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Semantic and Pragmatic Motivations for Constructional Preferences: A Corpus-based Study of *provide***,** *supply,* **and** *present*

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A select group of transfer verbs can enter into four different constructions: the ditransitive construction (*He provided John the money*), the prepositional-dative construction (*He provided the money to John*), a construction with a prepositional theme (*He provided John with the money*), and a construction with a recipient realized by a *for*-phrase (*He provided the money for John*). In this article, we take a close look at three such verbs: *provide*, *supply,* and *present*. Corpus analysis shows that these three verbs display different structural preferences with respect to the *for*-, *to-,* and *with*-patterns. To explain these preferences, the study investigates pragmatic principles (following Mukherjee 2001 on *provide*) and the role played by semantic factors. An examination of the semantics of the verbs and the lexically motivated constructional semantics of the *to*, *for*, and *with*-patterns shows (i) that the three constructions are not interchangeable, and (ii) that the preferential differences between the three verbs find an explanation in the compatibility between lexical and constructional semantics. The description is mainly based on data from the British National Corpus.

Keywords: constructional semantics; lexical semantics; verb alternation patterns; information structure

Background and Research Questions

Typological literature on constructions with verbs of giving emphasizes that both the recipient and the theme (the transferred object, defined by Goldberg 1995:112 as "the argument which undergoes a change of state or location") are qualified to be encoded as the object of the sentence (Faltz 1978; Dryer 1986; Newman 1996), as is the case in the ditransitive or double object construction in (1) below. In addition, the recipient can also be represented as an oblique constituent in the prepositional dative construction, as illustrated in (2).

(1)   He gave her the money.

(2)   He gave the money to her.

A restricted number of verbs of transfer also allow an oblique realization of the theme (see Levin 1993; Mukherjee 2001), as shown in the contrast between (3) and (4) below:

(3)   *He gave her with the money.

(4)   He provided her with the money.

While the prepositional theme structure is by no means a typological rarity and appears in many genetically and typologically diverse languages (for examples, see Newman 1996; Faltz 1978; Dryer 1986), it has been observed that the Indo-European languages—including English—do not systematically use this strategy. With the English verbs that do allow the construction with an oblique theme (see Levin 1993 for

an overview), this structure can emerge as the second or third option, next to (one of) the constructions in (1) or (2), or even as the only option. Example (5) shows that the verb *provide* allows the prepositional theme construction (5a), as well as the prepositional dative (5b) and (much less frequently) the ditransitive (5c), while *equip* can only appear in the prepositional theme structure, as shown in (6):

(5) a. This should provide you *with* the incentive to train harder and achieve even more. [BNC A0W482][1]

b. Major composers have continued to provide an abundant source of inspiration *to* more recent choreofigureers. [BNC A1255]

c. The pups are not fed their meal before the party but, instead, the organiser provides every human a small bag of dry dog food. [BNC A17380]

(6) a. Severo Balason's academic challenges and experiences have equipped him *with* the tools he needs to mentor students in his new post as dean of students at North Harris College.
<http://www.wikio.com/news/North+Harris+College, accessed June 21st 2011>

b. *Severo Balason's academic challenges and experiences have equipped the tools *to* him.

c. *Severo Balason's academic challenges and experiences have equipped him the tools.

In addition to the alternations mentioned so far the option of a beneficiary realized as a *for*-phrase is also available in English. For example, the verb *provide* also enters into that structure, as illustrated in (7) below:

(7)   This latter unit (formerly the HO Research) does provide some research material *for* those who seek it out. [BNC A0K581]

In this article we are interested in verbs that allow these different structural possibilities, and aim to answer the following questions: (i) what are the attested frequencies of these structures? and (ii) what are the parameters underlying the choices that are made? To answer these questions, we focus on three verbs: *provide*, *supply,* and *present*. These verbs have been selected because they are mentioned as prototypical representatives of this special type of transfer verbs (see Levin's 1993 treatment of *fulfill* verbs) and because they have a relatively high frequency of occurrence, which allows corpus-based analysis of a significant amount of data. We start from Mukherjee's (2001) account of the structural preferences of *provide* and examine to what extent his observations also apply to our own *provide* data, and whether these observations can be extended to *supply* and *present*.

Principles of Pattern Selection: Mukherjee (2001)

Leaving aside rare ditransitive uses, Mukherjee (2001) observes the following hierarchy in the structural preferences of the verb *provide*: the *for*-pattern is by far the most frequent one, followed by the *with*-pattern, while the *to*-pattern is the least frequent option. Such a distribution is not only attested in his selection of BNC data, but across 4 other corpora as well (LOB, FLOB, Brown, and Frown). In other words, the

distribution is similar in British and American English and in different periods (1960s and 1990s). Table 1 summarizes Mukherjee's findings.

[INSERT TABLE 1]

It can be seen that the *for*-pattern is consistently and saliently the most frequent option in all corpora. It is followed by the *with*-pattern in all corpora, except Frown. According to Mukherjee, this distribution is related to the nature of the recipient, principles of information structuring, and semantic prosody.

The difference in frequency between the *for*- and the *with*-patterns is accounted for on the basis of three parameters: (i) differences in preferred recipients, (ii) the principle of end-weight, and (iii) the principle of end-focus. Regarding factor (i), Mukherjee (2001:303) observes that the *with*-pattern tends to select recipients from a more restricted semantic class of nouns than the *for*-pattern does. More specifically, the analysis of his data, summarized in Table 2, shows that the recipient in the *with*-pattern is mostly animate.

[INSERT TABLE 2]

Mukherjee argues that the more selective nature of the *with*-pattern is one factor that accounts for the lower frequency of this pattern in comparison with the more flexible *for*-pattern.

Because the two patterns have a different ordering of theme and recipient (the theme precedes the recipient in the *for*-pattern, while the opposite order obtains in the *with*-pattern), Mukherjee also examines the effect of the pragmatic principles of end-weight

and end-focus, which bear on word order variation (see also Arnold et al. 2000; Wasow & Arnold 2003).

The principle of end-weight stipulates that long and grammatically complex constituents will be positioned at the end of sentences. Such a distribution has been shown to facilitate comprehension because there is no need to memorize complex information (Callies 2007:4) and because the constituent structure is revealed earlier (Hawkins 1994). It also helps to avoid ambiguity with the referent of the prepositional clause: if a light prepositional clause attaches at the end, it might seem to modify one of the elements of the earlier constituent (see also Wasow & Arnold 2003). The principle thus predicts that the choice of the *with-* and *for-*patterns will depend on whether the theme (in the *with-*pattern) or the recipient (in the *for-*pattern) is more "weighty." Example (8) illustrates the *with-*pattern with a one-word recipient and a long and complex theme. Example (9) illustrates the *for-*pattern with a light theme and heavy recipient.

(8) Roland Smith has provided *us* with *a fascinating and interesting book that should whet the appetite of many hill walkers* and will certainly provide a wealth of useful background information when planning a walk to some (…) [BNC A151438]

(9) He is attempting to provide *training* for *people who want to create businesses that produce quality products from indigenous timber at source*. [BNC A0X 204]

The principle of end-focus (factor (iii) in Mukherjee's account) holds that new information tends to come at the end of the sentence (see Quirk et al. 1985:1357; Arnold

et al. 2000:29-31; Wasow & Arnold 2003:128-129, inter alia). Again, this principle has been argued to have a psycholinguistic explanation, since "given information usually helps to process and uncover new information" (Callies 2007:3). The *for*-pattern will hence be preferred when the focus is on the new recipient, while the *with*-pattern will be preferred when the theme (the transferred object) carries the highest information value. In (10), for instance, the theme (*the NROVA*) has already been introduced in the previous line and does not carry new information, hence the use of the *for*-pattern. In (11), the opposite is true. Here, the anaphoric personal pronoun *him* refers to a previously introduced recipient, whereas the transferred object carries new information, hence the *with*-pattern selection.

(10) In Scotland the Scottish Education Department, the Training Agency and SCOTVEC have combined to produce the NROVA. In the rest of the UK it is published by NCVQ. Currently the Training Agency provides *the NROVA* for *all who are on Employment Training* and this is being extended to YTS. [BNC HBM1820]

(11) Birmingham born, Graham Tiso left school to work for Cadbury's, the confectioners, who provided *him* with *a sound overall business training*. [BNC CCP195]

The least frequent is the *to*-pattern (see Table 1). Mukherjee claims that there are general restrictions on its use which can account for its lower frequency. Two reasons are given. First, while earlier research (Stubbs 1995) has revealed that the semantic prosody of the transferred objects tends to be positive in the case of the lexical item *provide*, Mukherjee goes further to suggest that a differentiation can be made between

the patterns in this respect. His data indicate that the *to*-pattern almost exclusively selects pleasant entities as themes (e.g., *aid*, *care*, *help*, *stimulus*, *solace*), whereas the *for*-pattern also co-selects a number of provided entities that may be regarded as neutral (e.g., *background*, *basis*, *context*, *framework*, *structure*). Since there seem to be fewer semantic restrictions on the themes in the *for*-pattern than on those in the *to*-pattern, the former is a more frequent option.

Second, Mukherjee (2001:307) observes that many of the lexical items used as themes in the *to*- pattern "quite generally co-select the preposition *to* even (and especially) when they are not used in this pattern." He presents proof for the N *to* n pattern of these items on the basis of the structure information in the *Collins COBUILD Dictionary* as given in definitions, patterns, and examples. Mukherjee's argument is that there is a general and strong tendency to choose the *to*-pattern instead of the default and more frequent *for*-pattern when a lexical item generally co-selects the preposition *to*. Example (12) illustrates such nouns:

(12) … it provides the only realistic *solution to* the problems of race relations [LOB D17 84] (In Mukherjee 2001:307)

The question to be answered is to what extent the explanations provided by Mukherjee also apply to our own *provide* data, and to what extent they can be used to account for the observed frequencies of the constructional choices of *present* and *supply*.

Corpus-based Overview of Attested Structural Patterns

For an analysis of *provide*, *supply,* and *present,* the 100-million-word BNC was used. The frequency of these verbs varies extensively: *provide* occurs 40,326 times, while

present and *supply* occur less frequently with 12,435 and 6,750 hits respectively. In order to obtain a representative overview of the structural alternatives and preferences, a random selection was made of 1,000 instances for each of the three verbs.

Table 3 presents an overview of the number of attested constructions illustrated in examples (1), (2), (4), and (7) that have been attested for each of the verbs.

[INSERT TABLE 3]

A number of observations can be made. First, Table 3 shows that the majority of structural realizations of the three verbs fall under the category *other*. Most of these are monotransitive uses (see 13-15), which account for a proportion of roughly 70 to 76 percent of the attested instances. In the monotransitive uses, the element which is realized is always the theme.[2]

In the case of *provide*, other uses also include instances of *provide for* as a phrasal verb as in (16).

(13) After a period of time we will then ask local groups to provide this information. [BNC A10243]

(14) No-one expects you to present the result. [BNC A10243]

(15) In the past five or six years, foodservice companies have also been able to supply frozen pasta. [BNC A0C1001]

(16) A new state education system provided for universal basic education as well as vocational and higher education. [BNC EE2293]

Second, Table 3 shows that the proportion prepositional theme-prepositional recipient is different for *provide* and *present* structures on the one hand (i.e., 70 percent and 64 percent of the structures are prepositional recipient patterns respectively), and *supply* structures on the other hand. The *supply* data show a more balanced proportion in the prepositional realization of theme and recipient (52 percent vs. 47 percent). It further appears that the recipient can also be introduced by *for* with all three verbs, as illustrated in (17)-(19).

(17) Their local branches provide support and help and social opportunities *for* widows. [BNC A0Y330]

(18) And yet, this planet could supply ample food *for* everyone. [BNC A7G888]

(19) One scene in the BBC Nice Work will present an interesting test-case *for* Lord Rees-Mogg. [BNC A2561]

Third, Table 3 shows that *with*-patterns occur with all three verbs, as illustrated in (20)-(22):

(20) Your sister's been able to supply us *with* most of the details we need. [BNC A731018]

(21) He knows so little about being loved, he cannot really provide Miranda *with* any more than material gifts and force to persuade her to love him. [BNC KAY1032]

(22)　On my final day at Berkeley, my fourth-form pupils presented me *with* some

flowers and a small mounted copy of Claude Lorrain's 'Hagar and the Angel'.

[BNC A0F632]

Fourth, ditransitive patterns with double objects are very rare and have been attested

once only with *provide* and *supply,* in (5c) above and (23):

(23)　All I get supplied are empty bottles and hundreds of boxes of bandages. [BNC

AMB2395]

Although our selection of BNC data does not yield instances of the double object

construction with *present*, it cannot be ruled out, as illustrated by the Web-based

example in (24) taken from the *Guardian* online. Mukherjee and Hoffmann (2006:158

fn7) and Rohdenburg (2008) also report on differences between language varieties and a

higher acceptability rate of double object constructions with *present* in American

English.

(24)　At this thought, sadly, the executive flinched as if someone has presented him a

large tax bill while simultaneously hitting him over the head with a frying pan.

<arts.guardian.co.uk, accessed June 21st 2011>

In view of its low frequency, the double object construction will not be examined

further in this article (for detailed accounts and observations see Mukherjee 2005;

Mukherjee & Hoffmann 2006:158; Mukherjee & Gries 2009).[3]

Finally, focusing on the prepositional patterns, Table 3 shows that *provide*, *supply,* and *present* display completely different structural preferences. *Provide* occurs most frequently with *for*, *supply* most frequently with *with*, and *present* with *to*.[4] The figures for *provide* corroborate Mukherjee's (2001:299) findings but deviate from Hunston and Francis (2000:97), who claim that *provide* is typically used with the pattern V N *with* N. By contrast, the *for*-pattern is infrequent with *present*. All in all, we find a diffuse picture of the constructional preferences and relative frequencies. These structural preferences also appear to be relatively stable from a diachronic perspective. De Clerck and Colleman (2009) show that in Late Modern English, *provide*, *supply,* and *present* display statistically significant similar preferences for each of the three prepositions.[5] Additional analysis of the OED data indicates that similar tendencies are present in earlier periods as well.

In addition, it is striking that the three verbs share certain preferences in terms of genre and register distribution. The BNC queries show that all three verbs have a relatively low frequency in fiction and in spoken language, compared with newspapers and academic writing.[6] While this usage information does not explain the particular co-occurrences of verb + preposition that we have attested (since all three verbs display similar genre preferences, but diverging constructional preferences), the spread nevertheless highlights the specialized nature of these verbs, especially when compared with more "ordinary" verbs of transfer of possession with less or other structural possibilities. Possibly, the skewing towards the academic and newspaper writing points to more "learned" or "formulaic" uses of these predicates.

Extended Data Analysis: Applying Mukherjee's Parameters

Animacy of the Recipient

Figure 1 presents the proportions of animate and inanimate recipients in each of the constructions for each of the three verbs. The results show that, for *provide*, there is indeed a significant difference (χ^2 = 4.03, df = 1, p < .05) between the constructional preference of the *with*-pattern and of the *to-* and *for*-patterns in terms of animacy of the recipients.[7] Proportionally, animate recipients are more frequent in the *with*-construction (nearly 9 times as frequent as inanimate ones in the *with*-pattern vs. just 3.5 times and 3 times in the *for-* and *to*-patterns respectively), thus corroborating Mukherjee (2001). Figure 1 also shows a higher frequency of the *for*-pattern and thus supports Mukherjee's findings in both respects.

[FIGURE 1 HERE]

The preference for animate recipients in the *with*-pattern is also confirmed by the *supply* data. However, with 73 animate recipients out of a total of 95, this is also the case for the *to*-pattern and as a consequence, the difference between *to-* and *with*-constructions on this parameter is less apparent in the *supply* data. The *for*-pattern deviates in this respect and even selects more inanimate recipients. The difference between *for* and *to* with respect to the degree of animacy is statistically significant (χ^2 = 13.758, df = 1, p = 0.0002). There is no statistically significant difference between *to* and *with* (χ^2 = 0.018, df = 1, p = 0.0921). Figure 1 also shows, however, that despite its preference for animate recipients, the *with*-pattern is much more frequent than the *for*-pattern. Thus, the construction's preference for animate recipients does not automatically imply that it will also occur less frequently. Seeing that the *supply* data contain more inanimate than animate recipients, the question arises why the more flexible *for*-pattern does not occur

more frequently. In addition, the *to*-pattern also displays a preference for animate

recipients, but despite this preference, it still occurs more frequently than the *for*-pattern.

A similar picture emerges from the *present* data. The difference between *for* and *to*

on the one hand and *with* on the other hand in terms of preference for animate recipients

is statistically significant (χ^2= 16.92, df = 1, p < .0001). Again, despite its clear

preference for animate recipients (109 vs. 0), the more selective *with*-pattern occurs

much more frequently than its more flexible *for*-counterpart. In addition, the verb is in

general very much inclined to select animate recipients—significantly more so than

provide and *supply*—as is shown in the proportional difference between animate and

inanimate recipients (a ratio of 9 to 1 vs. 3 to 1 and 4 to 1 respectively).

Summing up, while the correlation between animacy and lower frequency as

proposed by Mukherjee for the *provide* patterns is corroborated by our data, it cannot be

extended to the *supply* and *present* data.

Principle of End-weight

To calibrate the weightiness of the constituents, two criteria were used: the number

of lexical words each constituent consists of (thus disregarding grammatical items in the

word count) and the vertical complexity of the constituent (i.e., whether or not there was

coordination or subordination within the constituent). Weightiness is hence a relative

notion in this methodology: either the theme or the recipient is more weighty than the

other constituent, or both have an equal weight. Theme and recipient were labeled as

having a different weight when the difference in the number of lexical words was larger

than two (see Arnold & Wasow 2000:36, who use similar categories of relative

difference in weight) and/or when there was a clear difference in vertical complexity

(e.g., presence vs. absence of relative clauses). While this method is just one of many

possible ways to calibrate the relative weight of pairs of constituents, Wasow (1997)

convincingly shows that any of the various proposed measures of weight such as the

number of words (Hawkins 1990), the number of nodes (Hawkins 1994), or the number

of phrasal nodes (Rickford et al. 1995) work equally well as predictors of weight effects.

Figure 2 presents an overview of the results for the three verbs. Passive clauses are

not included, since their influence on information structure is often more pervasive than

principles of end-weight and end-focus.

[FIGURE 2 HERE]

Figure 2 shows that in those instances where a clear difference in weight was attested,

the pragmatic principle is respected in most cases. For *provide,* 99 out of 116 instances

that show a difference in weight obey the order light-heavy. In the *supply* and the

present data too, the principle of end-weight is respected to a high extent, with 69 out of

81 instances showing the light-heavy order for each verb.[8] The principle of end-weight

seems to be so strong that it can also reverse the normal order theme-recipient in a *to-*

pattern. In example (25) a light recipient is followed by a heavy theme, while the

marked constituent order could have been avoided by choosing the *with*-pattern.

(25) Mr Sutherfield and his colleague, Richard Johns, presented to *Mr Husseini a*

    letter from 16 members of the US Congress who supported the league's peace

    plan. [BNC A1V577]

Breaches of the end-weight principle do occur, however, as illustrated in (26) and

(27), where the heavy themes precede the light recipients in *for-* and *to-* patterns. Such

instances show that we are indeed dealing with principles—not hard and fast rules—and that these may be overruled by other influences, idiosyncratic or stylistic in nature. However, an additional account in terms of semantic compatibility between constructional patterns and verb semantics is proposed further in this article.

(26) They accompany her every entrance. In contrast, he provided *passages of descending chords* for *Kostchei*. [BNC A12471]

(27) Working in teams with teachers, Neighbourhood Engineers provide *friendly, informal, practical and committed support* to *schools*. [BNC J15235]

Finally, it should be noted that in many cases no difference in weight has been attested (see Figure 2). This means that the explanatory force of the end-weight principle is limited when it comes to accounting for the overall observed structural preferences of these verbs.

Principle of End-Focus

In order to measure differences in information value between theme and recipient, two criteria were used. We either relied on the surrounding context and/or we decided on the basis of the referents' ability to be inferred from world knowledge. This methodology owes much to Prince (1992), who originally proposed the distinction discourse-given, inferable, and discourse-new. Prince's characterization of information structure is useful in that it allows a straightforward coding scheme for empirical studies. A constituent can be classified as given if its referent has been previously mentioned in the discourse. A constituent whose referent has not been explicitly mentioned but could be inferred from something else that was mentioned or from world knowledge is

classified as inferable. Both discourse-given and inferable have been merged as "old" in this study. Only constituents whose referents are truly new to the discourse are classified as "new." However, as pointed out by Arnold & Wasow (2000:30), the given/new contrast is a simplified representation of accessibility, and the rough distinctions that are made here will not allow a fine-grained analysis of the accessibility of theme and recipient. The methodology, however, does suffice to show the effect of the end-focus principle on pattern selection in those cases where a clear-cut distinction could be drawn between the information value of both constituents. This method implies that we preferred to leave out indeterminate cases to making debatable *ad hoc* decisions.

Again, passive clauses have not been included in Figure 3, since other constituents may receive more prominence (such as the agent, for instance), overruling the end-focus principle. The class of remaining sentences was further reduced to those instances whose context allowed us to clearly identify which constituent could be regarded as newer or older than the other.

[FIGURE 3 HERE]

The figure shows that in those cases where a distinction can be made between high or low information value, the old-before-new pattern prevails (63 out of 77 instances for *provide*; 85 out of 101 for *supply;* 84 out of 118 for *present*). In (28), for instance, the given-before-new order is maintained in the use of the *with*-construction: the theme is new or provides more prominent or specific information, while the recipient is given. In (29) the recipient is new or more specific, while the theme is given. This leads to the choice of *for-* or *to*-patterns.

(28) These will all be presented to interested donors in a common summarised format that will provide *them* with *the information they are looking for to make their decisions*. [BNC A10212]

(29) To date ACET has provided *professional nursing care or practical help* to *over 400 individuals across London*, excluding hardship grants and equipment loans. [BNC A00364]

However, not all constructional choices can be explained in these terms. As Figure 3 shows, the opposite order—new before old—is also attested, and it is proportionally most salient in the *to-* or *for*-patterns. In a few cases, the order can be accounted for in terms of the principle of end-weight overruling that of end-focus, as in (30), but in (31) and (32) neither the principle of end-focus nor the principle of end-weight can account for the attested order of theme and recipient.

(30) You kindly supplied to my colleague Astrid Edwards a VHS copy of the following titles: Midnight Hours Postcode Connection Today's Post Office. [BNC AP1997]

(31) A start has been made on a study of the Iapetus Convergence Zone, which is designed to complement local investigations in the Southern Uplands and northern England, and to provide *the regional setting* for *them*. [BNC CFW572]

(32) Each association holds an annual conference and supplies *a free 'counsel's opinion' service* to *its member authorities*. [BNC B0S687],

For (31) and (32), the collocational pattern N *for* n and N *to* n may have been the decisive factor in opting for the *for*-pattern (see the pattern information on *setting* and *service* in the Collins COBUILD Dictionary). The strength of this parameter can, for instance, be seen in the frequency with which the noun *facilities* is followed by *for*. Only two instances of the pattern *provide X with facilities* have been attested in the BNC, while the collocation *facilities for* appears more than 740 times. Example (33) is in that sense default, regardless of the information structuring:

(33) So as naturally as anything, Judith switched to Spanish and greatly impressed the customer as well as pressing upon him the need to provide *proper facilities* for *his ladies*. [BNC HBH684]

Other cases, such as (34) and (35), remain unaccounted for on any of the parameters mentioned so far.

(34) If this was the sleeping arrangement prior to the patient's illness, the family may have to supply *a fairly wide single bed* for *the patient*, or the carer might sleep in a separate bed, leaving the normal conjugal bed to the patient. [BNC AS065]

(35) Its main function, however, appears to be to present *a better image of Sri Lanka* to *the outside world*. [BNC A03777]

To sum up, the principle of end-focus is indeed a strong parameter in determining the order of the constituents and hence the verb pattern. Some of the data, however, cannot be accounted for by this principle, either because no difference in information status

could be identified or because the end-focus principle is overruled. Further, the principle can at best account for the choice between the *to-* or the *for*-pattern on the one hand and the *with*-pattern on the other hand, but it cannot explain the difference between the differential preferences of the verbs.

Collocational Preferences

Mukherjee (2001) states that many nouns which occur as themes in *provide to-*constructions tend to co-select the preposition *to* regardless of whether they are used with *provide* or not. The fact that this is not the case for *for* would account for the higher frequency of the *for*-pattern in the *provide* data, as the latter is said to be "very flexible" and "the default case of pattern selection" (2001:308-309).

The nouns which belong to N *to* N class are said to include the following:

aid, assistance, answer, boost, care, challenge, contribution, grant, help, impetus, incentive, information, input, protection, sanctuary, service, solace, solution, stimulus, subsidy, support, treatment, value (Mukherjee 2001:307)

Before we look at the data for the individual verbs, three general observations need to be made. The first is that some of the nouns mentioned above also occur in the *for*-pattern (as acknowledged by Mukherjee 2001:308). Mukherjee mentions as examples *assistance*, *funds*, *help*, *impetus*, *incentive*, and *service*. Our own data additionally show *care*, *information*, and *support*. For example, the noun *care* occurs as theme in ten instances of the *to*-pattern and eight instances of the *for*-pattern, *support* occurs in five instances of the *for-* and five of the *to*-pattern, and *service* occurs seven times in the *to-*

pattern and five in the *for*-pattern. This indicates that while in some cases the factor of noun collocation can influence the selection of a construction, it is not determinative.

The second observation is that Mukherjee's list (reproduced above) is set up on the basis of definitions, examples, and pattern information in COBUILD. If we rely on the same dictionary's explicit reference to patterns, the list becomes much smaller: *aid, answer, challenge, contribution, impetus, protection, service, solution,* and *treatment*. In addition, themes like *impetus*, *treatment,* and *protection* mentioned in Mukherjee's list actually occur in a N *for* N (e.g., *impetus for*, *treatment for*) and a N *against* N (*protection against*) pattern. No explicit reference is made to N *to* n for these themes in the dictionaries consulted.

Third, since themes with N *for* N collocational preferences occur as well—see examples (31) and (32)—these, too, can have a bearing on the selected structure. In addition to those mentioned above, these themes include words such as *basis* and *starting-point*. In other words, in addition to Mukherjee's observed N *to* N preference of certain themes, there is also an opposite tendency in which some themes will prefer a *for*-construction in line with their N *for* N preferences outside a *provide* context.

Let us now take a closer look at the data in this respect. A total of 23 nouns mentioned in COBUILD as N *to* N have been attested as themes in our *provide* data (there were several instances of the same nouns), only 14 of which actually occurred in a *to*-pattern in the data, and eight of which occurred in a *for*-pattern. On the other hand, a total of 15 nouns mentioned in COBUILD as N *for* n have been attested as themes (including *basis*, *starting point*, *facilities*, *home*, and *opportunities*), only nine of which actually occurred in a *for*-pattern. All of this means that 14 out of the 61 attested *provide to* patterns can possibly be explained by the collocational factor. Of these

instances, four overrule the principle of end-weight and/or end-focus, as illustrated in (36):

(36) We are unable to provide *a personal query answering service* to *readers* by post. However, a selection of your questions will be answered on these pages each   month. [BNC A0G2216]

In the *supply* and *present* data, too, the number of themes which occur in explicitly mentioned N *to* n or N *for* n patterns is proportionally low and hence cannot fully account for the attested structural distribution of patterns. In the *supply* data, the nouns *answer* and *service*(s), which according to COBUILD occur in the N *to* N patterns, account for only five attested instances of *supply to*. No themes preferring a N *for* n or a N *with* N pattern have been attested. In the *present* data, themes such as *hazard*, *danger*, *threat*, *challenge*, *response*, *solution*, and *opposition*, which according to COBUILD take N *to* N, account for eleven of the attested *to*-patterns, while *target* and *evidence* account for four of the attested *for*-patterns. In four cases (*answer*, *ending*, *evidence* and *service*), these collocational preferences overrule the principle of end-focus and/or end-weight.

To sum up, while some of the attested structures can be explained in terms of the influence of collocational patterns overruling other principles, the actual impact on the overall structural preferences for each of these three verbs is limited in our corpus.

Semantic Prosody

The semantic prosody of themes is not entirely problem-free. As observed in Whitsitt (2005) and Dilts and Newman (2006:234), "the lack of agreed-upon criteria for making

positive versus negative evaluations remains a methodological problem." How does one decide then whether the themes are positive, neutral, or negative? Which (objective) criteria are there? In other words, the study of prosody is always likely to involve a certain degree of subjectivity on the part of the researcher. While this matter cannot be fully resolved within the scope of this article, the results of Dilts and Newman's (2006) proposed method are incorporated. Their criteria should eliminate the need for researchers to make their own evaluative judgements in assessing the positive or negative prosodies of a word.[9]

However, there are a number of limitations. Dilts and Newmann's methodology is restricted to the measurement of nouns and it relies on a restricted set of adjectives, immediately preceding the noun. Since we want to measure the prosodies of verbs, we would first have to test the prosodies of all nouns they occur with and corroborate them with findings from collostructional analysis. For this study, however, such an enterprise is impossible to realize due to the many different themes for each verb and the fact that, even if some themes turn out to have a specific semantic prosody, it can always be overruled within the context (e.g., *a problem* becomes positive when it is premodified by *interesting*). It was therefore decided to adopt a critical attitude by not taking intuitive prosodies of isolated nouns for granted (as was the case in earlier studies) and by carefully examining the context in which those nouns occur. This implies that the constituent as a whole was considered and not just the nominal element. Consequently, the nouns in Mukherjee's list are not automatically regarded as having a positive semantic connotation.

Another difficulty is that the distinction between neutral and positive is not easy to draw. It appears that the majority of themes with all three verbs refer to an entity which is somehow for the benefit of the recipient. Yet, by themselves the theme nouns are

neutral. For these reasons the following categories of themes are distinguished: (i) *neutral to positive* consists of nouns which are either (contextually) marked for positive (such as *aid*, *assistance*, *care*) or unmarked for positive (such as *money*, *cheque*, *water*); (ii) *negative* consists of nouns which have a clear contextualized negative prosody.

Figure 4 presents an overview for the three verbs.

[FIGURE 4 HERE]

In line with previous research (Stubbs 1995), Figure 4 shows that *provide* indeed tends to attract a positive semantic prosody. No negative themes were attested. This trend is also further confirmed by extended queries in the BNC in which the top 25 nouns following a form of the verb *provide* within a span of four words have been filtered out. (37) gives a selection of the most frequent themes (nouns which were not themes have been left out) in decreasing order of frequency, showing that these nouns have a neutral or positive rather than a negative connotation.

(37)   information, services, service, support, evidence, opportunity, basis, care, means, framework, access, advice, training, opportunities, facilities, assistance, details, example, protection, data, education, range, help, accommodation

In comparison with the *provide* data, the *supply* data contains more neutral themes, as is also confirmed by the list of the most frequent nouns following *supply* in a span of four in the BNC, in (38).

(38)   goods, water, services, demand, information, labour, food, money, curve, equipment, materials, electricity, power, oil, products, gas, system, liquor, arms, contracts, price, energy

Another important difference between the lists of *provide* and *supply* is that the latter contains more concrete nouns, either uncountable or plural. A slightly different picture emerges from the analysis of *present*, which occurs more frequently with negative themes than *provide* and *supply*.[10] This finding is confirmed by the most frequent nouns following *present* (within a span of four) in the BNC. The nouns with a negative prosody are in bold in (39).

(39)   **problems**, **problem**, case, picture, information, report, challenge, **difficulties**, evidence, budget, petition, view, cheque, data, form, award, (parliament), opportunity, image, way, **threat**, results, awards

The higher number of negatively connotated themes in the data is also partially caused by the frequent use of the collocations *present problems/difficulties* (11 out of 37 instances).

The correlation between semantic prosody and structural patterns is presented in Figure 5. The *provide* data show that the *to*-pattern selects relatively more positive themes (48 out of 61 instances) than the other patterns.

[FIGURE 5 HERE]

This difference between the *to*-pattern and the other patterns is statistically significant (χ^2 = 15.451, df = 1, p = 0.0001). For *supply*, both *for-* and *to*-patterns show similar distributions in the semantic prosody of the themes they select (most of which are unmarked for positive) and no statistically significant difference can be attested between the two patterns (χ^2 = 0.128, df = 1, p = 0.7206). In other words, the logic behind the explanation for the lower frequency of the *to*-pattern in the *provide* data by Mukherjee cannot be extended to account for the lower frequency of the *for*-pattern (or the higher frequency of the *to*-pattern for that matter) in the *supply* data. On a more general level this also implies that *to*-patterns will not invariably co-select positively connotated themes as the most preferred objects. With respect to *present*, it is the *with*-pattern (not the *to*-pattern) that generally prefers positively connotated theme elements. To sum up, it appears from the analysis that Mukherjee's account of the correlation between the lower frequency of *to*-patterns and the positive semantic prosody of the themes cannot be applied to all data.

Merging the Results

Our analysis has shown that some of the parameters proposed by Mukherjee (2001) are more influential than others. The effect of semantic prosody could not be proven and only some uses could be accounted for in terms of the effect of the collocations N *to* N or N *for* N. The *provide* data did confirm the preference of *with*-patterns for animate recipients found by Mukherjee. However, in the case of *supply* and *present,* this more selective behavior of the *with*-pattern did not appear to correlate with lower frequency of the pattern, as claimed by Mukherjee for the verb *provide*. This may indicate that the connection between animacy and frequency is not a causal one.[11]

The accumulated effect of end-weight and end-focus is relevant and accounts for 55 percent of the cases in the *provide* data (121 out of 218 active utterances), for 56 percent in the *supply* data (109 out of 194 active utterances), and for 59 percent in the *present* data (107 out of 182 active utterances). Together with the few cases that could be accounted for in terms of N *to* n or N *for* n collocational preferences, this means that roughly 60 percent of the *supply*, *present,* and *provide* data can be explained on the basis of these parameters.[12]

Some questions are left unanswered and part of the data is not explicable by the parameters. First, the parameters do not explain the differences between the three verbs with regard to their structural preferences. Second, we need to explain why in some cases not all three constructions are acceptable, even though the criteria for them discussed so far are fulfilled. Examples (40) and (41) illustrate this. The (a) versions are the ones attested, while the (b) versions are pragmatically odd:

(40)   a. Its main function, however, appears to be to present a better image of Sri

Lanka *to* the

outside world. [BNC A03777]

b. ? Its main function, however, appears to be to present a better image of Sri

Lanka

for the outside world.

(41)   a. They present us continually with death. [BNC A6B1429]

b. ?They continually present death *for* us.

In the following sections, we elaborate on these issues by focusing on the constructional semantics of the constructions and the compatibility of these meanings with the lexical semantics of the verbs themselves.

Semantic motivations for constructional preferences

Rationale

Whenever a language has two (or more) constructions in variation, the question arises as to what conditions their distribution. Stefanowitsch (2003:413) observes that there seem to be two possibilities: "Either the two constructions differ in their discourse-functional properties (i.e. they encode alternative ways of structuring the information flow), or they differ in their semantics (i.e. they either have different constraints on the lexical items they occur with, or they differ in their semantic import)." We want to argue that, in his search for explanatory factors for the relative frequency of the constructional options for *provide*, Mukherjee's account focuses on the first explanation and ignores the semantic import of the constructions themselves and their compatibility with the (polysemous) lexical semantics of the verbs. For example, Mukherjee observes that the *to-* and *for*-ditransitive patterns not only resemble each other concerning the order of elements, but that they "even seem to be interchangeable in very similar contexts" (Mukherjee 2001:306). Such similarity can indeed easily be demonstrated from the BNC data, as (42) and (43) show:

(42)   resources required to ensure provision of adequate staff and facilities to enable
          high quality health care to be provided for *elderly people*, both at home
          and in hospital for increased numbers. [BNC A101426]

(43)   Over the last three years, our volunteers have provided *much love and care* to
          many hurt and lonely people. [BNC A00170]

However, the two patterns are not interchangeable without altering the meaning. In (42) the future orientation of the provision, with a view to potential giving, makes the *for*-pattern a more appropriate option. In contrast, the focus in (43) is on an actual recipient: many hurt and lonely people have received much love and care. As is generally accepted in the literature (see e.g., Goldberg 2006), the *to*-pattern introduces a theme and a recipient at the end of a spatio-temporal path (i.e. the so-called "caused motion construction"), while the *for*-pattern introduces a theme and a beneficiary. The difference between a recipient and a beneficiary is that the former is affected by a transfer-related event (*He gave the flowers to Mary*), whereas the latter is also affected, but this need not be caused or triggered by a transfer event (*He watered the flowers for Mary*). In the literature, one also finds the concept of the recipient-beneficiary, the referent who is potentially affected by a possible transfer, which is not reflected in the meaning of the verb. In (44b), for instance, Tom may eventually receive the cake that is baked for him, but this is not implied by the meaning of the verb. *To*-patterns can only occur with recipients, whereas the *for*-pattern allows for both recipient-beneficiaries and pure beneficiaries, as shown in invented examples (44a–c). Note that the *for*-pattern in (c) would indicate that the cake was given to a non-specified recipient for Tom's benefit (i.e. to be eventually received by Tom) (see also Kittilä 2005).

    (44)   a. I cleaned the house for/*to Tom. (beneficiary, no transfer)

             b. I baked a cake for/*to Tom. (recipient-beneficiary, potential transfer)

             c. He gave the cake to/?for Tom. (recipient, transfer)

A second semantic consideration concerns the verbs themselves. The data contain instances of *provide* with a *for*-constituent which do not express a process of giving, but rather a relational process of being. These instances do, as a consequence, not always easily allow *to*. Example (45) illustrates this:

(45)   a. Like every other organism in a thriving garden, pests have a role to play. They provide food *for* predators whose presence reduces the likelihood of any one pest developing into epidemic proportions. [BNC A0G2450]

   b. ? […] They provide food *to* predators […]

In (45) the sentence can be paraphrased as 'They constitute/are food for predators' rather than as 'They give food to predators.' The former reading is not compatible with the spatio-temporal meaning of the *to*-pattern where an active (and animate) agent triggers a transfer, whereas mere existence or availability is compatible with a beneficial reading (i.e., being there for the taking).

   The above examples show that the patterns are not semantically synonymous and hence that the choice of any particular one cannot be accounted for solely by pragmatic and discourse factors. The constructional semantics of the *to*, *for,* and *with* patterns as well as the semantics of the verbs need to be examined before causal relations between frequencies of patterns and the pragmatic principles can be set up. In the following sections we elaborate on the impact of constructional semantics on the structural preferences of a particular verb. At the same time we focus on the lexically specific nature of constructions in a move towards grammar as a lexico-syntactic enterprise whereby actual lexical items play a key role in understanding syntax and vice versa.

The Constructional Semantics of Ditransitive to*,* for*, and* with *Patterns*

In this section, accounts of the constructional semantics of the *to-*, *for-* and *with-*patterns given in the literature are briefly discussed to the extent that they are relevant to the verbs of transfer. Most of the observations tie in with discussions of such patterns from a constructional cognitive point of view.

The constructional semantics of the *to*-pattern with a theme and a goal has been discussed extensively in the literature on dative alternation, in which the constructional meanings 'caused motion' (X causes Y to move to Z), expressed by the *to*-pattern, and 'caused possession/reception' (X causes Y to have Z), expressed by the double object construction, are juxtaposed (see Colleman 2009 and Colleman & De Clerck 2009 for overviews).

The top line in Figure 6 below (based on Goldberg 1995:88) represents the [NP V NP *to* NP] construction's semantics. It contains the semantic arguments (constructional roles) and represents their semantic relation to each other ('X CAUSES Y TO MOVE Z').

[FIGURE 6 HERE]

For a verb to be able to enter this construction, the semantic roles of the construction and the independently existing participant roles of the verb must be able to fuse. When the verb's semantics interacts with the caused-motion construction, the verb's participant roles are inserted into the construction's predicate role array and subsequently mapped to syntax. According to Goldberg, this is because the verb's participant roles are compatible with the construction's 'X CAUSES Y TO MOVE Z' semantics and can thus fuse with the construction. In addition, the construction is capable of providing additional participant roles—indicated by the dotted line—which

need not be part of the verb's argument structure. This also explains why, for instance, monotransitive *write* and the verbs under discussion can also enter the [NP V NP *to* NP] pattern.

The meaning of this pattern is lexically motivated by the meaning of the preposition *to.* According to Jackendoff (1983), Cuyckens and Verspoor (1998), Zwarts (2005), Goldberg (2006), and many others, the basic function of *to* is to mark the goal at the end of a spatio-temporal path. It is generally assumed that the use of *to* to mark the recipient of a transfer of possession in English originated in descriptions of prototypical *give* events where a concrete entity is transferred from one person to another. It is in such events that the match in cognitive topologies between the roles of recipient and spatial goal (see Newman [1996:88]: "There is a sufficient match of cognitive topologies involving goal and RECIPIENT to support categorizing the RECIPIENT as a goal") is most obvious: as the transferred entity moves along a path in physical space, it also moves from one person's domain of possession and/or control to another's. It is in the context of such events, in other words, that the *recipient as goal* construal could arise (see the discussions on the dative alternation in Colleman & De Clerck 2009).

In the case of *provide*, *present,* and *supply*, we have seen that this fusion is more welcomed by some verbs than it is by others, though it is not impossible for any of these verbs. While normally used in monotransitive structures, they can all appear with an extra argument (in a *to/for* or *with*-pattern), but the frequencies will depend on the compatibility with the individual verb's different meanings, as will be shown below.

The *for*-pattern does not have a goal at the end of a spatio-temporal path, but a beneficiary as a third argument. Its semantic meaning also differs in that the notion of movement towards the end of a path is no longer present. In its spatial sense *for* differs from *to* in that it focuses on the "act of starting on a journey (…) as a rule without

statement of reaching the goal or destination" (Lindkvist 1976:206). This is in contrast with *to*, which is used "in cases in which the motion reaches the object" (Lindkvist 1976:209). In other words, *for* focuses on the onset of the movement, while *to* focuses on the end. From this spatial use "beneficiary *for*" can be derived, which indicates that the event profiled by the verb beneficially affects the participant (see Jackendoff 1990:183-84). The action denoted by the main verb causes a benefit to accrue to the *for*-participant. In this category we can include an example such as (46):

(46)   By buying the apartment, Bill provided a safe home for Mary.

It is beneficiary *for* that is relevant to transfer of possession verbs, and it can be seen as an extension from spatial destination to a purpose or goal of some kind. The distinction between a beneficiary role in the *for*-pattern and a recipient role in the *to*-pattern can be illustrated by means of the following examples, taken from Nisbet (2005:60):

(47)   a. John brought some chocolates for Mary, but she wasn't in.

      b. ? John brought some chocolates to Mary, but she wasn't in.

      c. John described the route for Mary while she was out.

      d. ? John described the route to Mary while she was out.

Sentences (47b) and (47d) are pragmatically odd, because allative *to* focuses on the end of the path and implies an approximation to the goal and increased spatial proximity, which is not possible when the goal is not present. The preposition *for* with its focus on the onset does not carry this meaning and allows for uses such as (47a) and (47b). The

difference between the two is also shown in (48a) and (48b) from Jackendoff, in which the beneficiary may be absent, but not the recipient.

    (48) a. Bill sold a book to Harry for Mary.

           b. ?Bill sold a book to Harry for Mary but he wasn't there.

It follows that *for* and *to*, even when the context allows the use of either, do express different meanings (see Goldberg 2006 on benefactive ditransitives and benefactive *for*-constructions).

    The constructional semantics of the *with*-pattern also needs to be linked to the lexical semantics of the preposition *with*. The preposition has a remarkably wide range of uses, from spatial proximity or accompaniment as in (49a), to an instrumental use as in (49b), a more general Adverbial use as in (49c), a causal use as in (49d) and, relevant to this article, "a use to mark a transferred thing" (Farrell 2007) as in (49e) (see also Dirven 1993; Goldberg 2002; Goldberg 2006).

    (49) a. The CDs are with the DVDs. (proximity)

           b. I fixed it with a hammer. (instrument)

           c. I showed up there with a smile on my face. (circumstance)

           d. She was trembling with fear.(cause)

           e. I supplied them with uniforms. (transfer) (Farrell 2007:1)

Farrell (2007) claims that *with*, like many other English prepositions, has a spatial central sense (togetherness in a place) and a bundle of related 'part of,' 'containment,' or possessive 'having' senses (*a man with long hair*, *a vase with flowers*, etc.) that

represent more specific, non-spatial kinds of togetherness. According to Farrell (2007), the *with*-pattern is used in transfer events when the agent, the action of taking possession, and the theme are profiled, as opposed to the NP_NP *to* NP pattern, which focuses on the force dynamic event of the theme being moved in the direction of the goal. In other words, the core meaning of the preposition as 'togetherness in a place' triggers a more possessive reading of having in NP_NP *with* NP patterns.

In the following sections, we give a semantic explanation for the structural preferences of the three verbs *provide*, *supply,* and *present.*

The Preference of provide *for the* for-*Pattern*

To account for the structural preference of *provide*, which is *provide something for someone*, we turn to the lexical semantics of the verb and its polysemous meanings. Unlike the verb *give,* whose general sense in the *Oxford English Dictionary* (*OED*) is described as "To make another the recipient of (something that is in the possession, or at the disposal, of the subject)," the general sense of *provide* does not automatically entail a transfer with change of possession. Apart from meanings such as 'to see in advance,' 'to see beforehand,' 'to foresee,' 'to take precautions,' which are clearly linked to its Latin predecessor *pro-videre*, the *OED* also lists "to supply (something) for use; to make available; to yield, afford" as one of its basic meanings. Since 'making available' rather than actual transfer is the basic meaning of *provide*, it is not surprising that there are many theme-only patterns in the data (see Table 3). In addition, this meaning allows for constructions with explicit reference to the argument the theme is made available for. This may explain the finding that *for* is the more frequently used preposition in combination with *provide. To* or *with* foreground the actual end of the path of transfer and the instrument, respectively. They are hence less frequent, though not incompatible

with *provide,* and do occur in contexts where an actual transfer or movement is implied or intended, as in (50).

(50) We are unable to provide a personal query answering service *to* readers by post. However, a selection of your questions will be answered on these pages each month. [BNC A0G2216]

(51) Erdinger contracts with local farmers to grow some of its barley and all of its wheat, and provides them *with* seed. [BNC A14346]

In other contexts, where no such movement is implied, such as in those cases where *provide* is used in its meaning of 'constitute' or simply as 'making available,' replacement by *to* is marked or alters the intended meaning. If, for instance, *for* is replaced by *to* in (52), the caterpillars change from being sources of protein into the providers of sources of protein:

(52) The caterpillars so far unidentified, which feed on its leaves, provide an abundant source of protein *for/?to* the many young birds.

It will further be noted that the most frequent collocates listed in (37) above are abstract themes, which often occur in contexts where there is no actual transfer but rather a relationship of being ('be,' 'form,' 'constitute'): e.g., *provide a basis for*, *a framework for*, *an example for*. The frequency of this sense can also account for the attested preferences for the *for*-pattern. The constructional meaning of the pattern itself thus best matches the specific meanings of *provide* that occurred most frequently in the

data. Principles of information structuring alone cannot account for the attested preferences.

The Preference of supply for the with-*Pattern*

In similar fashion, the lexical semantics of *supply* and its polysemous uses can help to account for the observed preference, in this case the *with*-pattern. According to the OED, *supply* is derived from Latin 'supplere,' *fill*. This core meaning of filling in a gap still echoes in the meaning descriptions in present-day dictionaries, which emphasize that a need is being filled as in "to fulfil, satisfy (*a need or want*) by furnishing what is wanted, to furnish or provide (a person) with something; to satisfy *the wants of*, provide for; now usually, to furnish with regular supplies of a commodity" (OED, emphasis added), "give someone *what they need*" (Macmillan English Dictionary for Advanced Learners 2002, emphasis added). Further, the Longman Dictionary of Contemporary English (1995) adds the semantic specification that *supply* expresses transfer of something needed "especially regularly over a long period of time." Our corpus data indeed contain many examples in which a large quantity of the thing supplied and/or a long period over which it is supplied are explicitly expressed. Examples are (52)-(54):

(52) Undertakers' men and gravediggers had to be *copiously* supplied with liquor to keep them at work, and this added to the disorder and indecency. [BNC ACA1138]

(53) These are simple needs that can be simply met – plants will grow perfectly well in pure sand – provided they are kept *amply* supplied with water and a complete nutrient solution. [BNC ACY1206]

(54) The fuels which the fusion reaction would use are deuterium (a common

isotope of hydrogen) and lithium and the energy potential exists to supply the

world with energy *for at least 5,000 years*. [BNC AT81376]

Since the basic meaning is that of filling a need, and hence often to provide enough of

something to fulfil the need, one can take the meaning of actual receipt to be of greater

importance than that of merely making something available (as is the case with *provide*).

In such a context actual transfer is crucial. It is also not surprising to find that material

themes are very frequent (see the list in (39) above), as they are compatible with an

actual (spatial) transfer of possession. In view of the discussion of the involved patterns'

constructional semantics, the construction which is most compatible with such a

meaning is the [NP V NP *with* NP] pattern. Unlike the *for-* and the *to-*patterns, which

focus on the onset and the directional path towards the goal respectively, the *with-*

pattern focuses on the togetherness of theme and recipient as a result of successful

transfer.

   A further extension of this meaning is found in passives with inanimate subjects

where the meaning is 'equipped with/fitted with something useful'—where again the

focus is on togetherness in one place—or 'there is an abundance of.' These passive

constructions of the type *NP[inanimate] is supplied with* do not necessarily have an

active counterpart, but they do express the possessive 'having' or 'containment'

meaning of the preposition, which cannot be expressed by the *to-* or *for-* patterns. Since

the passive constructions as those illustrated in (55) and (56), occur fairly frequently in

the data (34 out of 153 with-patterns), they can also further explain the attested

frequency of the *with*-pattern.

(55)   …their skin, which is *well supplied with* blood-vessels. [BNC AE71010]

(56)   Bangkok is *well supplied with* shooting galleries. [BNC ABF 943]

The structure *supply something for someone*—not mentioned in any of the dictionaries we consulted—does occur in our data, but with a very low frequency (see Table 3). This may also be explained from the semantics of *supply*. Since its focus is on fulfilling a need, it will occur less frequently in a pattern that merely focuses on the onset of the transfer, that is, on making something available rather than actually furnishing it.

The Preference of present *for the* to-*Pattern*

   Etymologically, *present* goes back to Latin *praesentare* (see also the adjective *present < praesens < prae(esse)* 'be at hand'). Its core meaning can be described as to 'show, display, to make present to, bring into the presence of,' though additional meanings are imported depending on the structure it is used in. In monotransitive, theme-only uses, the 'showing, appear, display' meaning prevails, as shown in the dictionary-based examples (57)-(59):

(57)   present one's passport at the border (Oxford Advanced Learner's Dictionary
        1995, henceforth Oxford 1995)

(58)   I have to present myself in court on 20 May. (Oxford 1995)

(59)   A new problem suddenly presented itself. (Oxford 1995)

The 'display' reading can also be found in ditransitive uses in the NP _ NP *to* NP pattern, where the participant to whom something is displayed is made explicit, as in (60).

(60) For television is not a 'neutral' provider of images or a mere facilitator, it has

increasingly determined the manner in which high performance sport is played

and presented *to* the public. [BNC A6Y657]

Additional shades of meaning are possible as well. First of all, the sense of

displaying or showing is not incompatible with the NP_NP *to* NP's transfer-related

meaning 'X causes Y to go to Z.' Since presenting or showing something often implies

a certain movement of the theme (from a hidden position to one which is visible and

probably also closer to the addressee), it is not surprising to see *present* in such a

context as the more formal equivalent of *give* as illustrated in (61). Note also that

dictionaries explicitly mention such formal contexts in descriptions such as 'give

something to someone, especially at a ceremony' (Oxford 1995):

(61) Colleagues presented a gold watch *to* the retiring chairman. (Oxford 1995)

(62) Mr Jack Price, National President of the Air Force Association of the United

States of America then addressed Conference, extending his Association's

fraternal greetings to the Association in Conference and presenting an inscribed

plaque *to* the Chairman.[BNC A67311]

When human themes occur in this pattern, the meaning is even more specific and is then

interpreted as a formal introduction ('especially to somebody of higher rank or status';

Oxford 1995), as in (63):

(63)   May I present my fiancé to you? (Oxford 1995)

As pointed out, the notion of cause to move is central in the NP_NP *to* NP pattern, while the NP_NP *with* NP pattern, with the central spatial proximity meaning of *with* and related notions of containment (see Langacker 1991; Maldonado 2002; Farrell 2007), focuses more on the possession aspect. This contrast can be illustrated if we put a human theme in the NP_NP *with* NP pattern. For instance, whereas (63) must be interpreted as a simple introduction, (64) would sound odd: the NP_NP *with* NP pattern triggers a reading in which the theme is offered as a present for the addressee to 'have.'

(64)   May I present you *with* my fiancé?

Similarly, in (65a) new products are shown to the sales people, whereas (65b) supports a reading where they would actually receive them.

(65)   a. Each month, the company's new products are presented *to* the sales people

              by the marketing teams. [BNC A6A982]

          b. Each month, the sales people are presented *with* the company's new products

              by the marketing teams.

Further, uses in which *present* means 'deliver, perform, bring,' etc. in collocations with *paper*, for instance, the NP_NP *to* NP pattern prevails. If a *with*-pattern is used, the hearer/reader is more inclined to interpret the scene as one in which a written document is handed to the audience, as in (66).

(66) He returned to Edinburgh in 1866, and tried, unsuccessfully, to present a paper on his Cambodian experiences to the Royal Geofigureical Society. He did manage to read a paper to the British Society at a conference on Geofigurey and Ethnology however, and the pictures he used to illustrate the item were very well received. [BNC APK137]

Finally, similar to *provide* (but unlike *supply*), *present* can also be used in the relational sense of 'constitute,' close to 'represent' or 'be.' In such cases the *for-* and *to-*pattern are possible, but not the *with-*pattern, as shown in (67) and (68).

(67) It was argued that the group's activities presented a threat to national security. (Macmillan English Dictionary for Advanced Learners 2002)

(68) The Democrats now seemed in much disarray, and presented a dismal prospect *for* their new leader, Paddy Ashdown, who had succeeded David Steel. [BNC A661574]

Notably none of the three dictionaries consulted mentions the *for-*pattern. Table 3 shows indeed a very low frequency for this pattern. In all cases where *for* is used in the data, the sense is relational and the themes are such nouns as *problem*, *test-case*, *target*, *opportunity*, *prospect*, *difficulty*, and *dilemma*. Example (69) further illustrates this use:

(69) When deciding how wide to make your stance, look at yourself in a full length mirror to see what kind of *target* you present for your opponent. [BNC A0M541]

It appears from the overview that the *to*-pattern can accommodate most meanings of *present,* and it seems to be the preferred pattern in those cases where something or someone is being introduced or shown, without an implication of actual or potential possession. Since the latter meanings are most frequently attested in the corpus, we can also account for the structural preferences of *present.*

Summing up, the semantic analysis of the verbs shows that the observed constructional preferences can be accounted for in terms of a greater match between the lexical semantics of the verbs and the constructional semantics of the patterns they occur in. The results of these findings can be related to Arnold et al. (2000) and Wasow and Arnold (2003), who make similar, though less explicit and less semantically motivated, claims about the parameters influencing the choice between a double object construction and a prepositional realization of the recipient in the dative alternation. Apart from the effects of end-weight and information structure, Wasow and Arnold (2003) also acknowledge the influence of lexical bias,[RISC1] which causes some verbs to prefer a particular construction over another. In their examination of the structural preferences of the verbs *give*, *hand*, *bring*, *send,* and *sell*, they show that *give* and *hand* display a clear preference for the double object construction, while *send* and *sell* clearly prefer the realization with a prepositional recipient. On the basis of these findings Wasow and Arnold (2003:134) observe that "It is possible that there is a semantic basis for such biases." Noting that subtle semantic differences are associated with the two constructions involved in the dative alternation (see Goldberg 1995), Wasow and Arnold conclude that the interaction of verb meaning and constructional meaning may be responsible for the observed preferences. The present study has provided further evidence for the claim that

we need not be blind to potential differences between uses of a
construction with particular verbs. We need to account for verb meaning
anyway, so it makes sense to look to verb meaning to determine whether
differences in interpretation or in the range of possible paraphrases can be
straightforwardly accounted for by it (Goldberg 2006:43).

Put differently, "functional [and semantic] explanations require reference to the
function of the constructions involved (including the lexical semantics of the words
involved)" (Goldberg 2006:161). Our analysis of *provide*, *supply,* and *present* has
shown this is indeed the case for the data we analyzed. Not only do the data show clear
differences in structural preferences, they also allow us to link these differences to
lexical bias and explain them in terms of the compatibility between the verb's
polysemous senses and the constructional semantics of the patterns involved. In
addition, the analysis has shown that each key item in the construction at the level of
specific lexical items and specific prepositions plays a role in accounting for structural
preferences of the verbs. It also shows that the lexically specific nature of constructions
should be recognized.

Conclusion

In this article we have shown that principles of information structure, semantic prosody,
and types of arguments do not suffice to account for the structural preferences of
provide, *supply,* and *present*. Such principles can partly account for choices between
structures that have the same number of arguments but a different order of recipient
and theme (in other words, the choice between the *to-/for-* and the *with*-patterns), but
cannot explain why a choice is made between *to* and *for,* nor why the three verbs

display different preferences. In order to obtain a more accurate picture, we need to look at the polysemic lexical meanings of the verbs themselves and their compatibility with the constructional semantics of the patterns involved. By adding a lexico-syntactic analysis to the pragmatic one, this study has contributed to a fuller understanding of the at-first-sight puzzling frequencies attested in corpus data.

Notes

1. The codes between square brackets refer to the British National Corpus text files the data are gleaned from. For more information on the British National Corpus (BNC), see http://www.natcorp.ox.ac.uk/.

2. Other formally similar patterns that have been disregarded include instances where the verbs are used in combination with a temporal adjunct introduced by *for*, where *for* introduces a constituent expressing purpose, and instances where the prepositions *to* and *for* do not introduce the intended or actual recipients but Postmodifiers (Quirk et al. 1985:709-710 quoted in Mukherjee 2001:298).

3. In order to account for the selection of the double object pattern over the other structural possibilities, Mukherjee (2001:299) briefly refers to Rohdenburg (1996:149), who introduces a "complexity principle." According to the complexity pattern the less explicit VN1N2 pattern would be preferred to the other grammatically more explicit patterns in cognitively less complex environments. The available data, however, do not allow further corroboration of this principle.

4. The difference between the verbs in terms of constructional preferences is also statistically significant ($\chi^2 = 163.17$, df = 4, p < 0.0001).

5. $\chi^2 = 502.1$, df = 4, p < 0.0001. Interestingly, the study also shows that double object uses (which are very rare in Present-Day English) occur more frequently for many of these Latinate verbs (including *provide* and *present*), presenting a further challenge to the so-called Latinate restriction.

6. The frequencies per million words vary extensively. In spoken data and fiction, *provide* occurs 178.5 and 67.0 times per million words respectively. In news articles and academic writing, however, it appears no less than 330.1 and 861.2 times respectively. Similar results are attested for *supply* and *present*: 28.6 and 26.5 for spoken data and fiction vs. 67.3 and 79.6 for *supply* in news articles and academic writing and 52.0 and 43.4 vs. 123.0 and 258.5 for *present*.

7. In order to trace statistically relevant information of a particular correlation, the statistical chi-squared tests in this article are sometimes based on a selection of columns and rows of the larger table. In this case, for instance, the result of the chi square is based on the distribution animate/inanimate for the *with*-pattern. Because the frequencies of some of the observed phenomena are not always very high, a chi-squared test was used with a Yates correction.

8. The preference of the three patterns for the default light-heavy order is statistically significant ($\chi^2 = 4.8$, df = 1, p = .0001).

9. Dilts and Newman (2006) used a combination of criteria based on Osgood et al. (1957) and Stefanowitsch and Gries (2003).

10. The difference in semantic prosody between *present* on the one hand and *supply* and *provide* on the other hand is statistically very significant ($\chi^2 = 48.179$, df = 1, p < .0001).

11. The preference for animate recipients in the *with*-pattern is explicable and predictable from research on the dative alternation. Thompson (1989) found that

post-verbal nouns tend to have the properties linked to topic-worthiness. The present article not only shows that a significant number of recipients in the *with*-pattern are animate (see Figure 1) and that information structuring principles play an important role, but also that more than half of the recipients in the *with*-pattern are either pronominal or proper names for each of the three verbs (35 out of 69 in the *provide* data, 70 out of 153 in the *supply* data, and 57 out of 109 in the *present* data). These findings bear out what can be predicted from Thompson (1989).

12.   These figures are based on the merged results of the effects of end-focus and end-weight, including patterns with the same weight but a different information value and those with the same information value but a difference in weight.

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TABLE 1

Structural Preferences of *provide* in Five Corpora, Based on Mukherjee (2001)

	LOB	*FLOB*	*Brown*	*Frown*	*BNC*	TOTAL
Prepositional theme	24	32	35	34	61	186
with	**24**	**32**	**35**	**34**	**61**	**186**
Prepositional recipient	72	112	110	135	186	615
for	**60**	**81**	**86**	**92**	**148**	**467**
to	**12**	**31**	**24**	**43**	**38**	**148**
NP NP	0	0	3	4	0	7
Subtotal	96	144	148	173	247	808
Other	302	396	360	404	753	2215
Total	398	540	508	577	1000	3023

TABLE 2

Frequency of Animate and Inanimate Recipients in the *with-* and *for-* Patterns, Based on

Mukherjee (2001). Percentages have been rounded to the nearest half decimal point.

	with-pattern Animate	*with*-pattern Inanimate	*for*-pattern Animate	*for*-pattern Inanimate
LOB	22 (92%)	2 (8.5%)	27 (45%)	33 (55%)
FLOB	27 (85%)	5 (15.5%)	36 (44.5%)	45 (55.5%)
BROWN	32 (91.5%)	3 (8.5%)	42 (49%)	44 (51%)
FROWN	31 (91%)	3 (9%)	41 (44.5%)	51 (55.5%)
BNC	57 (93.5%)	4 (6.5%)	72 (48.5%)	76 (51.5%)

TABLE 3

Frequency of Attested Structures. Percentages have been rounded to the nearest half

decimal point.

	provide	*supply*	*present*
Prepositional theme *with*	69 (29.5%)	153 (52%)	109 (36%)
Prepositional recipient	165 (70%)	139 (47.5%)	195 (64%)
for	*104 (44%)*	*44 (15%)*	*18 (6%)*
to	*61 (26%)*	*95 (32.5%)*	*177 (58%)*
NP NP	1 (0.5%)	1 (0.5%)	0
Subtotal	235 (23.5%)	293 (29.5%)	304 (30.5%)
Other	765 (76.5%)	707 (70.5%)	696 (69.5%)
Total	**1000 (100%)**	**1000 (100%)**	**1000 (100%)**

Figure 1: *Provide, supply, and present*: Animate Versus Inanimate Recipients

[Unknown A3]
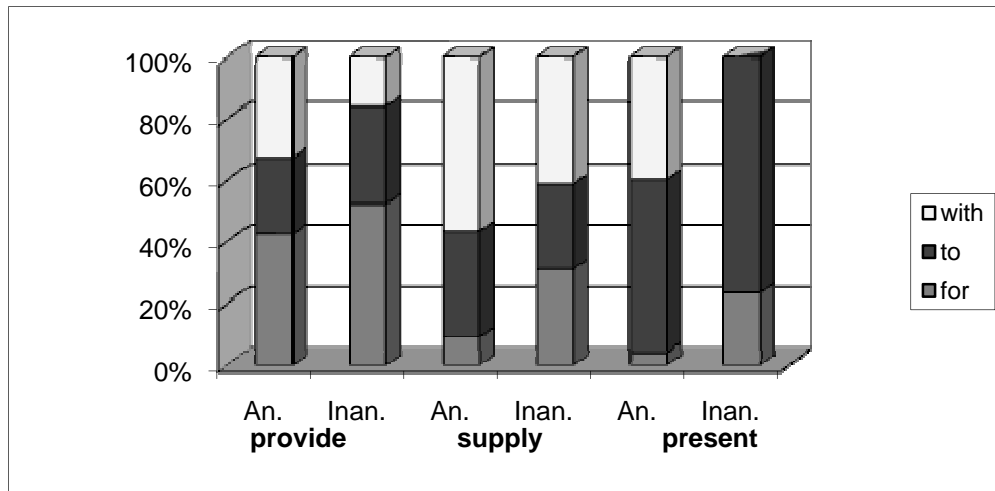
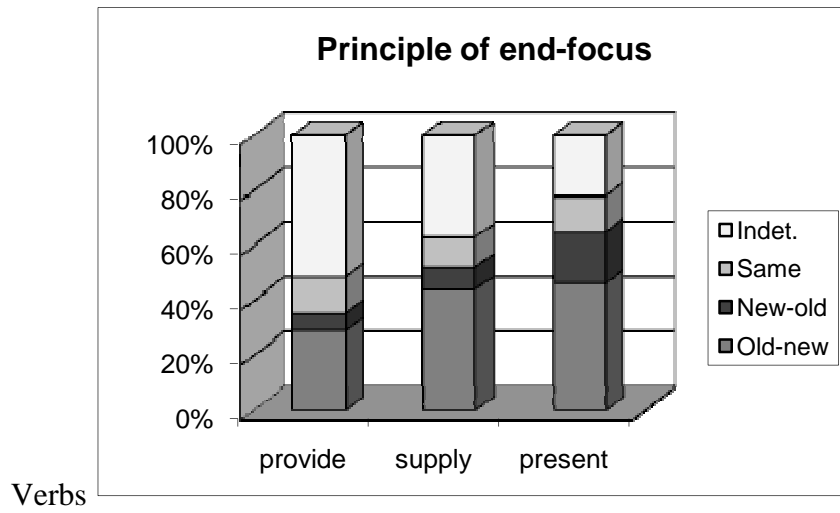**Figure 2:** Correlation between End-weight and Pattern Selection
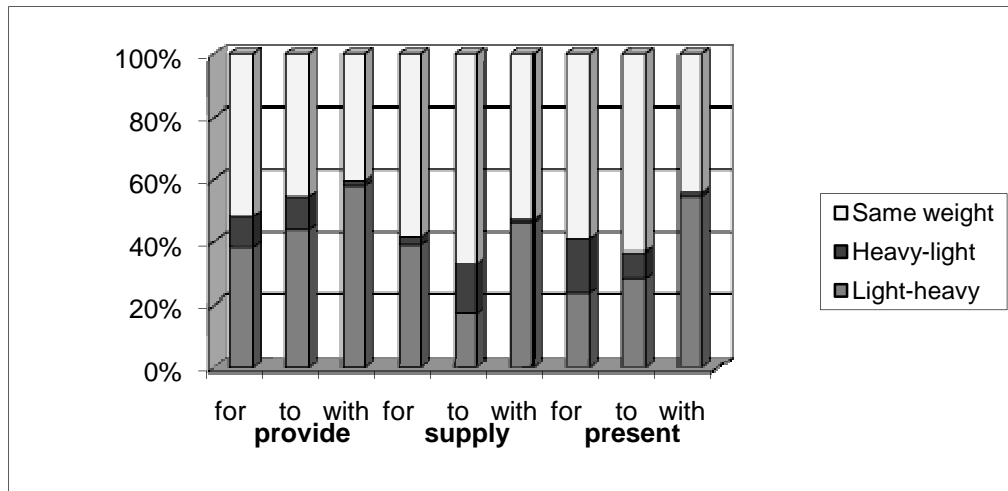
Figure 3: The Relative Frequency of End-focus in the Attested Instances of the Three

Verbs

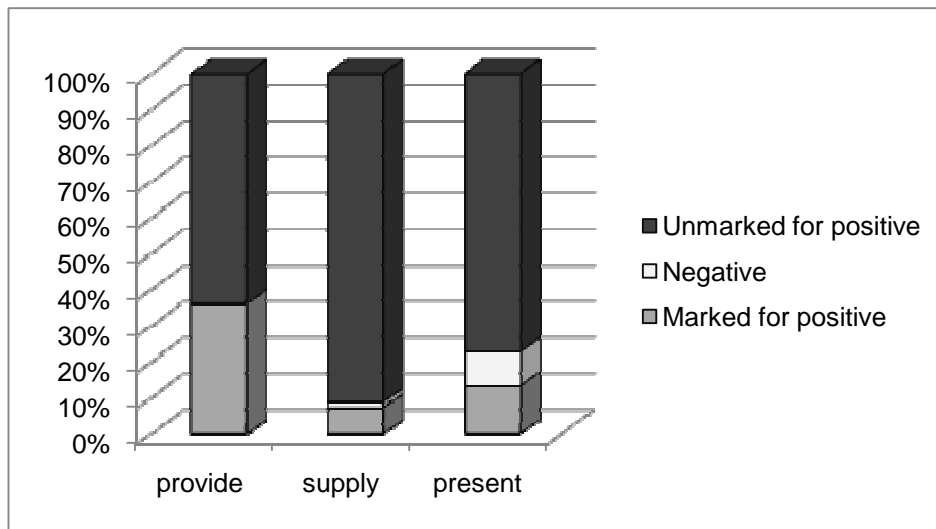**Figure 4:** The Semantic Prosody of the Themes in the Attested Instances

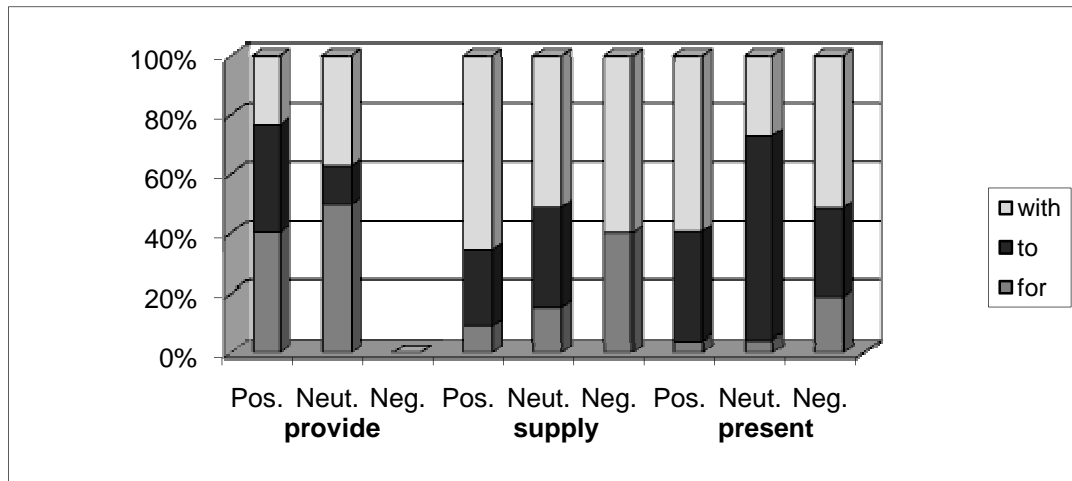**Figure 5:** The Correlation between Semantic Prosody of the Themes and the Prepositional Patterns for the Three Verbs
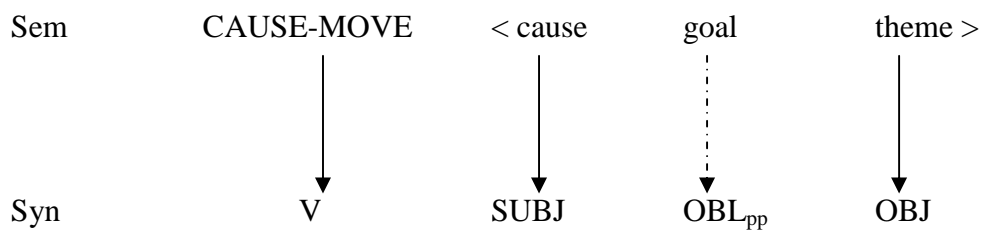

Figure 6: Semantics of the [NP V NP *to* NP] construction (Goldberg 1995:88)

Sem   CAUSE-MOVE   < cause   goal   theme >

Syn   V   SUBJ   OBL$_{pp}$ OBJ

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Gries & Stefanowitsch 2004:109)