Double Object Constructions

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Note: This chapter grew out of the enterprise to revise and update the chapter that appeared in *The Blackwell Companion to Syntax*, 1st ed. Barbara Citko is responsible for the revision and update of the chapter, which contains significant portions of the original chapter (especially in sections 2.2., 3.2–3.4, and 4.2). Barbara Citko expresses her appreciation for the useful and constructive collaboration with the original authors who, in turn, are grateful to the new author for having accepted the task of revising and updating this chapter. As the actual author of the present version, Barbara Citko is alone responsible for any errors and omissions.

1   Introduction

Double object constructions have been a source of quite a few debates and controversies in linguistic literature. These debates involve their structure and derivational history, the relationship of double object constructions to ditransitive PP datives, the constraints on movement and interpretation, and, last but not least, cross-linguistic variation in the availability and behavior of double object constructions. Strictly speaking, the term double object construction refers only to a subset of ditransitive constructions. Of the examples (1a)–(1d) below, in a strict sense of the term, only the English (1a) is a double object construction, since the two objects are morphologically marked in the same way (i.e., with accusative case).[1,2] The Polish counterpart in (1b), due to the fact that the two objects are distinctly case-marked (accusative Theme versus dative Goal) is not. Neither is (1c), in which the Goal is realized with a prepositional phrase. In (1d), the presence of an extra object (Recipient/Benefactive in this case although many other roles are possible) correlates with an "extra" piece of verbal morphology, the so-called applicative morpheme and, on some accounts, English-type double object constructions are simply treated as a type of applicatives. Since applicatives are a topic of an entire chapter (Applicatives by Martha McGinnis), we do not treat them in much detail here. However, since many interesting issues surround the relationship between double object constructions and PP datives, we discuss both of them in this chapter and allude to others where relevant.

(1)   a. Pat gave Terry a book.
      Polish
      b. Jan   dał   Marii   książkę.
          Jan.NOM gave Maria.DAT book.ACC
          'John gave Mary a book.'
      c. Pat gave a book to Terry.
      Bukusu
      d. wanjala   a-a-kul-il-a   omu-xasi   sii-tabu.
          Wanjala   3sS-TENSE-buy-APP-FR CL1-woman CL7-book
          'Wanjala bought the book for the woman.'

                                              (Peterson 2007, 7)

The purpose of this chapter is to outline the issues that have dominated the research on double object construction, beginning with Fillmore's (1965) classic study, and to review the major approaches to the structure of double object constructions as well as the most influential approaches to the so-called dative alternation (focusing on the arguments in favor of and against dative shift). However, given the massive (and ever growing) literature on double object constructions, the current review of the literature on double objects does not pretend to be exhaustive; it focuses

on the major issues that have dominated the literature and outlines representative approaches to these issues. The core questions that will form the basis of the discussion that follows are listed in (2a)–(2d).

(2)   a.   What is the structure of double object constructions?
      b.   What is the relationship between the double object construction and its PP dative counterpart?
      c.   What are the constraints on double object constructions?
      d.   Why are double object constructions restricted cross-linguistically?

We proceed as follows. Having outlined the empirical domain of investigation, we turn to examining the structures that have been proposed for double object constructions (section 2). In section 3, we focus on what is perhaps the biggest (still ongoing) debate in the literature on the topic; the debate concerning what is referred to as the dative alternation (i.e., the alternation between the double object construction in (1a) and the PP dative in (1c)). The biggest source of debate here is whether the two are transformationally related or not. The properties that have played (and continue to play) a big part in this debate concern meaning differences between the two variants and the productivity of the alternation. In section 4, we turn to the constraints that double object constructions are subject to, focusing on passivization patterns (section 4.1), A-bar-extraction asymmetries between the two objects (section 4.2) and scope (section 4.3). And, lastly, in section 5, we turn to the cross-linguistic variation in the availability of double object constructions. Since, typologically speaking, double objects are fairly restricted (e.g., in Siewierska's (1998) sample of 216 languages only 6 percent had them), this section focuses on the question of what properties might lead to the lack of a double object construction in a given language. It also examines the different coding of the two objects in different languages and variation in the order of the two objects that is likely not the result of dative shift.

2   Structure of double object constructions

2.1   Flat structures

The structure in (3), proposed by Oehrle (1976) and more recently defended by Culicover and Jackendoff (2005, 109) on the grounds of syntactic parsimony, is simple yet problematic for both theoretical and empirical reasons (as pointed out as early as in Czepluch 1982, n. 5).

(3)

```
        VP
       / | \
      V  NP  NP
```
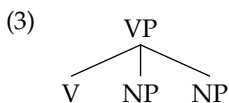
There are also variants of this general ternary-branching structure that do not treat the two objects as identical. For example, Czepluch (1982) and Kayne (1984) analyze the indirect object NP as a "covert" PP with a P that remains empty throughout the derivation, as in (4) below. Czepluch (1982) proposes that ordering

of the PP before the NP in (4) is determined by the requirements of case assignment and the Empty Category Principle, which forces the dummy P to be properly governed. The empty P attaches to the verb through reanalysis, allowing the verb to indirectly transmit case to the indirect object NP.

(4)

```
            VP
        ___/|
       /    |   \
      V    PP    NP
          / \
         P   NP
```
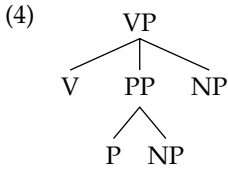
Since it is somewhat anachronistic to criticize these early approaches based on their incompatibility with later theoretical developments, such as connectedness (with its ban on ternary branching), X-bar theory, or Kayne's (1994) Linear Correspondence Axiom, we limit our attention here to the empirical predictions such flat structures make. Perhaps the biggest empirical issue concerns the symmetric relationship of the objects with respect to each other (and with respect to the verb). First, the structures (3) and (4) make incorrect predictions with respect to standard c-command diagnostics, as shown convincingly by Barss and Lasnik (1986). Their diagnostics involve anaphoric binding, bound variable interpretation, negative polarity item licensing, weak crossover, superiority, and the so-called *each … the other* construction. Below we illustrate for a subset of their diagnostics. The contrast in (5a)–(5b) shows that the indirect object can bind an anaphoric direct object but not vice versa, the contrast in (6a)–(6b) shows that a quantified indirect object can bind a direct object variable but not vice versa, and the contrast in (7a)–(7b) makes a similar point with respect to negative polarity item licensing; a negative indirect object can license a negative polarity direct object but a direct object cannot license an indirect object negative polarity item. Examples (8a)–(8b) show that a direct object cannot cross over the indirect object containing a coindexed pronoun.[3]

(5)   a.   I sent *Mary$_i$ a picture of herself$_i$*
      b.   *I sent *herself$_i$ a picture of Mary$_i$.*

(6)   a.   I sent *every account owner$_i$ his$_i$ bank statement.*
      b.   *I sent *its$_i$ owner every$_i$ bank statement.*

(7)   a.   I sent *no one anything.*
      b.   *I sent *anyone nothing.*

(8)   a.   [??]*Which account owner$_i$* did you send *t$_i$ his$_i$* bank statement?
      b.   *Whose bank statement$_i$* did you send *his* owner *t$_i$*?

Second, it is not clear how the flat structure in (4) would capture the relationship between double object constructions and prepositional datives. Third, it is not clear how the case on the two objects is licensed. A simple and hence optimal case theory states that case assigners (such as V and P) assign exactly one grammatical case to a single, adjacent NP (see Pesetsky 1995, 124). In a flat structure, the

assignment of case to the second NP of the double object construction in (3) becomes problematic. Chomsky (1981, ch. 3) assumes that the V in this situation assigns an additional "inherent Case" to one of the objects and the usual structural case to the other (see also Larson 1988). Structures in which one of the objects is "buried" within the prepositional phrase, such as the one in (4), (and many of its variants we will discuss in what follows) do not face this problem, as they maintain a direct one-to-one mapping between the number of case-assigning heads (P and V heads) and the number of objects. And fourth, work on double object applicative constructions in non-Indo-European languages, first in the framework of Relational Grammar (Chung 1976; Kimenyi 1980; Aissen 1983) and later in Government and Binding under the impetus of Marantz (1984) and Baker (1985; 1988a), revealed many syntactic properties which demonstrate that prepositionless indirect objects function cross-linguistically as surface direct objects. An additional set of data involving verb particle constructions (Emonds 1972), which we will discuss in section 3.3, supports the same conclusion for English. This body of work taken together, has been taken to mean that the indirect object must be "promoted" (using Relational Grammar terms) from a deep status of an "initial 3" (a deep oblique complement) to a "final 2" (a surface direct object) in the course of a derivation. Flat deep structures of the kind given in (4) obscure this "promotion." And lastly, it is not clear how a flat structure captures different restrictions the two objects might be subject to, such as the fact that for many speakers of American English, only indirect objects may passivize.

2.2 Asymmetric structures

As we saw in the previous section, Barss and Lasnik (1986) established that the indirect object in a double object construction asymmetrically c-commands the direct object to its right. Their findings thus suggest the following asymmetric structure:

(9)
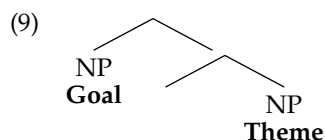
There are many different implementations of this general structure, which we examine in the sections that follow. Crucially, the issue of whether the indirect object is higher than the direct object is in principle independent of the issue of whether double object constructions are derived from ditransitive PP constructions, and, if so, whether this is a lexical or a transformational process. This will be the focus of section 3. The approaches surveyed here differ with respect to what kinds of elements mediate the relationship between the two objects; an empty verb in a VP shell structure, a (null) prepositional head, an applicative head, or a functional head of a small clause. They also differ in whether the two objects in a double object construction form a constituent with each other (to the exclusion of the verb) or not.

2.2.1 VP shell structures

Larson's (1988) structure for double object constructions, which has come to be known as a VP shell structure, has been very influential over the years, and many subsequent discussions of double object constructions position themselves in relationship to his proposal. The structure he proposes for double object constructions is intimately tied to the derivation he proposes for them, in particular to the claim that a double construction is derived from a PP dative via a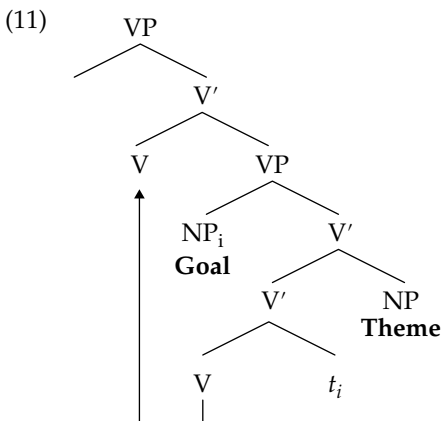 syntactic transformation. We present the gist of Larson's proposal (as well as some of the questions it raises) here and come back to it in section 3 (in particular in section 3.2., where we discuss dative shift).

Larson (1988; 1990) follows the insight of Relational Grammar (see Perlmutter 1983; Perlmutter and Postal 1983; and Perlmutter and Rosen 1984) in promoting indirect objects to direct object status and demoting the original direct object. The direct object is generated in the specifier of VP, and the indirect object as a PP complement inside the lower V in the VP shell structure. The empty head of the higher VP is a landing site for an eventual V-raising.

(10)

```
            VP
           /  \
          V    VP
          Ø   /  \
            NP    V'
          Theme  /  \
                V    PP
                    /  \
                   P    NP
                       Goal
```
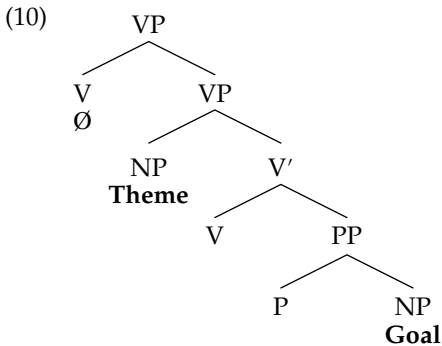
The double object construction is derived by a passive-like movement of the indirect object.[4] In Government and Binding terms, the dative shift operation absorbs case from the "object" of the verb in (10). The indirect object moves to the "VP subject" position (i.e., the specifier of the lower VP), as shown in (11). The verb moves to the higher V position. After the indirect object moves, it asymmetrically c-commands the second NP, and receives case from the raised verb. The underlying direct object becomes an adjunct of the V', in a way that parallels what happens to subjects in *by*-phrases in passives.

(11)

```
            VP
           /  \
               V'
              /  \
             V    VP
                 /  \
              NP_i    V'
              Goal   /  \
                    V'    NP
                   /  \  Theme
                  V    t_i
```

(adapted from Larson 1988, 353)

The VP shell structure is in principle independent from dative shift. (12) below, for example, preserves Larson's basic proposal about the two objects being selected by two different V heads (with the lower V moving to the higher one) without deriving the Goal Theme order transformationally.

(12)

```
            VP
           /  \
              V'
             /  \
            V    VP
                /  \
              NP    V'
              Goal /  \
                  V    NP
                       Theme
```
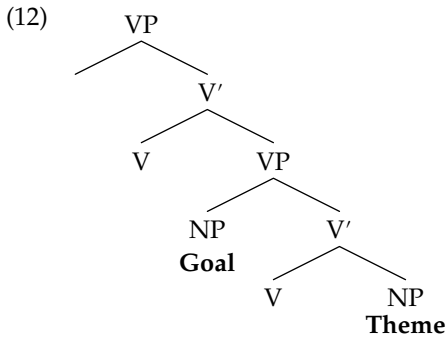
In the rest of this section, we present some of the issues that have been raised for Larson's structure; we come back to them in section 3.2. For example, in order to explain how a single verb can essentially assign case twice, Larson assumes that V assigns both an inherent and a structural objective case. A typical transitive verb is taken to assign both inherent and structural case to its direct object. In double object constructions, the cases can be split: the indirect object receives structural objective case and the direct object inherent objective case. Within this framework, both cases are suppressed for passive formation, but only structural case for dative shift. Furthermore, case assignment to the promoted indirect object is tied to V' reanalysis; the lower V' constituent in (11) is reanalyzed as a complex verbal head, which is what allows it to assign case. Den Dikken (1995, section 3.2) examines the predictions such a reanalysis makes, and concludes that it faces problems with respect to the English verb particle constructions. In particular, building on Emonds' (1976) observations about the distribution of particles in double object constructions, Den Dikken points out that Larson's structure cannot account for the distribution of particles illustrated in (13). If the particle is reanalyzed with the verb (and undergoes raising) with it, the result is the marginal verb adjacent order. It is not clear, however, that the medial placement can be derived on Larson's structure.

(13)   John sent (%off) Bob (off) a package (*off).

(Den Dikken 1995, 117)

Bowers (1993, sect. 4) presents a critique of Larson's proposal to assimilate the dative alternation to that of a passive transformation, as well as a revised analysis that circumvents some of the attendant problems. His revised proposal uses a variant of a shell structure to account for both the double object and the prepositional dative constructions, but considers the relation between them to be akin to a lexical causative alternation; that is, *give* with double objects realizes the structure of *make IO **own/have** DO*, with *give* raising from a lower to a higher V position. In comparison, the prepositional construction with *give* realizes *make IO **belong** to DO*, with the

double object verb again raising to the V head of the higher VP shell. According to Bowers, NPs in the double object construction are positioned in the surface as in (14), with their grammatical roles given as subscripts. In this structure, all three arguments in a double object construction are in specifier positions. The four bold nodes in (14) indicate the positions for lexical items in a simple sentence such as *We sent Mary books*. Such a structure permits the indirect object to license a floating quantifier (as in *We sent the boys all a book*). It also permits the "outer object" to be modified by secondary predicates (*We sent John the food cold*), which is not ordinarily allowed for adjunct NPs.

(14)   [$_{PrP}$ **NP$_{SUBJ}$** [$_{Pr'}$ **Pr** [$_{VP}$ **NP$_{IO}$** V [$_{PrP}$ t_{IO} Pr [$_{VP}$ **NP$_{DO}$** V]]]]]

2.2.2 *Small clause structures*

A number of proposals preserve the insight that the relationship between the two objects is mediated by a head, but treat this head not as a verbal head, but as a small clause head (and the resulting constituent as a small clause). In other words, when XP in a structure like (15) is not a projection of V, it is customary to refer to it as a "small clause" (i.e., a clause-like structure lacking many – or nearly all – clausal properties). The choices for XP can be IP (formerly S) or PP, NP/DP, or a functional element heading a small clause, such as the Predicational (Pr) head of Bowers (1993) that we alluded to in the previous section.

(15)

As we will discuss in detail in section 3.5 (which focuses on meaning differences between double object and PP dative structures), several authors have noted that the double object construction indicates a kind of possession of the direct object by the indirect object, even though verbs such as *offer*, *sing*, and *read* make this somewhat doubtful. Partly to express this property, Aoun and Li (1989) propose that double object constructions are small clauses (SC) of indeterminate category, as in (16), headed by an empty V of possession. The idea that the head of the small clause contributes the meaning of possession is present in many other small clause accounts.

(16)

Kayne (1981; 1984) argues in favor of a small clause structure for double object constructions based on the parallels between double object constructions and small clause complements of verbs like *consider* or *believe* (often referred to as exceptional case marking/ECM verbs).[5] Kayne (1984, 134–135) thus argues for assimilating the constituent consisting of the two objects in a double object construction to a small clause complement of ECM verbs:

(17) a. John gave [$_{SC'}$ Mary a book]
      b. John considered [$_{SC'}$ Mary a genius]

His first argument comes from the behavior of double objects in nominalizations, in particular from the parallelism between small clause subjects and indirect objects in this respect. The ungrammaticality of (18b) and (19b) shows that neither can nominalize (Kayne 1984, 152). In this regard, double objects contrast with PP datives, which *do* allow nominalization of the indirect object, as shown in (19c).

(18) a. John believes Mary to be a genius.
      b. *John's belief of Mary a genius

(19) a. John gave Mary a book.
      b. *John's gift of Mary of a book
      c. John's gift of a book to Mary

Kayne (1981, 1984) attributes the behavior of both to the fact that "N cannot govern across a boundary." Kayne (1983) also uses the ordering restriction illustrated in (20)–(21), according to which English intransitive [$_{PP}$ P] must precede [$_{PP}$ P – XP] (see Emonds 1972):

(20) a   The secretary sent a memo *out* to the committee.
      b. They are trying to make John *out* a liar.

(21) a. *The secretary sent a memo to the committee *out*.
      b. *They are trying to make John a liar *out*.

He excludes (21a)–(21b) by means of "recursive small clauses" as in *make [$_{YP}$ [$_{XP}$ [$_{NP}$ John] [$_{X'}$ a liar]] [$_Y$ out]]*. Since *make* is not a sister of XP, the latter's subject is ungoverned, hence not assigned case, hence ungrammatical. However, his discussion provides no indication of how this small clause structure contributes to meaning. Thus, the different small clauses for the synonymous pair below would apparently have no effect on meaning:

(22) a. send [$_{SC}$ a memo out] to the committee
      b. send [$_{SC}$ [$_{SC}$ the committee out] a memo]

Additionally, the fact that (22b) is good for many speakers disconfirms Kayne's account of (21a)–(21b), since his proposal rules out (22b) on exactly the same grounds as (21a)–(21b).

Finally, consider the secondary predication *bring John his food cold*. While recursive small clause structures (AP inside YP) might accommodate *bring [$_{YP}$ [John] [$_{Y}$ Ø] [$_{AP}$ [his food] [$_{A}$ cold]]]*, an identical bracketing could also tolerate **make John a liar out*. A solution might consist of imposing an ordering restriction on intransitive P as heads of SCs, thereby bringing us back to the starting point of Emonds (1972). Consequently, the restriction illustrated in (21a)–(21b) ends up providing no evidence of small clause structure.

The small clause structure has been defended more recently by Beck and Johnson (2004), Harley (2002), among others, who argue that the small clause head contributes an element of possession, associated with the meaning of the double object construction. For Harley, a double object construction involves a small clause headed by the preposition which she dubs P_{have}. This leads her to correlate the lack of double object constructions to the lack of P_{have} in a language (see section 5 for further discussion of cross-linguistic variation in the availability of double object constructions). The PP datives and double object constructions have similar structures (both involving a small clause headed by a prepositional element). The two are not transformationally derived, however. The small clause in PP datives is headed by a different type of a prepositional element, the locative P (P_{loc}).

Beck and Johnson (2004) focus on the interpretation of *again* in double object constructions. Constructions with the adverb *again* are generally ambiguous between the so-called repetitive and restitutive reading, with the two readings paraphrased in (23b)–(23c) (see Von Stechow 1996). The two readings are taken to reflect different attachment sites for the adverb.

(23) a. Terry opened the door *again*.
      b. Terry has opened the door before.   (Repetitive reading)
      c. The door has been open before.   (Restitutive reading)

Beck and Johnson note that double objects are similarly ambiguous, as shown in (24a)–(24b), which receives a natural explanation on the structure in which the double object construction is a small clause headed by an abstract HAVE predicate.

(24) a. Thilo gave Satoshi the map again.
      b. Thilo gave Satoshi the map and that had happened before.   (Repetitive reading)
      c. Thilo gave Satoshi the map, and Satoshi had had the map before.   (Restitutive reading)
                                             (Beck and Johnson 2004, 113)

The ambiguity leads them to argue in favor of the structure in (25), which allows *again* to modify either the small clause headed by the abstract *have* element or the VP/vP. The former leads to the restitutive interpretation in (24c) and the latter to the repetitive one in (24b). This is essentially Harley's (2002) structure, for whom it is P_{have} that heads the small clause.

(25)

```
                    vP
              ┌──────┴──────┐
            DP              v'
                      ┌──────┴──────┐
                      v             VP
                              ┌──────┴──────┐
                              V             PP
                                      ┌──────┴──────┐
                                     DP             P'
                                    Goal      ┌──────┴──────┐
                                           P_have          DP
                                                         Theme
```
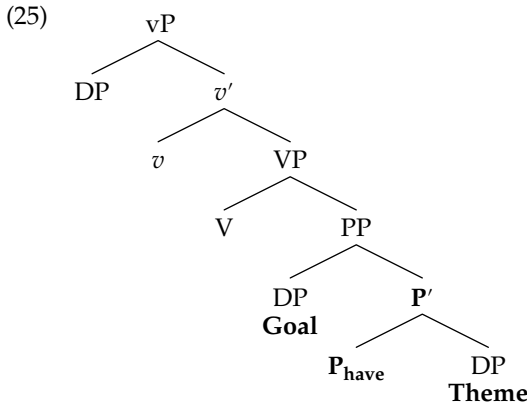
Den Dikken (1995, ch. 3), who follows Larson in arguing that double object constructions are related to PP datives, provides a carefully designed and defended small clause analysis of English double objects as complex PPs, with special attention to their properties when they occur with particles, as in *John sent Bob off a package*. The center of his analysis is that English postverbal particles are "unaccusative" P heads of small clause constituents. Deep structure PPs for double objects with particles therefore contain a series of small clauses, as in (26a). In the course of the derivation, the PP moves to the specifier of the higher small clause (SC$_2$ first and SC$_2$ next) and the P gets incorporated into the null copula element (the lower V in (26b)).

(26) a.   b.

```
        VP                                              VP
   ┌─────┴─────┐                                  ┌──────┴──────┐
   V          SC₁                                 V            SC₁
         ┌─────┴─────┐                                   ┌──────┴──────┐
                    VP                                                VP
               ┌─────┴─────┐                                    ┌──────┴──────┐
               V          SC₂                                   V            SC₂
               BE     ┌────┴────┐                             BE + Pⱼ  ┌──────┴──────┐
                               XP                                    PPᵢ            XP
                          ┌─────┴─────┐                          ┌────┴────┐   ┌─────┴─────┐
                          X          SC₃                        tⱼ       NP  X          SC₃
                         off     ┌────┴────┐                           Goal      ┌────┴────┐
                                NP         PP                          off      NP        tᵢ
                              Theme    ┌────┴────┐                            Theme
                                       P        NP
                                              Goal
```
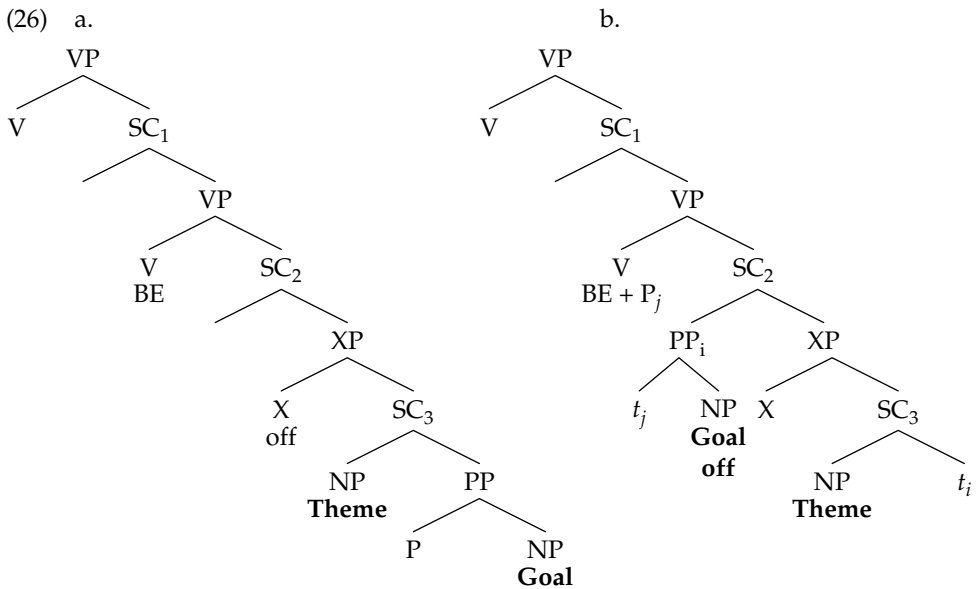
(adapted from Den Dikken 1995, 132)

Pesetsky (1995), however, points out some issues for the proposals that rely on a small clause structure for double object constructions. In his alternative, the relationship between the two objects is also mediated by a prepositional element but

the prepositional element is not heading a small clause.[6] Interestingly, in Pesetsky's structure, the prepositional element takes the Theme (rather than the Goal) argument as its complement. The null preposition subsequently incorporates into the verb, as in (27b). However, overt applicative realizations of incorporated Ps are generally homophonous with Goal rather than Theme prepositions (e.g., the Chinese *gei* 'to', discussed by Zhang 1990); this tendency is a bit surprising given the structures in (27a)–(27b)).

(27)   a.   b.
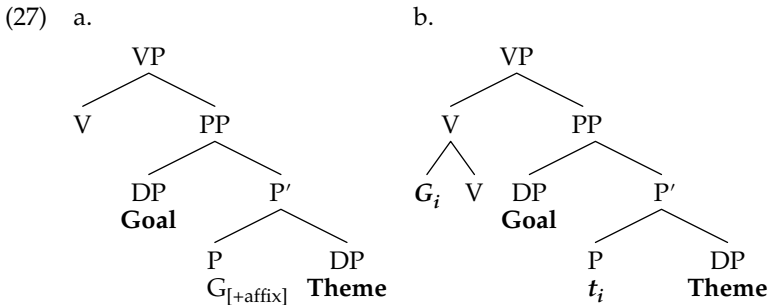
One of the problems Pesetsky points out for the small clause analysis involves binding. In particular, he points out that run-of-the-mill small clauses count as binding domains. By contrast, small clauses consisting of the two objects in a double object construction do not.[7] In (28a) the anaphor cannot be bound by an element outside the small clause containing it, but in (28b) such binding is possible.

(28)   a.   *The boys$_i$ made the girls think about *each other*$_i$.
       b.   *The boys*$_i$ gave the girls pictures of *each other*$_i$.

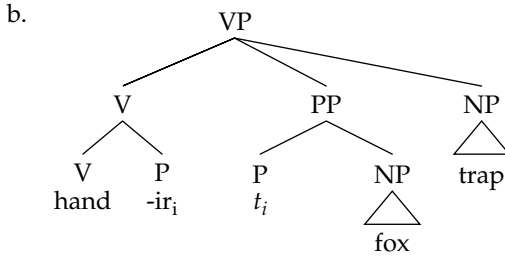   (Pesetsky 1995, 159–160)

2.2.3   Applicative structures

A number of analyses of double object constructions assimilate them to applicative constructions, even in languages with no overt applicative morphology. In these approaches, the applicative morpheme is present but can be null. Marantz (1993) extends the analysis of applicatives in Bantu languages to English double object constructions.[8] For Marantz, the null applicative morpheme is a verbal head and for Baker, Emonds, among others, it is a prepositional element instead. Baker's structure for a Chichewa applicative is given in (29b); the underlying P incorporates into V and surfaces as an overt applicative morpheme.

(29)   Chichewa
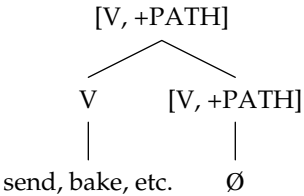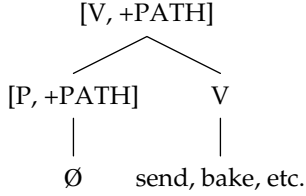   a.   Mbidzi   zi-na-perek-er-a   nkhandwe   msampha.
            zebras   SP-PAST-hand-TO-ASP   fox   trap
            'The zebras handed the fox the trap.'

                                                        (Baker 1988a, 229)

b.

```
                    VP
         ┌──────────┼──────────┐
         V          PP         NP
       ┌──┴──┐    ┌──┴──┐      △
       V     P    P     NP    trap
      hand  -ir_i t_i    △
                        fox
```
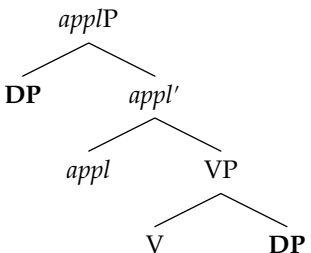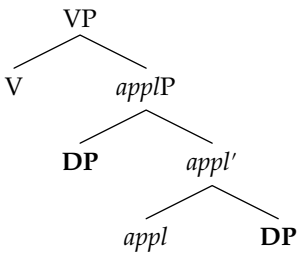
(adapted from Baker 1988a, 231)

According to Baker, an empty P cannot govern or assign case to its object, so this NP must receive case from some other source. He achieves this and explains many other derived direct object properties of promoted indirect objects by appealing to his general Government Transparency Corollary (Baker 1988a, 64), which states that if a head Y (here P) adjoins to a higher head Z (here V), then a phrase otherwise governed by Y becomes governed by Z. Since the complex V (V+P) in (29b) then governs the stranded NP, the latter is assigned accusative case and treated as a direct object. Incorporation and Government Transparency thus together account for the fact that deep oblique NPs can behave as surface direct objects. Baker's incorporation is supported by several intricate properties of the applicative systems he examines. Nonetheless, (29b) appears to have two serious weaknesses. First, the asymmetric c-command required for the paradigms of Barss and Lasnik (1986) is exactly the opposite of that in (26b), as observed in Emonds (1993), Marantz (1993), and Pesetsky (1995). Since the deep direct object asymmetrically c-commands the indirect object at the end of the derivation, the binding properties holding between double objects should be the opposite of what holds for English double objects, or at least the second "outer" NP should act like it c-commands the first. Second, Baker is left without a general device by which the deep or "demoted" direct objects in (29b) can acquire case, or at least "pass" the Case Filter.[9] Another issue with the structure in (29b) concerns the fact that overt applicative morphemes generally surface as suffixes across languages, as discussed recently by Georgala (2012). Baker (1988a; 1988b) derives applicatives by head movement of P into V. However, in a clear majority of well-motivated head movements that give rise to single words, such as noun incorporation and V-raising, a moved head becomes a prefix (not a suffix). This discrepancy in morpheme order within a V toward structures of the complex verbal structure of kind given in (30a) for representing applicatives, with the null applicative morpheme contributing some aspect of meaning (identified as +PATH below, following Emonds 1993). Assigning applicative suffixes to the category V also explains why languages fail to have parallel constructions in other types of phrasal projections; the complex V structure of (30a) but not the P-incorporation of (30b) accounts for the lack of applicative nouns or applicative adjectives, for example.

(30)   a.   b.

```
        [V, +PATH]                          [V, +PATH]
         /      \                            /      \
        V    [V, +PATH]        [P, +PATH]        V
        |         |                 |            |
   send, bake, etc.   Ø            Ø      send, bake, etc.
```

More recently, both overt and null applicative morphemes have been treated as occupying their own projection, an applicative head of an Applicative Phrase (see McGinnis 1998; 2001; Pylkkänen 2002; 2008; Jeong 2007; Cuervo 2003; Paul and Whitman 2010; Bowers 2010; Citko 2011a; 2011b; Kupula 2011; Georgala 2012; among many others). Since applicatives are treated separately in Applicatives, we refer the interested reader to that chapter (also to Polinsky 2005; Peterson 2007; and McGinnis 2008, for general overviews). Let us nevertheless mention one important distinction, due to Pylkkänen (2002), the distinction between high and low applicatives, as it will play an important role in the discussion of constraints on passive formation (and variation in this respect) in section 4.1 of this chapter. Pylkkänen shows that with respect to a number of diagnostics, different types of applicatives behave differently. These differences can be between applicatives in different languages or between different types of applicatives in the same language. The differences surface in contexts involving intransitive verbs, stative verbs, and depictive modifiers. English applicatives are impossible in all three contexts: (31a) shows that an applied argument (the indirect object) cannot be added to an intransitive verb; this example cannot be interpreted as meaning that Mary ran for the benefit of John. (31b) shows that the applied argument cannot be added to a stative verb, and (31c) shows that it cannot be modified by a depictive.

(31)   a.   *Mary ran John.
       b.   *Mary held John the door.
       c.   *Mary showed *John* a movie *interested*.

In many Bantu languages, on the other hand, the equivalents of all three are perfectly grammatical. Pylkkänen derives these differences from the difference in the position of the applicative head and proposes that there are two types of applicatives; a high applicative head takes a VP as its complement and the indirect object as its specifier, as shown in (32a). A low applicative takes the indirect object as its specifier and the direct one as its complement, as shown in (32b). Nevertheless, in both types, the relative relationship between the two objects is the same, with the indirect object c-commanding the direct one.

(32)   a.   high applicative   b.   low applicative

```
          applP                               VP
          /    \                             /    \
        DP     appl'                        V    applP
              /    \                              /    \
           appl    VP                           DP    appl'
                  /  \                                /    \
                 V   DP                            appl    DP
```

Pylkkänen further shows that this difference in structure is also reflected in the semantic interpretation of the two types of applicatives; a low applicative head denotes transfer of possession, whereas a high one is compatible with a wider range of interpretations (Benefactive, Instrumental, Malefactive, etc.). English double object constructions involve a low applicative structure and the ungrammaticality of the examples in (31a)–(31c) follow from this structure. First, since low applicatives describe transfer of possession between two internal arguments, they are not possible with intransitive verbs (which lack one argument). Second, low applicatives are incompatible with verbs that describe states (rather than events) because such verbs are lexically incompatible with the idea of transfer. And third, low applicatives are incompatible with depictives modifying indirect objects because the two are of incompatible semantic types.

The idea that double object constructions involve an applicative structure is not without its critics. For example, Larson (2010) points out that dissociating the indirect object from the verb (in Pylkkänen's low applicative structure the indirect object is not related to the verb) incorrectly predicts that (33a) should entail (33b).

(33) a.   John wrote that letter and Bill gave Mary that letter.
      b.   John wrote Mary that letter.

<div align="right">(Larson 2010, 702)</div>

Given Pylkkänen's low applicative semantics, the interpretation of both examples involves a possession relation between Mary and the letter, and in neither is there any relationship between Mary and the event of writing the letter. Georgala (2012) also points out that the low applicative structure makes incorrect morphological predictions regarding the ordering of the applicative morpheme relative to the verb.

3   Dative alternation

3.1   Transformational versus lexicalist approaches

This section focuses on what is perhaps the most exciting ongoing debate in the literature on double object constructions, going back to the early work on the topic (see Fillmore 1965), involving the relationship between the double object and PP dative constructions. The examples in (34a)–(34b) exemplify Fillmore's (1965) *to*-dative alternation and those in (35a)–(35b) his *for*-dative pattern.

(34) a.   Mary sent a present to each family member.
      b.   Mary sent each family member a present.

(35) a.   Carolyn baked that cake for my children.
      b.   Carolyn baked my children that cake.

This alternation is referred to as dative alternation, and the simple question at the core of the debate is whether the two are transformationally related or not. The dative shift approaches, which we outline in section 3.2 below, take the double object constructions to be derived from the PP dative constructions. Much early transformational work assumed that the dative alternation resulted from a movement rule, based on the degree of regularity of its operation and the synonymy of

the two alternating structures. A typical treatment (in the introductory text of Akmajian and Heny 1975, 183–186, 220) proposes the following rule of Dative Movement (see Herriman 1995, ch. 2 for a survey of earlier traditional and generative analyses of indirect objects).

(36) **Structural description:** V   NP   {to, for}   NP
                                    1   2   3   4
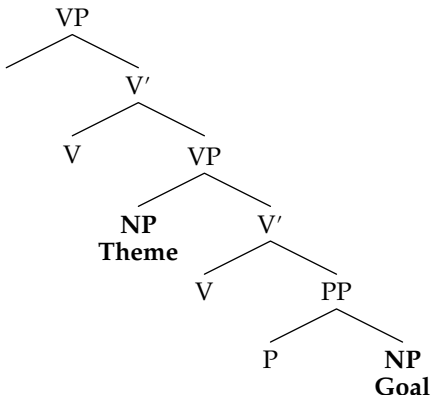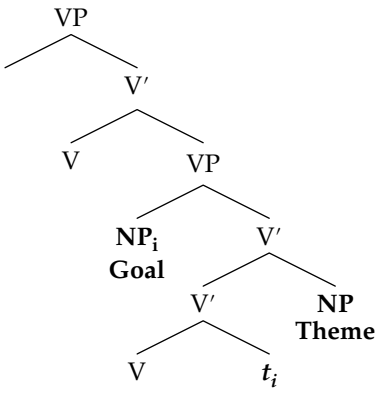   **Structural change:**   1+4   2   Ø   Ø

The theory of Lexical Functional Grammar (Kaplan and Bresnan 1982) proposes a similar "surface" analysis for double object verbs. Two distinct sets of grammatical functions are assigned to the unified predicate argument structure of Agent, Theme, and Goal:

(37) a.   V (SUBJ) (OBJ) (OBJ)
      b.   V (SUBJ) (OBJ) (to OBJ)

Alternatively, it has been argued that the English double object construction is not derived by transformation because of the differences between the two constructions (differences in meaning, productivity of the alternation, to be discussed in sections 3.5 and 3.5, respectively). Rather, double object structures are directly selected by lexical entries of verbs. The two NPs are then differently interpreted in the semantic component. Oehrle's (1976) dissertation is the first detailed argumentation that dative pairs result from a lexical alternation.

3.2   Dative shift

One of the most influential generative treatments of dative shift is that of Larson 1988, which we discussed in section 2.2 above. The two structures are repeated below. The underlying structure that serves as input to dative shift is given in (38a). Recall that Larson analogizes dative shift to a passive transformation; case absorption forces the Goal DP to undergo movement (for case related reasons). The result is (38b).

(38) a.   b.

(adapted from Larson 1988, 353)

The Goal argument becomes a derived VP subject and the Theme gets demoted to an adjunct status. In this respect, his analysis reflects the common insight in Relational Grammar accounts, where passive and dative shift are also taken to be a result of the same fundamental operation, 2-1 or 3-2 promotion.

Many of Larson's arguments in favor of the underlying structure in (38a) come from standard constituency tests. For example, Larson (1988, 340) points to the existence of discontinuous idioms in (39a)–(39c), also discussed by Emonds (1972), as an argument in favor of the structure in (38a), in which the verb forms a constituent with the PP indirect object, to the exclusion of the direct object.

(39) a.   send X to the showers
      b.   take X to the cleaners/to task/into consideration
      c.   throw X to the wolves

The facts concerning idioms are somewhat more complicated. Larson acknowledges the existence of idioms of the kind given in (40a)–(40c) below, which involve the verb and its Theme argument to the exclusion of the Goal PP argument (see also Jackendoff 1990; Richards 2001; Harley 2002; Bruening 2010b; among others). These are problematic for Larson's structure as the idiomatic parts do not seem to form a constituent.

(40) a.   give one's all to X
      b.   give hell to X
      c.   give the boot to

Larson suggests that as these idioms do not involve the verb, as the idiomatic meaning is preserved with other verbs (such as *get*). However, the range of verbs that are compatible with the idiomatic reading of *boot* is quite limited, which leads Richards (2001) to attribute the systematic alternation between idiomatic readings with *give* and *get* and the parallelism between *give X the boot/flak/the creep* and *X got the boot/flak/the creeps* to the following lexical decomposition: *get* is treated as *cause to become* and *give* as *cause to have*. In both cases, the idiomatic part is HAVE + *the boot/flak/the creeps*.[10]

Harley (2002) points out another issue for Larson's argument; the fact that idiom parts do not undergo dative shift:

(41) a.   *Lasorda sent the showers his starting pitcher.
      b.   *Felix threw the wolves Oscar.

(Harley 2002, 37)

This is not a general prohibition against moving parts of an idiom, as shown by the well-formedness of constructions like *The headway was made* or *The cat is likely to be out of the closet*.

C-command and coordination also point toward the structure in (38a). Larson (1988) shows that PP datives exhibit asymmetries indicative of the direct object c-commanding the indirect one, as shown below for a subset of the Barss and Lasnik c-command tests:

(42) a.   I presented/showed *Mary*$_i$ to *herself*$_i$.
      b.   *I presented/showed *herself*$_i$ to *Mary*$_i$.

(43) a. I gave/sent *every$_i$ check* to *its$_i$ owner*.
      b. $^{??}$I gave/sent *his$_i$ paycheck* to *every$_i$ worker*.

(44) a. I sent *no presents* to *any of the children*.
      b. *I sent *any of the packages* to *none of the children*.

<div align="right">(Larson 1988, 338)</div>

And (45) shows that the constituent consisting of both the direct object and the indirect object can be coordinated (with a like constituent). However, as pointed out by Jackendoff (1990), the coordination facts are compatible with coordination of larger chunks coupled with ellipsis.[11]

(45) John sent a card to Bill and a present to Jim.

A quite different implementation of the dative shift operation comes from the work of Emonds (Emonds 1972; 1993). Emonds (1993) reworks his (1972) proposal that "Dative Movement" is a structure-preserving transformational interchange of a direct and indirect object (i.e., "3 to 2 advancement" accompanied by demotion of the direct object).[12] Emonds differs from others in that for him both the shifted and unshifted variant contains an empty preposition (marked as [P, +PATH]). This null P is realized as an overt preposition only in the absence of dative shift.

(46) a.

```
                    V′
         ┌──────────┼──────────┐
         V         NPᵢ         PP
         │          │       ┌───┴───┐
       send        …    [P, PATH]  NPⱼ
                                    │
                                    …
```

      b.

```
                    V′
         ┌──────────┼──────────┐
         V         NPⱼ         PPⱼ
         │          │       ┌───┴───┐
       send        …    [P, PATH]  NPᵢ
                             │       │
                             Ø       …
```

This structure-preserving interchange of objects accounts for the synonymy of the dative alternations and the cross-linguistic similarity between these alternations and applicative constructions. While the analysis does not decide issues about proper levels for case assignment, it provides two case assigners for two adjacent NPs. The analysis promotes indirect objects and thus constitutes a basis for explaining their direct object behavior. Finally, the structures in (46a)–(46b) provide

asymmetric c-command of the second NP by the first, in both shifted and unshifted sequences, and thus account for the Barss and Lasnik (1986) paradigms. In this account, the underlying PP configuration in (46a) is taken to universally define an indirect object, independently of a direct object and the category of the head. Late or PF insertion of Ps such as *to* and *for* in the unshifted version of (46a) is obligatory because of a general prohibition against unlicensed empty categories. Less straightforward is the obligatory licensing of an empty P in (only) the shifted or "interchanged" derivation. Emonds suggests that an empty head, for example P in (46a), is coindexed with its sister in underlying structure. The structure-preserving *interchange* of NPs, while respecting his Projection Principle, then yields the derived configuration (46b), where *i* is the index of the deep direct object and *j* of the deep indirect object. His claim is that no preposition can be inserted "late" in this shifted derivation because a general condition on PF-insertion of a head requires non-distinct indices between heads and complements.[13]

The resulting coindexed structure (46b) also accounts for the so-called Restriction on A'-Extraction (which will be the focus of section 4.2). If the NP_j in (46b) subsequently moves to an A'-position, *both* its trace *and* the empty-headed PP_j are bound by the same operator. This configuration violates Koopman and Sportiche's (1983) Bijection Principle prohibiting an A'-constituent from locally binding two empty categories (here NP_j and $[P, PATH]_j$).

A yet different version of dative shift comes from the work of Den Dikken (Den Dikken 1995; 2006; 2007). We saw Den Dikken's (1995) structure (and derivation) in section 2.2.2. Den Dikken (2006) is a more streamlined version; the relationship between the two objects is mediated by an abstract functional element that he refers to as a RELATOR, projecting its own phrase, the Relator Phrase. The RELATOR is the head of the small clause (small clauses being tenseless Relator Phrases in this approach). The empty preposition incorporates into the verb, after first adjoining to the RELATOR head.

(47) a. V [$_{RP}$ THEME [RELATOR [$_{PP}$ P GOAL/RECIPIENT]]]
      b. V +P [$_{PP}$ t_P GOAL/RECIPIENT]$_i$ [$_{RP}$ THEME [RELATOR t_i]]]

<div align="right">(Den Dikken 2006, 107)</div>

3.3 Status of the "promoted" object

The dative shift approaches reviewed in the previous section raise the question of whether the promoted object behaves like a standard (i.e., non-promoted) direct object or not. In Relational Grammar (RG) terms, the promotion is described as "3 to 2 advancement," where 2 indicates a direct object. And indeed, with respect to some properties the promoted indirect object does behave like a direct object. For example, it can passivize, as shown in (48a). For some speakers (and in some languages), however, the lower object can passivize as well; we will come back to this issue in section 4.1 below. However, the promoted object resists A-bar-movement (as shown in (48b). This so-called A-bar Restriction will be the topic of section 4.2.

(48) a. *John$_i$* was given t_i a book.
      b. *$^*Who_i$* did John give t_i a book?

Haspelmath (2015) points out that framing the discussion in terms of direct object properties (or lack thereof) associated with the promoted indirect object might not be very illuminating as different properties lead to different conclusions. And Postal (2010) discusses a number of concrete differences between true direct objects and promoted indirect objects. Even though promoted objects can passivize, with respect to other diagnostics, however, they do not pattern with direct objects. To illustrate with a small subset of the properties Postal discusses, promoted indirect objects do not allow middles (49a), do not allow *tough*-movement (49b) and cannot incorporate (49c).

(49) a. *Children teach French easily. (with the interpretation 'It is easy to teach children French')

(Postal 2010: 81, citing Everaert 1990)

      b. Those people will be easy to send those flowers.

(Postal 2010, 79, citing Farrell 1994)

      c. *kid telling of stories by teachers.

(Postal 2010: 82, citing Baker 1997)

(49c) is the restriction, observed in Baker (1988a, 278–279; 1988b), that the head indirect object noun in benefactive applicatives cannot "incorporate" into a governing verb (in contrast to a deep direct object noun). In many languages with productive dative alternations, an overt "applicative" verbal affix accompanies the advancement to direct object. Marantz (1982) proposes that this situation is typical: when verbs have supplementary overt morphology corresponding to an oblique argument NP, that NP and not the usual direct object behaves like a surface direct object. Baker (1988a, section 5.3.1) refers to this cross-linguistic pattern as Marantz's Generalization.

English is poor in diagnostics that syntactically distinguish a surface direct object among bare NPs. However, some can be constructed. For example, Emonds (1972) tests the PP-like nature of the direct object in a double object construction by its interaction with intransitive prepositions (particles). Intransitive prepositions can follow a direct object, as shown in (50a)–(50b), but not a PP, as shown in (51a)–(51b):

(50) a. The secretary sent a memo *out* to the committee.
      b. Bill fixed a drink *up* for John at the party.

(51) a. *The secretary sent a memo to the committee *out*.
      b. *Bill fixed a drink for John *up* at the party.

For speakers who allow a particle at all within a double object construction, the first or promoted NP behaves like a direct object in (52a)–(52b) while the second NP behaves like a PP, as seen by the ungrammaticality of the particles in (53a)–(53b):

(52) a. The secretary sent the committee *out* a memo.
      b. Bill fixed John *up* a drink at the party.

(53) a. *The secretary sent the committee a memo *out*.
      b. *Bill fixed John a drink *up* at the party.

The pattern is considered to have quite different implications in analyses that group double objects into SCs, such as Kayne (1984) and Den Dikken (1995, ch. 3).

A second test distinguishing English derived direct objects from demoted NPs (chômeurs) involves shifted quantifiers. Chung (1976, 81–82) observes that in Indonesian, non-adjacent "floated" quantifiers are fully acceptable as modifiers of subjects and direct objects, but not as modifiers of PPs or demoted NPs. The same (admittedly rather weak) contrast holds in English, where the test concerns not quantifiers at the end of the clause as in Indonesian, but rather quantifiers shifted just to the right of the NP they modify. These NPs with floating modifiers can be either direct objects (54a) or promoted indirect objects (54b), but they cannot be PPs, as seen in (54c)–(54d):

(54) a. We sent the books *all* {by mail/to that man}.
      b. Mary {brought/sent} the boys {*each/both*} a present.
      c. We sent a refund to those men (^{??}*all*) by mail.
      d. I fixed those drinks for the girls (^{??}*both*) with ice.

3.4 Productivity

Another question that has featured prominently in the debates on double object constructions concerns the productivity of the dative alternation. This question arises irrespective of how the dative alternation is captured. The question is simply how to account for the fact that some verbs participate in this alternation whereas others do not. Compared with similar early transformational rules such as passive formation, the range of conditions on English dative shift suggests to many that it cannot be a regular syntactic formation. Not all *to*-datives allow double object variants, as shown by the contrast between the verbs in (55a)–(55b), which do allow both variants, and the ones in (56a)–(56b), which do not:[14]

(55) a. Dr. Smith {*gave/sent/showed*} his collection to the library.
      b. Dr. Smith {*gave/sent/showed*} the library his collection.

(56) a. Dr. Smith {*donated/transferred/showed off*} his collection to the library.
      b. *Dr. Smith {*donated/transferred/showed off*} the library his collection.

There have been many accounts of this difference; relying on semantic, etymological, morphological, phonological constraints (or some combination thereof), a subset of which is given in (57). The list is not exhaustive; it is meant to give the reader the flavor of the complexity of the issue.

(57) a. Verbs that do not convey transfer of possession do not have double object variants.
      b. Verbs with Latinate (as opposed to Germanic) stems do not have double object constructions.
      c. Verbs with {multisyllabic/multifeet} stems do not have double object variants.

d. Verb stems whose only stress is initial have double object variants.
e. Verb stems lacking secondary stress have double object variants.

Alternatively, while most English double object constructions allow PP dative para-phrases, a disparate collection of verbs taking double objects does not permit them (e.g., *allow, ask, bet, charge, cost, deny, envy, fine, forgive, pardon, spare*):

(58) a. This watch *cost* Mary fifty dollars.
      b. The manager *denied* the students a chance to explain.

(59) a. *This watch *cost* fifty dollars {to/for} Mary.
      b. *The manager *denied* a chance to explain {to/for} the students.

Based on Green (1974), Pinker (1989) and Gropen *et al*. (1989) divide verbs into two groups (with the ones listed in (60) participating in the dative alternation and the ones in (61) not).[15] We provide representative examples of both types and refer the interested reader to these works for a comprehensive list and further discussion.

(60) a. verbs of giving (*give, sell*)
      b. verbs of instantaneous causation of ballistic motion (*throw, kick*)
      c. verbs of sending (*send, mail*)
      d. verbs of continuous causation of accompanied motion in a deictically specified direction (*bring, take*)
      e. verbs of future having (*promise, leave*)
      f. verbs of instrument of communication (*email, fax*)
      g. verbs of creation (*bake, build*)
      h. verbs of obtaining (*buy, find*)
                                          (see Gropen et al. 1989, 243–244)

(61) a. verbs of fulfilling (*present, credit*)
      b. verbs of continuous causation of accompanied motion in some manner (*pull, push*)
      c. verbs of manner of speaking (*shout, scream*)
      d. propositional attitude verbs (*say, claim*)
      e. verbs of choosing (*choose, select,*)
                                          (see Gropen et al. 1989, 244)

Gropen et al. (1989) point out that not all of the differences can be attributed to the so-called morphonological constraint, on which monosyllabic verbs with Ger-manic/native stems allow double object variants and polysyllabic Latinate ones do not. While verbs of giving (*donate* versus *give*), type of communication (*tell* versus *explain*), creation (*make* versus *create*), verbs of obtaining (*get* versus *obtain*) fall under the constraint, exceptions include verbs of instrument of communication (*email, radio*), which are polysyllabic and allow double object frames) and verbs of future having (*promise, bequeath, assign, prescribe*), which are Latinate and polysyllabic, and yet are also perfectly fine in a double object frame.

 Pinker's (1989) main concern is how children are able to learn the dative alterna-tion without access to negative evidence. That is, the child must learn without being told which verbs are unavailable for the double object construction. For example,

how does the learner realize that *give* is acceptable in this context, but *donate* is (usually) not, although the two verbs have very similar meanings? Pinker proposes a "Grammatically Relevant Subsystem" hypothesis, arguing that "there is a set of semantic elements and relations that is much smaller than the set of cognitively available and culturally salient distinctions, and verb meanings are organized around them" (Pinker 1989, 166). Linguistic processes, including lexical alternations, are sensitive only to members of this set. He then develops a set of relevant verbal features and uses linking rules to map certain groupings of features onto certain syntactic structures. These features are detailed enough to distinguish between dativizable verbs and similar verbs that do not display the dative alternation (see Pinker 1989, ch. 5). Although Pinker's analysis is lexicalist in the sense that he assumes without argument that "Dative Movement" is a lexical alternation, nothing in his theory precludes applying it to a transformational theory of datives.

Jackendoff (1990) is another theorist who believes, like Oehrle, that a lack of full productivity in the dative alternation supports a purely lexical account of double objects. He reserves transformations for more transparently regular alternations such as passive. He elaborates on some of Green's ideas for verb classes, claiming that the semantic facts of double objects and their verbs militate against a transformational analysis, at least for English. For Jackendoff, generalizations about theta-roles do not explain the difference between verbs that allow double objects and those that do not. Unlike Pinker, he finds no plausible contrast between the roles assigned by *give* and *donate*, which both appear to assign "beneficiary" and "goal" roles to their complements. He feels rather that the inherent meanings of verbs determine whether there is a dative alternation. For example, verbs of creation or preparation such as *sing* or *bake* allow double objects, while benefactive NPs with other verbs such as *copy* or *eat* occur only in *for*-phrases:

(62) a. Enrico {sang/copied} an aria for Luisa.
      b. Enrico {sang/*copied} Luisa an aria.

(63) a. Susan {baked/ate} some vegetables for her mother.
      b. Susan {baked/*ate} her mother some vegetables.

Along similar lines, Jackendoff (1990, 449) favors a lexicalist account for a generalization of Pinker (1989), whereby motion verbs that "imply influence of the Agent continuing throughout the Theme's trajectory" do not appear with double objects:

(64) a. He {dragged/moved/pushed} the material to Bill.
      b. *He {dragged/moved/pushed} Bill the material.

(65) a. He {dropped/kicked/threw} the material to Bill.
      b. He {dropped/kicked/threw} Bill the material.

An adequate analysis should probably relate this distinction to whether the P indicates an actual spatial trajectory, as in (64a)–(64b), or whether it simply introduces a third NP argument, as in (65a)–(65b).

A different way to solve the problem of non-productivity is to adopt some variant of Pesetsky's (1995, sect. 5.1.3) null P incorporation and derive the constraints on

double objects either from the constraints on incorporation or the properties of the null prepositional element. On one level, this proposal moves the problem of non-productivity into the lexicon, but this is where both morpheme lists and null morphemes are known to play a role (Pesetsky 1995, 128–129). In Pesetsky's analysis, double object constructions involve incorporation of a null preposition G. The constraints with productivity will thus have to do with the constraints on the incorporation of this null preposition. For example, this preposition would be incompatible with certain verbs, like *manner of speaking* verbs. Recall that Gropen et al. (1989, 243–245) list some verb classes that do not occur with double NPs even though they satisfy the morphophonological constraint. Two types are "manner of speaking" verbs (*scream*, *whisper*, *yell*) and verbs of continuously caused motion (*drag*, *move*, *push*). Indirect objects of such verbs are always expressed in *to*-phrases. In these cases, following Larson (1988, sect. 5; see also next paragraph), it may well be that the P's independent theta-role assigning content causes it to be present throughout the derivation. In the terms of Emonds (1993) such Ps are lexicalized in deep structure, which blocks their object NP from advancing to direct object. Pesetsky (1995) and Den Dikken (1995) propose a similar account in terms of a lexical P that assigns a theta-role characterized by "continuous imparting of force." As a reviewer notes, perhaps the term "indirect object" is simply not appropriate for objects of these contentful Ps.

For Larson, constraints on productivity also follow from the properties of the prepositional element. In his analysis, *to* is contentful and is associated with the meaning of "Goal of Motion along some path." The same specification is part of the meaning associated with the verb *give*. This means that *to* can be absorbed/suppressed without violating recoverability of deletion since its meaning is redundantly specified in the meaning of the verb, which in turn means it can be recovered from it. On this account, the verbs that do not allow dative shift are the ones that do not have transfer to a Goal as part of their lexical make-up. Verb particle constructions offer supporting evidence: *give away/out* no longer describe transfer of possession, and they also do not allow double object variants:

(66) a. John gave Mary a book.
      b. *John gave Mary out/away a book.

Particles might play a more general role in explaining the alternation. In this regard, Fraser's (1974, 13–15) discussion of which verbs combine with postverbal particles appears relevant as he concludes that "Surprisingly enough, it is the phonological shape of a verb that determines to a large extent whether or not it can combine with a particle … the majority of verbs occurring with particles are monosyllabic and the remainder are made up primarily of bi-syllabic words which are initially stressed." These are *also* the factors that have been implicated in explaining which classes of English verbs participate in the dative alternation. If double object frame is limited to verbs whose only stress is initial (see (57d) above), relatively few double object verbs have to be listed separately. For the *to*-dative alternation, the following verbs with some non-initial stress are listed in Herriman (1995, 61, 104): *accord*, *administer*, *advance*, *afford*, *allocate*, *allot*, *allow*, *apportion*, *assign*, *assure*, *award*, *begrudge*, *bequeath*, *concede*, *deliver*, *deny*, *extend*, *forbid*, *permit*, *prohibit*, *recommend*, *refund*, *refuse*, *reimburse*, *remit*, *repay*, *return*, *telegraph*, *telephone*, and *vouchsafe*. For the *for*-dative, she

lists (1995, 124, 146) *design*, *embroider*, *ensure*, *furnish*, *guarantee*, *occasion*, *prepare*, *prescribe*, *procure*, *provide*, *purchase*, *reserve*, and *secure*. However, most of these "exceptions" can be analyzed as containing a prefix and an initially stressed stem. In standard American speech, verbs that carry secondary or non-initial stress are usually incompatible with a dative alternation. This suggests that perhaps the relevant factor is the lack of secondary stress on the verb stem (see (57e) above).[16]

More recently, Coppock (2009) devises a number of careful experiments to distinguish between the types of hypotheses listed in (57), more specifically between the prosodic weight hypothesis (i.e., only verbs with one metrical foot allow double objects), the two lexicon hypothesis (i.e., only verbs belonging to the Germanic (as opposed to Latinate) lexicon allow double objects), the formality hypothesis (i.e., verbs that are compatible with double objects tend to be less formal). Since constructed examples tend to conflate different factors, such as number of syllables and number of feet or Germanic versus Latinate roots and formality level, she uses nonce verbs (following Gropen et al. 1989 in this respect). To illustrate briefly, in one experiment (Experiment 2, discussed on pages 81–90), she keeps the number of syllables constant but varies the number of feet, contrasting nonce verbs like *'feffam* (one foot, stress on the first syllable) with ones like *fe'flame* (two feet, stress on the second syllable) and finds no effect of prosodic weight.[17] She also finds no contrast between Germanic and Latinate roots that is not tied to the number of syllables. Formality level was also shown *not* to be a factor by her experimental results.

A very different view on the productive of the dative alternation is taken by Bresnan (2007), Bresnan et al. (2007), Bresnan and Nikitina (2009), who argue against the approaches that derive the constraints on the dative alternation from the meaning differences, and suggest a more probabilistic approach instead. If change of possession correlates with a double object frame and change of location/movement to a goal correlates with PP dative frame, ditransitive constructions that do *not* indicate transfer of location are predicted to be impossible in a PP dative frame and ditransitive constructions that do not indicate movement to a location are going to be impossible in a dative PP frame. The two are illustrated in (67a)–(67b), respectively.

(67) a. *That movie gave the creeps to me.
      b. *I carried/pulled/pushed/schlepped/lowered/hauled John the box.

(Bresnan et al. 2007, 71)

Bresnan et al. (2007), based on the fact that examples of this general sort are attested in the corpus (see (68a)–(98b) below), argues that these are only preferences that can be overridden by independent factors, such as discourse prominence (given precedes non-given), weight/heavy (light constituents come before heavy constituents), pronominal status (pronouns come before non-pronouns), animacy (animates come before inanimates) and definiteness (definites come before indefinites). They thus conclude that "we cannot predict the dative alternation from meaning alone" (page 75).

(68) a. This story is designed to *give the creeps to people who hate spiders* but is not true.
      b. This life-sized prop will *give the creeps to just about anyone*!

(Bresnan et al. 2007, 72)

They take it to mean that there are no deep syntactic differences between double object and PP dative frames. Bruening (2010a), however, takes issue with this conclusion, based on the syntactic behavior of the examples of the kind given in (68a)–(68b) above. He argues that these counterexamples are only apparent and that they are in fact double objects in disguise, as they pattern with double object constructions in a number of respects (e.g., lack of inverse scope).

3.5   Meaning differences

A common intuition, going back at least to Green (1974) and Oehrle (1976) is that the double object and ditransitive PP constructions are *not* equivalent in meaning and, consequently, that the restrictions on productivity discussed in the previous section can be (at least partially) attributed to the differences in meaning. On this view, a double object frame implies successful transfer of possession whereas a PP dative a change of location. Green (1974, 157), for example, claims that learning necessarily occurs for using (69a) felicitously, but not for (69b). Similarly, Pinker (1989) claims that possession must change in (70a) but not necessarily in (70b):

(69)   a.   Mary taught John linguistics.
       b.   Mary taught linguistics to John.

(70)   a.   John threw Bill the book.
       b.   John threw the book to Bill.

For Emonds (1993, 227–228), on the other hand, such examples do not differ in truth values.[18,19] This is also the conclusion of Bresnan et al. (2007), whose work we discussed in the previous section (in a slightly different context).

  Others (such as Pinker 1989; Krifka 2004; among others) point out that the meaning component that is crucial to a double object frame is *caused possession* rather than *transfer of possession.* In examples like *give X a headache* or *give X an idea*, it is clear that there is no literal or metaphorical transfer of possession but there is a component of caused possession. However, Rappaport and Levin (2008) argue against such uniform treatments of the difference between the double object and the PP dative frame, where by uniform we mean that all double object constructions are associated with a single meaning (be it *caused possession* or *transfer of possession*) and all PP datives are associated with another meaning. Instead, they advocate what they dub a *verb-sensitive* approach to the meaning differences between the two frames, on which some verbs do indeed have two meanings (correlating with the difference between double object and PP dative frames) but others maintain a single meaning across the two frames. The verb *give* always expresses caused possession (even in the PP dative variant) and lacks a path component. They point out, for example, that if *give* had a path component in the PP dative variant, the example in (71), in which the path is expressed overtly, should be grammatical, contrary to fact:

(71)   *Josie gave/handed the ball from Marla (to Bill).

                                                      (Rappaport and Levin 2008, 139)

In this respect, *give* contrasts with verbs like *throw, kick, send*, or *ship*, which do have a path component, expressed overtly below:

(72) a. Jill threw/kicked the ball from home plate to third base.
     b. I sent/shipped the bicycle from my house at the beach to my house in the mountains.

<div align="right">(Rappaport and Levin 2008, 136)</div>

Rappaport and Levin also point out that, depending on the verb, the successful transfer can be present *irrespective* of the syntactic frame and in both variants it is equally easily defeasible (see also Krifka 2004).

4   Constraints on movement

4.1   Symmetric versus asymmetric passives

In this section, we turn to the behavior of the two objects with respect to passivization, more specifically to the issue of which of the two objects in a double object construction can undergo passive movement. Passives in which either object can passivize are commonly referred to *symmetric passives* and passives in which only one can as *asymmetric passives* (see Baker 1988a; Bresnan and Moshi 1990; Woolford 1993; McGinnis 1998; 2001; Citko 2011a; among many others).[20]

On the asymmetric approaches to double object constructions, a variety of which we defended in section 2.2, the asymmetric passive in which the higher (i.e., the indirect) object is the only one that can passivize is the expected pattern given standard locality considerations; simply put, it is the one closer to the subject position, identified as the specifier of TP in (73).

(73)
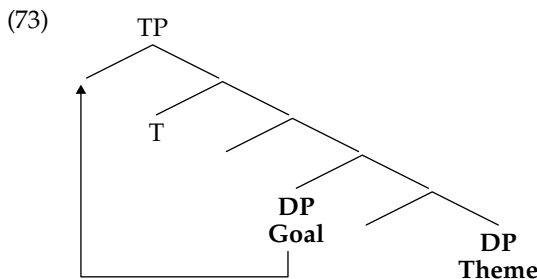
This is what accounts for the following contrast:

(74) a. *John$_i$* was offered t_i a job.
     b. **A job$_i$* was offered John t_i.

Logically speaking, another asymmetric pattern is possible; the pattern in which only one object can passivize but it is the direct object instead. This is quite common, typical in languages that mark indirect objects with inherent (dative) case.

We illustrate below with examples from Polish, representative of this class of languages (see Dziwirek 1994; Citko 2011a; 2011b for further discussion of Polish double objects and their passivization patterns):

(75) a. *Maria*   poleciła   Janowi   książkę.
          Maria.NOM   recommended Jan.DAT book.ACC
          'Maria recommended a book to Jan.'

      b. *Książka$_i$*   została   polecona   (Janowi) t_i przez Marię.
          book.NOM   became.3FEM recommended Jan.DAT   by   Maria
          'The book was recommended to Jan by Maria.'

      c. *Jan$_i$*   został   polecony t_i książkę   przez   Marię.
          Jan.NOM became.3MASC recommended book.ACC by   Maria
          'John was recommended a book by Maria.'

Symmetric passives, in which either object can passivize, are known to be possible in languages like British English (and for some dialects and/or speakers of American English), Norwegian, Icelandic, among others:[21]

(76) English
      a. *John$_i$* was given t_i a book.
      b. *A book$_i$* was given John t_i.

(77) Norwegian
      a. Jon   ble   gitt   boken.
          John   was   given book.DEF
          'John was given the book.'
      b. Boken   ble   gitt   Jon.
          book.DEF was   given John
          'The book was given John.'
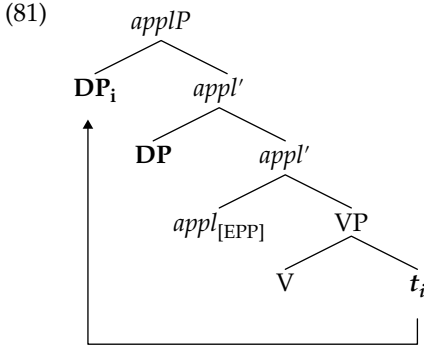   (adapted from Holmberg and Platzack 1995, 215)

(78) Icelandic
      a. Jóni   var   gefin   bókin.
          John.DAT was   given book.NOM
          'John was given the book'
      b. Bókin   var   gefin   Jóni.
          book.NOM was   given John.DAT
          'The book was given John.'
                                               (Holmberg and Platzack 1995, 189)

The contrast between languages (or dialects) with symmetric passives and those with asymmetric passives is widely discussed and perhaps best known from the literature on Bantu languages. In this group of languages, oftentimes the contrast is not between one language being symmetric and another one asymmetric, but, rather, between one type of applicative being symmetric and another one asymmetric (see Kimenyi 1980; Woolford 1993; Marantz 1993; Ngonyani 1996; McGinnis 2001; Doggett 2004; and the references therein for further discussion). For example, in Swahili locative applicatives are symmetric whereas benefactive and goal ones are asymmetric.

There is some variation regarding the acceptability of direct object passives in American English double object constructions. While the judgments in (74a)–(74b) are the ones perhaps most often reported in the literature, some speakers also allow passivization of the lower (direct) object, as illustrated below. The possibility of passivizing either object was already reported in the early literature on the topic (see Fillmore (1965), Emonds (1972), Lees (1963) and Chomsky (1955), for example).

(79)   a.   *Several books* were given him by the teacher.

(Postal 2010, 52, citing Chomsky 1955)

      b.   A letter was given 'im/*HIM by Mary.

(Larson 1988, 364)

Note that in all of them the (intervening) indirect object is a pronoun, which suggests, as noted by Oehrle (also Larson 1988) that the possibility to passivize the direct object could be attributed to the weak nature of the (pronominal) indirect object (and the possibility to cliticize it).

Some of the existing accounts of symmetric passivization patterns (be it in English or other languages) link it to the availability of word order in which the relative order of the two objects is reversed (see Ura 1996; Anagnostopoulou 2003; Doggett 2004, among others). Examples of such "alternative double object constructions" from dialects of British English, more recently discussed by Haddican (2010), are given in (80).

(80)   a.   I gave *it him*.

(Gast 2007, 31)

      b.   She gave *a book the man*.

(Hughes and Trudgill 1979, 21)

However, this correlation does not hold up to cross-linguistic scrutiny. Doggett (2004), for example, points out that Norwegian and Swedish are counterexamples in that they allow symmetric passives but do not allow both orders. Instead, they only allow one ordering of the two objects, with the indirect object preceding the direct one.

Yet other accounts capitalize on movement of the direct object over the indirect object to a position in which it is the closer target for passivization (see McGinnis 2001 and Anagnostopoulou 2003 for representative examples). For both of them, the ability for the direct object to move over the indirect one is what is responsible for symmetric passive formation. Anagnostopoulou (2003) proposes a parameter that allows the direct object to move to the specifier of the applicative little v, generated above VP. McGinnis (2001) correlates the availability of symmetric passives with the availability of a high applicative structure in a language (or for certain type of applicatives). The gist of McGinnis' proposal is that the high applicative structure allows movement of the direct object to the external specifier of the applicative head, which McGinnis attributes to the high applicative head being a phase head (which "endows" it with an EPP feature responsible for this movement). From this position, the direct object is closer than the indirect object to the subject position. To explain what allows the direct object to passivize as well, we need to assume that the

indirect object has the option to tuck in (land below the base-generated position of the indirect object, making the direct object a closer target for passivization) or that the presence of the EPP feature is optional or that the two objects are equidistant (being the specifiers of the same head).

(81)

Crucially, analogous movement (of the direct object over the indirect one, schematized in (82)) is impossible in a low applicative structure.

(82)
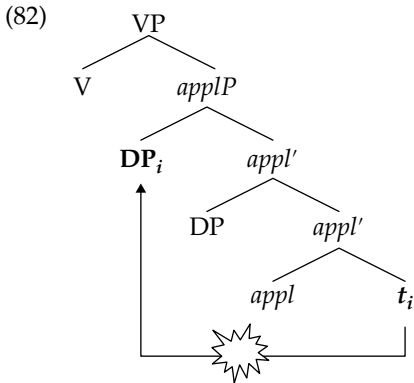
First, such movement would be movement from a complement position to a specifier position, which violates anti-locality by virtue of being too short, as argued by Doggett (2004), Jeong (2007), among others. Second, there is no motivation for this movement (the low applicative head, by assumption, is not a phase head and lacks the EPP feature). And passivizing the direct object in a low applicative structure (i.e., moving the direct object directly to the subject position) would violate standard locality principles (Relativized Minimality, Shortest Move, Attract Closest, etc.) as the direct object would cross over the indirect object.

4.2   A-bar-movement restriction

If a promoted indirect object behaves like a standard direct object, the degraded status of the examples in (83) is rather mysterious:

(83)   a. $^{??}$*Which sister$_i$* shall we send t_i a present?
       b. $^{??}$*Who$_i$* did Carolyn bake t_i that cake?

c.   *This is *the friend$_i$* (that) {Mary sent t_i a present/Carolyn baked t_i that cake}.
d.   *Kids$_i$* are always easy to {tell t_i a story/buy t_i presents}.
e.   *Charlie {sent t_i a book/baked t_i that cake} *[the girl who lives next door]$_i$*.

We formulate the restriction in (84).

(84)   *Restriction on A-Bar-Extraction*
       Movement of a "promoted" indirect object NP unmarked by a P or dative case to a
       non-argument position is ungrammatical.

This restriction on what Government and Binding calls "A-bar-movements" holds for both Goals (*to*-datives) and Beneficiaries (*for*-datives). For English, it was first noted in Fillmore (1965). Ross (1967) observes that indirect objects without P cannot undergo rightward Complex NP Shift (83e) either. Further examples of this restriction are presented and discussed in Oehrle (1976), Ziv and Sheintuch (1979), Hornstein and Weinberg (1981), Whitney (1982; 1983), Czepluch (1982), Barss and Lasnik (1986), Baker (1988a, sect. 5.4), and Hellan (1991). As Whitney (1982; 1984) observes for English, the restriction generalizes to all movements to non-argument positions, including rightward movements, as in (83e).

Before reviewing how authors have treated this restriction theoretically, it is important to note that this kind of syntactic property strongly suggests that a promoted Goal phrase, even though it has the position and many other properties of a direct object, is not simply that. Promotion accounts of the kind reviewed in section 3.2 can distinguish between the *wh*-objects in (83a)–(83e) and the non-promoted *wh*-objects, which are *not* subject to this restriction. Considering double object constructions to be base-generated provides no clear reason why they should behave differently under A-bar-movement.

Oehrle's (1976) base analysis includes the statement that inner NPs, that is, those followed by a direct object, are inaccessible to movement rules, but this basically only rephrases the problem. Moreover, Baker (1988a, 295) points out that the explanations based on the inaccessibility of an inner NP (as defined by the simultaneous presence of an "outer NP") encounter a further difficulty. In Chichewa and Chamorro, morphologically identifiable applicatives with promoted oblique NPs can be formed with certain classes of intransitive verbs. Extraction of the applied object in these cases is just as bad as extraction of the inner object of a transitive verb. Accounts that depend on the presence of two NPs, rather than on the derivational status of the promoted NP, are thus inadequate.

Stowell's (1981) solution for the Restriction on A-Bar-Extraction is somewhat more attractive. In his analysis, a bare English indirect object (of whatever length) is incorporated under the V by a "word formation rule." It then follows that the inner NP cannot be further moved, as syntactic rules never apply to parts of words. Larson (1988) also invokes a type of inaccessibility restriction based on a verb forming a deep constituent with an indirect object. Furthermore, for Larson, the reason why Heavy NP Shift of the indirect object in double object constructions is ungrammatical is different from the reason other A-bar-movements of direct objects are ungrammatical. For him, Heavy NP Shift does not involve rightward movement; instead, it involves reanalysis. And the reanalysis required to derive the Heavy NP Shifted variant with the promoted indirect object is structurally impossible.

Larson also points out that cross-linguistically the two do not pattern together; Norwegian, for example, allows *wh*-movement of indirect objects but not Heavy NP Shift thereof. As we saw in the previous section, promoted indirect objects *can* nevertheless undergo A-movement. Both Stowell and Larson circumvent the problem involving their ability to move (only) to A-positions by claiming that "dative passives" in (85a)–(85c) move from an outer, non-promoted position directly to the subject position. It is not clear, however, what allows this movement not to violate locality, given the discussion in the previous section.

(85) a. *We$_i$* might be given a book t_i.
      b. A woman$_i$ was offered the job t_i.
      c. The guests$_i$ were finally fixed an appropriate lunch t_i.

Once English dative passives are not derived directly from double object constructions, however, an important generalization is lost. Early generative analyses observed that English verbs which do not permit prepositionless double objects prohibit dative passives as well:

(86) a. *Our club might be {distributed/donated/suggested} some books.
      b. *A woman was {demonstrated/outlined/revealed} the procedure.
      c. *The guests were finally {concocted/designed/reordered} an appropriate lunch.

That is, dative passives appear to be derived, in English at least, from double object constructions. Hoekstra (1995, sect. 3) provides two further arguments against passivizing indirect objects in their base position. Along the same lines, Romance languages lack dative passives because they lack bare double objects. Thus, the following descriptive generalization encompasses both English and Romance:

(87) *Dative Passive Restriction*
      Passivization of indirect objects (unmarked by any dative case) results from moving NPs already promoted to direct object.

Czepluch (1982) takes a different approach to the A-bar-movement restriction. He analyzes bare datives in terms of a base-generated PP headed by an empty P. He rules out extraction of the bare dative NP through a constraint on movement out of empty-headed phrases, which would leave a presumably unacceptable "layered trace" under a PP. In order to nonetheless allow dative passives, Czepluch must extend case theory so that these layered traces are unacceptable only under the conditions of A-bar-movement. That is, a sentence like *Who did John give the book?* is ruled out because the trace of *who* cannot be either directly or indirectly case-marked.
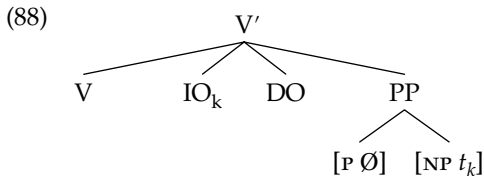
   Den Dikken (1995, sect. 4.2) provides a somewhat similar account of the A-bar-movement restriction that also involves the structure of a PP. Summarizing relevant data from a range of authors, he concludes that only "short" (clause-bound) *wh*-movement of promoted IOs can be grammatical, as in (83a)–(83b), and this only in some languages, such as Dutch, Norwegian, and certain dialects of English.

For these systems with grammatical "short" overt *wh*-movement of indirect objects, which seems to contravene (84), Den Dikken argues that an entire PP headed by an empty dative-assigning P is fronted. In contrast, he claims that many A-bar-extractions, including at least those in (83c)–(83e), involve Empty Operator Movement or more generally simple movement of an NP, and these are always excluded (Den Dikken 1995, 188).

Baker (1988a, 299) proposes a different refinement of Czepluch's approach, which he calls the Non-Oblique Trace Filter. This filter blocks any trace of an A-bar-operator lacking oblique case if its non-verbal governor incorporates into a higher verb. By stipulating the presence of an operator in the filter, he automatically exempts passive traces from it while still blocking A-bar-movements. It is doubtful whether this ad hoc device works empirically, since it also appears to wrongly rule out A-bar-movement of a passivized bare indirect object, which is cross-linguistically permitted (Alsina and Mchombo 1990, sect. 2).

Hellan (1991) illustrates the A-bar Restriction for Mainland Scandinavian, arguing that the trace of an A-bar-movement of a bare indirect object is not licensed. In his structure for double objects, the verb governs just the direct object; the bare indirect object is licensed and receives a theta-role only by virtue of its structural position (akin to a possessive NP). Moreover, he claims that such lexical NPs do not need to receive an abstract case, whereas traces of *wh*-movement uniformly do require case. Hence, those NPs licensed by virtue of their structural position, and not by a lexical licenser, are precisely those which cannot undergo A-bar-movement. A virtue of this proposal is that it can account for why possessive NPs in English, for example, are not available for A-bar-movement either. However, it must be observed that extracting possessive NPs (the Left Branch Constraint of Ross 1967) is significantly less acceptable than violating (84), and that the Left Branch Constraint is subject to cross-linguistic variation.

Whitney (1982; 1983) proposes an account of the A-bar Restriction that does not require extending case theory or special restrictions on movement of the inner NP. Like Czepluch and Baker, she assumes that indirect objects are generated under a PP. They then move to their surface position next to the verb, leaving a trace in the usual way:

(88)

$$
\begin{array}{c}
\text{V}' \\
\diagdown \\
\text{V} \quad \text{IO}_k \quad \text{DO} \quad \text{PP} \\
\diagup\diagdown \\
[_\text{P}\ \emptyset] \quad [_\text{NP}\ t_k]
\end{array}
$$

All further movements to an A-bar-position, including Complex NP Shift and other A-bar-movements (Whitney 1983; 1984), leave a trace that serves as a variable in LF. Further movement of indirect objects is then blocked by Chomsky's (1982, 31) principle that a variable "must be A-free in the domain of the operator that binds it." The variable in the position of IO_k is under the first branching node V' is not A-free. This analysis correctly predicts that *wh*-movement, Complex NP Shift, and other movements of bare indirect objects to A-bar-positions are ruled out, while movements to an A-position, like passive, are acceptable. It also distinguishes base-generated NPs

next to the verb, which are extractable, from indirect objects that have been promoted to direct object position, which are not.

Whatever the ultimate fate of these competing proposals for explaining the A-bar Restriction, the facts do suggest that bare indirect objects are not generated in the base as direct objects but rather move to their surface position. The restriction on their further movement, which base-generated direct objects are not subject to, can be satisfactorily accounted for only if their transformational history is distinct from that of direct objects.

4.3   Scope freezing

The behavior of double object constructions with respect to scope, in particular the differences in this respect between double object constructions and PP dative constructions, also shows that promoted indirect objects behave differently from run-of-the-mill direct objects. English is well-known to allow quantified arguments to optionally take wide scope with respect to other (higher) arguments in the same clause. In (89), for example, either surface or inverse scope is possible. This is commonly attributed to the covert operation of quantifier raising (see May 1977 and much later work). On the surface scope interpretation, topics are fixed independently of the students, whereas on the inverse scope interpretation, topics co-vary with students.

(89)   *Two new topics* might reinvigorate *every student in the*   TWO > EVERY, EVERY > TWO
       class.

But, as Aoun and Li (1989; 1993) and Larson (1990), who attributes the observation to David Lebeaux, note, the double object constructions differ from PP datives in that they do not allow inverse scope. That is, (90b) below, unlike its PP dative counterpart in (90a) does not typically mean that every student was assigned the same two topics.[22]
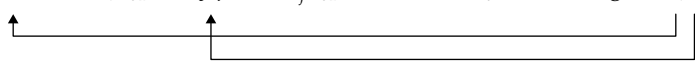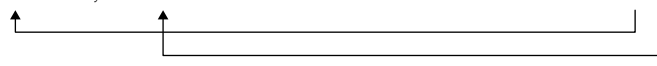
(90)   a.   She assigned *two new topics to every student in the*   TWO > EVERY, EVERY > TWO
            class.
       b.   She assigned every student in the class *two new*   *TWO > EVERY, EVERY > TWO
            topics*.

The examples in (90a)–(90b) and (91a)–(91b) provide further illustration; the PP dative in (91a) allows either scope, whereas its double object counterpart only allows surface scope, in which all problems were assigned to a single student.

(91)   a.   The teacher assigned *one problem* to *every student*.   ONE > EVERY, EVERY > ONE
       b.   The teacher assigned *one student every problem*.   ONE > EVERY, *EVERY > ONE
                                                                (Larson 1990, 604)

Bruening (2001) provides a very explicit account of this restriction, and in the remainder of this section, we focus on his account. He attributes the lack of inverse scope in the double object frame to an independent constraint on quantifier raising (QR).
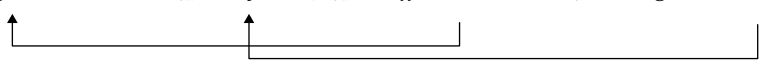
In particular, he assumes, as is pretty standard, that both quantifiers in a double object construction have to undergo QR, which he takes to be adjunction to the closest projection of the right semantic type (type *t*). This movement is subject to locality; the indirect object, being the higher one, moves first and the lower one tucks in below (following Richards' 1997 *tucking in* principle), which requires the second movement to a multiple specifier configuration of the same head to target the inner specifier (i.e., tuck in below the first moved element). Alternative derivations that would result in inverse scope are not allowed; one would involve the reverse ordering of the two movements, with the direct object moving first and the indirect object moving next (and landing in the lower specifier), and the other one a sequence of movements in which the direct object moves second but lands in the outer specifier instead. Both would result in (92b), which should yield inverse scope. However, both are banned by economy (the movement to the outer specifier is longer than the movement to the inner one). On Bruening's account, frozen scope in double object constructions reduces to superiority, which, more generally, reduces to economy.

(92)　a.　$[_{vP}$ *one student*$_i$ $[_{vP}$ *every problem*$_j$ $[_{vP}$ the teacher $[_{v'}$ *v* [VP assigned $t_i t_j$]]]]

　　b.　$[_{vP}$ *every problem*$_j$ $[_{vP}$ *one student*$_i$ $[_{vP}$ the teacher $[_{v'}$ *v* [VP assigned $t_i t_j$]]]]

Interestingly, it is not the case that the direct object can never scope over another element. The examples in (93) show a direct object in a double object construction *can*, for example, scope over the subject.

(93)　a.　A *(different) teacher* gave me *every book*.　　　　EVERY > A
　　b.　*At least two judges* awarded me *every medal*.　　EVERY > AT LEAST TWO
　　　　　　　　　　　　　　　　　　　　　　　　　　　(Bruening 2001, 243)

The ability for the indirect object to scope over the subject can be accounted for by allowing the lowest copy of the subject to be the one that "counts" for interpretive purposes, that is, by interpreting it in its reconstructed position, as shown in (94).

(94)　$[_{TP}$ *a different teacher* T $[_{vP}$ *every book*$_i$ $[_{vP}$ ~~*a (different) teacher*~~ $[_{v'}$ *v* [VP gave me t_j]]]]

Note that the subject, unlike both objects, moves to the specifier of TP for EPP related reasons. This movement, being overt (and not related to scope), can reconstruct. By contrast, QR, being covert (and scope-related), does not reconstruct, which explains the lack of the option of interpreting the higher copy of the QR-ed direct object and the lower copy of the QR-ed indirect object, which would give rise to the non-existent inverse scope interpretation.[23]

5   Cross-linguistic variation

This section focuses on one aspect of cross-linguistic variation with respect to the availability of double object constructions, in particular on the factors that might account for the lack of double object constructions (and, relatedly, the lack of a dative alternation) in a language. In spite of what the vast literature on the dative alternation might imply, from a typological perspective it is not very common; in Siewierska's (1998) sample of 219 languages only 12 (6 percent) exhibited a dative alternation (see also Haspelmath 2015).[24] In this section, we consider three types of explanations for this gap that have been explored in the literature.

   One possibility is to link the availability of double object constructions to morphological case marking (or the lack thereof). On this view, languages with morphological case marking that distinguish Themes from Goals/Recipients/Benefactives (by marking the latter with dative case, for example) will not by definition allow a double object construction, in which two objects are marked with the same case (such as the accusative case, the "designated" Theme case). From this perspective, the German and Polish examples in (95)–(96) are *not* true double object constructions.

(95)   German
  a. Ich   gab   Anna   das   Buch.
      I   gave   Anna.DAT   the   book.ACC
      'I gave Anna the book/I gave the book to Anna.'
  b. Ich   gab   das   Buch   Anna.
      I   gave   the   book.ACC   Anna.DAT
      'I gave Anna the book./I gave the book to Anna.'
                                        (Holmberg and Rijkhoff 1998, 82)

(96)   Polish
  a. Jan   wysłał   Marii   paczkę.
      Jan.NOM   sent   Maria.DAT   package.ACC
      'Jan sent Mary a package.'
  b. Jan   wysłał   paczkę   Marii.
      Jan.NOM   sent   package.ACC   Maria.DAT
      'Jan sent Maria a package.'

Thus, the alternation between the (a) and (b) examples in (95) and (96) is most likely not due to dative shift

   Den Dikken (1995, sect. 4.6), building on Müller (1992) argues that the German has no dative shift and what appears to be dative shift is actually "A′-scrambling of a zero-headed dative PP." We tentatively agree with this conclusion, although we cannot fully exclude that languages with overtly case-marked NPs could, upon investigation, reveal a non-scrambling dative alternation. Nevertheless, constructions of the kind given in (95) and (96) are often referred to as double object constructions in the relevant literature, and the structures that have been posited for them are similar to the structures that have been proposed for English double objects (e.g., null P structure, applicative structure, VP shell structure, small clause structure). The questions that this alternation raises are also similar to the questions that have been at the forefront of the research on the English dative alternation.

Are the two orders (accusative dative and dative accusative) transformationally related or not? And if they are, which one is basic and which one derived? Not surprisingly, these issues are far from being settled and quite often, different researchers have argued for different answers to these questions. Dornisch (1998), for example, argues that the basic order in Polish is accusative dative, whereas Citko (2011a; 2011b) takes the opposite view. Likewise, Dyakonova (2007; 2009) argues for dative accusative order being the basic one in Russian, whereas Bailyn (1995; 2012) takes the accusative dative order to be basic. Japanese also allows both orders and marks indirect objects with dative case. Hoji (1985) takes the dative accusative order in Japanese to be basic, and the accusative dative order to be derived via scrambling. Miyagawa (1995; 1997), Miyagawa and Tsujioka (2004), on the other hand, argue that the two orders are not transformationally derived (however, both permit further reordering), but are a reflex of two different argument structures, corresponding to the English double object structure and PP dative, respectively. What allows for such an analysis is the fact that the Japanese particle *ni* is ambiguous between a dative marker and a preposition. Interestingly, the two can co-occur:

(97) Japanese
      Taroo-ga   Hanako-ni   Tokyo-ni   nimotu-o   okutta.
      Taroo-NOM   Hanako-DAT   Tokyo-to   package-ACC   sent
      'Taroo sent Hanako a package to Tokyo.'
                                         (Miyagawa and Tsujioka 2004, 9)

The lack of the ability of marking the two objects with non-distinct cases is one factor that might account for the unavailability of double objects in a language. This, however, will not explain why, French, for example (which lacks case marking outside of its pronominal system) lacks double objects.

Kayne (1981; 1984), focusing on the contrast between English and Romance languages links the availability of double object constructions in language to the availability of preposition stranding.[25] Given the cross-linguistic rarity of preposition stranding, it would be quite unlikely that only languages with preposition stranding (English, Dutch under certain circumstances, Afrikaans) would allow double objects. Kayne (1984, 195–196) further states that the reason French does not allow double object constructions is similar to the reason it does not allow ECM constructions. Kayne assumes that empty prepositions cannot assign Case but can transmit objective case if prepositions in that language normally assign objective case. Then objective case transmission by an empty preposition is available in English, but not in French. Kayne's proposal is then that P assigns case differently in the two languages, although neither language has overt case morphology outside the pronoun system. Larson follows Kayne and derives the lack of double object constructions in Romance languages from the same parameter setting that derives the lack of preposition stranding. To derive both P-stranding and the *to*-absorption necessary for dative shift to obtain, the preposition has to be reanalyzed with the verb. This reanalysis is blocked if the verb and the preposition assign different cases. For Kayne, the prepositions in Romance assign oblique case whereas in English they assign accusative case, which in turn makes reanalysis possible. This, however, seems to predict that if there are languages in which different prepositions assign different

cases, some of which happen to be accusative, in these languages only these prepo-
sitions should allow reanalysis (and thus be strandable and allow dative shift).

Zhang (1990) points out that "under one possible interpretation, Kayne's and Lar-
son's theory makes the following claim: Languages that do not permit P-stranding
also do not permit Dative Shift." Zhang further shows that Chinese contradicts any
such claim, as do Indonesian and other non-Indo-European languages with dative
applicatives. As observed in Van Riemsdijk (1978), preposition stranding is rare and
probably limited to a subset of Germanic languages; hence is unlikely to be a pre-
condition for a dative alternation. Sugisaki and Snyder (2006) examine the predic-
tions Kayne's model makes for the acquisition of double object constructions, and
show that children acquire double object constructions *before* they acquire preposi-
tion stranding, which casts doubt on the idea that preposition stranding is a "pre-
requisite" for double object construcions.[26]

Yet another possibility explored in the literature is to link the availability of dou-
ble object constructions not so much to the existence of another phenomenon (like
morphological case, preposition stranding, or case transmission) but to the availa-
bility of a certain structure or the availability of a certain lexical element. This is the
stance taken by Harley (2002), for example, who links the availability of double
object constructions to the availability of "the possessive prepositional element"
P_{have} in a language. Languages without this prepositional element (e.g., Irish, Diné
(Navajo)) lack double objects. On this view, there is a correlation between the exist-
ence of double object structures and the expression of possession in a language. Lan-
guages that express possession with a locative structure (P_{loc} in Harley's terms) lack
double object constructions. Crucially, the correlation is not between the presence of
the verbal *have* to express possession in a language and the availability of double
object constructions. Variation among languages that have a verbal *have*, however,
raises some questions for this view. As Harley notes, Romance languages, which
have *have* but are generally assumed to lack double object constructions appear
problematic for this view without some extra qualifications.

6   Conclusion

In this chapter, we have outlined the main issues surrounding double object con-
structions that have occupied linguists since the early days of generative grammar.
We hope to have shown what makes double objects interesting, and where the main
points of content and discontent lie. The points that the literature surveyed here has
established, which we take to be fairly uncontroversial, are the following. First, the
indirect object surfaces as asymmetrically "higher" than the direct object. This is
compatible with many structures that have been proposed for the double objects,
which we surveyed in section 2.2. It is also independent of the issue of whether
the indirect object is base-generated in its surface position or gets there via move-
ment; more generally it is independent of the issue of whether the dative alternation
is a lexical or syntactic process (which was the focus of section 3). Second, even
though with respect to some properties (case marking, passive movement), the
indirect object behaves like a true object, with respect to others (A-bar-movement,
scope) it does not. These restrictions (as well as the cross-linguistic variation with
respect to passive movement) were the theme of section 4. While the core empirical

observations remain pretty solid, we have seen that there are many different explanations for these restrictions. And finally, in section 5, we have discussed the possible explanations for the relative cross-linguistic paucity of double object constructions.

SEE ALSO: Affectedness; Applicatives; Case, Primarily in Japanese; The Person Case Constraint; The *Spray/Load* Alternation

Notes

1. Haspelmath (2015) characterizes a ditransitive construction as "a construction with a verb denoting transfer of an entity," where transfer can be literal as with verbs like *give* or *send*, or more metaphorical as with the verb *promise*. He further distinguishes three different patterns in the coding of Theme and Recipient arguments, which differ with respect to whether the Recipient or the Theme argument (or both) pattern with the Theme of a regular transitive construction.
2. This does not mean that there are no asymmetries between the two objects, as we will see in sections 3.3 and 4 in particular.
3. Barss and Lasnik consider examples of the kind given in (8a), which involve *wh*-movement of the indirect object "less than grammatical" but do not star them. We come back to the status of such examples in section 4.2.
4. A different execution of this basic idea is proposed in Aoun and Li (1989; 1993).
5. There are many other implementations of small clause structures for double object constructions, such as Hoekstra (1988), Aoun and Li (1989), Bowers (1993), Den Dikken (1995; 2006), Harley (2002), to name a few.
6. The early structure Pesetsky presents on pages 126–127 involves ternary branching. The structures in (24a)–(24b) are the later binary variants, which preserve his insights about the G element.
7. Additionally, Pesetsky discusses coordination data that are incompatible with a small clause structure.
8. This does not imply that there are no differences between the two. Bantu languages allow multiple (i.e., recursive) applicatives, and allow applied arguments with a wider range of thematic roles.
9. Consequently, Baker develops two alternatives in his section 5.3.4, one in terms of an extension of Case Theory and a second in terms of a rather abstract 'LF incorporation' of the thematic direct object (thus exempting it from the Case Filter in his system).
10. See Bruening (2010b) for a comprehensive structural theory of idiom formation.
11. Larson (1990, section 5.3) further argues for his constituent structure with a claim that both gapping and pseudo-gapping can delete a V′ constituent which unites verbs and indirect objects. However, finding contrasts in pairs like (i)-(ii) that would support this claim is difficult; the (a) examples, in which V′ deletes, do not seem to contrast with those in (b), in which V′ is not available:

    (i)   a. $^{??}$He sends love letters to Mary and she [$_{V′}$ Ø] dessert recipes.
           b.   Bill fixes martinis for us more often than he {did/would}[$_{V′}$ Ø] manhattans.
    (ii)   a. $^{??}$He sends love letters to Mary and she to Bill.
           b.   Bill fixes martinis more often for us than he {did/would} for you.

12. An appropriate Principles and Parameters reformulation of the original construction-specific rule requires that the interchange be sanctioned by UG, but licensed only in languages with some specific lexical property. His analysis uses a somewhat idiosyncratic

understanding of the Projection Principle to predict that dative movement is the only possible type of argument interchange.

13. It would be perhaps less stipulative to assimilate the empty coindexed P to a sort of a trace or copy, as movement generally leaves those behind.

14. Similarly, not all *for*-datives (which appear with characteristic verbs of preparation and creation) permit the double object variant:

    (i)   a.   Luisa {baked/fashioned/bought} some gingerbread houses for the children.
          b.   *Luisa {invented/devised/dispatched} some new toys for the children.
    (ii) a.   Luisa {baked/fashioned/bought} the children some gingerbread houses.
          b.   *Luisa {invented/devised/dispatched} the children some new toys.

15. Green (1974) groups verbs that license Dative Movement into different semantic classes, and relates these classes to different underlying structures. For example, *pass* and *take* are in the "*bring*" category, *feed* is in the "*give*" category, *buy* and *save* in the "*selection*" group, and so on. She concludes that "Dative Movement" should actually be divided into a series of interrelated processes that relate double object constructions and NP–PP sequences in either direction – from NP PP to NP NP or from NP NP to NP PP – according to those combinations of semantic features available for the verb in question. This approach is actually reminiscent of Harris' (1957) notion of transformational relations between sets of surface paradigms.

16. There might also be a difference regarding style, with different conditions on double object alternations, in restricted and relaxed style:

    (i)   Restricted Style Constraint: verb stems whose only stress is initial allow double object frames.
    (ii) Relaxed Style Constraint: verb stems lacking secondary stress allow double object frames.

    The Relaxed Style Constraint in (ii) accounts for examples like the following, although they are still excluded in the restricted style:

    (iii) We delivered Mary the package.
    (iv) Bill embroidered her a blouse.

17. Interestingly, however, Coppock (2009) showed that prosodic weight did play a role in response time.

18. Den Dikken (1995, 158–159) accepts the logical non-equivalence of such pairs but argues that this does not preclude a transformational relation between them; he suggests that the difference between members of a dative alternation concerns aspect, not theta-roles. Similarly, Hoekstra (1995, n. 5) maintains that "affectedness" rather than thematic role distinctions differentiates the pairs.

19. Other authors have tried to distinguish the two versions of the dative alternation on pragmatic grounds. Erteschik-Shir (1979) claims that the indirect object in double object constructions tends to be definite (for her, "non-dominant") and Thompson (1995) that it is "more topicworthy." However, such claims seem more concerned with language use rather than syntax proper.

20. Citko (2011a) (also Citko 2011b) focuses on the factors that allow the lower object to move over the higher one, especially in languages where this is the only option.

21. According to Holmberg and Platzack (1995, 189), Swedish allows symmetric passives "more marginally" and Danish does not. Icelandic allows symmetric passives only with a certain class of verbs, *gefa*-verbs, (i.e., *give*-verbs)

22. What might seem related is that wide-scope readings of the higher italic NPs are also strongly favored in structures derived by subject raising (ia), passive (ib), and, as pointed out by a reviewer, locative inversion (ic):

    (i) a. *Two new topics* seemed to **every student** to be unfair.
         b. *Every student in the class* might be reinvigorated by **two new topics**.
         c. *On two big billboards* were (painted) **every party's slogans**.

    So perhaps we are dealing with a broader generalization here. However, it does not seem to be a general factor against lack of inverse scope in A-movement configurations, as shown by the following example, due to Aoun and Li (1993, 21), which does allow inverse scope.

    (ii) Someone seems to love everyone.

    Furthermore, in languages with so-called fixed scope (i.e., Japanese, Chinese, Slavic languages), A-movement creates new scope possibilities (and gives rise to scope ambiguities) rather than removes scope ambiguity.

23. An account of frozen scope in double object constructions that reduces it to superiority makes an interesting cross-linguistic prediction. Since there are languages that allow violations of superiority in *wh*-movement contexts, Bruening's account predicts that these languages should also allow violations of superiority in QR contexts. This prediction was tested by Stepanov and Stateva (2009) (see also Citko 2011a for relevant discussion).

24. These 12 languages (with their genetic affiliations in brackets) are: Dutch (Germanic); Indonesian, Muna (Western Malayo-Polynesian), Savu (Central Malayo-Polynesian), Nandi (Western Nilotic), Chichewa (Bantu), Mundari (Munda), Ainu (language isolate), Kalkatungu (Pama-Nyungan), Kewa (East New Guinea Highlands), Sahaptin (Sahaptian), Zapotec (Oto-Manguean). Siewierska adds other languages to her original sample, which also have a dative alternation, which adds up to 38 languages total. Of the Germanic group, these include English, Frisian, Swedish, Norwegian, for example.

25. He also links the lack of so-called prepositional complementizers to the same parameter.

26. More generally, Snyder and Stromswold (1997) argue for a parametric approach to language acquisition, based on the fact that double objects and PP datives are acquired together with a number of other (related) constructions (i.e., verb particle constructions, *put* locatives and causative/perceptual constructions).

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