Syntactic Neutralization in Double Object Constructions

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This article synthesizes the ''alternative projection'' view of the alternation between the DP + DP and DP + PP complement frames of English double object verbs, according to which the alternants are base-generated as such, with a transformational account that claims that the DP + PP frame may be derived from the DP + DP frame. For some verbs allowing multiple complements, the DP + PP frame is syntactically ambiguous between a base-generated locative construction and a derivative of the possessive syntax associated with the DP + DP frame. Evidence from the distribution of purpose clauses motivates this conclusion, as do asymmetries in restrictions on animacy and idiom formation in the two frames.

Keywords: double object constructions, locative constructions, VP structure, passive

1 Introduction

This article treats the syntactic relationship between the two sentences in (1) and similar pairs. I refer to the format exemplified by (1a) as the *DP + DP complement frame* (also referred to in the literature as the ''double object frame'') and the format exemplified by (1b) as the *DP + PP complement frame* (also referred to in the literature as the ''locative frame,'' the ''prepositional frame,'' or the ''dative frame'').

(1) a. Mary sent John the letter.
    b. Mary sent the letter to John.

  Larson (1988) presents a transformational analysis of the relationship between (1a) and (1b) according to which (1a) is derived from (1b) by raising of the indirect object *John* to the left of the direct object *the letter* and omission of the preposition; see also Ormazabal and Romero 2010. Since Larson's seminal work, the transformational view has been largely displaced in the generative tradition by what Harley (2002) terms the ''alternative projection'' view, according to which (1a) and (1b) consist of a causative head combined in each case with a different complement structure. The different complement structures describe the result of causation in different ways. Harley claims that the DP + PP frame is a syntactic substructure headed by a locative preposition,

much as Larson characterizes it, as schematized in (2a). Drawing on proposals by Green (1974), Kayne (1981), Freeze (1992), and others, she claims that the DP + DP frame is a syntactic substructure whose head denotes a possession relation, as schematized in (2b). Harley categorizes the possessive head as a preposition on analogy to the locative counterpart. The schema in (2a) is exemplified by the verb phrase *send the letter to John* and the one in (2b) by the verb phrase *send John the letter.* Analyses along these lines, which attribute distinct syntactic base structures to the two complement frames, include those of Oehrle (1976), Kayne (1984), Gropen et al. (1989), Pinker (1989), Jackendoff (1990), Bowers (1993), Hale and Keyser (1993), Den Dikken (1995), Pesetsky (1995), Basilico (1998), Bruening (2001), Anagnostopoulou (2003), Beck and Johnson (2004), Ramchand (2008), and others.

(2) a. $[_{vP}$ CAUSE $[_{PP}$ the letter$_{Theme}$ $[_{P'}$ P$_{Loc}$ to John$_{Location}$]]]
    b. $[_{vP}$ CAUSE $[_{PP}$ John$_{Possessor}$ $[_{P'}$ P$_{HAVE}$ the letter$_{Theme}$]]]

Adopting the Distributed Morphology framework developed in Halle and Marantz 1993 and elsewhere, Harley proposes that the phonological unit corresponding to the verb itself, *send* in the case at hand, is inserted in the syntactic tree at the interface level of Phonological Form (PF), after concatenation of the heads in (2a) and (2b) by head movement. What is special about *send* and other verbs that display the alternation illustrated in (1), then, is that they are flexible regarding the categorial content of the node they are inserted into at PF. *Send* can be inserted into a node with the internal structure [[P$_{Loc}$] CAUSE] or one with the internal structure [[P$_{HAVE}$] CAUSE]. This is the reason for their compatibility with both complement frames.

Rappaport Hovav and Levin (2008) claim that while it is true that there are two semantic schemas associated with double object verbs—a locative one and a possessive one—the association of the semantic schemas to the two complement frames is not one to one. They distinguish between what they call the ''caused-possession'' and ''caused-motion'' event schemas. For some verbs, such as *give*, both complement frames are associated with the caused-possession schema, the meaning that Harley attributes to the syntactic structure in (2b). For others, such as *throw*, the DP + DP frame is associated with the caused-possession event schema, while the DP + PP frame is ambiguous between the caused-possession and the caused-motion event schemas. Rappaport Hovav and Levin (2008:132) summarize this characterization, which they call the ''verb-sensitive'' approach, in the table in (3).

(3) *A summary of the verb-sensitive approach*

	To-variant	Double object variant
Give-type verbs	caused possession	caused possession
Throw-type verbs	caused motion or caused possession	caused possession

In this article, I present additional evidence that Rappaport Hovav and Levin's attribution of meaning to the complement frames is correct, observations that undermine the alternative projection approach in its strongest form. At the same time, I propose that only an articulated

syntactic analysis of the structure of the two constructions can explain the asymmetry in the association of constructional meanings to complement frames evident in (3): the fact that the caused-possession interpretation of the double object variant systematically carries over to the *to*-variant but the caused-motion interpretation of the *to*-variant does not carry over to the double object variant.

I propose specifically that Harley and others are correct in claiming that it is possible for a causative head to combine with either a locative or a possessive substructure as diagrammed in (2a) and (2b), and that the meaning of the construction is fixed by its syntactic structure. Yet I maintain that it is relatively rare for a given verb to be compatible with both base structures. Rather, for most of the verbs that show an alternation between the DP + DP and DP + PP frames, the DP + PP frame is derived from the DP + DP frame in a manner similar to Aoun and Li's (1989) characterization of the alternation, related to similar proposals by Bowers (1981) and Dryer (1986) and described in detail in section 2. Consequently, the caused-possession event schema that is syntactically composed from (2b) carries over to the DP + PP frame in those cases. Because of the unidirectionality of this transformation, verbs composed from the locative structure in (2a) cannot be converted into the DP + DP frame, whence the missing caused-motion event schema in the right column of table (3).

In effect, there are two derivational paths for the DP + PP frame. It can either be base-generated or derived from the DP + DP frame, and it differs in meaning and behavior accordingly. This is the ''neutralization'' that the title of this article refers to. The analysis pursued here essentially superimposes a transformational analysis on the alternative projection analysis. But the transformation it identifies is the mirror image of that proposed by Larson (1988). It is not the DP + DP frame that is derived from the DP + PP frame; rather, it is the DP + PP frame that is derived from the DP + DP frame.

When relevant, I refer to the base-generated DP + PP frame as the *locative* DP + PP frame, using the vocabulary of the alternative projection approach, and to the derived DP + PP frame as the *derived* DP + PP frame. I refer to verbs that are compatible with the DP + DP frame, such as *give*, as *double object verbs*. I proceed on the initial assumption that if a verb, such as *put*, is not compatible with the DP + DP frame, then its DP + PP frame is base-generated, and I call such verbs *locative* verbs. It will turn out, though, that a subset of such verbs are actually double object verbs that undergo the transformation posited here obligatorily, more on which in section 4.

The first set of evidence reviewed here relates to the behavior of purpose clauses in double object and locative constructions (section 2). The second set of evidence relates to restrictions on animacy and the format of idiomatic constituents within double object and locative constructions (section 3). Section 4 investigates Case assignment in double object constructions in greater detail. Section 5 treats certain asymmetries in the behavior of the initial DP in the DP + DP and derived DP + PP frames. Section 6 concludes.

2 Purpose Clauses in Multiple Complement Constructions

A class of infinitival modifiers in English treated in detail by Faraci (1974) and Jones (1991) describe the purpose that an entity serves by virtue of being in either the state described by the

matrix predicate, as in (4a), or the state resulting from the event described by the matrix verb, which in (4b) is just the state described by the matrix clause in (4a).

(4) a. John has a puppy [to play with].
    b. Mary gave John a puppy [to play with].

The nonfinite ''purpose clause'' *to play with* in (4a–b) contains neither an overt subject nor an overt object (of the preposition *with*). The covert subject is the empty pronominal PRO that occurs in ungoverned positions such as the subject of a nonfinite modifier clause (Chomsky and Lasnik 1977, Chomsky 1981). The object gap is argued by Faraci (1974), Chomsky and Lasnik (1977), Chomsky (1981), Browning (1987), Chierchia, Partee, and Turner (1989), and Whelpton (1995) to be derived by Ā-movement of an empty operator to the left edge of the purpose clause, deriving a predicate over potential fillers of the gap (Engdahl 1983, Chomsky 1986, Nissenbaum 2000b). The covert material in the examples in (4) according to these authors is elucidated in (5). I analyze the purpose clause as a nonfinite CP following Whelpton (1995). The attachment site of the purpose clause is discussed below.

(5) a. John has a puppy [$_{CP}$ Op$_i$ [$_{IP}$ PRO to play with t$_i$]].
    b. Mary gave John a puppy [$_{CP}$ Op$_i$ [$_{IP}$ PRO to play with t$_i$]].

As the sentences in (6) show, the nonsubject gap in a purpose clause may be identified by the second DP in the DP + DP frame (the direct object) of a double object verb, in which case the PRO subject of the purpose clause is most naturally interpreted as coreferential with the first DP (the indirect object). Here I omit the null operator in the purpose clause for perspicuity.

(6) a. Mary gave John$_i$ a puppy$_j$ [PRO$_i$ to play with e$_j$].
    b. Mary sent John$_i$ a manuscript$_j$ [PRO$_i$ to read e$_j$].
    c. Mary assigned John$_i$ a job$_j$ [PRO$_i$ to do e$_j$].
    d. Mary lent John$_i$ a bicycle$_j$ [PRO$_i$ to run some errands with e$_j$].
    e. Mary offered John$_i$ her apartment$_j$ [PRO$_i$ to stay in e$_j$].

In the DP + PP frame associated with these same verbs, the gaps in the purpose clause are identified by the same thematic arguments as in the DP + PP frame (7).

(7) a. Mary gave a puppy$_j$ to John$_i$ [PRO$_i$ to play with e$_j$].
    b. Mary sent a manuscript$_j$ to John$_i$ [PRO$_i$ to read e$_j$].
    c. Mary assigned a job$_j$ to John$_i$ [PRO$_i$ to do e$_j$].
    d. Mary lent a bicycle$_j$ to John$_i$ [PRO$_i$ to run some errands with e$_j$].
    e. Mary offered her apartment$_j$ to John$_i$ [PRO$_i$ to stay in e$_j$].

However, the alignment of gaps in the purpose clause with arguments in the matrix predicate seen in (7) is not typical of locative constructions. Locative verbs select a DP + PP frame that does not alternate with a DP + DP frame (the pattern in (8) holds for all the verbs in (9)) and in which the object of the prepositional phrase designates a location that the theme comes to occupy

by virtue of an event of the type described by the verb. Such constructions, whose syntactic context is superficially identical to the DP + PP frame in change-of-possession verbs illustrated in (7), do not readily accept purpose clauses with the argument alignment seen in (7), where PRO is identified by the location argument of the matrix clause and the object gap is identified by the theme (9). The purpose clauses are acceptable as independent sentences with the subject and object that the indexation in (9) attributes to them; see (10).
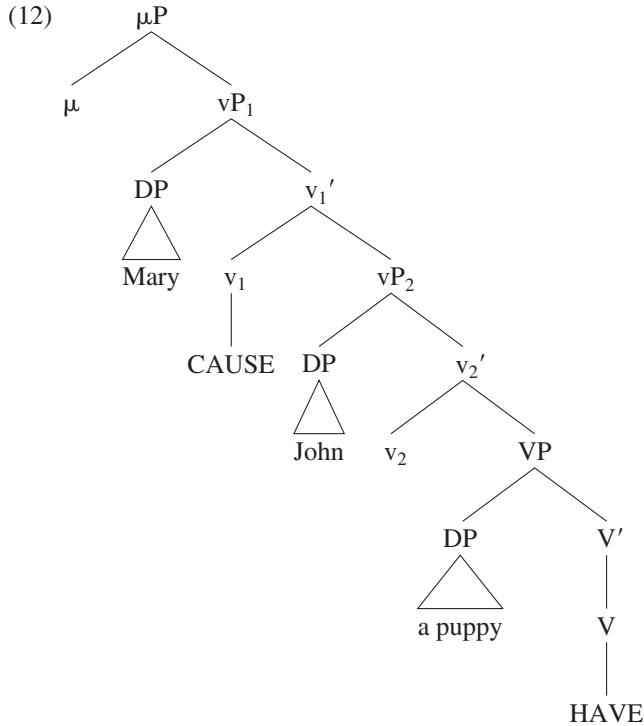
(8) a.   Mary put the child on the horse.
    b. *Mary put the horse the child.

(9) a. *Mary put the child$_j$ on the horse$_i$ [PRO$_i$ to carry e$_j$].
    b. *Mary led the horse$_j$ to John$_i$ [PRO$_i$ to feed e$_j$].
    c. *Mary poured honey$_j$ on her little brother$_i$ [PRO$_i$ to lick off e$_j$].
    d. *Mary immersed the cloth$_j$ in oil$_i$ [PRO$_i$ to permeate e$_j$].
    e. *Mary placed the planting pots$_j$ under the tomato vines$_i$ [PRO$_i$ to grow over e$_j$].

(10) a. The horse carried the child.
    b. John fed the horse.
    c. Mary's little brother licked off the honey.
    d. The oil permeated the cloth.
    e. The tomato vines grew over the planting pots.

I follow Harley (1995, 2002) and others in analyzing the DP + DP frame as consisting of a causative head, here ''little v'' after Chomsky (1995) and others, and a possessive substructure. The lexical core of this possessive substructure is the *have* relation; its external argument is the possessor and its internal argument is the theme (possessee), as schematized in (11).

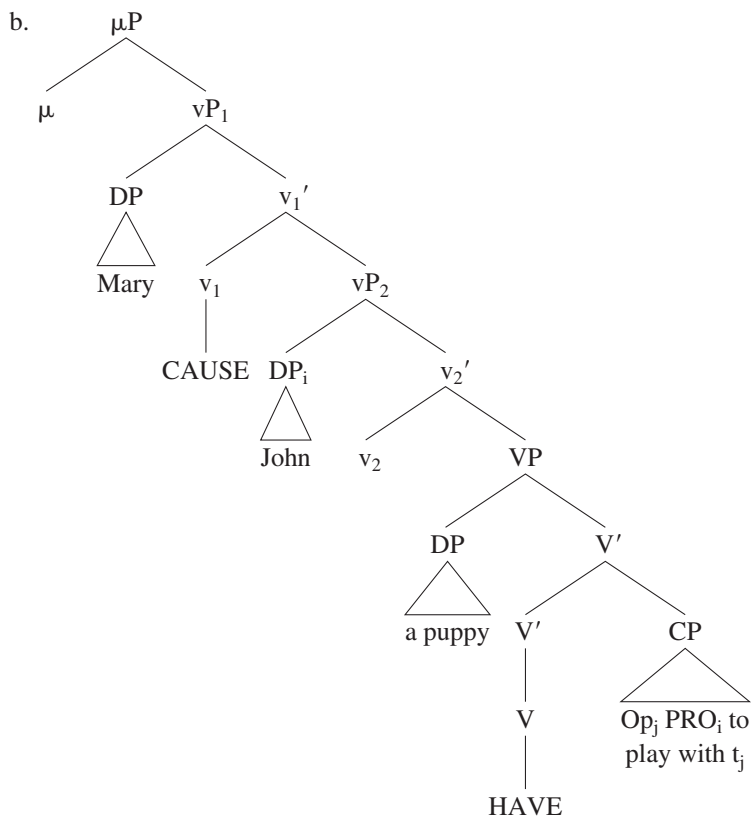(11) [$_{vP}$ causer CAUSE [possessor HAVE theme]]

I follow Bowers (1993) and others in attributing syntactic complexity to the possessive substructure as well. The possessor argument is base-generated in the specifier of a projection I label vP_2 (in contrast to the higher causative little-vP, which is consistently labeled vP_1 in the structures below). The theme is base-generated in the specifier of the underlying big-VP headed by an abstract possessive predicate HAVE. vP_1 corresponds to what is sometimes termed ''VoiceP'' in the literature (Kratzer 1996), and vP_2 corresponds to what is sometimes called ''Appl[icative]P'' (Pylkkänen 2002, Bruening 2010a,b). Big-V HAVE corresponds to what Harley (2004, 2012) calls ''P$_{HAVE}$,'' on the basis of the claim that the English verb *have* is the spell-out of a complex head formed by syntactic concatenation of a possessive preposition with the auxiliary *be*; languages without this concatenation such as Russian spell out the auxiliary and the preposition separately (Freeze 1992, Kayne 1993). The base structure for the verb phrase in the sentence *Mary gave John a puppy*, illustrating the DP + DP frame of the verb *give*, is shown in (12). Like Harley, I follow the Distributed Morphology theory of lexical insertion elaborated in Halle and Marantz 1993, according to which lexical items are inserted into syntactic nodes at PF.

A lexical item must be compatible with the featural content of the node it is inserted into. Adopting Johnson's (1991) proposal that verbs move cyclically into a functional head position he terms μ on the left edge of the verb phrase, the content of μ in the tree in (12) after head movement is [HAVE [v_2 [CAUSE]]], a construct replaceable by the lexical item *give* at PF.

(12)

```
              μP
            /    \
           μ      vP₁
                 /    \
               DP      v₁'
                |     /    \
              Mary  v₁      vP₂
                     |     /    \
                  CAUSE  DP      v₂'
                          |     /    \
                        John  v₂      VP
                                    /    \
                                  DP      V'
                                   |      |
                               a puppy    V
                                          |
                                        HAVE
```

Faraci (1974) and Jones (1991) show that purpose clauses do not escape ellipsis and other operations on verb phrases and conclude that purpose clauses attach VP-internally. Refining this conclusion, Whelpton (1995) analyzes the purpose clause as a modifier of the V′ that introduces the argument that the purpose clause is predicated of, similar to Nissenbaum's (1998, 2000b) treatment of parasitic gap constructions. The purpose clause is semantically conjoined with the denotation of the V′ and asserts, in the case of (13a), that John's having the puppy is for the purpose of his playing with it. (See Whelpton 1995:sec. 5.5 for an explicit analysis of the semantics of purpose clause constructions.) The purpose clause modifier *to play with* in (13a) composes with the structure in (12) as shown in (13b).

(13) a. Mary gave John a puppy to play with.

b.

```
                        μP
                   ┌─────┴─────┐
                   μ          vP₁
                         ┌─────┴─────┐
                        DP          v₁′
                         △      ┌────┴────┐
                       Mary    v₁        vP₂
                               │      ┌───┴───┐
                            CAUSE   DPᵢ      v₂′
                                     △    ┌───┴───┐
                                   John  v₂      VP
                                         ┌───────┴───────┐
                                        DP              V′
                                         △        ┌─────┴─────┐
                                      a puppy     V′          CP
                                                  │            △
                                                  V        Opⱼ PROᵢ to
                                                  │        play with tⱼ
                                                HAVE
```

When double object constructions are passivized, the first DP in the DP + DP frame, the indirect object, undergoes promotion to subject (14b). This suggests that in the active counterpart in (14a), the indirect object receives Case in the same configuration as objects of monotransitive verbs, since it is this Case that is withdrawn in the passive according to Burzio (1986), Jaeggli (1986), Baker, Johnson, and Roberts (1989), and others. According to Chomsky (1995, 2000, 2001, 2004), that configuration is the ''outer'' specifier of the agent-introducing vP_1. Outer specifiers play the role here that Agr projections play in earlier incarnations of Minimalist theory (Pollock 1989, Chomsky 1991, 1993). Outer specifiers may be replaced by Agr projections here with no loss of descriptive adequacy.

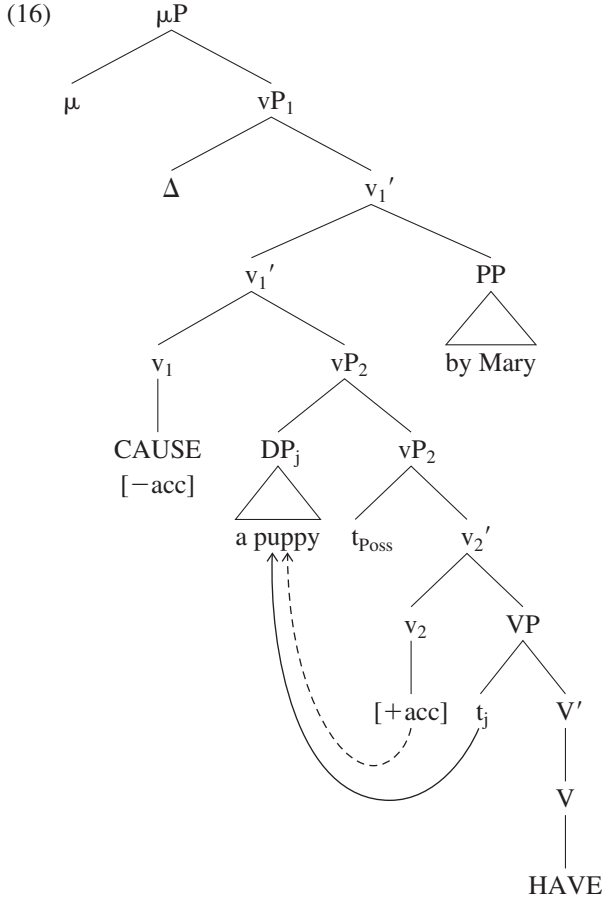(14) a. Mary gave John a puppy.
     b. John was given a puppy.

I propose on analogy to this characterization of primary objective Case that the Case configuration for the second DP in the DP + DP frame is the outer specifier of vP_2. That is, v_2 plays the same role in assigning Case to the DP that it minimally c-commands in the base structure (the direct object) as v_1 plays in assigning Case to the DP that it minimally c-commands in the base

structure (the indirect object). The tree in (15) shows the mapping from θ-positions to Case positions in the DP + DP frame. The trace t_{EA} represents the trace of the external argument, which occupies the matrix nominative position (not shown). The feature [+ acc] in v_1 and v_2 represents their ability to license Case in their outer specifier. The solid arrows represent movement and the dashed arrows represent Case assignment.

(15)
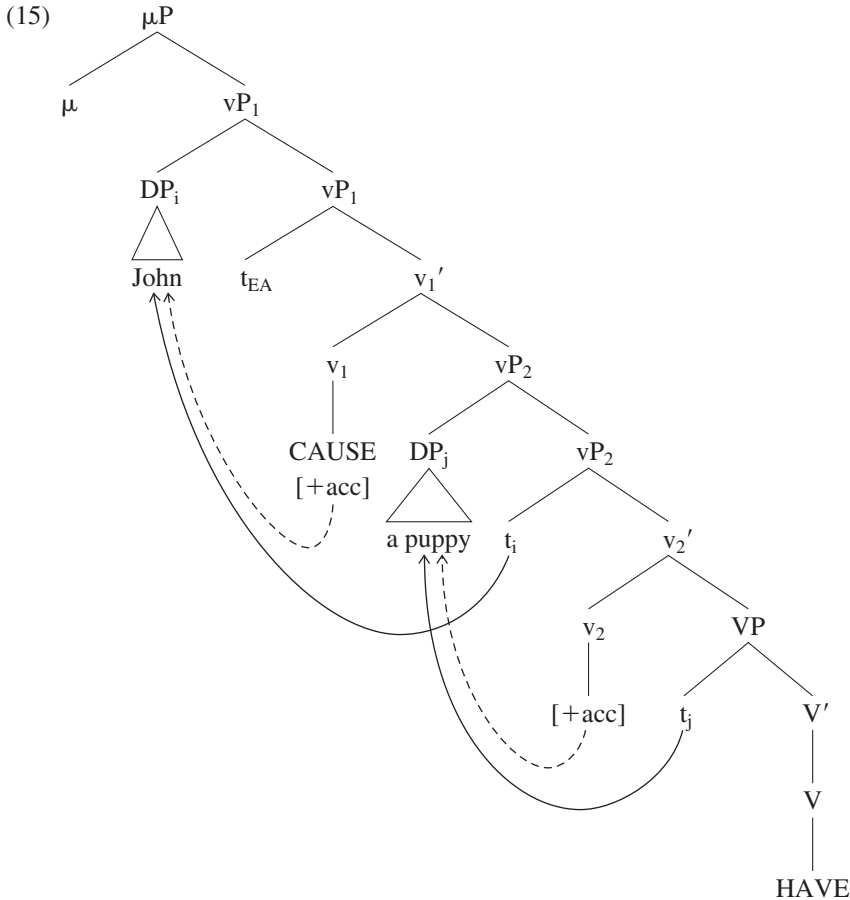
In accordance with feature-based analyses of the passive such as Harley's (1995), Embick's (1997, 2004a,b), and Kallulli's (2007), among others, passives of double object constructions such as those in (14b) are characterized by a [− acc] feature in v_1, and the *by*-phrase that optionally expresses the external argument surfaces as an adjunct of v_1', as diagrammed in (16). While the outer specifier of vP_2 remains available for the theme argument in such structures, as shown in (16), the possessor argument must move to the matrix nominative position to receive Case (not shown; its trace is labeled t_{Poss}). The preposition *by* is selected by its syntactic context v_1'. The preposition assigns Case to the agent and attributes the property denoted by v_1' to its complement; it denotes the combinator $\lambda x \lambda P[P(x)]$. I use the symbol Δ to mark the unoccupied canonical position of a demoted argument (*Mary* appears in the Δ position in the active counterpart). For

brevity, I include outer specifiers only when they are occupied by something. While the properties attributed here to the passive construction are not uncontroversial, they represent a reasonable first characterization of the construction for the purpose of setting the stage for the analysis of ''internal'' passive presented shortly.

(16)

```
              μP
            /    \
          μ       vP₁
                 /    \
                Δ      v₁′
                      /    \
                    v₁′     PP
                   /   \    /\
                 v₁    vP₂  by Mary
                  |   /   \
              CAUSE DPⱼ    vP₂
              [−acc] /\   /    \
                 a puppy t_Poss  v₂′
                               /    \
                             v₂      VP
                              |     /   \
                          [+acc] tⱼ  V′
                                       |
                                       V
                                       |
                                     HAVE
```

Turning now to locative predicates, I follow Harley (2002) and others in analyzing the prepositional phrase in locative constructions (constructions headed by *put*-type verbs) as an internal argument of an existence predicate, syntactically subordinate to the theme, as schematized in (17).

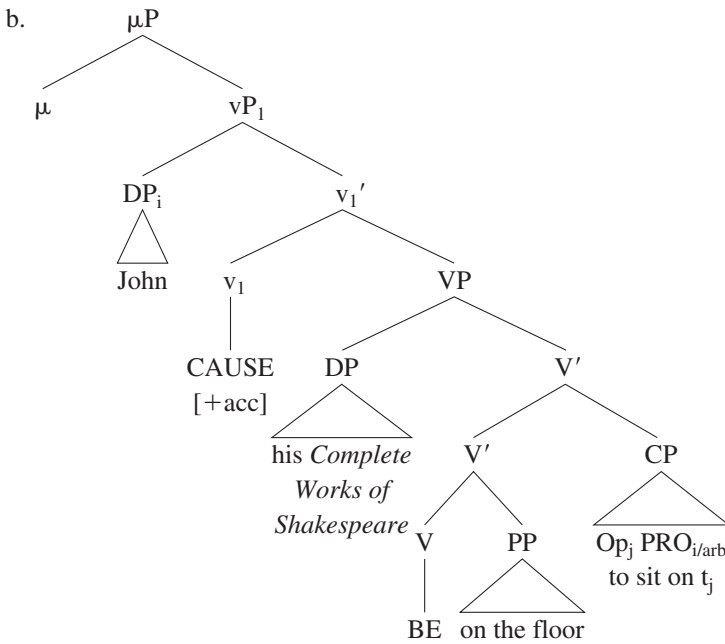(17) [$_{vP}$ causer CAUSE [theme BE AT location]]

Concretely, the sentence in (18a) (modified from Whelpton 2002:183) has the predicate structure illustrated in (18b). The direct object receives Case from accusative-assigning v_1 subsequent to movement to the outer specifier of vP_1 (not shown), as in garden-variety transitive constructions. The complex head [[BE] CAUSE] formed by cyclic head movement to μ is replaced by the lexical item *put* at PF.

(18) a. John put his *Complete Works of Shakespeare* on the floor.

b.
```
                        μP
                   ┌─────┴─────┐
                   μ          vP₁
                         ┌─────┴──────┐
                        DP           v₁′
                         △      ┌─────┴──────────┐
                       John    v₁              VP
                              │         ┌───────┴────────┐
                            CAUSE      DP               V′
                            [+acc]      △         ┌──────┴──────┐
                                    his Complete   V          PP
                                     Works of      │           △
                                    Shakespeare   BE      on the floor
```
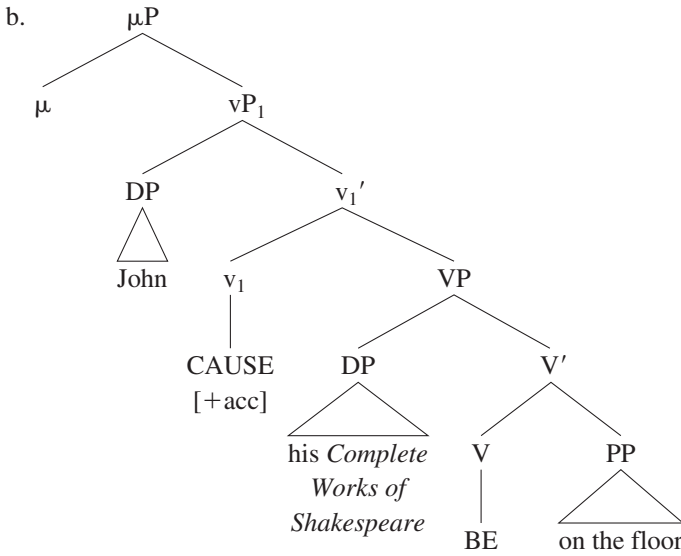
As in (13b), a purpose clause is able to modify V′ in (18b), where it is predicated of the theme DP in Spec,VP; this is shown in (19). In this case, the null PRO subject is bound by the matrix subject or receives arbitrary reference.

(19) a. John put his *Complete Works of Shakespeare* on the floor to sit on.

b.
```
                        μP
                   ┌─────┴─────┐
                   μ          vP₁
                         ┌─────┴──────┐
                        DPᵢ          v₁′
                         △      ┌─────┴──────────┐
                       John    v₁              VP
                              │         ┌───────┴────────┐
                            CAUSE      DP               V′
                            [+acc]      △         ┌──────┴──────┐
                                    his Complete   V′          CP
                                     Works of    ┌──┴──┐        △
                                    Shakespeare  V    PP    Opⱼ PROᵢ/arb
                                                 │     △      to sit on tⱼ
                                                BE  on the floor
```
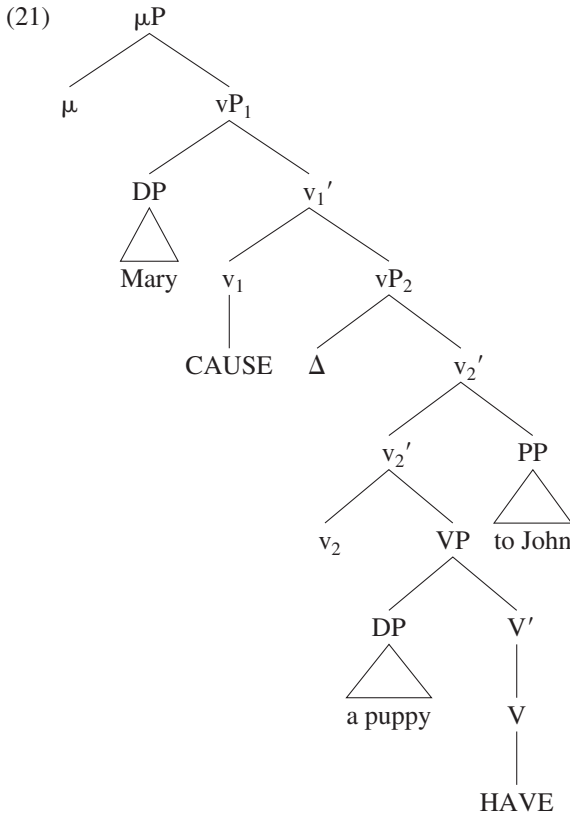
Binding of PRO in the purpose clause by the location argument in locative constructions is impossible, as the examples in (9) show. The structure in (19b) reveals why binding of the subject of the purpose clause by the location argument is not possible. That argument does not c-command the PRO subject of the purpose clause when the purpose clause is predicated of the theme, since the theme is hierarchically higher in the structure than the location argument. The hierarchical position of the purpose clause in locative constructions rules out the locative argument as a potential binder of PRO in the purpose clause, explaining the ungrammaticality of the examples in (9).

But then, the fact that the possessor argument of the double object verbs in the DP + PP frame *can* bind the subject PRO in a purpose clause, as shown in (7), indicates that the DP + PP frame with double object verbs does not share the syntactic structure of locative verbs like *put* shown in (19b). The fact that the subject PRO in the purpose clauses in (7) may be bound by the possessor in the matrix clause indicates that the possessor c-commands the purpose clause PRO, and therefore the purpose clause itself. Since the purpose clause is directly subordinate to the theme by virtue of being predicated of it, the hierarchy of object DPs in the structure in which the purpose clause is interpreted (and its gaps identified) is one in which the possessor c-commands the theme, as found in the DP + DP frame. Note that PRO can be bound by a quantifier in the matrix clause (20), confirming that the subject gap in the purpose clauses in (7) is identified by syntactic binding (Nishigauchi 1984:233), a relation requiring c-command.

(20) Mary gave a puppy$_j$ to every child$_i$ [PRO$_i$ to play with e$_j$].

I conclude from this comparison of PRO binding in double object and locative constructions that the possessor argument of verbs like *give* occurs in a higher syntactic position than the locative argument of verbs like *put*, even when it surfaces in a prepositional phrase. Dryer (1986) and Aoun and Li (1989) present analyses in which the prepositional phrase complement of *give*-type verbs containing the possessor is syntactically superior to the theme. Dryer (1986) analyzes the DP + PP frame as what he calls an ''antidative'' surface reanalysis of the DP + DP frame in the Relational Grammar framework. He posits the grammatical functions ''primary object'' and ''secondary object'' and claims that the primary object (first DP) in the DP + DP frame may be demoted into a prepositional phrase, while the secondary object is promoted to primary object. Dryer draws attention to the striking resemblance from this perspective between the double object alternation and passive, where the subject is demoted into a prepositional phrase and the object is promoted to subject. Similarly, Bowers (1981) and Aoun and Li (1989) derive the DP + PP frame by demotion of the primary object of the DP + DP frame. I propose in this vein, and on analogy to the analysis of matrix passive sketched in the tree in (16), that the indirect object in the double object construction may be introduced in a prepositional phrase modifying v$_2$′ and headed by the preposition *to*, as illustrated in (21). This preposition passes the θ-role assigned by v$_2$′ to its DP complement, just as *by* passes the θ-role assigned by v$_1$′ to its DP complement. The preposition *to* is selected by its context v$_2$′ just as *by* is selected by v$_1$′. The derived DP + PP frame therefore represents ''internal'' passivization.
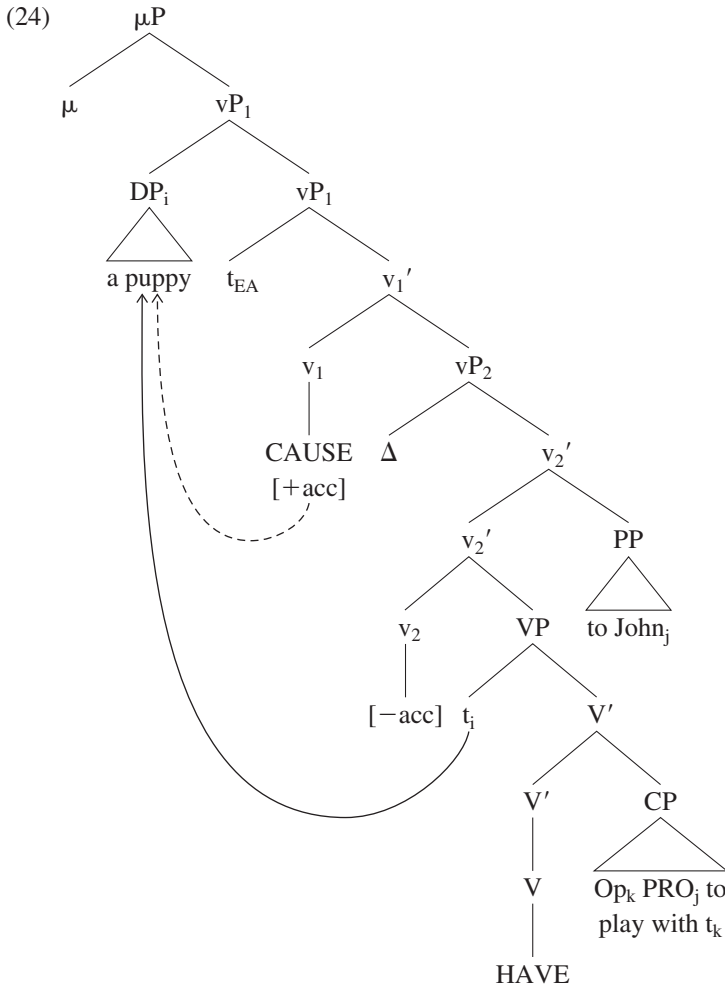
(21)

```
            μP
          /    \
         μ      vP₁
              /     \
            DP        v₁′
            △       /    \
          Mary    v₁       vP₂
                  |      /     \
                CAUSE   Δ       v₂′
                              /     \
                           v₂′       PP
                          /   \      △
                        v₂     VP   to John
                             /    \
                           DP      V′
                           △       |
                        a puppy    V
                                   |
                                 HAVE
```

Matrix passivization of the structure in (21) results in promotion of the direct object to subject, illustrated in (22b). This observation means that the direct object is Case-licensed in the outer specifier of vP_1, the canonical Case configuration for objects of monotransitive verbs, and so is affected by passivization in the same way.

(22) a. Mary gave a puppy to John.
       b. A puppy was given to John.

Movement of the object *a puppy* in (21) to vP_1 is apparently obligatory, since passivization obligatorily results in promotion of that argument to nominative. This indicates that the outer-specifier-of-vP_2 configuration, in which Case is assigned to the direct object in the $DP + DP$ frame, does not qualify as a Case position in the $DP + PP$ frame. This observation in turn indicates that demotion of the possessor argument to adjunct of $v_2′$ in double object constructions is accompanied by, or perhaps caused by, the withdrawal of v_2's potential to check accusative Case on the theme, just as demotion of the agent to adjunct is accompanied by withdrawal of v_1's ability to check accusative on an internal argument, as illustrated in (16). The mapping of arguments in (21) to Case positions is illustrated in (23).

(23)
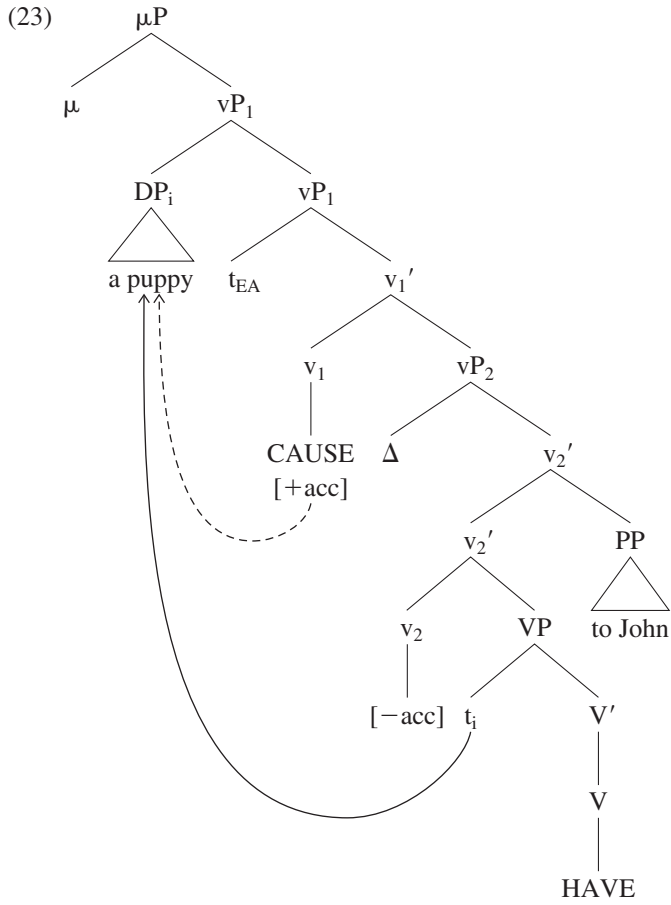
The purpose clause as adjunct of V′ is base-generated hierarchically below the adjunct PP, as the tree in (24) illustrates.

(24)

μP

μ vP_1

DP_i vP_1

a puppy t_{EA} $v_1{}'$

v_1 vP_2

CAUSE Δ $v_2{}'$
[+acc]

$v_2{}'$ PP

v_2 VP   to John$_j$

[−acc] t_i V$'$

V$'$ CP

V   Op$_k$ PRO$_j$ to
play with t_k

HAVE

    The linear order that the tree in (24) places the purpose clause and *to*-phrase in, spelled out in (25a), is not the canonical order. The canonical order is that in (25b). Note that the ungrammaticality of (25a) is slightly mitigated by the possibility of construing the purpose clause as an infinitival modifier of the noun *puppy*. Replacing this noun by a name, which cannot readily be modified, as in **Mary gave Lassie to play with to John*, brings the ungrammaticality of the word order in (25a) into better focus (Faraci 1974:18, Jones 1991:26–27).

(25) a. *Mary gave a puppy to play with to John.
      b.   Mary gave a puppy to John to play with.

    What this means for the present analysis is that the purpose clause is obligatorily displaced from its low position below the *to*-phrase to a higher position. Guéron and May (1984) present evidence that in extraposition constructions, material extraposed from DP to the right clause edge must be licensed by raising of the extracted-from DP at LF to the same level of attachment as

the extraposed material. To explain this effect, they posit a syntactic principle requiring the head of an extraposition construction to govern the extraposed material at LF, which in turn requires syntactic locality. Their analysis is ''based on the intuitive idea that the head-complement relation in these constructions must be 'reconstructed' at LF'' (p. 2). Here, *reconstructed* refers to the reestablishment of a syntactic relation that held earlier in the derivation by raising of the remnant of the extraposition construction, not by lowering of the extraposed material. In purpose clause constructions, the purpose clause is interpreted as a λ-abstract over the nonsubject gap, and is predicated of the DP that identifies that gap. The data in (25) indicate that as in the case of extraposition, the disruption of the predication relation by movement of the DP in question (for Case) must be ''reconstructed'' at the derived level, in this case by movement of the purpose clause to the syntactic level of the moved DP, which in (25b) is the theme *a puppy*. That is, the purpose clause essentially follows the raised theme to its Case position vP_1 above the *to*-clause, deriving the structure in (26) for (25b).
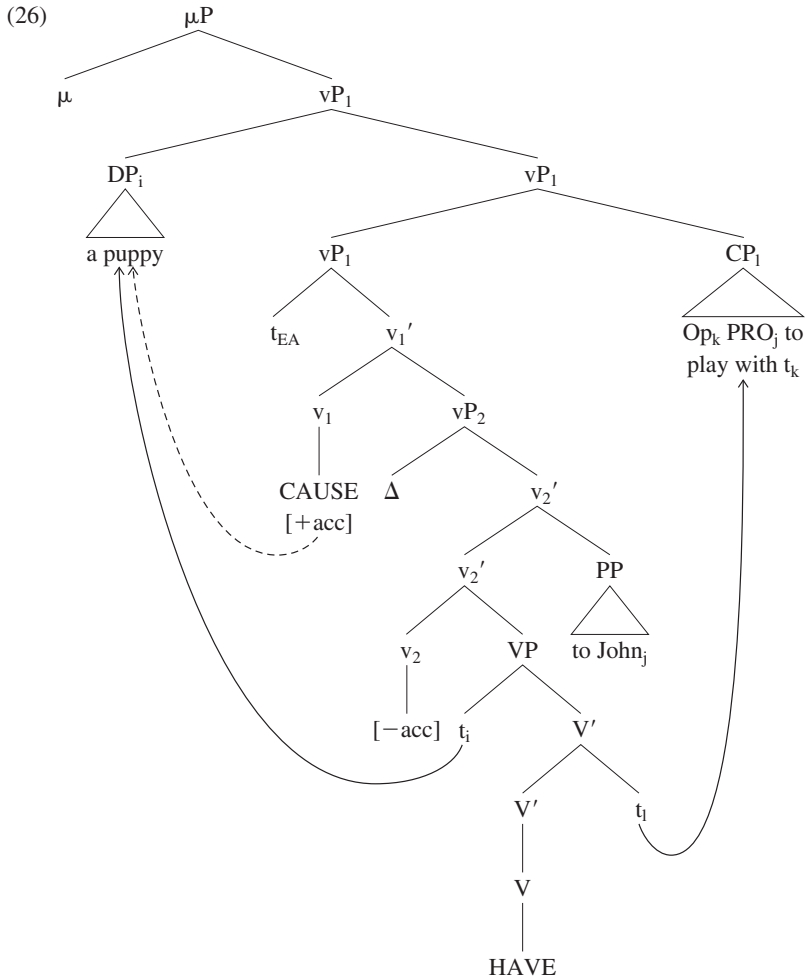
Note that the possibility of base-generating the purpose clause in the position it occupies in (26) is not available. Binding of PRO by the PP-internal argument *John* would not be possible for the same reason it is impossible in locative constructions: the purpose clause is never in the c-command domain of the lower argument. I conclude that the position of the purpose clause to the right of the PP in the DP + PP frame is derived, as illustrated in (26).

An anonymous *LI* reviewer notes that transitive verbs like *bake* in (27), which admit an optional benefactive argument, license purpose clauses just like double object verbs, both in their DP + DP format illustrated in (27a) and in their DP + PP format illustrated in (27b) (a pause is necessary before the purpose clause in (27b) to disambiguate this parse from one in which *for John to eat . . .* is a constituent). The significance of this observation is that the preposition *for* shows up in the DP + PP frame of such verbs, rather than the otherwise ubiquitous *to*.

(27) a. Mary baked John$_i$ a cake$_j$ [PRO$_i$ to eat e$_j$ on his birthday].
      b. Mary baked a cake$_j$ for/*to John$_i$ [PRO$_i$ to eat e$_j$ on his birthday].

The benefactive alternation is therefore parallel to the double object alternation; the DP + PP frame is derived by demotion of the benefactive argument into a prepositional phrase, not base-generated. The fact that *for* surfaces rather than *to* is attributable to a difference between the head that introduces the benefactive argument and the head v$_2$ that introduces the possessor in double object constructions. In the benefactive case, Appl seems to be an appropriate label, since we are dealing with an optional ''applied'' argument. I conclude that some transitive verbs allow ApplP to be sandwiched in between vP$_1$ and VP. Like vP$_2$, ApplP allows the DP it selects to occur in a prepositional phrase adjunct of Appl′. Just as v$_2$′ selects the preposition *to* in this case, Appl′ selects *for*. Therefore, double object verbs and applicative verbs have the same internal structure, and both admit internal passivization, though they select different prepositions for the demoted argument.

3 Supporting Evidence: Animacy and Idioms

Section 2 has shown that the double object and locative frames exist independently of one another, but it has identified another source for the DP + PP frame: namely, internal passivization of the DP + DP frame. If a given verb were to be compatible with both a locative and a double object complement structure, along the lines of the alternative projection approach, then internal passivization of the double object structure would neutralize with the locative base structure in the surface word order. The DP + PP frame would be ambiguous between a base-generated locative and a derived possessive source. I present evidence below that some verbs, such as *send*, show this neutralization, but others, such as *give*, do not. That is, the DP + PP frame with *send* may be derived by demotion of the possessor or by base generation of a locative complement structure. The DP + PP frame with *give*, however, can only be derived by demotion.

Green (1974), Kayne (1981), Freeze (1992), Harley (2002), Beck and Johnson (2004), and others claim that the first DP in the DP + DP frame is thematically a possessor, since it cannot be inanimate. Compare (28) and (29). If the DP + PP frame is derived from the DP + DP frame, the felicity of (29b) is unexpected, since its putative base in (29a) is infelicitous.

(28) a. I sent Mary the letter.
     b. I sent the letter to Mary.

(29) a. #I sent London the letter.
     b.   I sent the letter to London.

As Bowers (1981:64) points out, these observations indicate that (29a) and (29b) have different base structures. (29a) is indeed a possessive construction and (29b) is indeed a locative construction. However, the behavior of *send* does not extend to all verbs that display the alternation seen in (28). *Give*, for example, does not allow its putative ''location'' argument in the DP + PP frame to be inanimate. If each of the (b) examples in (30)–(32) contains a location argument, why is an inanimate nominal unable to bear the location role in these structures?

(30) a. #I gave the cupboard the dishes.
     b. #I gave the dishes to the cupboard.

(31) a. #I lent London my bicycle.
     b. #I lent my bicycle to London.

(32) a. #I offered my car a car wash.
     b. #I offered a car wash to my car.

This observation supports Rappaport Hovav and Levin's (2008) claim that *give* displays the behavior of what in the table cited in (3) are called *give*-type verbs. These are compatible with both frames but display only the caused-possession semantic schema. *Send*, on the other hand, is what Rappaport Hovav and Levin term a *throw*-type verb. It is compatible with the caused-possession event schema in both frames (cf. (28a) and (28b)) but is also compatible with the caused-motion event schema, but only in the DP + PP frame (cf. (29a) and (29b)). The present analysis offers a syntactic explanation for the partial overlap in the behavior of *give* and *send*. *Send* is compatible with both the locative and the possessive base structure. Because the possessive base structure is transformable into the DP + PP frame by the process described in section 2, the DP + PP frame of *send* is ambiguous between the base-generated frame representing the caused-motion event schema and the derived frame, which inherits the caused-possession event schema from its derivational base, the possessive structure illustrated in (12). The DP + DP frame cannot represent the caused-motion event schema because no transformation relates it to a locative base structure.

The analysis presented here also explains vexing idiom patterns in double object constructions. Larson (1988) points out that in the DP + PP frame—that is, in verb phrases of the form V–DP_1–P–DP_2—it is possible for the V–DP_1 substring to form an idiom, as in (33) (Larson's (11)), but it is also possible for the discontinuous substring V–DP_2 to form an idiom, as in (34) (Larson's (10)).

(33) a. Max *gave his all* to linguistics.
     b. Alice *gives hell* to anyone who uses her training wheels.
     c. Oscar will *give the boot* to any employee that shows up late.
     d. The Count *gives the creeps* to anyone he's around long enough.
     e. Phyllis should *show her cards* to other group participants.

(34) a. Lasorda *sent* his starting pitcher *to the showers*.
    b. Mary *took* Felix *to the cleaners*.
    c. Felix *threw* Oscar *to the wolves*.
    d. Max *carries* such behavior *to extremes*.

Larson points out that the data in (33) are problematic for an analysis that takes the DP + DP frame to be derived from the DP + PP frame, as his analysis does, assuming that the idiomatic material must form a constituent in the base structure, a critical methodological premise of contemporary syntactic analysis (Koopman and Sportiche 1991, Marantz 1997). Since the sentences in (33) essentially represent the base structure for their DP + DP counterparts in Larson's analysis, the idiom is discontinuous in the base structure. Addressing this issue, Larson maintains that the idiom in cases like (33) consists of nothing more than the nominal component *one's all*, *hell*, *the boot*, and so on, pointing out that these terms appear with *get* as well, as in (35) (Larson's (12)).

(35) a. Linguistics gets my all.
    b. I got hell from Alice.
    c. Peter got the boot.
    d. Geez, you get the creeps just looking at him.

However, Richards (2001) points out that these terms have a much more limited distribution than arguably genuine idiomatic nominals like *a white elephant* (referring to an expensive object of little value); he notes that in fact their occurrence with *get* merely reinforces the view that *get* also contains a hidden possessive structure and that the idiomatic reading of both *give one's all* and *get one's all* is an attribute of the substructure *have one's all* common to both constructions. These considerations indicate that the idiomatic interpretation in the *give hell*–type examples in (33) is an attribute of the possessive complement structure found in the DP + DP frame counterparts in (36).

(36) a. Max gave linguistics his all.
    b. Alice gives anyone who uses her training wheels hell.
    c. Oscar will give any employee that shows up late the boot.
    d. The Count gives anyone he's around long enough the creeps.
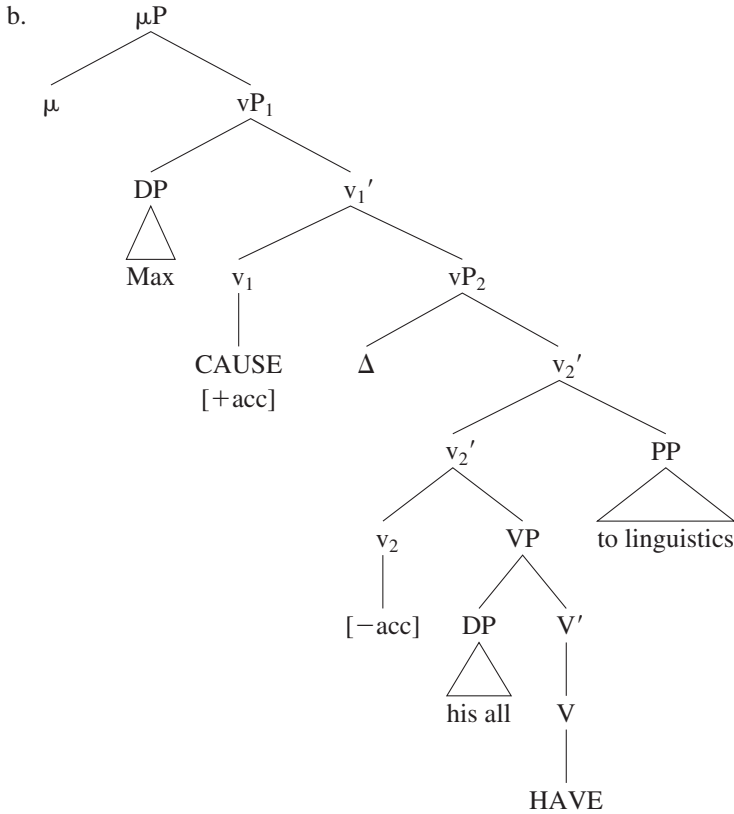   e. Phyllis should show other group participants her cards.

Here, the idiomatic component HAVE + DP is a constituent, the lowest maximal projection in the structure in (37b)—that is, the structure of (37a) in the present analysis.

(37) a. Max gave linguistics his all.

b.
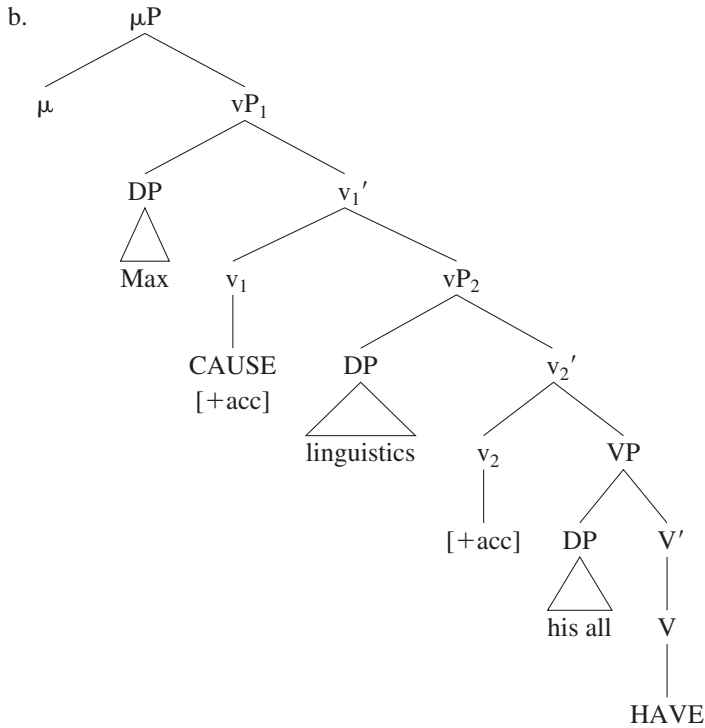
The carryover of the idiomatic reading associated with the DP + DP frame in (36) to the DP + PP frame in (33) is predicted in the present analysis, which maintains that the DP + PP frame may be derived from the DP + DP frame by demotion of the first DP into a prepositional phrase and promotion of the second. Demotion of the indirect object *linguistics* yields the structure in (38b) for the sentence in (38a), where VP receives an idiomatic interpretation, as before, prior to movement of the DP *his all* to a Case position.

(38) a. Max gave his all to linguistics.

b.

```
                          μP
                    ┌──────┴──────┐
                    μ            vP₁
                            ┌─────┴─────┐
                           DP          v₁′
                           △       ┌────┴────┐
                          Max      v₁       vP₂
                                   │    ┌────┴────┐
                                 CAUSE  Δ        v₂′
                                 [+acc]      ┌────┴────┐
                                            v₂′        PP
                                        ┌────┴────┐    △
                                        v₂       VP   to linguistics
                                        │    ┌────┴────┐
                                      [−acc] DP        V′
                                             △         │
                                           his all     V
                                                       │
                                                     HAVE
```

If the DP + PP frame were always derived from the DP + DP frame, we would not expect expressions to be possible in which the verb forms an idiom with DP_2 in the string V–DP_1–P–DP_2. However, idioms like *send someone to the showers* and others in (34) instantiate just this structure. But we have already seen that *send* is compatible with a locative base structure in which V combines with a prepositional phrase designating a location, as illustrated in (39) for the sentence in (34a). Here, V′ receives an idiomatic interpretation.

(39)

μP
├── μ
└── vP₁
    ├── DP
    │   └── △ Lasorda
    └── v₁′
        ├── v₁
        │   └── CAUSE [+acc]
        └── VP
            ├── DP
            │   └── △ his starting pitcher
            └── V′
                ├── V
                │   └── BE
                └── PP
                    └── △ to the showers

Of the other verbs in (34), neither *take* nor *carry* is readily compatible with the DP + DP frame at all, so the DP + PP frames of these verbs must be base-generated, which is consistent with the form of the idiom there. *Throw* is compatible with the DP + DP frame, but the idiomatic reading of the locative structure *throw to the wolves* (40a) does not carry over to the DP + DP frame (40b). As Harley (2002) concludes, this fact about *throw* indicates that *throw* is compatible with both the DP + DP frame and the DP + PP frame in the base structure. In the latter case, *throw to the wolves* is a constituent in the base structure, just as *send to the showers* is in (39), and this constituent may be associated with an idiomatic meaning. That the idiomatic reading of the DP + PP frame for *throw* does not carry over to the DP + DP frame undermines analyses such as Larson's, in which the DP + DP frame is derived from the DP + PP frame. In the present analysis, the DP + DP frame is never derived from the DP + PP frame, explaining the fact that the idiomatic interpretation of (40a) does not carry over to (40b).

(40) a. Felix threw Oscar to the wolves.

[idiomatic reading: Felix abandoned or sacrificed Oscar]

b. Felix threw the wolves Oscar.   [literal reading only]

Nonetheless, the fact that *throw* licenses the same alignment of purpose clause gaps to matrix θ-roles in both frames, as (41) shows, indicates that the DP + PP frame is also derivable from the DP + DP frame for *throw* as for other double object verbs, in addition to being able to be base-generated, unlike for most other double object verbs. That is, *throw* displays the same behavior as *send*. Its DP + PP frame is syntactically ambiguous.

(41) a. Felix threw Oscar$_i$ the ball$_j$ [PRO$_i$ to hold on to e$_j$ while the batter argued with the umpire].

      b. Felix threw the ball$_j$ to Oscar$_i$ [PRO$_i$ to hold on to e$_j$ while the batter argued with the umpire].

These observations illustrate once again the asymmetry found in Rappaport Hovav and Levin's (2008) verb classification table in (3). Rappaport Hovav and Levin (2008:154) claim that what blocks the idiomatic reading in examples like (40b) is the fact that the DP + DP frame is associated with the caused-possession event schema. Since no actual wolves come into possession of Oscar in the situation described by the potential idiomatic interpretation of (40b), that interpretation is blocked. This assessment presupposes that while lexical meaning is not preserved in idioms, constructional meaning is. However, this premise could equally well be expected to block the legitimate idiomatic reading of *throw Oscar to the wolves* as well. This expression occurs in the DP + PP frame that is associated with the caused-motion event schema, yet the act of abandoning or sacrificing Oscar does not entail that Oscar moved, nor do any of the idioms in (34) assert that the direct object moves on a spatial path. Rappaport Hovav and Levin contend that idioms like *throw someone to the wolves* are possible because they ''have meanings that involve an abstract form of caused motion'' (p. 154), but they provide neither corroborating criteria for abstract motion nor substantiation of their implicit contention that *throw the wolves Oscar* could not have an idiomatic reading compatible with an ''abstract'' form of caused possession.

The analysis presented here makes the further prediction that double object verbs that are not compatible with a locative deep structure will not be able to form a discontinuous idiom with the PP-internal DP in the DP + PP frame. We have seen that *give* is such a verb. Its DP + PP frame is derived by demotion of the possessor argument, and no other derivational path leads to the surface DP + PP order found in expressions like *give a puppy to the child*. Consequently, it should be impossible to form an idiom consisting of the verb *give* and DP$_2$ in the string V–DP$_1$–P–DP$_2$, along the lines of the examples in (34). Such an idiom might look like (42). As Rappaport Hovav and Levin (2008:154) observe, idioms of this form are systematically nonextant with *give*.

(42) #Mary gave John to the showers/cleaners/wolves, etc.

O'Grady (1998) claims that a head may form an idiom with material that it selects, and with what that material in turn selects, and so on. Starting with this premise, Bruening (2010a) seeks to reconcile the existence of the two idiom formats in (33) and (34) with the alternative projection view by claiming that a nonlexical category such as a preposition optionally interrupts the spread of the idiom by selection. This effect is seen in locative idioms that exclude the object of the preposition such as *throw the book at X*, meaning to prosecute *X* to the fullest extent of the law, or *pour cold water on X*, meaning to discourage or foil *X*. This approach makes the existence of idioms like those in (33) compatible with the assumption that the verbs there—*give* and *show*—have a locative base structure along the lines of what the alternative projection approach claims. But the attribution of a locative base structure to *give* is not compatible with the nonexistence of idioms of the form in (42); nor is it compatible with the fact that its putative locative argument cannot be inanimate (30), or with the purpose clause facts discussed in section 2. The analysis

presented here makes the idioms in (33) and (34) base structure constituents, and it remains compatible with the claim that prepositions may interrupt idiom formation.

In concluding this discussion of the availability of idiomatic readings in the two complement frames, I should note that the naturalness of Larson's examples in (33) belies the fact that for most idioms in the DP + DP frame, the corresponding DP + PP frame sounds rather coerced, as Green's (1974:84ff.) examples in (43)–(46) demonstrate (cited with her judgments).

(43) a.   Mary gave John a cold.
     b. *Mary gave a cold to John.

(44) a.   Mary gave John an inferiority complex.
     b. *Mary gave an inferiority complex to John.

(45) a.   Mary gave John a call.
     b. ?*Mary gave a call to John.

(46) a.   Mary gave John a rough time.
     b. ?*Mary gave a rough time to John.

As is evident from Green's judgments, there is a certain lack of systematicity to the unavailability of the DP + PP frame in such constructions. The (b) examples in (45) and (46) are slightly better than the (b) examples in (43) and (44), and as we have seen, some discontinuous idioms in the DP + DP frame are fine in the DP + PP frame (33). Bresnan et al. (2007), Rappaport Hovav and Levin (2008), and Bresnan and Nikitina (2010) claim that this variation in well-formedness judgments for what is essentially the same syntactic structure in each case results from information-structural constraints on surface structures. Bresnan and coauthors claim that the availability of a frame is subject to the general tendency for pronouns to precede nonpronouns, ''local'' (first and second) persons to precede nonlocal (third) persons, animates to precede inanimates, and definites to precede indefinites, among other factors. Rappaport Hovav and Levin claim that given material tends to precede new material and heavy material comes last. In cases where word order can vary, such as in the transformation that maps the DP + DP frame to the DP + PP frame, the alternation will be inhibited or facilitated by the well-formedness of the output with respect to these output conditions. The fact that idiomatic DP + DP structures resist the DP + PP frame, as the marginality of the (b) examples in (43)–(46) demonstrates, follows from the fact that the second DP in the (a) examples—for instance, *a rough time* in *give someone a rough time* (46a)—does not have any of the properties that facilitate syntactic promotion: these direct objects are third person, nonpronominal, nonreferential, inanimate nominals expressing new material, and they are not particularly heavy. Both Bresnan and coauthors and Rappaport Hovav and Levin amass a body of corpus data demonstrating that examples of discontinuous idioms in the DP + PP frame improve substantially when the referential and prosodic attributes of the DPs in the example align well with the tendencies they establish. Most of Larson's (1988) examples in (33) have a heavy indirect object NP, which is more comfortable in sentence-final position. The only example with a light indirect object—(33a), with *linguistics*—has an even lighter (in terms of syllable count) direct object (*his all*). What these authors' observations mean for the purposes of this study is that the

infelicity of cases like the (b) examples in (43)–(46) is not a result of the unavailability of the syntactic process that derives these structures; rather, it arises because the output fails to harmonize with preferences guiding the presentation of information in normal speech.

Bruening (2010b) presents an alternative analysis of the pattern in (43)–(46) in the following terms. First, he claims that fixed-theme idioms do not have a locative base structure available to them (contra Bruening 2010a), though nonidiomatic verb phrases do. The DP + PP frame may nonetheless be derived for fixed-theme idioms by an operation he terms ''R[ight]-dative shift,'' in which the specifier of ApplP, which houses the first DP in the DP + DP frame on his approach, is projected to the right instead of to the left; in this case, the phrase occurring in that specifier position acquires the prefix *to*, which Bruening suggests might function as a Case marker in this configuration. He then claims that R-dative shift requires subsequent Ā-movement of the DP in the right-projected specifier, such as *wh*-movement or heavy NP shift. Since a light DP may not undergo heavy NP shift, (47a) cannot be derived by R-dative shift, nor, again, is a locative base structure available. R-dative shift is available to the heavy possessor in (47b), whence the contrast between (47a) and (47b), from Bresnan and Nikitina 2010:163.

(47) a. #The lighting here gives a headache to me.
     b. The lighting here gives a headache to everyone who enters the room.

Evidence presented here indicates that *give* and the other verbs in its class are altogether incompatible with a locative base structure, not just in idioms. Consequently, the DP + DP frame is the only source for the DP + PP frame for verbs like *give*, in idiomatic and nonidiomatic expressions alike, meaning there is only one derivational path for both (47a) and (47b). As discussed above, the contrast between (47a) and (47b) does not represent evidence for a structural distinction between them; rather, it represents the effect of referential hierarchies governing information presentation, which militate in (47a) against the occurrence of the nonreferential idiom chunk before the referential possessor, an effect counterbalanced in (47b) by the heaviness of the possessor. See Ormazabal and Romero 2012 for a critical review of a number of other aspects of Bruening's proposal.

The analysis presented here explains the asymmetry in the association of event schemas to complement frames in the table in (3) and the otherwise puzzling distribution of purpose clauses in double complement constructions. It also predicts when the object of a prepositional phrase may be inanimate in the DP + PP frame (when the frame is locative), and it predicts when a fixed-theme idiom is available in the DP + PP frame (when it's derived from the DP + DP frame). In the following section, I consider in more detail the role of Case in the distribution of DPs in double object constructions.

4 Internal Case

Certain verbs behave with respect to purpose clauses like double object verbs yet only occur readily in the DP + PP frame, displaying the DP + DP frame only marginally. Specifically, verbs such as *donate*, *return*, and *reveal*, primarily of Romance origin, support purpose clauses in which

the subject of the purpose clause is identified by the DP within the prepositional phrase in the matrix clause, like double object verbs and unlike locative verbs; see (48).[1] However, unlike double object verbs, these verbs resist the DP + DP frame to a greater or lesser extent (Green 1974:74–75, Gropen et al. 1989:204, Levin 1993:46); see (49). The degree of resistance seems to vary from verb to verb, with some speakers being more liberal than others (the judgments in (49) are mine); but all these verbs are substantially degraded in the DP + DP frame in comparison to double object verbs like *give* and *send.*

(48) a. John donated money$_j$ to the church$_i$ [PRO$_i$ to buy candles with e$_j$].
       b. Mary submitted a draft$_j$ to the professor$_i$ [PRO$_i$ to comment on e$_j$].
       c. Mary returned the books$_j$ to John$_i$ [PRO$_i$ to reshelve e$_j$].
       d. John revealed the plan$_j$ to Mary$_i$ [PRO$_i$ to consider e$_j$].
       e. Mary demonstrated the technique$_j$ to John$_i$ [PRO$_i$ to teach e$_j$ to the new assistants].

(49) a. ??John donated the church money.
       b. *?Mary submitted the professor a draft.
       c. ??Mary returned John the books.
       d. *?John revealed Mary the plan.
       e. *?Mary demonstrated John the technique.

The evidence discussed in section 2 indicates that the alignment of empty categories in the purpose clause with arguments in the matrix clause is established with reference to the hierarchy found in the base structure DP + DP frame. If this is so, the sentences in (48) must contain base structures corresponding to the sentences in (49), though something apparently prevents those base structures from surfacing as such. Supporting this view is the fact that some verbs that lack the DP + DP frame show the same ambiguity with a base-generated locative structure that verbs like *throw* display, and the locative counterpart differs from what I am analyzing here as a derivative of the DP + DP frame in ways the present analysis predicts. For example, *drop* in (50a), with the locative preposition *on*, does not allow the object of the preposition (*John*) to bind the PRO subject of the purpose clause, which would derive the interpretation that Mary dropped the ladder on John intending for John to climb up the ladder. This reading is available with the preposition *to*, however, as in (50b). This is the preposition that introduces the demoted argument of the internal passive. This indicates that (50b), but not (50a), is a derivative of an underlying double object construction that licenses the purpose clause, though again, something prevents the DP + DP frame from showing up in the surface structure. (50a), on the other hand, is a genuine locative construction. The verb *lower* shows a similar effect for animacy with an invariant preposition. *Lower* occurs in the DP + PP frame only with the preposition *to*, but if the object of the

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[1] In the class of primarily Latinate nonalternating verbs, Levin (1993:46) includes *address, administer, broadcast, contribute, convey, delegate, deliver, demonstrate, denounce, describe, dictate, dispatch, display, distribute, donate, elucidate, exhibit, explain, explicate, express, forfeit, illustrate, introduce, narrate, portray, proffer, recite, recommend, refer, reimburse, remit, restore, return, sacrifice, submit, surrender, transfer,* and *transport.* She also mentions some semantically defined classes of nonalternating verbs discussed below.

preposition is inanimate (51a), it is incompatible with the caused-possession interpretation of the underlying DP + DP frame and may only function as a location in the base-generated DP + PP frame. In this position, the object of the preposition may not identify the subject gap in a purpose clause (cf. *The ledge supported the ladder*). The animate argument *John* may bind the subject gap in the purpose clause (51b), indicating that it originates in a higher position, as predicted by the analysis described in section 2.

(50) a. *Mary dropped the ladder$_j$ on John$_i$ [PRO$_i$ to climb up e$_j$].
　　　 b. Mary dropped the ladder$_j$ to John$_i$ [PRO$_i$ to climb up e$_j$].

(51) a. *Mary lowered the ladder$_j$ to the ledge$_i$ [PRO$_i$ to support e$_j$].
　　　 b. Mary lowered the ladder$_j$ to John$_i$ [PRO$_i$ to climb up e$_j$].

What, then, prevents the DP + DP frame from surfacing in the context of these verbs? The unavailability of Case in vP$_2$ would have the observed effect. A [− acc] vP$_2$ would be unable to assign Case to the theme generated in the VP. The underlying ditransitive argument structure could only surface by demotion of the argument base-generated in vP$_2$ (the possessor) into a prepositional phrase, where Case is provided by the preposition. The theme then promotes to vP$_1$. On this view, what is special about verbs such as *donate* and *submit* is that they are incompatible with a [+ acc] feature on v$_2$.

This approach makes the absence of the DP + DP frame a lexical idiosyncrasy of these verbs. Most of the verbs with this behavior are borrowings from French, which lacks the double object construction altogether (Kayne 1984). In the present analysis, the absence of the DP + DP frame in French means that the French v$_2$ is parametrically specified for the [− acc] value, so that double object verbs are only compatible with the derived DP + PP frame. This assessment of French is supported by the fact that Old French had a double object construction of the contemporary Germanic type (Herslund 1980). The loss of this construction in the fourteenth century (Troberg, Burnett, and Tremblay 2011) was not accompanied by obvious changes in the morphological structure of the verbs in question. The wholesale loss of the DP + DP frame implicates a macroparametric change—a change in a feature value shared by all functional heads of the relevant type, here v$_2$ (Baker 1996, 2008, Roberts 2012). The fact that borrowings from French into English largely retain their French syntactic behavior suggests that that behavior was borrowed as part of the lexical content of the word—in this case, its specification for a complex head containing a [− acc] vP$_2$. In this manner, a macroparameter of French was reanalyzed as what Biberauer and Roberts (2014) call a ''nanoparameter'' of English—a feature value shared by one or more individual lexical items. To what extent the impossibility of licensing the surface DP + DP frame in English might be characterized as what Biberauer and Roberts call a ''microparameter''—a feature value shared by a small subclass of lexical items such as auxiliaries or pronouns—depends on whether the class of lexical items in question is independently definable. Green (1974:78ff.) notes that some English verbs of Romance origin do permit the DP + DP frame (e.g., *concede*, *refuse*), which compromises an analysis that relates their syntactic behavior to their Romance morphological form or stress pattern, as does the fact that the same Romance verbs that now resist the DP + DP frame in English were compatible with this frame in Old French. From the

perspective of the hypothesis articulated here—that a macroparameter of French ($[-\text{acc}]$ v_2) spread to English in the form of a nanoparameter associated with the borrowed lexical items—the scattered exceptions in English are not unexpected, nor is interspeaker variation in the availability of the alternation, including inconsistencies in the linguistic literature on the categorization of various verbs noted for example by Levin (1993:47).

A structural source for the lack of the DP + DP frame is potentially warranted for certain classes of nonalternating verbs that Levin (1993) mentions. She notes that the DP + DP/CP frame is not found for verbs of ''communication of propositions'' (*admit*, *announce*), verbs of ''manner of speaking'' (*whisper*, *shout*), verbs of ''putting with a specified direction'' (*drop*, *lower*), or verbs of ''fulfilling'' (*credit*, *issue*) (Levin 1993:46–47). The theory of double object constructions presented here says something about the form such an account must have. The purpose clause facts in (48) indicate that if a structural source exists for the absence of the DP + DP frame, it does not prevent the structure in (12) underlying the DP + DP frame from being built; rather, it requires the structure in (12) to be converted into the structure in (23). That is, it necessitates internal passivization. I leave the proper analysis of this dependency for another occasion.

Additional syntactic structure may also play a role in the converse of the *donate*-type verbs—namely, verbs in English compatible with the DP + DP frame that resist the DP + PP frame (Green 1974). Levin (1993:47) lists two subclasses of these verbs that arguably include an implicit predicate of having. The *deny* class includes verbs like *deny* and *guarantee* (52), while the *bill* class, illustrated in (53), includes verbs that select a measure of value as their second object.[2]

(52) a. Mary denied/guaranteed John a raise.
     b. ??Mary denied/guaranteed a raise to John.

(53) a. John tipped/billed the pianist $5.
     b. ??John tipped/billed $5 to the pianist.

Here again, there is interspeaker variation regarding the grammaticality of these verbs in the DP + PP frame, and in most cases they are compatible with the DP + PP frame to the extent that it satisfies the information-structural principles described by Bresnan et al. (2007), Rappaport Hovav and Levin (2008), and Bresnan and Nikitina (2010). Bresnan and Nikitina (2010:167), for example, find attested uses of *deny* and *cost* in the DP + PP frame (54). Larson (1988) categorizes *deny* as an alternating verb without comment. To my ear, *tip* and *bill* are acceptable in the DP + PP frame under similar circumstances. These observations militate against an analysis that makes the DP + PP frame a syntactic impossibility—for example, by connecting it directly to the semantic composition of the verbs in question.

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[2] Levin's (1993:47) *deny* class also includes *accord*, *ask*, *bear*, *begrudge*, *bode*, *cost*, *envy*, *flash (a glance)*, *forbid*, *forgive*, *issue (ticket, passport)*, *refuse*, *save*, *spare*, *strike (a blow)*, *vouchsafe*, *wish*, *write (check)*. The *bill* class also includes *bet*, *(over/under)-charge*, *fine*, *mulct*, *save*, *spare*, *tax*, *wager*. Levin lists three additional classes of nonalternating verbs in which the second object is predicated of the first, as in *appoint John minister of finance*. I assume these have a rather different structure from the construction treated here and are not relevant to the present purposes.

(54) a. After all, who could deny something to someone so dedicated to the causes of international friendship and collaboration?

    b. He did so thinking it would cost nothing to the government.

Both Beck and Johnson (2004) and Beavers (2011) consider *deny* a nonalternating verb and suggest without elaborating that extra internal structure inhibits the alternation. Once again, the present analysis places conditions on what a structural analysis of the behavior of these verbs must look like. Just as something about the internal structure of *donate* promotes internal passivization, something about the internal structure of *deny* militates against internal passivization. A reviewer offers the suggestion that these verbs resist the DP + PP frame because the preposition *to* that appears in that context has semantic content, and to the extent that the examples in (54) are noncanonical, it is because the semantic role of the primary object of these verbs in the DP + DP frame is incompatible with the meaning contributed by *to* in the corresponding DP + PP frame. On the one hand, the fact that the choice of preposition in the DP + PP frame is sensitive to aspects of the semantic composition (e.g., benefactive *for* vs. possessive *to*) lends credence to this view. On the other hand, this view asserts that the derivation of the DP + PP frame adds meaning that is not present in the DP + DP frame, which makes the derivation semantically contentful in a way that grammatical-function-changing operations usually are not. Once again, an analysis of what impedes internal passivization for *deny*-type verbs requires a more concrete proposal on the internal structure and semantic composition of these verbs than I am able to offer here, so I leave this matter, too, for further research.

5 Asymmetries between Double Complement Frames

In section 2, I described one respect in which the first DP of the DP + DP frame is like the first DP of the DP + PP frame: it is this DP that is promoted to subject in the matrix passive. This parallel warrants Dryer's (1986) characterization of this DP as ''primary object'' in the two frames. In a framework that connects passive to withdrawal of Case, it follows that the primary object in each frame receives Case from the same source. In the present analysis, they receive Case in the outer specifier of vP_1 in the surface structure. The discussion below treats certain respects in which the primary object of the DP + DP frame behaves differently from the primary object of the DP + PP frame and the significance of these differences for the present analysis.

One such asymmetry is the fact that the primary object in the DP + DP frame resists Ā-movement (55a), unlike the secondary object (55b) and unlike the primary object of the DP + PP frame (55c) (Fillmore 1965:12–13, Hornstein and Weinberg 1981:74, Stowell 1981:320–321, Baker 1988:293, Den Dikken 1995:183ff.). Ross (1967), Engdahl (1983), and Nissenbaum (2000a,b) analyze heavy NP shift as a type of Ā-movement. Culicover (1976:155) and Larson (1988:354) observe that in the DP + DP frame, heavy NP shift may not move the primary object to the right of the secondary object and/or a VP adjunct like the adverb *yesterday* (56a). The secondary object may undergo heavy NP shift (56b), as may the primary object in the DP + PP frame (56c). In these respects, the first DP in the DP + PP frame acts like the second DP in the DP + DP frame.

(55) a. *Who$_i$ did John give t$_i$ a book?
    b. What$_i$ did John give Bill t$_i$?
    c. What$_i$ did John give t$_i$ to Bill?

(56) a. *John gave t$_i$ a book about roses yesterday [the tall man in the garden]$_i$.
    b. John gave the tall man in the garden t$_i$ yesterday [a book about roses]$_i$.
    c. John gave t$_i$ to the tall man in the garden yesterday [a book about roses]$_i$.

I propose that Ā-movement may proceed from vP$_2$ but not vP$_1$. This proposal is an instance of the often-reported observation that Ā-movement from a lower position is generally preferred over movement from a higher position. For example, *wh*-movement targets objects more readily than subjects (Chomsky 1981, Huang 1982, Lasnik and Saito 1984), and predicate-internal objects more readily than predicate-external ones (Diesing 1992). The proposal that vP$_1$ does not count as predicate-internal for the purposes of *wh*-movement immediately rules out (55a) and (56a), where movement originates in vP$_1$, the position of the primary object in the DP + DP frame, and rules in (55b) and (56b), where the moved element originates in vP$_2$, the position of the secondary object in the DP + DP frame. Of course, with nothing further said, this proposal rules out Ā-movement of the primary object in the DP + PP frame as well, contrary to fact ((55c) and (56c)).

Chomsky (2000, 2001, 2004) claims that in quirky Case and VSO constructions, where nominative Case is passed from tense down to a predicate-internal DP, Case and agreement are transmitted through the Agree relation between the higher Tense/Agreement head and the lower DP (characterized as formal feature movement in Chomsky 1995). While Agree is a prerequisite for movement, Agree may obtain without movement, transmitting Case and agreement features between a probe and a goal occupying a lower position. Suppose now that a [−acc] vP$_2$ is transparent to the transmission of Case from v$_1$ downward via Agree, while a [+acc] vP$_2$ is opaque by virtue of Minimality, since v$_2$ is itself a potential Case assigner. Then, when v$_2$ is [−acc], the theme may move into the outer specifier of vP$_2$ and receive Case there from v$_1$ under Agree, rather than moving to its ''proper'' Case position in the outer specifier of vP$_1$. Having received Case in vP$_2$ in this manner, this DP (the first DP in the DP + PP frame) may undergo Ā-movement, just like the second object in the DP + DP frame. This proposal says what the primary object of the DP + PP frame has in common with the primary object of the DP + DP frame (they both receive Case from v$_1$ and therefore are promoted to subject in the passive), as well as what it has in common with the secondary object of the DP + DP frame (they both occur in vP$_2$—optionally in the first case—and therefore may be Ā-moved). The mapping of DPs to Case positions in the DP + DP frame is shown in (15). What I am proposing here is that the mapping of DPs to Case positions in the DP + PP frame involves an optionality in the placement of the theme. It may either move to the outer specifier of vP$_1$ and receive Case in the specifier-head relation with v$_1$, but then may not be Ā-moved (illustrated in (23)), or it may move to the outer specifier of vP$_2$ and receive Case in the Agree relation with v$_1$, and may subsequently be Ā-moved, as illustrated in (57), an intermediate stage in the derivation of (55c).

(57)
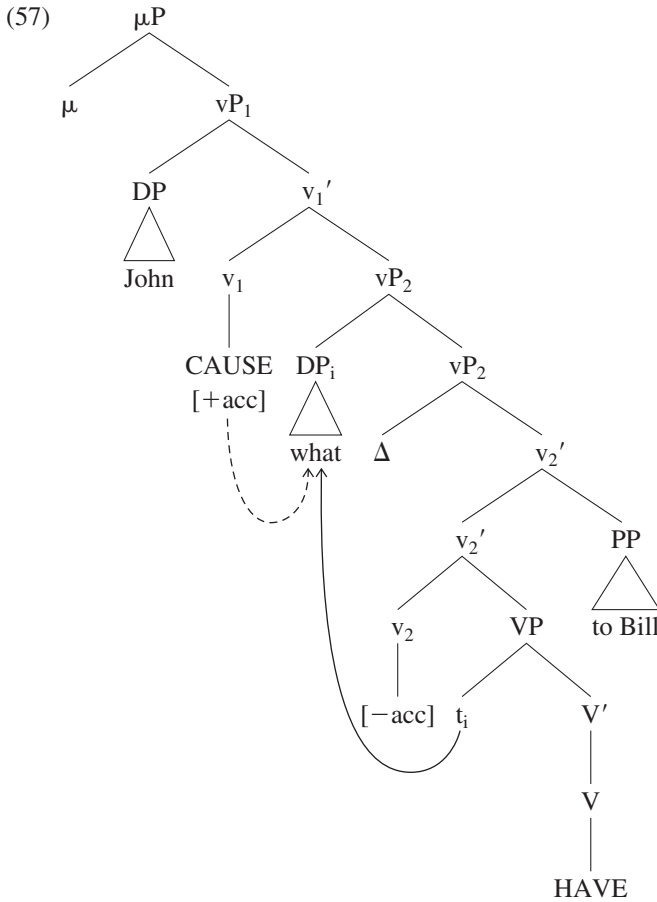
This analysis maintains that the primary object in the DP + PP frame has a placement optional-ity available to it that is not available to the primary object in the DP + DP frame. Emonds (1976) makes an observation that supports this proposal. The primary object of the DP + DP frame may precede a verb particle, but is marginal following it, as in (58) (Emonds 1976:82–83). Placement of the object after the particle is in fact ungrammatical in my judgment, but Emonds reports dialectal variation on this matter. Crucially, the primary object of the DP + PP frame is equally natural before or after the particle, as in (59). This indicates that the canonical position of the particle is between vP_1 and vP_2. The primary object in the DP + PP frame may occur either in vP_1, before the particle, or in vP_2, after the particle. The primary object in the DP + DP frame, however, may only occur in vP_1, before the particle. If this proposal is correct, the extent to which the postparticle placement of the primary object in (58) is acceptable is related to the possibility of placing, or perhaps moving, the particle above vP_1. The absence of any contrast in (59) supports the claim that the primary object in the DP + PP frame may occur lower in the structure than the primary object in the DP + DP frame, and this accounts for the difference in Ā-extractability. Note

that this placement optionality with respect to a verb particle extends to objects in monotransitive contexts, implicating vP_2 there, too. This suggests that the substructure $[vP_1 [vP_2 [VP]]]$ is a formal syntactic ''scaffolding'' that is always present in the verb phrase, regardless of the number of arguments that the underlying relational head V licenses.

(58) a. The secretary sent ⟨the stockholders⟩ out ⟨?the stockholders⟩ a schedule.
    b. John read ⟨Mary⟩ off ⟨?Mary⟩ the figures.

(59) a. The secretary sent ⟨a schedule⟩ out ⟨a schedule⟩ to the stockholders.
    b. John read ⟨the figures⟩ off ⟨the figures⟩ to Mary.

Another asymmetry between the DP + DP frame and the DP + PP frame is that the first DP in the DP + DP frame cannot appear as a genitive argument to the corresponding nominal (60a), though the first DP in the DP + PP frame may (60b) (Kayne 1984:152).

(60) a. *the teacher's gift of Mary of the letter
    b. the teacher's gift of the letter to Mary

The examples in (60) illustrate the observation that accusative Case is not available in what Grimshaw (1990) calls ''complex event nominals.'' In the context of the present study, this means that they may not contain a [+ acc] vP_1 or vP_2. The fact that complex event nominals license the full repertoire of arguments of the corresponding verb, as Grimshaw shows, indicates that they contain the full syntactic base structure of the corresponding verb. The occurrence of an agent and the *to*-phrase in (60b) implicates the occurrence of vP_1 and vP_2 in that example, though apparently neither has Case-licensing potential there. A possible explanation for the lack of accusative in (60b) is a variation on the analysis of nominalizations presented in Chomsky 1970, in which the full X-bar structure of the corresponding verb is present, but in the category N. The base structure of (60b) on this view is illustrated in (61). Being nominal, the nPs do not assign accusative Case. The inflectional structure associated with DP offers two genitive positions, one of which is marked by the preposition *of*. For all three arguments to be realized, the possessor must be demoted into a *to*-phrase in the manner of its verbal counterpart, deriving (60b), where the lexical item *gift* replaces the head complex $[HAVE_N [n_2 [CAUSE_{n_1}]]]$.

(61) $[_{nP_1}$ the teacher $CAUSE_n [_{nP_2}$ Mary $[_{NP}$ the letter $HAVE_N]]]$

Another respect in which the first DP in the DP + DP frame differs from the second is in its ability to function as antecedent for a depictive adjective. A depictive adjective like *dead* in (62a) may not modify the first object (*Bill*), but it may modify the second (*the dog*), as the indexing in (62a) indicates. In this respect, the second object patterns like the object of a monotransitive verb, which may also host a depictive adjective (62b) (Williams 1980:207). However, the double object alternation does not affect the relationship between a depictive adjective and its subject. The depictive *dead* may not depict the state of Bill in (62c) any more than in (62a).

(62) a. John gave $Bill_i$ the dog_j $dead_{*i,j}$.
    b. John ate the $meat_i$ raw_i.
    c. John gave the dog_j to $Bill_i$ $dead_{*i,j}$.

As a reviewer points out, this is probably the same fact as the fact that purpose clauses cannot be predicated of the primary object in the DP + DP frame, with PRO bound by the matrix subject. Example (63) cannot be interpreted as asserting that Mary gave John the puppy with the intention of keeping John happy.

(63) *Mary$_i$ gave John$_j$ the puppy [PRO$_i$ to keep e$_j$ happy].

I argued in section 2 that the relation between a purpose clause and the DP that identifies its nonsubject gap is established in the base structure. The purpose clause adjoins to V′, where a predication relation is established between the purpose clause and the DP in the specifier of VP (the theme). Examples (62a) and (62c) indicate that depictives are related to an antecedent in the same manner. The fact that neither depictives nor purpose clauses may be predicated of the primary object in the DP + DP frame, or of its demoted counterpart in the DP + PP frame, means that neither depictives nor purpose clauses may be adjoined to v_2′ in the base structure. Only VP may host a depictive or purpose clause; vP_2 does not admit modifiers. This conclusion ''localizes'' what purpose clauses and depictives have in common. The source of the restriction remains unclear.

In summary, the data discussed in this section implicate the three syntactic generalizations in (64). The first characterizes the data in (55) and (56) in concert with the Minimalist device Agree, which transfers Case downward subject to Minimality. The second characterizes (60), and the third (62).

(64) a. Ā-movement may not target Spec,vP_1.
       b. v assigns Case but n does not.
       c. Depictives and purpose clauses may not modify v_2′.

These remarks are provisional and leave a number of issues unaddressed. They clarify, however, that the present analysis is compatible with asymmetries in the behavior of the primary object of the DP + DP and DP + PP frames, and that in the case of the Ā-movement facts in (55) and (56) it is corroborated by the contrast illustrated in (58)–(59). I suggested above that (64a) is related to a broader generalization that constrains Ā-movement from a predicate-external position. Ideally, future research will reveal that this and the other two conditions in (64) can be reduced to more general principles of syntactic architecture.

6 Conclusion

The central thesis of this article is that the surface linear order V + DP + PP is syntactically ambiguous. For some values of V, such as *put* and *immerse*, the DP + PP frame is base-generated in that hierarchical order. In these cases, the PP-internal location argument may not identify the subject of a purpose clause associated with the theme, since c-command does not obtain; also, the object of P may be inanimate, since it designates a location, and may participate in an idiom with P and V, since these form a constituent in the base structure. For other values of V, such as *give* and *lend*, the DP + PP frame is derived from the DP + DP frame by demotion of the first DP into a prepositional phrase and promotion of the second. In these cases, the PP-internal DP

may identify the subject of a purpose clause associated with the direct object, since it c-commands the purpose clause in the base structure; the object of P may not be inanimate, since it may only have the possessor role associated with the first DP in the DP+DP frame, and may not form an idiom with P and V, since these do not form a constituent in the base structure. For still other values of V, such as *send* and *throw*, the DP+PP frame is syntactically ambiguous between a base-generated order and a derived order. These verbs therefore show properties of both the base-generated DP+PP locative construction and the base-generated DP+DP possessive construction. This synthesis of the alternative projection and transformational views of the double object alternation accounts for a spectrum of facts that each alone is unable to capture in full.

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