Ruin and restitution

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Consider (1) below, uttered by Mary Bennet in Jane Austen's 1813 novel *Pride and Prejudice* (Austen 1983, p. 387, lines 16–17):

(1) "... we may draw from it this useful lesson; that loss of virtue in a female is irretrievable ..."

Unlike much of what Mary Bennet says, this utterance is quite interesting. We will focus on the part of (1) contained in sentence (1′):

(1′) Loss of virtue is irretrievable.

What is meant here is that virtue, once lost, cannot be retrieved. The predicate of the sentence 'be irretrievable' applies to 'virtue', not 'loss'. This is unexpected—compare (2):

(2)a. The discussion of the riots was devastating.
   b. The president of Ghana can be visited.

These examples cannot mean that the riots (which were discussed) were devastating, or that Ghana (which has a president) can be visited. That is, in a

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sentence whose subject has the structure in (3), by all normal procedures of semantic interpretation the predicate is attributed to the subject, NP_1, not to the complement of the head noun of the subject, NP_2. In our example (1′), however, it appears that just that happens, and that is highly unexpected given what we know about principles of compositional interpretation.

(3) $[_{NP1}$ Det $[_{N'}$ N$_1$ $[_{PP}$P NP$_2]]]$

The example provided by Mary Bennet's utterance is not unique. Several other examples that we have found are listed below. A comment on the data: we concentrate on English, but the phenomenon occurs also in other languages, in particular German. The sentences below are mostly versions of sentences collected informally from the internet, simplified so as to use a structure parallel to (1'); the phenomenon does of course occur outside such structures, e.g. attributively, as in *the irrecoverable deletion of the data* or (elliptical) *refundable expenditure*. In each case, the predicate must reasonably be taken to apply to the complement NP inside the subject, not the subject NP itself.

(4)a.   The deletion of the data was recoverable.
   =   The data, which were deleted, could be recovered.
   ≠   The data were deleted, and the deletion of the data could be recovered.
   b.   The destruction of the city was irreparable.
   =   The city, which was destroyed, could not be repaired.
   ≠   The city was destroyed, and the destruction could not be repaired.
   c.   The expenditure of this sum was refundable.
   =   This sum, which was spent, could be refunded.
   ≠   This sum was spent, and the expenditure could be refunded.
   d.   The loss of hearing is restorable.
   =   Hearing, which was lost, can be restored.
   ≠   Hearing was lost, and the loss can be restored.
   e.   The insertion of the DNA sequence was reextractable.
   =   The DNA sequence, which was inserted, could be reextracted.
   ≠   The DNA sequence was inserted, and the insertion could be reextracted.

From the data that we have found, the following generalizations seem to capture necessary conditions for the availability of this surprising interpretation:

(ABLE)   The main predicate is a (positive or negative) *-able* adjective.
(RE)   The predicate that *-able* attaches to expresses **restitution** (for example in the form of a *re-* verb or a predicate containing *wieder* ('again') in German).
(CONTRA)   The head noun of the subject and the predicate that *-able* attaches to are **counterdirectional** predicates.

(5)a. A predicate expresses **restitution** if with the event it describes, a state of affairs is restored that has held before (compare e.g. Fabricius-Hansen 2001).

b. A predicate P is **counterdirectional** to a predicate P_c if it indicates a reversal of the process denoted by P_c (for example *rise – fall, buy – sell, open – close*) (Fabricius-Hansen 2001).

(4′) loss/lose – retrieve
deletion/delete – recover
destruction/destroy – repair
expenditure/spend – refund
loss/lose – restore
insertion/insert – reextract

The interpretation we get in (4) and also in (1′) schematically amounts to (6). The content of N_1 enters into the semantics only as a presupposition, not as truth conditional content. The former is not surprising, since N_1 occurs as the argument of a definite determiner, but the latter is the puzzling aspect of this interpretation. What we would expect is sketched in (7). Comparing the two, we see that in the interpretation we are interested in, essentially, the counterdirectional head noun is ignored. *Counterdirectional Head-noun Ignored* (CHI) will be our name for this reading.

(6) $[_{NP1}$ Det $[_{N'}$ N_1 $[_{PP}$ P $NP_2]]]$ $[_{VP}$ be $[_{AP}$ [restitutive predicate] -able$]]$
$\Rightarrow$ Assertion: $[[$-able$]]$ $([[$rest-pred$]]$ $([[\mathbf{NP_2}]]))$
Presupposition: $\exists$ $[[N_1]]([[NP_2]])$
= 'It is possible to rest-pred $\mathbf{NP_2}$, where there was N_1 of NP_2.'

(7) $[_{NP1}$ Det $[_{N'}$ N_1 $[_{PP}$ P $NP_2]]]$ $[_{VP}$ be $[_{AP}$ [rest-pred] -able$]]$
$\Rightarrow$ Assertion: $[[$-able$]]$ $([[$rest-pred$]]$ $([[\mathbf{Det\ N_1\ (NP_2)}]]))$
Presupposition: $\exists$ $[[N_1]]([[NP_2]])$
= 'It is possible to rest-pred $\mathbf{NP_1}$, where there was N_1 of NP_2.'

Where the conditions above are not met, the CHI reading is not possible, cf. (2). The examples below illustrate that each condition seems necessary: (4″a) does not meet (ABLE), (4″b) does not meet (RE), and (4″c) is missing (CONTRA).

(4″)a. The destruction of the city cannot be repaired.   [?? CHI reading]
b. The insertion of the DNA sequence was extractable. [?? CHI reading]
c. The mayor of the city was irreparable.   [# CHI reading]

However, even when all the conditions listed are met, a CHI reading may not be possible. The following candidates do not work according to our intuition.

(8) a. The closing of the door was reopenable.
    ≠ The door, which was closed, could be reopened.
  b. The dissolution of the monasteries was reinstantiable.
    ≠ The monasteries, which were dissolved, could be reinstantiated.
  c. The separation of the milk is reconstitutable.
    ≠ The milk, which was separated, can be reconstituted.
  d. The purchase of this property is resellable.
    ≠ The property, which was bought, can be resold.

Note that (ABLE) as well as (RE) and (CONTRA) are observed.

(9)   closing/close – reopen
        dissolution/dissolve – reinstantiate
        separation/separate – reconstitute
        purchase/buy – resell

We think that the CHI reading is possible with the following predicates and nouns:

(10)a. Predicates:
       repair, refund, regain, retrieve, recover, replace, reextract
       (perhaps also: *reclaim, reconstruct, recreate, rediscover, restore*)
   b. Nouns:
       loss, destruction, deletion, expenditure, insertion
       (perhaps also: *collapse, desintegration, breakdown*)

Thus the phenomenon is to some extent systematic, in the sense that it is not limited to a handful of fixed expressions. On the other hand, it seems to be restricted to a subset of the cases characterized by the conditions (ABLE), (RE), and (CONTRA). It remains to be explained why a CHI interpretation is possible at all, and why it is possible only under the circumstances (ABLE), (RE), and (CONTRA) as sketched above. It is to be hoped that (RE) and (CONTRA) will allow an analysis that reconciles compositional derivation with the interpretation we intuitively get—i.e. that we do not literally ignore the head noun. But we do not at present have such an analysis. This is all extremely vexing.

References

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Fabricius-Hansen, Cathrine. 2001. Wi(e)der and again(st). In *Audiatur Vox Sapientiae. A Festschrift for Arnim von Stechow*, ed. Caroline Fery and Wolfgang Sternefeld, 101–130. Berlin: Akademie Verlag.