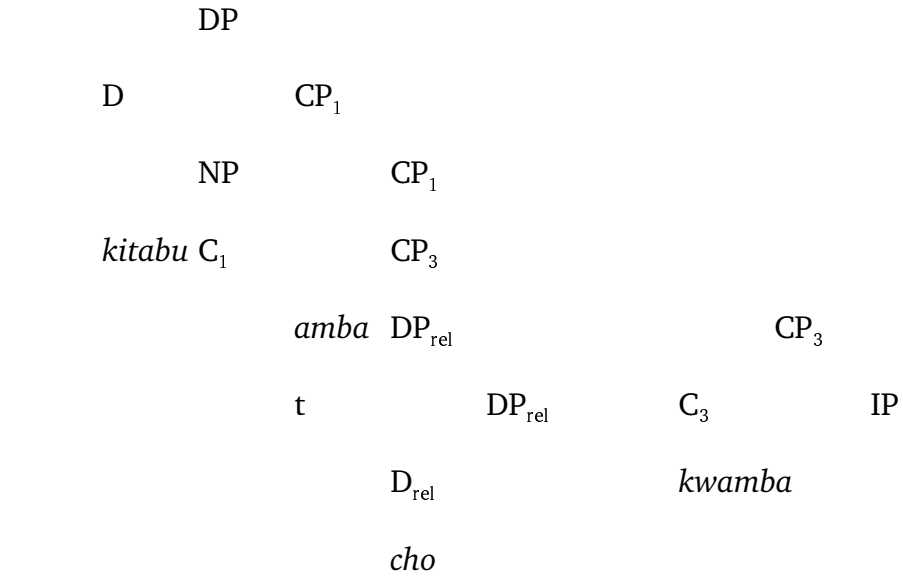
(69)



In (69), either the head C_2 moves and adjoins to the head D_{REL} of the element in its specifier position, or vice versa. In both cases, the moved element fails to c-command its trace.

In the analysis proposed here, the required movement of *cho* to *amba* does not incur such problems:

(70)



In (70), *cho* adjoins to *amba*, the moved category c-commanding its trace along the lines of Baker (1988). Alternatively, *cho* and *amba* are combined through cliticization.

Thus, the *amba* relative clause construction of Kiswahili is readily described in terms of the head raising analysis of Kayne (1994), provided the analysis is supplemented with the additional movement of the head noun to the highest Spec,CP proposed by Bianchi (1995) and here.[6]

[6] The relative clause constructions without *amba* can be described along similar lines. The difference with the *amba* construction is that now a verbal element must be assumed to move to C_1, either an auxiliary verb (in the so-called tensed relative), consisting of a subject marker, a tense/aspect marker, and suffixed

(continued...)

4.3 Conclusion

In this section I have argued, following Bianchi (1995), that the head noun in relative constructions occupies the specifier position of the highest CP in the relative clause, and has been moved out of the DP_{REL} in which it was generated.

In the final section, I would like to discuss the semantic contribution of the CP_1 projection proposed here.

5. CP_1 as a `Restriction Phrase'.

5.1 A Semantic Trigger for Movement of the Head Noun to CP_1

So far, we have been reasonably successful in describing the elements appearing in relative clause constructions in Dutch in terms of their morphological properties.

As we have seen above, relative pronouns in Dutch can be of the wh-type (*wie-wat-waar*) or of the d-type (*die-dat-daar*). Likewise, the complementizers appearing in relative clauses can be of the wh-type (*of*) or of the d-type (*dat*). In Dutch, wh-elements and d-elements move to a position in the CP-system obligatorily (see Zwart, to appear, for the obligatory movement of d-elements in so-called topicalization constructions). As argued in Hoekstra and Zwart (1994), these elements target designated positions in the CP-system: wh-elements move to the specifier position of a wh-CP, and d-elements move to specifier position of a d-CP. We have seen above that the same is presumably true in relative clauses, in which a DP (the DP_{REL}) headed by a wh-relative pronoun or a d-relative pronoun moves to the specifier position of a wh-CP (CP_2) or a d-CP (CP_3), respectively.

Note that relative clauses in Dutch never show wh-relative pronouns and d-relative pronouns appearing at the same time:

(71)	*	wie	die	dit leest is gek
		REL	REL	this reads is crazy

The only exception is, again, the Maastreechs combination *diewat*, which I have suggested above is a complex wh-relative pronoun.

[6] (...continued)
with the relative pronoun (*kitabu wa-li-cho ki-som-a* `book SM-PAST-REL OM-read-IND), or a main verb without tense markers (in the so-called general relative), consisting of subject and object agreement markers and a verbal root, and again suffixed with the relative pronoun (*kitabu wa-ki-som-a-cho* `book SM-OM-read-IND-REL'. This analysis presupposes that tensed verbs in Kiswahili are actually combinations of an auxiliary and a main verb, only the former moving to C_1 in tensed relative clauses. There is some evidence of a prosodic nature in Barrett-Keach 1985:37f that this is correct, but the position overall appears to be highly contentious. Evidence for verb movement to C in tensed relative clauses is provided by the obligatory subject-verb inversion in these constructions (Bokamba 1976, Vitale 1981:98), but the circumstance that both the auxiliary part and the main verb part precede the subject in this case may be a problem for the analysis suggested in this note.

The proposed analysis is a straightforward implementation of the ``split CP hypothesis'' as discussed in Zwart (1993), Hoekstra and Zwart (1994), Müller and Sternefeld (1993), and elsewhere.

The semantic effects of the movement of the DP_{REL} to CP are familiar from wh-movement and left dislocation/topicalization. The movement is a standard procedure for turning a proposition into a property (*lambda abstraction*). In the traditional adjunction analysis, movement of the empty operator serves the same semantic purpose (cf. (5)). Being a property, the relative clause denotes a set which intersects with the set denoted by the head noun (cf. Partee 1975:229, Larson and Segal 1995:256).

There is, however, an important difference between the traditional adjunction analysis and the head raising analysis. In the adjunction analysis, the head noun is outside the relative clause, so that the head noun and the relative clause are independent constituents. As a result, the mapping from syntactic structure to semantic interpretation is straightforward, two independent constituents combining to yield the required intersection of sets.

In the head raising analysis, the head noun is a proper part of the relative clause, sitting in the specifier position of the extracted category DP_{REL}. Moreover, what is intuitively regarded as the relative clause, the combination of the relative pronoun (D_{REL}) and the relative clause IP, is not a constituent excluding the head noun. This makes it impossible to straightforwardly derive the interpretation of the relative construction as involving an intersection of two sets. The syntactic structure does not provide a situation in which the relative clause modifies the head noun.

I would like to propose that the additional movement of the head noun out of DP_{REL} to the specifier position of CP_1, argued for in section 4, serves to create a configuration in which the relative clause and the head noun can again be interpreted as two independent constituents, one restricting the interpretation of the other via set intersection, just like in the traditional adjunction analysis. In other words, movement of the head noun sets up a situation in which the head noun and the relative clause are independent constituents, each representing a set, and in which the interpretation of the relative construction involves the intersection of these two sets.

I will argue in the next subsection that CP_1, headed by *als/zo* in Dutch, is the typical functional projection for expressing the relation of restriction that is characteristic of restrictive relative clauses. If this is correct, we may conjecture that C_1 attracts the head noun for semantic reasons: it needs an element in its specifier position in order to perform its function as a ``restrictor''. In this respect, C_1 differs from $C_{2/3}$, which appear to attract elements to their specifier positions for purely morphological reasons.

5.2 C_1 as a Restrictor.

We have assumed that CP_1 in Dutch is headed by the complementizers *als* `if' and/or *zo* `so'. Consider how *als* and *zo* are employed outside relative constructions.

Als is used in comparisons (72) and in conditional/temporal clauses (73):

(72) a. groen *als* gras
green as grass

b. Amerika *als* vredestichter
America as peace maker

(73) a. *Als* hij belt (dan) ben ik weg
if he calls then am I away
``If he calls, I'm out."
b. *Als* ik in Phoenix ben (dan) is zij al wakker
if I in Phoenix am then is she already awake
``By the time I get to Phoenix she'll be awake already."

Zo is used as a manner demonstrative (74), as a (deictic) extent marker (75) and, again, in conditional clauses (76):

(74) *Zo* moet je dat doen
so must you that do
``That is the way to do it."

(75) a. *zo* groen
so green
``That green."
b. *zo* groen dat het pijn doet aan je ogen
so green that it pain does to your eyes
``so green that it hurts your eyes"

(76) *Zo* je wilt kun je langskomen
so you want can you along-come
``In case you want, you can stop by."

Distal demonstratives in Dutch are generally characterized by an initial *d-*:

(77) person *die*
thing *dat*
time *dan*
place *daar*

The original distal manner demonstrative was *dus* `thus'. This leads me to believe that the demonstrative use of *zo* in (74) is a later development. I will ignore it here.

In its other uses, *zo*, in combination with its complement, measures out an extent. In (75) the unnamed subject of *groen* is only green to a certain extent (usually given by deixis or information available in the discourse, or, in the case of (75b), supplied by the result clause). In (76) the proper paraphrase is that the person addressed by the speaker may stop by ``to the extent that (the situation is such that) he wants to".

More generally, a conditional clause specifies a crucial point at which a consequence starts to apply. This is also true of the conditional clauses with *als* in (73). As indicated, the consequence may be introduced by the temporal demonstrative element *dan*, lending the construction the appearance of a correlative construction (cf. (78)):

(78) Wie dit leest die is gek
who this reads DEM is crazy
``Who reads this is crazy."

Finally, *als* in (72) also acts as an extent delimitor. For instance, (72b) can be paraphrased as ``America in its role of peace maker, to the extent that it is a peace maker".

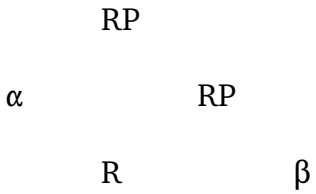
Let us therefore assume that the head of CP_1 serves to indicate the extent to which whatever is in its complement (the relative clause) applies to whatever is in its specifier (the head noun). Thus, (79a) is paraphrased as (79b):

(79) a. the man I saw
b. the [man to the extent that I saw him]

This is very close to the *such that* paraphrase of restrictive relative clauses employed by Montague (1973) and Partee (1975).[7]

The semantic properties of *als/zo* suggest that CP_1 is a ``Restrictor Phrase", illustrated in (80), where β restricts the interpretation of α (in a pretheoretical sense):

(80)



I will assume that restrictive relative clauses are defined by a the configuration in (80), where α = the head noun and β = the relative clause. This provides the trigger for extraction of α, the head noun, out of DP_{REL}, which occupies the specifier position of β.[8]

[7] Partee (1975:230) notes that the *such that* paraphrase ``can be defended linguistically on the grounds that precisely analogous forms are perfectly colloquial in some languages," referring to Nadkarni (1970). If we are correct, the restrictive relative constructions with *so* in older stages of Dutch and High German (cf. (35)-(36)) illustrate the same point. Note that none of the High German examples given by Paul (1920:238f) appear to be appositives, suggesting that the *so*-construction is indeed restricted to restrictive relative clauses. Another language employing an overt extent delimitor as a relative complementizer is Norwegian (*som* `like', cf. Taraldsen 1978).

[8] It is tempting to propose for amount relatives (Carlson 1977, Heim 1987, Grosu and Landman 1995) the same syntactic analysis as for restrictive relatives, namely involving a head noun in the specifier position of an RP. The difference with restrictive relatives appears to be that the restrictor (C_1) adds to the extent delimitation an element of cardinality or degree (presumably through some interaction with the top determiner (cf. Grosu and Landman 1995)). However, certain properties of amount relatives (notably the absence of an indefiniteness effect inside the relative clause) suggest that the status of the gap in the relative clause is different in amount relatives, which should be ascribed to the status of DP_{REL} rather than to the status of C_1. I will leave this aspect of the analysis for further study.

Appositive relative constructions should lack CP_1. As a result, appositives should not allow extraposition, apparently a correct prediction.

5.3 Conclusion

In this section I have argued that the semantic interpretation of restrictive relative constructions provides an additional argument in support of the movement of the head noun to Spec,CP_1 proposed by Bianchi (1995).

The interpretation of restrictive relative constructions requires that the top determiner, the head noun, and the relative clause enter into the semantic computation as independent constituents. In the head raising analysis of Kayne (1994), the head noun is entangled with the remainder of the relative clause, making a straightforward semantic interpretation seemingly impossible. Subextraction of out the $CP_{2/3}$ restores the head noun as an independent constituent, ready to contribute to the interpretation of the relative construction via interaction with the relative clause, and, ultimately, the outer determiner.

6. Conclusion

In this paper, I have proposed a description of restrictive relative constructions in Dutch in terms of the head raising analysis of Kayne (1994).

In the analysis proposed here, the head noun is generated inside the relative clause, as part of a DP headed by a demonstrative or interrogative determiner (the D_{REL}, traditionally known as the relative pronoun). The relative clause as a whole is a sister to a determiner (referred to as the top determiner or the outer determiner), as proposed by Kayne (1994). The head noun ends up in a position right adjacent to the outer determiner as an accidental consequence of two crucial derivational steps. First, the DP_{REL} moves to the specifier position of a projection in the CP-system matching its morphological features. Thus, if the D_{REL} is of the wh-type, the DP_{REL} is attracted by a [+wh] complementizer, and if the D_{REL} is of the d-type, the DP_{REL} is attracted by a [+d] complementizer. We have seen that the corresponding wh-complementizer and d-complementizer do show up in (dialects of) Dutch, always immediately following the [+wh] or [+d] DP_{REL}. Secondly, the head noun moves out of the DP_{REL} to the specifier position of a higher CP, the highest projection inside the relative clause. I have argued that this is the CP identified by Hoekstra (1993) as the highest layer of the Dutch CP-system, headed by *als* (and, in relative clauses, by *zo*).

I have presented several arguments for this movement of the head noun to Spec,CP_1, which was already proposed by Bianchi (1995). The arguments all hinge on the circumstance that the movement of the head noun allows us to treat the relative clause as a constituent excluding the head noun. Syntactically, this makes it possible to describe various movement processes in a more satisfactory way (for example in the derivation of head final relative constructions and in the analysis of extraposition). Semantically, the separation of the head noun and the relative clause allows for the various elements of the relative construction (the outer determiner, the head noun, and the relative clause) to interact as independent constituents, yielding a straightforward semantic interpretation.

Relative constructions in (dialects of) Dutch have many fascinating properties, most of which I have not been able to address in this paper. However, I hope that the

discussion presented here contributes to illuminating one aspect of the relative clause construction in Dutch, namely the morphology of the relative pronominals and complementizers, and the order in which these elements appear.

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