(Im)possible intensionality?[*][†]

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1.   Introduction

I will use the syntactic distribution of intensional contexts in VP to probe the structure of double object constructions and double object alternations in English and French. I conclude that such alternations are indeed underlied by double object structures, but that these are different from surface double object structures. I also conclude that French does display both underlying and surface double object structures.[1]

Some linguistic contexts are intensional. In such contexts, one can observe some (or all) diagnostic properties, e.g. for indefinites: (i) non specificity, (ii) failure of truth preservation under extensional substitution, or (iii) lack of existential import. The property of creating an intensional context is a lexical property, e.g. of a particular verb such as *owe* or (idiomatic) expressions such as *look for*, but not of *acquire* or *get*. Thus:

(1)   a.   Marta acquired a violin *or* Marta got him a violin ⊨ there is a violin that Marta acquired, or got him.
         b.   Marta owed him a violin ⊭ there is a violin that Marta owed him.

In this article, the single criterion used for intensionality will be the availability of non specific readings for simple indefinites, that is DPs of the form [indefinite article, noun]. A *non specific indefinite* will mean an indefinite which does not refer to particular objects; thus we could add about the violin in (1b) (but not in (1a)): *any will do* or *none in particular*.

[1]Some terminology: I will discuss pairs such as *I gave John a book, I gave a book to John*. I will call the latter the prepositional dative construction (PDC) and the former the double object construction (DOC). I will call indirect object (IO) the DP interpreted as the goal/recipient/intended possessor, namely *John* here. I will call direct object (DO) the DP that interpreted as the theme/patient, here *a book*.

Treatments of intensionality (see Schwarz 2015 for a survey of analyses for transitive verbs) assume that:

(α) The intensional context created by an element E must be an argument of E.

Call such an argument of E an intensional argument of E, or **intensional** for short. For an indefinite to be non specific, it does not suffice that it be merged in an intensional context, it must also be interpreted in this context. In other words:

(2) ζ can be interpreted intensionally due to P iff:

    a. ζ is merged as an intensional or within an intensional argument of P, an intensional context creating lexical item, and

    b. ζ is interpreted in the scope of P.

2.   English IOs in DOCs

2.1   Intensional asymmetries

Consider the DOC in (3) with both the IO and the DO indefinite:

(3)   Livia owed a peasant a horse.

While the DO need not be specific, the IO has to be: a particular peasant is owed a horse by Livia.[2] Now it may well be accidental that the verb *owe* imparts intensionality to its DO but not to its IO. But there do not seem to be cases of intensional IOs in a DOC.[3] I will now assume that in principle there are no such cases and reason on this basis. This means no verb can license an intensional IO in a DOC and that this is for principled reasons, not accidental reasons. If e.g. *a peasant* is in the complement structure of *owe*, which licenses intensionality in its DO, there is no principled reason why there could not be a DOC verb *schmilch* licensing intensionality on its own IO.

Given (2), if IOs of DOCs can never be intensional, this means either that the IO in a DOC is not an argument of the verb licensing intensionality in its DO, thus failing property (2a), or that it cannot be interpreted in the scope of this verb, thus failing property (2b).

Let us first explore the possibility – **hypothesis #1** – that it cannot be an (internal) argument of a predicate whose lexical content can license intensionality.

Since VPs can contain as part of their shells a head H which makes a direct object intensional, IOs cannot be in the complement structure such a head H, and unless we attribute the lack of such intensional IOs to a (possibly universal yet) accidental gap, IOs never are arguments of the head introducing the DO. In other words, we derive the conclusion that

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[2] I will return to these verbs of commitment, such as *owe*, *promise* and *bequeath*. For now, it suffices to note the clear judgment differences between IOs and DOs in simple cases as (3).

[3] As far as I have been able to determine, the full generality of this claim is, surprisingly, novel, as is that regarding subjects of transitive and unergative verbs below around the discussion of (γ). Please let me know otherwise.

the underlying constituent structure of DOCs like (3) includes a constituent where the IO asymmetrically c-commands the DO as in (4):

(4)   [[IO] ... [$_{XP}$ X [DO]]]

This is an instance of what is sometimes called low applicatives, where the head X is the low applicative head (Pylkkänen 2008) and for which there is good independent evidence (see a summary in Sportiche et al. 2013).

   It is worth noting that under hypothesis #1, both objects are c-commanded by the SUBJECT/external argument, if there is one, introduced by a v as in (5):

(5)   [SUBJECT v ... [[IO] ... [$_{XP}$ X [DO]]]]

This means that no v should be able to create intensional contexts (which seems true). Otherwise we would expect IOs in DOCs to sometimes be intensional.

(γ)   Little v is never intensional.

I will not discuss this further here except to note that this implies that subjects of transitives verbs and unergative verbs, which are hypothesized to include a v, are never intensional. Subjects of unaccusatives, however, which are subjects of verbs lacking a v, can be:

(6)   une parabole   manque   (pour qu'on puisse   recevoir la BBC)
       a   parabolic antenna is missing (for   us   to be able to get   the BBC)

Here again, (6) does not refer to a particular (type of) antenna. That the preverbal subject can be intensional can be corroborated by the possibility of having the indefinite subject modified by a subjunctive relative clause, as such relatives must occur in intensional contexts:

(7)   Une antenne qui   puisse   capter la BBC manque
       an   antenna which could-subj get   the BBC is missing

2.2   Double objects alternations

Are there derivational relations between DOCs and their PDC counterparts as in (8a,b)?

(8)   a.   Omnart sent a picture of her$_m$ mother to [Livia$_m$ only].
       b.   Omnart sent [Livia$_m$ only] a picture of her$_m$ mother.
       c.   Omnart sent a graduate (*from its$_m$ worst school) (back) to [NYC$_m$ only].
       d.   *Omnart sent [NYC$_m$ only] a graduate (from its$_m$ worst school).

The patterns in (8) illustrate straightforward binding considerations supporting a positive answer:[4] (8) shows the correlation between the possibility of backwards semantic binding of a pronoun by a *to*-PP and the existence of a DOC structure. Backwards semantic binding of *her* by the (intended, see Beck & Johnson 2004) possessor *[Livia only]* (or other binders) is possible in the PDC as in (8a), as it is in the DOC in (8b). And backwards semantic binding of *it* by the locative *[NYC only]* (or other binders) is not possible in (8c)[5] nor is it possible in the corresponding DOC in (8d).

Since semantic binding of a pronoun by DP-*only* requires c-command, this correlation can be derived from the assumption that at some derivational point of (8a), the IO c-commands the DO, as in (8b), while the location DP never does. In other words, (8a) is derived from a structure like (8b). It is worth noting that this conclusion holds regardless of whether hypothesis #1 is correct or not.

These considerations provide support for Hallman (2015)'s conclusions according to which some DP PP structures are transformationally derived from double object structures, by a passivization like process. Hallman shows that the PDCs are so derived essentially when the PP is understood as a possessor rather than as a locative.

Now, note that this reasoning applies to the following PDC/DOC pair with *owe*: the pronoun *his* can be bound by *every peasant*.

(9)   a.   Omnart owed seeds for his_m fields to every $peasant_m$.
       b.   Omnart owed every $peasant_m$ seeds for his_m fields.

Given hypothesis #1, (10a) ought to be derived from (10b).[6]

(10)   a.   Omnart owed a horse to a peasant.
        b.   Omnart owed a peasant a horse.

Minimally we would need to assume the following derivational steps, where X, Y and Z are heads, in which *a horse* ends up c-commanding *a peasant* because of (9b) (step (ii) intentionally missing – see below (14)):

(11)

i.					[$_C$ [a peasant] ... [X	[a horse	]]]	$\rightarrow$
iii.			[to	[$_C$ [a peasant] ... [X	[a horse	]]]	$\rightarrow$
iv.		[Y	[to	[$_C$ [a peasant] ... [X	[a horse	]]]]	$\rightarrow$
v.	[[a horse]$_k$	[Y	[to	[$_C$ [a peasant] ... [X	t_k	]]]]	$\rightarrow$
vi.	Z	[[a horse]$_k$	[Y	[to	[$_C$ [a peasant] ... [X	t_k	]]]]

[4]Different binding facts first noted in Burzio (1986, p. 199-203) are discussed in Pesetsky (1995, p. 221-223) with partially similar conclusions.

[5]There is of course no bar against a locative outscoping a theme. If it did, the deviance would arise from a WCO effect.

[6]This derivation does not trigger Condition C effects, cf. the well formed *Omnart owed a picture of Livia to her* from a structure including *[her [a picture of Livia]]*. This can be understood if the theme raises past the possessor by A-movement – a form of passive, indeed as Hallman (op.cit.) proposes – which can bleed Condition C. In principle, guaranteeing total reconstruction of the DO under the IO should trigger a condition C effect but clear relevant examples are difficult to construct.

Interestingly, DOC differ from their PDC counterparts regarding intensionality. Thus, while the indefinite *a peasant* must be specific in (10b), it does not have to be in (10a):[7] (10)a unlike (10)b can describe a situation in which Omnart was committed to give some horse (did not matter which), to some peasant (did not matter which).

At what step of (11) is the intensionality inducing *owe* merged? It cannot be as X in (11i), as this would disallow *a peasant* being intensional in (10a).

But under hypothesis #1, *owe* cannot be merged outside of the constituent C either, as this would make *a peasant* always intensional.

We end up with a contradiction: (10a) cannot be derived from (10b).

To avoid this contradiction, note that the binding facts in (9) do not require that (9a) be literally derived from (9b), but rather that (9a) be derived from a structure S *like* (9b), in which the IO c-commands the DO. As both objects can be intensional in (10a), both objects must be able to be in the scope of *owe*. We can handle this by giving up **hypothesis #1** in favor of **hypothesis #2**: everything is exactly as described in (11) (given Hallman's conclusions and the binding arguments above) except that the structure in step (i) of (11) is *not* the *surface* DOC but rather some *underlying* DOC like structure.

So what is the surface structure S of the DOC? The IO of *owe is* merged in an intensional context created by *owe*. Given (2), whatever S is, it should not have the IO in the scope of *owe*, that is property (2b) should fail.

It is sometimes assumed that there is no transformational derivation between DOCs and their PDC counterparts. Under such an assumption, a verb, e.g. *owe*, would enter into two distinct subcategorization frames. But this is not good enough here. We would need to postulate two distinct verbs *owe*: one lexically intensional on its second argument only (DOC), and one lexically intensional on both (PDC). Clearly this is highly undesirable. I conclude that structure S should be derived from step (i) of (11) – the constituent C, an *underlying* DOC structure thus common to both constructions – in such a way that the IO does not have the option to be in the scope of *owe*. Since the DO must be, we are led to assume that structure S must meet the following two properties:

(12)   a.   (The intensionality creating part of) *owe* is indeed merged above the constituent C containing both objects.
       b.   The IO must move higher than *owe* and cannot reconstruct.[8]

Both can be achieved if the IO must move to a scope position. So S is derived from (i) as follows (X the same head as in (11) or (14), W not the same as Y):

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[7]Not all speakers find (10a) or (9a) natural, although even for them the judgment differences remain. Other verbs that can be used are e.g. *bequeath*, *promise*, *grant*.

[8] Alternatively, the IO is first merged in the highest position in (13) and controls a PRO in the place of t_k: a control analysis of DOC. Space prevents me from discussing this further here but there are grounds for concluding that both may be available. In my French, the sentence *Omnart promised a violin to a peasant* is ambiguous: the promise can be to give a violin to a peasant, or it can be a promise to a peasant to give him a violin. The latter, but not the former, suggests the presence of two θ-roles, hence of a control analysis.

(13)

i.				$[_C$ [a peasant]	[X	[a horse	]]]	→
ii.			[owe	$[_C$ [a peasant]	[X	[a horse	]]]	→
iii.		[W ...	[owe	$[_C$ [a peasant]	[X	[a horse	]]]]	→
iv.	[[a peasant]$_k$	[W ...	[owe	$[_C$ [t$_k$]	[X	[a horse	]]]]	

W is a head whose specifier is a scope position, thus marking the scope of the IO (so the indefinite IO must be specific). The movement of *a peasant* in step (iv) above may be covert or overt (the latter requiring the verb to overtly move higher). Regardless, *owe* ends up higher than *a peasant* phonologically, not changing scope relations if it moves.[9] To merge *owe* always in the same syntactic context, we can revise the derivation of the PDC case (11) roughly as follows, adding the missing step (ii) (which is step (ii) of (13) above):

(14)

i.					$[_C$ [a peasant] [X	[a horse	]]]	→
ii.				[owe	$[_C$ [a peasant] [X	[a horse	]]]	→
iii.			[to	[owe	$[_C$ [a peasant] [X	[a horse	]]]	→
iv.		[Y	[to	[owe	$[_C$ [a peasant] [X	[a horse	]]]]	→
v.	[[a horse]$_k$	[Y	[to	[owe	$[_C$ [a peasant] [X	t$_k$	]]]]	→
vi.	owe$_m$	[[a horse]$_k$	[Y	[to	[~~owe~~$_m$	$[_C$ [a peasant] [X	t$_k$	]]]]

In this derivation, the movement of *a horse* or of *a peasant* are crucially not to scope positions and can thus reconstruct under (the merge position of) *owe* (and *owe* ends up higher phonologically than usual, not changing scope relations, notwithstanding claims that head movement can affect scope).

2.3   Frozen scope

Consider now:

(15)   a.   Marta owed a peasant a horse.
          b.   Marta owed a peasant every horse.

That *a horse* can be intensional in (15a) undermines Bruening's (2001) treatment of the *frozen scope* effect in DOCs. This effect is illustrated by the fact that in (15b), the reading *every* $>a$ is unavailable. Indeed Bruening's explanation assumes that in such a construction, both objects undergo QR, preserving (for independent reasons) their relative c-command (hence scope) relations, which freezes relative scope. Thus (15b) is unambiguous: *a peasant* must outscope *every horse*.

This account requires that QR be obligatory (or that QR-ed elements cannot reconstruct).[10] But if reconstruction were impossible, the *de dicto* reading of *a horse* would not

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[9]Note that, crucially, this reasoning does not apply to indefinite transitive SUBJECTS: they can be interpreted as non specific when indefinite when in the scope of e.g. an adverb as *(if) a friend is always visiting...* allows *always* $>a$ *friend*. Conclusion (γ) is thus not affected.

[10]An alternative treatment without QR at all is untenable, as QR must be available, e.g. to deal with Antecedent Contained Ellipsis, or relative scope of objects and subjects.

be allowed in (15a), contrary to fact.[11] So indefinites can fail to QR (or can totally reconstruct) in the scope of an intensional verb. Furthermore, universally quantified objects can outscope c-commanding indefinites: this is what happens when an object outscopes a subject as in *a peasant owns every castle*. So nothing prevents QR-ing *every horse* in (15b) while (totally reconstructing or) failing to QR *a peasant*: this should yield the impossible scope *every >a*.

To handle frozen scope, an additional ingredient is needed. Given the discussion above, this ingredient is the independent fact that the IO cannot be intensional. If the reasoning above is correct, frozen scope (say, Bruening's account)[12] must build on the fact that the IO **must** move to (or be first merged in – see footnote 8) a scope position higher than the verb.[13,14]

3.   French double objects

French allows the prepositional DP PP alternates of double objects constructions but differs from English in disallowing visible double object constructions.

(16)   a.   Omnart devait un cheval à un paysan.
              Omnart owed a   horse to a   peasant.

        b.   *Omnart devait un paysan un cheval.
              Omnart owed a   peasant a   horse.

        c.   Omnart lui   devait un cheval.
              Omnart to-him owed a   horse.

Interestingly however, the binding facts reported in (8)a,c hold of French too (the equivalents of (8)b,d are ill formed):

(17)   a.   Omnart devait des grains pour ses$_m$ champs à chaque paysan$_m$.
              Omnart owed seeds   for his$_m$ fields to every   peasant$_m$.

        b.   *Omnart a   (r)envoyé un diplômé de   sa$_m$ pire école à [NYC$_m$
              Omnart sent (back)   a   graduate from its$_m$ worst school to [NYC$_m$
              seulement].
              only]

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[11]The scope of the DP is meant here. The NP restriction of the DO or IO may be read *de re* or *de dicto*.

[12]In such an account it suffices that the 2*nd* object not be able to QR past the IO.

[13]The reason for this could be the one given in footnote 8: the DOC is a control structure and the IO gets two theta roles.

[14]Given the view of QR as a type of Scrambling (Johnson & Tomioka 1998), this requirement basically is (overt or covert) movement to the middle field past the VP internal subject. The fact that IOs must scramble would not be surprising: as is known from e.g. German or Dutch (or Hindi), (non focused) specific DPs must scramble. The same mandatory Scrambling seems at play in verb particle constructions viz *Livia picked * up them / ✓ them up*, which would support the existence of overt Scrambling in English, consistent with e.g. Johnson 1991.

These binding facts show that the derivation of (8)a given in (14) holds in French too. French thus does have an underlying double object structure: the derivation of (16)a proceeds as in (14), with a constituent C as in (13) or (14).

French does not allow the surface form of DOCs, at least with a plain DP IO. But is there an equivalent of overt double object structures? Sportiche (1996) conjectured that Cliticization and Scrambling are two facets of the same phenomenon, affecting specific DPs. This predicts that if the Dative is cliticized, this Dative object has scrambled and characteristic double object properties should resurface. This prediction is correct, as can be shown by the fact that scope freezing obtains in cases in which a dative complement cooccurs with a Clitic, as e.g. Clitic Left Dislocation (see Angelopoulos & Sportiche 2016 for a more complete discussion):

(18)　　a.　On a recommandé chaque élève$_m$/[Jean$_m$ seulement] au　　proviseur de
　　　　　　　We recommended each　　pupil$_m$/[Jean$_m$ only]　　　to the principal of
　　　　　　　son$_m$ lycée.
　　　　　　　his$_m$ high school.

　　　　　b.　*Au　　proviseur de son$_m$ lycée,　　　on lui$_m$　　a recommandé chaque
　　　　　　　To the principal of his$_m$ high school, we to-him$_m$ recommended　each
　　　　　　　élève$_m$/[Jean$_m$ seulement].
　　　　　　　pupil$_m$/[Jean$_m$ only].

In other words (16c) is not the counterpart of (16a) but of (16b). Other diagnostic properties of DOCs are observed too when the dative object is cliticized, e.g. non intensionality of clitic doubled dative objects (cf. Angelopoulos & Sportiche 2016) and logocentricity of the Dative clitics (Charnavel & Mateu 2015). The same seems to hold of Spanish dative clitic doubling (Woods 2012).

4.　　Impossible intensionality?

The title contains a question mark for two reasons. First, we generalized that some cases do not exist, a risky generalization, and we also assumed that this non existence was not accidental but principled. Either assumption could turn out false. But second, we assumed that what was involved, particularly with IOs in DOC constructions, was non intensionality. We only checked specificity, however, and not all diagnostics for intensional contexts. The behavior of commitment verbs such as *bequeath*, *promise*, which are future oriented, raises questions. Indeed, consider (19a-c):

(19)　　a.　Marta promised a peasant a violin.
　　　　　b.　Livia promised a peasant who will plant red currants a bountiful harvest.
　　　　　c.　Marta promised the winner of the 2020 Ybbs bike race a violin

Speakers report (19a) as requiring the IO (but not the DO) to be specific, (19b) as perhaps natural if it is about a particular peasant who it is thought will plant red currants and (19c)

as fine even if the 2020 Ybbs race never takes place, and there is no winner: perhaps surprisingly, there is no existential import for this definite phrase. Does this indicate appeal to possible worlds, hence intensionality? If we are right, the specificity requirement on the IO requires that it (overtly or covertly) scrambles: as a result, it can't be in the scope of the verb and thus can't be intensional (because of the verb). Instead we are led to assume that the appearance of intensionality is due (i) to the future orientation of such verbs and (ii) the internal structure of the DP which contains a reference to the future.[15]

5.   Conclusion

Looking at the distribution of non specific indefinites in VPs, I have concluded that their distribution entails the following:[16]

(20)   i.   The higher head v of VP shells introducing external arguments (or transitive and unergative verbs) is never intensional.
ii.   IOs of English DOC constructions must be specific and scramble to above the (lexical, potentially intensionality inducing part of the) verb. This crucial property underlies in part the frozen scope effect of such constructions.
iii.   Agreeing with Hallman (2015), DPCs are derived from an underlying deep double object structure. This is also true of French.
iv.   This deep double object structure also underlies the surface English DOCs and French DPC constructions where the Dative is clitic doubled.

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[15]Special thanks to Florian Schwartz – who may not agree – for his input on this section.

[16]As Chris Collins remarks, looking at negative verbs such as *deny*, *refuse*, *eliminate*, *preclude*, etc. and the distribution of NPIs licensed by them could possibly lead to similar conclusions, or at any rate to an understanding of the internal structure of their VP shells – e.g. the exact distribution of negation within them.

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