

# Ackema and Szendrői 2002: Determiner sharing as an instance of dependent ellipsis

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*Sharing Constructions*

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16. Juni 2015

## 1 Take-home message

Determiner sharing involves two ellipsis operations: coordinate ellipsis (gapping) and 'dependent' ellipsis, which is parasitic on coordinate ellipsis and targets dependents of the elided head. The special properties of dependent ellipsis can account for empirical observations made about DS.

## 2 Introduction

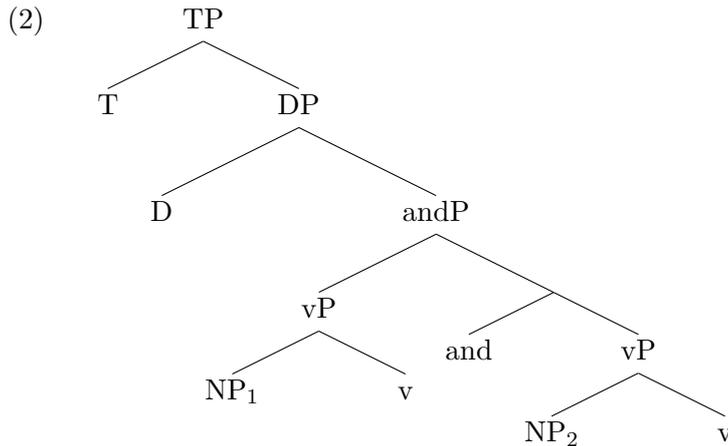
- McCawley 1993: in coordinations that involve gapping in the second (and further) conjunct(s), it is possible to omit the determiner of the subject DP in the second (and further) conjunct(s) and 'share' it with the determiner of the first conjunct

- (1) a. Too many Irish setters are named Kelly, ~~too many~~ German shepherds ~~are~~ named Fritz, and ~~too many~~ huskies ~~are named~~ Nanook.  
b. The duck is dry and ~~the~~ mussels ~~are~~ tough.

- not easily analyzable as gapping of a bigger constituent including V and D but not the NP of the subject

### 2.1 Sharing approach by Johnson (1998, 2000) and Lin (1999)

- DS is not gapping, but literal sharing of the determiner: the coordination happens on a level below D



- asymmetric A-movement: NP<sub>1</sub> can move to D to check features (precisely to D<sup>0</sup> and not to SpecDP since the determiner must be initial; 'head-movement' of an XP) while NP<sub>2</sub> remains in situ  
⇒ violation of movement constraints
  - **disanaphora requirement**: determiner sharing has a property that is typical for structures involving ellipsis: the overt remnants in the second conjunct must **necessarily contrast** with the corresponding constituents in the first conjunct. If there is no ellipsis, there is no such requirement on coordinations, see (3).
- (3)
- We did not move while any trumpet was blowing or drum beating.
  - \*We did not move while any trumpet was blowing or trumpet sounding.
  - We did not move while any trumpet was blowing or any trumpet was sounding.
- in the Johnson/ Lin approach, this was an unexpected feature

### 3 Coordinate ellipsis and dependent ellipsis (Williams 1997)

- Williams (1997): coordination = projection of a bivalent lexical item, see (4)
- (4)
- [C, C]P = CP and CP  
*That the Earth revolves around the Sun and that the Moon revolves around the Earth* are well-established facts.
  - [I, I]P = IP and IP  
I think that *John will eat meat and Mary will drink wine*.
  - [V, V]P = VP and VP  
It is ok to *like fish and hate meat*.
- gapping = coordinate ellipsis: the structure consists of a projection of a double head, the second one of which is 0 (2<sup>nd</sup> conjunct = 0P) and anaphoric to the first head
- (5)
- [C, 0]P = CP and 0P  
*That the Earth revolves around the Sun and 0 the Moon revolves around the Earth* are well-established facts.
  - [I, 0]P = IP and 0P  
I think that *John will eat meat and Mary 0 drink wine*.

- c. [V, 0]P = VP and 0P  
It is ok to *eat fish on Fridays and 0 meat on Wednesdays.*

- the null head can license further ellipsis. In (6b) the complement of the 0 head is also 0

- (6) a. John gave Mary a book today and 0 Sue a record yesterday.  
b. John gave Mary a book today and 0 0 a record yesterday.

⇒ two ellipsis operations in (6b): coordinate ellipsis + dependent ellipsis

- double meaning of 'dependent': (1) DE is dependent on coordinate ellipsis of the head, (2) DE targets a dependent of the 0 head (= complement or specifier) which has to be anaphoric to the counterpart in 1<sup>st</sup> conjunct
- If the complement to a null head is not elided, it must be **disanaphoric** to the corresponding complement.

- (7) \*John gave Bill<sub>i</sub> a book today and 0 him<sub>i</sub> a record yesterday.

- the 0 head in a CE structure allows the head of a dependent phrase to be 0 as well, but there may be overt material besides the 0 head in the 0P

- (8) John saw pictures of Mary on Tuesday and 0<sub>V</sub> [0<sub>N</sub> of Sue] on Wednesday.

- Williams: dependent ellipsis is a transitive process, which means a 0 head whose null status is licensed by the 0 head of a coordinate ellipsis can itself act as licenser of elision of the head of its own complement ((9)). Ackema and Szendrői argue that there are restrictions to that recursivity.

- (9) a. John wants to decapitate Fred and Bill wants to hamstring Pierre.  
b. John wants to decapitate Fred and Bill 0 to hamstring Pierre.  
c. John wants to decapitate Fred and Bill 0 0 hamstring Pierre.  
d. John wants to decapitate Fred and Bill 0 0 0 Pierre.

- heads may not be skipped (*\*John wants to decapitate Fred and Bill wants 0 hamstring Pierre.*)

- (10) *Dependent ellipsis*  
The 0 head in coordinate ellipsis licenses the heads of its dependents to be 0.

DE targets the head of the dependent, turning this phrase into a 0P. In case the dependent is anaphoric to the corresponding dependent in the first conjunct, the rest of its material will be included in the ellipsis process; if overt material remains in the dependent 0P, it must be disanaphoric to the corresponding dependent in the first conjunct.

## 4 Subject determiner sharing

- **determiner sharing** = a coordinate 0 head licenses the head of a nominal dependent phrase (D<sup>0</sup>) to be 0 itself. Disanaphora requirement holds (anaphoric elements

will be elided).

- properties of DS that this type of analysis can explain:
  - DS is **only possible in coordination**: DE is dependent on the presence of the syntactically null head that is the result of coordinate ellipsis
  - DS is not possible in a double-object construction or between subjects and objects

- (11) a. \*Henry VIII gave too many wives ~~too many~~ presents.  
b. \*Your daughter hates ~~your~~ son.

- coordination is not enough, **gapping is required**: T-gapping (coordinate ellipsis in a coordination of two TPs) is sufficient for subject DS, V-gapping is possible but not necessary

- (12) a. The girls will drink whiskey and the boys will drink wine.  
b. The girls will drink whiskey and ~~the~~ boys drink wine. (0<sub>T</sub> and overt V)  
c. The girls will drink whiskey and ~~the~~ boys wine. (0<sub>T</sub> and 0<sub>V</sub>)

- subject is a dependent of T rather than V

- not all Ds can be shared: indefinite determiners, numerals, demonstratives cannot

- (13) a. \*An Irish setter is usually named Kelly, ~~a~~ German shepherd ~~is named~~ Fritz, and ~~a~~ Husky ~~is named~~ Nanook.  
b. \*Two girls will drink whiskey and ~~two~~ boys ~~will drink~~ wine.

- Lyons (1989) among others: indefinite determiners are not D elements but modifiers in the NP → DE can't target them since they are not the head of the phrase

#### 4.1 Gapping of negative modals

- some cases involving gapped negative modals don't seem to involve **T-gapping but still licenses D-sharing**
- consider first (14), without D-sharing

- (14) a. Ward can't eat caviar and Sue can't eat beans.  
b. Ward can't eat caviar and Sue eat beans.  
c. Ward can't eat caviar and Sue beans.

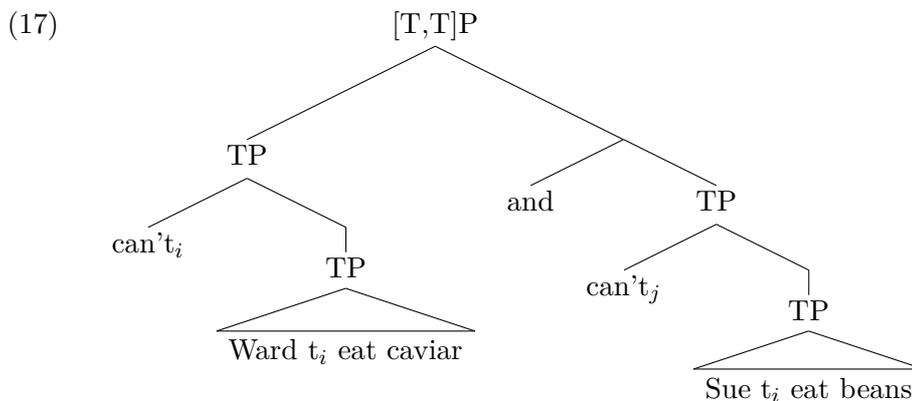
- in (14a) *can't* has scope over its own conjunct respectively
- (14b) seems to involve T-gapping. Here, the negative modal gets wide scope (over the entire conjunction; '*it cannot be the case that Ward eats caviar and Sue eats beans at the same time*').
- in (14c) both readings are possible

- (15) The girls can't eat caviar and boys eat beans.

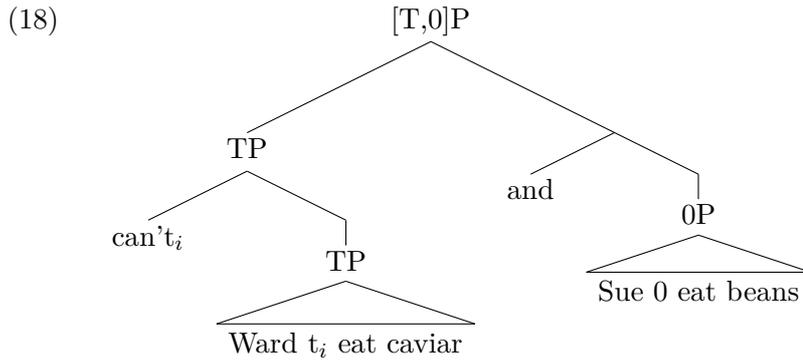
- Lin: (15) shows that DS involves coordination below a shared T and D node. The wide scope reading of T follows from its syntactic position: it c-commands both coordinated vPs.
  - the wide scope reading for (14c) follows in the same way
  - for the distributed scope reading of (14c): full TP-ellipsis, after moving subject and object out of TP in the second conjunct.
  - this implies that DS should be impossible for the distributed reading of (14c) Since D is below T and T is not shared in this reading, D cannot be shared either. This is incorrect, however.

(16) I don't know whether too many GIRLS can't dance the SAMBA or ~~too many~~ BOYS ~~can't dance~~ the TANGO.

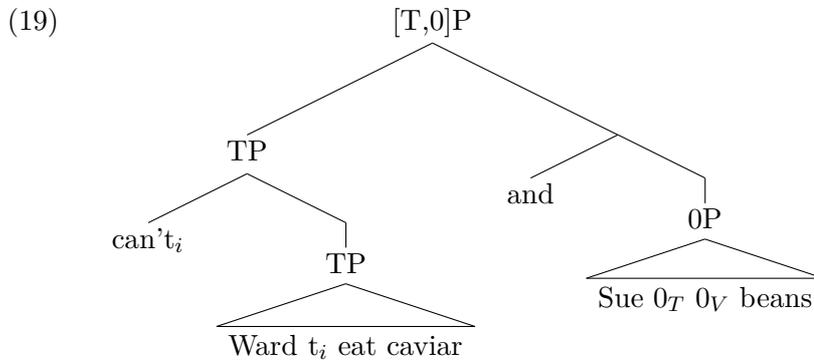
- DS remains possible in the reading which is supposed not to involve T-sharing in Lin's analysis. This appears to be incompatible with a 'coordination below T and D' analysis of D-sharing.
- **problem** for the present analysis: if (14b) involves T-gapping (which is assumed because the 0 determiner is licensed by a  $0_T$  via DE), the difference in interpretation with (14a) is unexpected
- Scope is established by raising operators at LF. (14a) has the LF representation in (17)



- the modal in the first conjunct c-commands both conjuncts  $\Rightarrow$  in principle it could take scope over both conjuncts
- that it only takes scope over the first conjunct follows from relativized minimality if relativized minimality is sensitive to operators themselves rather than to the elements (traces) bound by or attracted by the operator (Manzini 1999)
- modal can't take scope over both conjuncts  $\Rightarrow$  distributed scope reading
- in (14b) the modal is a 0 head which lacks any inherent features  $\Rightarrow$  no features that turn a head into an operator  $\Rightarrow$  can't take scope, is not targeted by LF raising rule  $\Rightarrow$  the modal from the first conjunct can scope into the second conjunct because there is no intervening operator  $\Rightarrow$  wide scope reading



- in an analysis where the modal in the second conjunct is turned into a 0 head, a difference in meaning between (14a) and (14b) is not unexpected
- scope ambiguity in (14c): operator raising in the first conjunct but not in the second, verbal head is 0



- (19) is not a well-formed LF: the  $0_V$  must acquire some predicative meaning in order to license the arguments *Sue* and *beans*
- how are **semantics** acquired in the second conjunct in general?

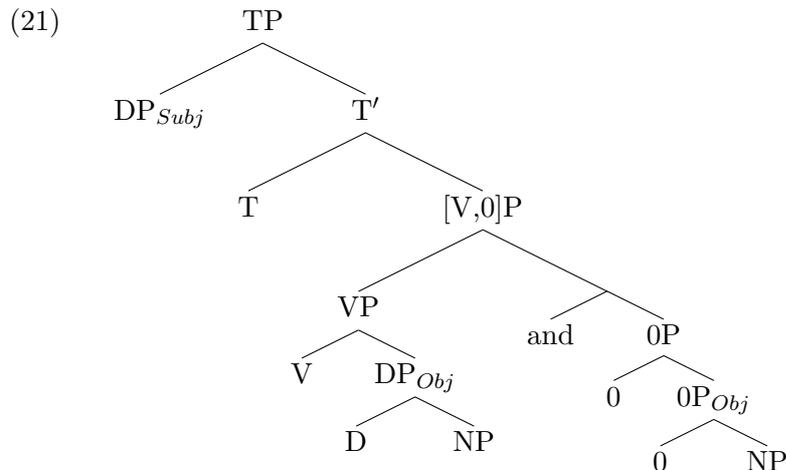
(20) *Reconstruction at LF (Fiengo and May 1994)*

If the second conjunct is structurally identical to a (sub)tree in the first conjunct, all terminal vocabulary of the phrase marker in the first conjunct is copied to the corresponding terminal nodes in the second conjunct, except for those terminals in the second conjunct that already contain vocabulary items.

- ambiguity in (14c): does reconstruction apply before the modal raises? Both are LF-processes, it's implausible to assume an intrinsic ordering  $\Rightarrow$  they can apply in either order.
- reconstruction > raising: distributed scope (modal is copied from first conjunct, can rise in both conjuncts separately, structure in (17))
- raising > reconstruction: wide scope (structure in (19), then reconstruction copies the content of the terminal nodes of the identical segment from the first conjunct into those terminal nodes in the second conjunct that are empty.

## 5 Object DS and the (non)recursivity of DE

### 5.1 Object D-sharing



(22) Bob gave too many magazines to Jessica and newspapers to Joanne.

- while subject D-sharing is dependent on T-gapping, the prediction is that object D-sharing is dependent on V-gapping, since the object is a dependent of V.
- when only T, but not V is gapped, object DS should be impossible. This is correct:

(23) \*Bob will give too many magazines to Jessica and ~~will hand too many~~ newspapers to Joanne.

- Object DS is more restricted than subject DS: the shared determiner has to be initial in its conjunct → the subject of the second conjunct has to be empty

(24) \*Bob gave too many magazines to Jessica and Harry ~~gave too many~~ newspapers to Joanne.

- this follows from the analysis: if the subject is present in the 2<sup>nd</sup> conjunct, coordination happens at the TP-level. An elided T head does not license DE of the head of the object DP, given that the object is not a dependent of T.
- a possible derivation for (24) that must be excluded: T<sup>0</sup> licenses DE of V<sup>0</sup> which in turn can license further ellipsis of its own complement.
- to rule this out:

(25) Dependent ellipsis is nonrecursive.

- When a head licenses some property of a dependent, **the head of the dependent is not itself turned into a licenser** of that same property on *its* dependents.
- it is possible that the head of the dependent is contained in an *extended projection* along with other heads. In that case, it can *share features* with these other heads. A dependently elided 0 head can share its property of having no feature with lower heads in the extended projection. This does not mean that such dependent 0 heads can license further dependent ellipsis in any dependents of this extended projection.
- (9d), repeated here as (26) seems to show recursivity of dependent ellipsis

(26) John wants to decapitate Fred and Bill 0 0 0 Pierre.

⇒ *to* and the infinitive are heads within the same extended projection. The coordinate 0 head in the second conjunct licenses the head of its dependent to be 0, and this head *shares* its property of being null with a lower head within the same extended projection.

- (25) can still rule out (24): overt subject in second conjunct indicates coordination at TP-level → coordinate T-ellipsis. The coordinate 0 head licenses its complement to be headed by 0, but this 0 head does not in turn license its complement DP to be headed by 0. It also cannot share its property of being null with this head because this head is in a different extended projection. Hence, DS is ruled out in this case.

## 5.2 Independent motivation for (25): restructuring and non-restructuring verbs

- prediction: there is a difference in gapping behaviour between restructuring and non-restructuring verbs
- restructuring verbs: take a verbal complement, form a monoclausal construction (modals, aspectual and perception verbs, causatives etc.)
- restructuring verbs are higher heads in the extended projection of the lower verb ⇒ both are heads in the same extended projection, so 0 spreading should be possible between them
- nonrestructuring verbs take verbal complement but don't show monoclausal behaviour ⇒ verbal heads in two different extended projections, 0 spreading should not be possible if (25) is correct
- Dutch: restructuring verbs trigger verb raising (VR) where the head of the infinitival complement is adjoined to the selecting verb; nonrestructuring verbs trigger extraposition of their complements

(27) a. dat Jan [Marie een liedje  $t_i$ ] hoorde zingen;  
 that John Mary a song heard sing  
 'that John heard Mary sing a song'

b. dat Marie besloot [PRO een liedje te zingen]  
 that Mary decided a song to sing  
 'that Mary decided to sing a song'

- prediction is confirmed by the data. In (28a), the head of the verbal complement *voordragen* can be elided along with the restructuring verb *gaan*. In (28b), where the complement to the coordinate 0 head is headed by a nonrestructuring verb, the head of *its* complement cannot be elided.

(28) a. *omdat Jan besloot die elegie te gaan voordragen en Cecilia*  
 because John decided that elegy to go recite and Cecilia  
~~*besloot die ode te gaan voordragen*~~  
 (decided) that ode (to go recite)  
 'because John decided to go and recite that elegy and Cecilia decided to go and recite that ode'

- b. ?\**omdat Jan besloot op te houden die elegie voor te dragen en*  
because John decided to stop that elegy to recite and  
*Cecilia besloot op te houden die ode voor te dragen*  
Cecilia (decided to stop) that ode (to recite)  
‘because John decided to stop to recite that elegy and Cecilia decided  
to stop to recite that ode’

- (25) allows for the whole extended verbal projection of the complement to the coordinate 0 head to be 0 by one instance of dependent ellipsis plus feature spreading in (28a)
- In comparison, the infinitival in (28b) is part of a different extended projection and cannot undergo DE

### 5.3 Further empirical evidence

- prediction: in a double object construction, where both objects are direct dependents of V, either or both may have a 0 head if V undergoes coordinate ellipsis.
- if both Ds are elided, one of them is not conjunct initial. This would be an exception to McCawley’s (1993) observation that a shared determiner must be initial in its conjunct.
- the prediction is correct. The shared D is non-conjunct-initial in (29a). (29b) shows that both Ds can be shared.

- (29) a. *dat Jan de meisjes teveel cadeautjes gaf en de jongens*  
that John the girls too-many presents gave and the boys  
~~*teveel*~~ *fopsigaren*  
too-many fake-cigars  
‘that John gave the girls too many presents and the boys too many fake  
cigars’
- b. *dat Jan teveel meisjes teveel cadeautjes gaf en ~~teveel~~ jongens ~~teveel~~ fop-*  
*sigaren*

- So the hypothesis that all direct dependents of the head that has undergone coordinate ellipsis can be targeted by dependent ellipsis, while at the same time the 0 heads thus produced do not themselves turn into licensors for further dependent ellipsis, can adequately account for the cases falling under McCawley’s generalization and also for a possible exception to it.

### 5.4 What non-recursivity can account for

- Under V-gapping, D-sharing should be impossible if the DP is contained in a PP that is an adjunct to V. If the PP is a complement of V, P-sharing is predicted to be possible. This is correct.

- (30) John talked about all magazines with Jessica and ~~talked about~~ all newspapers with Jane.

- The null P<sup>0</sup> cannot in turn license its complement D to be null. Under the assumption that P and D are not part of the same extended projection, D can’t become 0 via 0 spreading either.

(31) ?\*John talked about all magazines with Jessica and ~~talked about all~~ newspapers with Jane.

- In object D-sharing, additional 'N-sharing' should be allowed since both heads are in the same extended projection. N should be able to be 0 via 0 spreading. This is indeed possible

(32) a. John saw the picture of Mary on Tuesday and ~~saw the picture~~ of Sue on Wednesday.  
 b. John saw too many boys with white wine on the first floor and ~~saw too many boys~~ with red wine on the second floor.

- This should also be possible for 'N-sharing' in subject D-sharing constructions. In (33) there is coordinate T-ellipsis, with additional dependent ellipsis of D in the subject DP (and also of V in the complement VP). The N head of the subject can be null by virtue of being in the same extended projection with the shared D head.

(33) Too many setters with long hair are called Kelly and ~~too many setters~~ with short hair ~~are called~~ Tony.

- further dependent ellipsis into the modifier of N is excluded by (25). 0 spreading is disallowed as well, since the modifier and N are in separate extended projections. (34) confirms this.

(34) a. \*John saw the picture of Mary on Tuesday and ~~saw the picture~~ of Sue on Wednesday.  
 b. \*Too many setters with long hair are named Kelly and ~~too many setters~~ with short hair ~~are named~~ Tony.

- In sum, the constraint in (25) plus the notion of feature spreading in extended projections have the effect that when there is coordinate ellipsis, all heads in the extended projection of a direct dependent to the coordinate 0 head can be 0 as well, but dependent ellipsis cannot go beyond this.

## 6 The independence of D-sharing and T-sharing

- Johnson/ Lin approach predicts that D-sharing without T-sharing (T-gapping in the 2<sup>nd</sup> conjunct) is impossible. This doesn't hold. The cases in which D-sharing occurs without T-sharing are predicted by the present analysis.

- In CP-coordination with *wh*-movement to SpecCP, a 0<sub>C</sub> head can license subject D-sharing without T-gapping in case the subject undergoes *wh*-movement (DE targets the surface positions). When the subject moves to SpecCP, it is a dependent of C and therefore, DE is possible.

(35) a. I began to wonder how many paintings will never be seen, ~~how many~~ songs will never be heard, and ~~how many~~ books will never be read because of wars yet to come.  
 . . . [CP [DP [D how many] paintings] C [TP t<sub>DP</sub> will never be seen]],  
 [0P [0P [D 0] songs] 0 [TP . . . ]]

- the same holds for object D-sharing if the object is moved to SpecCP

(36) I wonder how many paintings Mary will never see, songs Bill will never hear and books Harry will never read because of wars yet to come.

- indeed coordinate C ellipsis (not PF-deletion or non-spelling out of C) because of the doubly filled comp filter (DFCF). A complementizer that only fails to be spelled out, rather than being a 0 head in syntax itself, is not expected to license dependent ellipsis.
- In a Johnson/ Lin-type approach, this is not easily derived. One would have to assume that in questions the determiner of the subject or of the object may be optionally merged higher than T but below C.
- a  $0_C$  head should license DE of its complement  $\rightarrow$ T-sharing
- the Johnson/ Lin approach predicts that T-sharing should be impossible in CP-coordination, where the shared element would have to be lower than the level of coordination. However, (37) is well-formed, indicating that dependent T ellipsis in the complement of a  $0_C$  is possible:

(37) a. The temple of Dagon, [CP whose exterior is seen in act I] and [CP whose interior ~~is~~ destroyed in act III], is a major feature of the opera.  
 b. Dat is Jan, wiens vader gek is en wiens moeder ziek is.  
 that is John, whose father mad is and whose mother ill  
 ‘That is John, whose father is mad and whose mother is ill.’

- T-ellipsis really is dependent, on a coordinate  $0_C$  head. Compare to (38).
- (38) a. That the Earth revolves around the Sun and (that) the Moon revolves around the Earth are two well established facts.  
 b. That the Earth revolves around the Sun and (\*that) the Moon around the Earth are two well established facts.  
 c. That the Earth revolves around the Sun and the Moon around the Earth is a well established fact.
- (b) shows that gapping of the tensed verb is indeed dependent here: C has to be 0 in order for T to be 0.
  - (b) really involves [C,0]P, not coordination at the TP-level, indicated by plural agreement on *are*. Compare with (c) which shows [T,0]-coordination and singular agreement

## 7 Conclusion

- determiner sharing is a special case of dependent ellipsis, which accounts for the fact that NP remnants in DS must be disanaphoric, a hallmark of ellipsis
- DE is not recursive, but the property of being 0 can be shared within an extended projection
- this accounts for the observations made by McCawley, Lin and others, as shown in sections 4, 5 and 6

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