not so much determiners, prepositions, conjunctives, and two- or more place verbs. In stories about rocks that may speak and open themselves, the preposition *between* does not change into a one-place predicate on the penalty of getting stuck. Computationally, this is an interesting empirical fact because why should we keep things stable in our excursions to different worlds? An answer to that question is in terms of a constraint that cannot be attributed to an external cultural factor, it seems to me. It involves our mental capacity to relate things and these relations are not culturally determined, so it seems. Our orientation in space and time is a matter of biology rather than of culture, although cultural information may 'color' them. But lions in a zoo remain lions.

Finally a remark with regard to thesis C on the necessity operator in Carnap's meaning postulates. They were invented in a period in which mental grammar was outside the scope of analysis. From the point of view of set theory quantifiers of natural language as applied by individual speakers can be given the same analysis as quantifiers in a formal language used externally in the public domain. The difference is not so much a difference in nature of their operation but rather the preciseness conditions with respect to the necessity operator involved. A simple example. I can say and often say I always take the tram to get to the Central Station even though I sometimes happen to get to the CS by walking. The large majority of speakers does not bother too much about the conditions making this sentence true. Only judges and niggling people will not allow universal quantification in this case and they will correct me. But this does not mean that the sentence does not express universal quantification. It does, and in spite of that the sentence is normally accepted as being true. In other words, the problem raised by thesis C has not so much to do with semantics itself. Rather it concerns the socially apt property of natural language users to steer between sloppyness and finicality. And perhaps the one property that binds the set corresponding to a noun A together is simply the metalinguistic property 'what counts for me as A (in the relevant domain of interpretation)'.

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Empty subjects and empty objects

Mark de Vries University of Groningen

In 1978, Jan Koster published a paper on subject clauses that soon became a standard reference. His later work on right-peripheral object clauses (Koster 1995, 1999a) is less well known, but at least as interesting, and it found a continuation in his study of extra-position (Koster 2000, 2001). On a personal note, Jan's work has been an inspiration to my own thinking and research for over a decade now. What I would like to do here is to relate the two developments mentioned, and propose a kind of unification – in a perhaps unexpected way.

1. Subject clauses

Apparently, a subordinate clause can function as the subject of a main clause. An example is (1a), which is semantically equivalent to the expletive construction in (1b):

- (1) a. *That Joop got fired* surprised us.
 - b. It surprised us *that Joop got fired*.

Several linguists wondered whether there could be a syntactic relationship between the two constructions, and if so, which one would be the base structure. Jan Koster, citing Joseph Emonds, argues against an extraposition analysis $(1a \rightarrow 1b)$, essentially because subject sentences do not behave like any other construction involving extraposition. For instance, in inversion contexts extraposition would suddenly become obligatory (2); by contrast, extraposition is forbidden in bisentential constructions (3):

- (2) a. *Did that Joop got fired surprise you?
 - b. Did it surprise you that Joop got fired?
- a. That Joop got fired implies that he is now unemployed.
 b. *It implies that he is now unemployed that Joop got fired.

Koster also rejects an 'intraposition' analysis (1b \rightarrow 1a). One of the main reasons is that it violates Structure Preservingness. Concretely, the grammar should not be able to replace an NP node with an S node: once created, structure cannot be destroyed. Related to this, phrase structure rules like NP \rightarrow S should not be possible. So even in the absence of an intraposition transformation, a subject clause cannot be generated

directly below an NP category (presupposing that the subject position is inherently an NP position).

Ignoring the expletive construction for a moment, the correct descriptive generalization – attributed to Susumu Kuno – appears to be that subject clauses must be sentence-initial. (It was clear from the start that John Ross's more general 'Internal S Condition' leads to incorrect results for certain complement clauses.) How can this be explained? Koster's solution is that left-peripheral subject clauses are not part of the core sentence, but *satellites* that license a phonologically empty subject NP. Borrowing Ann Banfield's 'expression node' E, Koster proposes the structure in (4), in which we can insert examples like (1a). The satellite S' binds the adjacent empty noun phrase in the COMP of the main clause.

(4) $[_{E} [_{S'} \text{ That Joop got fired}] [_{S'} [_{COMP} [_{NP} e]] [_{S} \text{ surprised us}]]]$

Koster justifies this move by making a comparison with dislocation constructions, which have a similar make-up. In Dutch, there is a free alternation between simple topicalization (TOP) and what is now known as Contrastive Left Dislocation (CLD). Consider (5)–(7):

(5)	a.	Joop,	die	hebben	wij	ontslagen.	(CLD of nominal object)
		Joop	DEM	have	we	fired	
		'Joop,	we fir	ed.'			

- b. Joop hebben wij ontslagen. (TOP of nominal object)
- (6) a. Dat Joop ontslagen werd, dat betreuren wij. (CLD of object clause) that Joop fired was DEM regret we 'That Joop was fired we regret.'
 - b. Dat Joop ontslagen werd betreuren wij. (TOP of object clause)
- (7) a. Dat Joop ontslagen werd, dat verbaasde ons. (CLD of subject clause) that Joop fired was DEM surprised us 'That Joop was fired, that surprised us.'
 - b. Dat Joop ontslagen werd verbaasde ons. (simple subject clause)

According to Koster's theory, the demonstrative in the a-examples would be the materialization of an empty COMP such as shown in (4). Put differently, the b-examples involve phonological deletion of an operator in COMP. Thus, it seems that we can make a nice structural generalization, relegating differences to some filtering device, and at the same time explain why subject clauses do not surface sentence-internally.

I think Koster is partly right and partly wrong, both on the theoretical side and on the data side. First, consider the status of subject clauses in the middle field. Especially if they represent discourse-old information, they are not nearly as bad as we have been led to think they would be. In (8), from Dutch, the main stress is indicated with capitals. The sentence is only slightly awkward. A similar argument is provided by Miller (2001) on the basis of English data.

(8) (?)ONS heeft dat Joop ontslagen is in het geHEEL niet verbaasd. us has that Joop fired is in the whole not surprised lit. 'Us, that Joop has been fired has not surprised at all'

Also, a recursive configuration seems possible in the following way:

 (9) (?)Of dat Joop ontslagen is een verGISsing was, is nog if that Joop fired is a mistake was is yet maar de VRAAG. but the question lit. '[Whether [that Joop has been fired] is a mistake] is still questionable?

Such facts, of course, are highly problematic for the satellite hypothesis: by definition, a satellite cannot be non-peripheral, and it cannot be embedded inside another satellite.

How, then, is the strong tendency of embedded clauses to surface in a left- or rightperipheral position to be explained? I think we can safely attribute this to an amalgam of considerations, involving parsing, discourse, phonology, and – last but not least – the availability of equivalent alternatives (this may be crucial for differentiating major constituent clauses and clauses embedded inside a complex NP). What is important for our purposes here is that there simply cannot be an inviolable syntactic factor enforcing it.

The above does not imply that subject clauses directly occupy the subject position. I think we can maintain the idea that 'subject sentences don't exist', but in another way than Koster originally proposed. I argue below that subject clauses are *right*-hand satellites at the *constituent* level. A big advantage of this is that it makes it possible to restore the analytical relationship with the expletive construction, which got lost in the original discussion. Before we can do so, we need to examine Koster's ideas concerning object clauses (mentioned in the introductory paragraph) in some more detail.

2. Specification/parallel construal

In (10) and (11), it is shown that nominal objects normally precede the final verb (or verbal elements/cluster) in Dutch, but clausal complements follow the verb. Note that it is generally assumed that the 'final' verb position constitutes the 'right sentence bracket', and everything following it is extraposed (or dislocated), at least in a pretheoretical sense.

- (10) a. Joop heeft een boek geschreven.
 Joop has a book written
 'Joop wrote a book.'
 - b. *Joop heeft geschreven een boek.

- (11) a. *Joop heeft dat hij Anna bewondert geschreven.
 - b. Joop heeft geschreven dat hij Anna bewondert. Joop has written that he Anna admires 'Joop wrote that he admires Anna'

In line with Richard Kayne, Jan-Wouter Zwart, and others, we could assume that Dutch is underlyingly VO, and that nominal objects, unlike complement clauses or prepositional phrases, are obligatorily scrambled to the middle field, yielding the familiar OV pattern. There is evidence, however, that this cannot be the complete story. Some verbs allow for an optional expletive object in addition to a clausal 'object'; see (12):

(12) Joop heeft (het) betreurd/geaccepteerd dat hij ontslagen was. Joop has it regretted/accepted that he fired was 'Joop regretted/accepted that he got fired.'

Citing Hans Bennis, Koster assumes that the expletive in such sentences is the actual object, and that the right-peripheral clause serves as a specification of it.

We now need to know what specification is in syntax. For this, Koster develops a much more general theory of 'parallel construal' in order to account for all kinds of extraposition phenomena. The idea is that the structural configuration of coordination can be used semantically for something that is (somewhat intuitively) called specification. The specialized X-bar category for this is the 'colon phrase'. In the structure [,p XP [: YP]], the complement YP specifies the XP in the spec position. In this way, we could, in principle, generate phrases like the following:

(13) a. $[_{:P} [_{DP} it] [: [_{CP} that he got fired]]]$ b. $[_{:P} [_{NP} men] [: [_{PP} with a red cape]]]$

Combining this possibility with ideas concerning generalized pied piping (see also Koster 2002 and other publications), extraposition can be analyzed as base-generation of a specification in a right-peripheral position:

(14) a. ... Joop heeft ... [._P [_{AgrOP} het betreurd] [: [_{CP} dat hij ontslagen was]]] (=12)
b. ... Joop heeft ... [._P [_{AgrOP} mannen gezien] [: [_{PP} met een rode cape]]]
lit. 'Joop has men seen with a red cape.'

Here, the specification is added at the level of some projection in the middle field that contains the surface position of the object, say AgrOP. This, supposedly, is possible because the features of the relevant nominal phrase (*het* 'it', *mannen* 'men') are percolated up to the mentioned level of projection. For a detailed discussion of this approach to extraposition, and an important modification, see de Vries (2009a: Section 3, 53–68).

Koster suggests that specification of a zero object should be possible as well. Essentially, this looks as in (15):

 (15) Joop heeft [[[_DP e] betreurd/gezegd] [: [dat hij ontslagen was]]]

 Joop has
 regretted/said

 that he fired
 was

Apart from considerations of generality, he claims that tests with parasitic gaps confirm the presence of an empty element here. (As my own judgments are underdeveloped in this area, I will refrain from reviewing such data.)

Furthermore, it seems only natural to apply the concept of parallel construal to extraposed subject clauses as well; see (16):

(16) [[[_{DP} It] surprised us] [: [that Joop got fired]]]

Thus, clausal expletive constructions, whether related to subject or object, can be treated on a par.

Summarizing so far, we have seen that specification may involve noun phrases, pronouns and empty NPs. It is structurally similar to coordination, and it creates a right-peripheral phrase that is semantically related to some anchor in the matrix.

3. Specification of zero subjects (versus dislocation)

Let us now compare Koster's analysis of right-extraposed clauses to left-peripheral subject clauses as in (1a), "That Joop got fired surprised us". Recall that the latter were analyzed as satellites binding an empty pronoun $[_{DP} e]$ in subject position; there is no parallel construal involved. Thus, apart from the idea that in both cases a pronominal element fills the actual argument position, the two analyses have nothing in common.

On a side note, the idea of subject-clauses-as-satellites has entered syntax handbooks, but as far as I know, the idea of parallel construal has not (yet). If the argument in this squib is even remotely on the right track, this needs justification.

In Section 1, we saw that the satellite hypothesis is empirically incorrect. There is also a theoretical problem, I think, that makes it suspect, and this is the idea that the satellite clause binds the empty noun phrase. In his work on the Configurational Matrix, Koster generalizes over anaphoric dependencies and movement (see, for instance, Koster 1999b). Since movement is structure preserving, we then expect binding to behave similarly. Concretely, just as a moved noun phrase cannot change into a clause, a clause should not be able to bind a noun phrase. Ironically, one of Koster's main arguments against other approaches comes back like a boomerang with a few years delay.

Nevertheless, the original case against three possible hypotheses is still valid (though not in every detail): (i) a bare clause cannot occupy the subject argument position (also, in compositional semantics we expect an entity rather than a truth value, here); (ii)/(iii) extraposition or intraposition in terms of a transformation/movement leads to incorrect predictions and is theoretically untenable.

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Are we now at an impasse? I do not think so. Later developments have made the original story for subject clauses untenable, but I think it is the concept of specification/parallel construal that provides us with a rather straightforward solution. If we insert an empty pronoun in the subject position, we can specify it at the constituent level with the relevant clause. Derivationally, then, we have to generate a full colon phrase as the (lexical) subject (and probably move it to SpecIP – I will ignore this for presentational simplicity):

(17) $[_{IP} [_{P} [_{DP} e] [: [_{CP} That Joop got fired]]]$ surprised us]

Like regular coordination phrases, the colon phrase takes over properties of its components. Thus, the sentence can be said to have its nominal subject (note that the extended projection principle could be theoretically implemented as a licensing requirement on the head I (or T) involving a [D] feature).

In (17), the subject clause is phonologically left-peripheral. Still, we can clearly see the similarity with the expletive construction in (16) – and also (15) for object clauses -, which uses the exact same mechanism of parallel construal. The difference is that specification applies at the constituent level in (17), but at the level of the spine in the other examples, which causes the clause to surface right-peripherally. Furthermore, in (16), the pronoun is spelled out as an expletive, but it remains empty in (17). This is due to the (language-dependent) requirement of English that at least something in subject position needs to be overt. Finally, notice that the combination of an overt expletive plus a clause in SpecIP is normally unacceptable ("*It that Joop got fired surprised us"). This is so for a number of reasons: first of all, spelling out *it* would be completely superfluous, here (and therefore blocked); furthermore, if we tried to do so nevertheless, the clause would surface sentence-medial, which is odd for several non-syntactic considerations already mentioned in the first section. In fact, we can upgrade the expletive to a meaningful pronoun, but then the subject clause must be either downgraded to a parenthetical status or pushed to the front, thereby creating a contrastive construction.

The last remark brings me to a final question that I would like to address briefly. What about the original comparison of subject clauses with left-dislocation constructions? We now know that these must be divided into at least two different types: Hanging Topic Left Dislocation and Contrastive Left Dislocation (see van Riemsdijk 1997 for an early overview). The former can be treated as involving a 'satellite'. An example is "*John*, I don't know *him*" – with pitch accent on *know*, not on *him*. But for the latter, which, crucially, is the one Koster compared subject clauses with in Dutch, this is far from clear. One of the reasons is that there are reconstruction effects and other movement effects. Let me give just one example:

(18) [VOL van $zichzelf_k]_i$ (dat_i) is $Joop_k$ NIET t_i. full of himself dem is Joop not Here, the preposed AP is either topicalized (DEM absent) or contrastively left-dislocated (DEM present); there is no meaning difference – the demonstrative only brings out the implied contrast somewhat clearer. In both cases the subject *Joop* binds the reflexive *zichzelf* embedded in AP. This is a strong argument that the AP itself has been moved, which implies that it is not a satellite. If this is indeed the case, then what could be the structural position of the demonstrative in CLD (considering that Dutch has verb second)? In de Vries (2009b), I argue that it forms a constituent with the preposed phrase by means of a specificational colon phrase [_P AP : DEM], as is sketched in some more detail in (19). Similarly, CLD of a subject clause would give (20):

(19) $\left[_{CP}\left[_{P}\left[_{AP} \text{ Vol van zichzelf}_{k}\right]\left[:\left[_{DP} \text{ dat}\right]\right]\right]_{i}$ is Joop niet t_{i}]

(20) [_{CP} [._P [Dat Joop ontslagen werd] [: [dat]]] verbaasde ons] (=7a)

The demonstrative adds something to the clause. Its function here, in addition to highlighting contrast, seems to be comparable to what a summary pronoun does as in "[my books, records, (and) CDs], (all) *that*".

Interestingly, we now see a new connection between regular subject clauses and CLD: both involve specification at the constituent level, and both involve a clause and a pronoun. The difference is in the order, and the type of pronoun. Notice that we could not make them even more similar by switching the order of SPEC and COMP within:P in (17). The reason is simply that an empty pronoun, unlike a demonstrative, is not a meaningful specification.

In conclusion, I argued that Jan Koster's ideas concerning empty subjects and empty objects are partly right. Though his original story concerning 'subject sentences' does not hold up to scrutiny, we can extend his later work on object clauses and extraposition to cover both subject clauses and contrastive dislocation constructions, and thus enlarge the explanatory power of the concept of specification/parallel construal.

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Island Fever

Edwin Williams Princeton University

I will explore the possibility that island violations arise as instances of a generalized "Improper Movement" condition. The improper movement condition itself arises from the most basic feature of the architecture of the generative system, its instantiation of the notion of *derivation*.

It is widely assumed that the structure of a clause is a sequence of Functional elements $F_n > ... F_0$, with F_0 reserved for the lexical verb. I will instead assume that the F-sequence is not directly the structure of the clause, but first and foremost the "clock" that times events in the workspace: for i<j, F_i things happen before F_j things. Such timing will indirectly give the clause the structure it is assumed to have if, for example, the F things are simple merges, though the actions of morphosyntax will disturb the mirroring of the derivation in the surface of the clause. But because of the relation of structure to derivation, I will interchangeably refer to F-positions, F-sizes, F-times, and ticks of the F-clock. The "structure" of the F-sequence or F-clock may become better understood at some future time, but for the purposes of this exploration it does not matter whether it is, but of course it will matter very much what the F-sequence turns out to be.

I will further assume that clauses come in different sizes in a way that is fully indexed by the F-sequence, and that they are embedded at the point at which they have been built up to the size that is called for by the verb under which they are embedded. So, for example, a verb that takes a small clause complement will be specified to take an F_iP^1 for small i, and it will be embedded earlier than a full tensed clause headed by F_jP , for large j. This is the Level Embedding Conjecture (LEC) of Williams (2003), where the regime of Level Embedding (LE) for clauses is distinguished from the regime of Co-generation, for DPs. I showed there that some simple locality effects and also a "generalized improper movement" (GIM) condition followed from this arrangement. Here I will speculate about some further consequences of the model. I really do mean speculate – I will be content here to

^{1.} or, just F_i – there is little point in making the distinction between F_i and F_iP , and I will freely refer to F_iPs as F_is .