DATIVE VERBS AND LEXICAL ALTERNATION IN ENGLISH: A STUDY OF NATIVE SPEAKER PRODUCTION

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This study is an investigation of Pinker's (1989) theory of lexical structure and lexical alternation with native speakers of English, using dative verbs as a test case. Pinker's theory captures the complex semantic conditions that influence whether or not a particular verb can alternate between related lexical structures. In the first two sections I will discuss the dative alternation, the types of constraints that restrict the productivity of the double object dative (DOD), how Pinker accounts for the constraints within his theory, and the existing research evidence that bears on the theory. In the subsequent three sections I will report a study that investigated how native speakers of English used dative verbs and the DOD lexical structure in two production tasks. The results support Pinker's view that lexical alternations do not apply broadly across verbs, but rather are restricted in very narrowly defined ways based on individual verbs' semantic structures.

I. The dative alternation and four constraints

Three dative lexical structures in English are related to one another both grammatically and semantically: two prepositional datives (PD) and one double object dative (DOD). Four constraints determine when a particular dative verb can occur in the DOD: the possession, verb class, morphological, and discourse constraints. The DOD is possible only if the verb indicates a change of possession, belongs to a semantic verb class that permits the DOD, is either morphologically derived from a native English verb or morphologically similar to native verbs, or represents a situation in which the object changing possession is new information in the discourse and thus occurs as a noun phrase rather than a pronoun. The PD lexical structure is not constrained in these ways, and thus is far more productive than the DOD.

Dative lexical structures

The three dative lexical structures share the meaning that there is intended transfer of an object to an animate goal, but they differ in the precise semantic role of the goal:

Structure	Semantic role	Examples
PD	Recipient	Mary gave a book **to John**.
PD	Beneficiary	Mary bought a book **for John**.
DOD	Possessor	Mary gave/bought **John** a book.

In both PD lexical structures, the theme object (*a book*) is next to the verb, and the animate goal (*John*) is encoded in a prepositional phrase (*to/for John*). They differ in whether the goal is a recipient (with the preposition *to*) or a beneficiary (with the preposition *for*). In the DOD lexical structure, the animate goal (*John*) occurs directly next to the verb, without a preposition. It has the semantic role of possessor, following the analysis of Stowell (1981) and Pinker (1989). Some verbs permit both the PD and DOD structures; however, the DOD is not allowed for all verbs that permit a PD structure, because the productivity of the DOD is limited by the possession, verb class, morphological, and discourse constraints, as illustrated in Table 1.

Table 1

Four constraints on the English dative.

POSSESSION

1. Mary sent a car to John/drove a car for John.
    Mary sent John a car/*drove John a car.
2. Mary passed the salt to John/put the salt next to John.
    Mary passed John the salt/*put John the salt.
3. Mary gave/*cost a job to John.
    Mary gave/cost John a job.

VERB CLASS

4. Mary offered/rewarded a promotion to John.
    Mary offered/*rewarded John a promotion.
5. Mary took/carried an ice cream cone to John.
    Mary took/?*carried John an ice cream cone.
6. Mary kicked/pushed a ball to John.
    Mary kicked/?*pushed John a ball.
7. Mary told/whispered a secret to John.
    Mary told/*whispered John a secret.
8. Mary bought/chose a new tie for John.
    Mary bought/*chose John a new tie.

MORPHOLOGY

9. Mary made/constructed a tree house for John.
    Mary made/*constructed John a tree house.

DISCOURSE

10. Who did Mary buy that tie for?
                    She bought it for John.
                    *She bought John it.
11. What did Mary get John for his birthday?
                    She bought a tie for him.
                    She bought him a tie.

Possession constraint

The DOD lexical structure is possible only if possession of an object has changed or has been affected by the action of the verb (Goldsmith, 1980; Green, 1974; Gruber, 1976; Mazurkewich and White, 1984; Oehrle, 1976; Pinker, 1989; Stowell, 1981; Wolfe-Quintero, 1993). The first two examples in Table 1 show that the DOD is not possible for *drive*, which indicates a benefit that cannot be possessed, or for *put*, which indicates a change of location, because they do not mean that the goal (*John*) comes into possession of the object. In contrast, *send* (indicating means of transfer of possession, like *ship, mail, fax*) and *pass* (indicating physical transfer of possession, like *hand*) readily occur in the DOD. The clearest case of change of possession is when a goal comes into possession of an object by means of transfer of the object, as in *Mary gave the book to John*. Thus the recipient PD has the most direct semantic relationship to the DOD.

The third contrast between *give* and *cost*, however, illustrates that the possession constraint and the DOD are independent of the semantic concept of transfer. The verb *give* is a member of the verb class that indicates physical transfer of possession, whereas cost is a member of the verb class that indicates negatively affected possession, but not necessarily transfer (like *envy, deny, refuse*). In the sentence *Mary cost John a job*, John's potential possession of the job is negatively affected by Mary, even though no object has changed hands. Both *give* and *cost* are possession verbs, so they can occur in the DOD, but cost cannot occur in the recipient PD because there is no transfer between the agent and the goal. The DOD lexical structure focuses on **possession of an object by a goal**, whereas the recipient PD lexical structure focuses on **transfer of an object to a goal**.

Verb class constraint

Fourteen dative verb classes have been identified by Pinker (1989), following the work of Green (1974). Each verb class is uniquely definable by a set of semantic features, and verbs within each class share the same semantic features and lexical alternations. The DOD verbs belong to different verb classes than the non-DOD verbs, and these classes can be distinguished on the

basis of different combinations of universal semantic features that define verb class membership. In the verb class section of Table 1, all of the verbs are used in situations that imply the transfer of an object to an animate goal, yet only some of them are grammatical in the DOD.

In example four, *offer* indicates the **future intention of transfer** (like *promise*), but *reward* indicates the **transfer of something deserved** (like *present, supply*) and requires use of the preposition *with*. Examples five and six illustrate a set of interesting contrasts: *take* is a member of the class that indicates the **direction of continuous transfer** (like *bring*), and *kick* is a member of the class that indicates the **manner of instantaneous transfer** (like *throw, toss, lob*). These verbs permit the DOD, unlike *carry* and *push*, which are members of the class that indicates the **manner of continuous transfer** (like *lift* and *reach*).[1] This means that neither the manner-direction contrast nor the instantaneous-continuous contrast can by themselves determine participation in the DOD (Pinker, 1989). In example seven, *tell* and *whisper* can be distinguished because *tell* belongs to the class of **general communication** (like *tell, show, write, teach*), but *whisper* belongs to the class of **manner of verbal communication** (like *whisper, shout, murmur, yell*). And in example eight, *buy* and *choose* can be distinguished because *buy* belongs to the class of **transfer of something obtained** (like *get, obtain, find*), but *choose* belongs to the class of **transfer of something selected** (like *pick out* and *select*). All of these semantic meanings are compatible with the broader possession constraint – some thing has been transferred to a goal, which can come into possession of that thing – but only some of these semantic verb classes permit the DOD.

Morphological constraint

In addition to the possession and verb class constraints, there is also a morphological constraint on a verb's occurrence in the DOD (Green, 1974; Mazurkewich and White, 1984; Oehrle, 1976; Pinker, 1989). In general, Latinate verbs that were borrowed into English from French are excluded from the DOD by the morphological constraint, although the basis for that

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[1] Several people have told me that they accept the DOD for *carry* and *choose*, and Green (1974:78) accepts carry in the DOD. For a discussion of the issue of dialect and grammar differences, see Ertischik-Shir (1979), Hudson (1992), and Wolfe-Quintero (1993).

exclusion is now morphological structure rather than origin. Historically, the PD was introduced with the borrowing of morphologically longer French verbs, whereas the DOD continued to be associated with the morphologically shorter native English verbs, which have only one stressed syllable (Grimshaw and Prince, 1986; Visser, 1963). In example nine in Table 1, both *make* and *construct* are members of the class of verbs that indicate transfer of something created (like *build, bake, sew*), and this class permits the DOD. The verb *construct* is excluded because it was borrowed into English from French.

However, Pinker (1989:119) shows that the morphological constraint does not apply generally to all verbs in English, but rather applies selectively to different verb classes. For example, the verb class that indicates **physical transfer** excludes Latinate verbs from the DOD (e.g., *Mary gave/*donated the charity all of her money*), but the verb class that indicates the **future intention of transfer** do permit Latinate verbs to occur in the DOD (e.g., *Mary offered/promised/bequeathed John all of her money*). Of the nine verb classes that permit the DOD, six are sensitive to the morphological constraint, and three are not.

Discourse constraint

There is also a discourse constraint that prohibits the DOD if the object being transferred occurs as a pronoun (e.g., **she bought John it*). This constraint is based on the more general function of the DOD in discourse to highlight the object being transferred by placing it in the dominant, focusing, or new information, position (Ertischik-Shir, 1979; Creider, 1979). In Table 1, example ten shows that the DOD is ungrammatical if the object is old information and thus occurs as a pronoun. Example eleven shows that both the PD and DOD are possible when the object is new information (occurring as a full noun), although the DOD seems preferable unless tie receives contrastive stress (e.g., *she bought a **tie** for him*). This constraint applies even to a verb like *buy*, which is capable of indicating possession, belongs to an alternating verb class, and meets the morphological criteria.

In English, the possession, verb class, morphological, and discourse constraints limit the productivity of the DOD lexical structure. In comparison, the PD lexical structure is more neutral semantically and more productive

syntactically. The PD can be used in either possession or non-possession situations, with any dative verb except negative possession verbs, whether the verb is native or Latinate, and without any particular grammatical restriction on pronoun use.

II. Pinker's theory and relevant research

The analysis of the dative alternation presented above is largely based on Pinker's (1989) work on four major lexical alternations in English (dative, causative, locative, and passive). He proposed a theory of lexical structure to account for the representation and acquisition of these alternations. In this theory, there are two levels of lexical structure: a level of broad semantic structure ('thematic cores') related to lexical alternations, and a level of narrow semantic structure ('parameterized lexicosemantic structures') related to semantic verb classes. Lexical alternations describe the relationship between lexical structures at the most general semantic level; that is, they describe the meaning that all verbs share when they occur in a particular lexical structure. However, there are more narrowly defined groups of verbs that share the same set of universal semantic features, and they participate together in any alternations as a class. Even though a lexical alternation may exist at a very broad level, not every narrow class of verbs can participate in the alternation. This means that lexical alternations are productively applied to new verbs only if they meet the necessary semantic criteria at both the broad and narrow levels.

Based on Pinker's theory, three proposals can be tested empirically: the broad generalizability of the DOD and its relationship to the possession constraint; the narrow verb classes and their differing participation in the DOD; and the interaction between the morphological constraint and particular verb classes. Two studies have investigated the possession and morphological constraints (Gropen, Pinker, Hollander, Goldberg, and Wilson, 1989; Yoshinaga, 1992), and one has investigated the narrow verb class differences (Yoshinaga, 1992).

Possession constraint

In Pinker's theory, there is a broad level of lexical structure that he calls 'thematic cores,' because they represent only the semantic features that are directly linked to grammatical arguments. These semantic features contain the same information that is handled in more traditional grammatical theories by thematic roles. The dative thematic cores and their links to grammatical arguments are shown below:

recipient PD   Mary gave a book to John
                         X acts on Y causing Y to go to Z
                      SUBJ   OBJ OBL$_{to}$

benefactive PD   Mary bought a book for John
                         X acts on Y for the benefit of Z
                      SUBJ   OBJ OBL$_{for}$

possession DOD   Mary gave/bought John a book
                         X acts on Z causing Z to have Y
                      SUBJ   OBJ OBJ

In the possession DOD thematic core, X is an agent because she acts on Z, and Z is both an experiencer of that action, and a possessor of Y.[2] The possession constraint is actually built into the DOD lexical structure at the broad level: Z comes into possession of Y. This approach captures the semantic concepts 'change of/affected/prospective possession' by means of the semantic features 'cause to have,' which are otherwise necessary for various lexical structures and grammatical linking. This differs from Pinker's earlier (1984) approach and Mazurkewich and White (1984), who proposed that the possession constraint is a semantic condition that is appended to a grammatical DOD lexical rule (e.g., 'NP1 PP alternates with NP2 NP1, only if NP2 is possessor of NP1').

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[2] For the verbs that indicate that possession has been negatively affected, the thematic core may be 'X acts on Z causing Z not to have Y,' as in Mary cost John the job.

Support for the existence of the possession constraint (but not a particular representation) comes from the Gropen et al. (1989) study and the Yoshinaga (1992) replication. In both of these studies, sixty-four native speakers of English were asked to rate the acceptability of eight made-up verbs occurring in the PD and DOD on rating scales from –3 to +3. To establish a meaning for the made-up verbs, each appeared several times in a paragraph that portrayed either a possessional or non-possessional context, with either a recipient or benefactive goal. The verbs also varied in whether they were mono- or polysyllabic (e.g., *pell* vs. *orgulate*). After the paragraph, the sentences to be judged appeared in a list with the rating scales (e.g., *Bob pelled his house to Sue/Bob pelled Sue his house*). The researchers found that the PD was rated significantly higher than the DOD, and that verbs used in a possession context were rated significantly higher than in a non-possession context. More importantly, there was a structure by possession interaction, with the PD being equally acceptable for possession and non-possession meanings (with an average rating of 2.7 in Gropen et al.), but the DOD being neutral for possession meanings (with an average rating of 0) but rejected for non-possession meanings (with an average rating of -2). This clearly indicates that for verbs the subjects had never before heard in the DOD, if the context did not include a possessional meaning, the DOD was rejected.

Support for Pinker's (1989) theory that lexical alternations are alternations of semantic structure comes from child acquisition studies. In spontaneous speech, children overgeneralize the DOD only for benefactive favors, which are metaphorical extensions of possession, but not for transfer to an inanimate recipient (e.g., they say *button me the rest*, but not *bring the park the ball*; Gropen et al., 1989). Gropen et al. devised an experiment in which an object was transferred in several unusual ways between the experimenter and three different recipients, corresponding to made-up verbs. They found that thirty-two children between 5;8 and 8;11 were more likely to produce the DOD with the made-up verbs if the recipient was the child himself (52%), less so if it was an animate toy (38%), and fewest if it was an inanimate object (32%). It should be noted that in preliminary modeling, the DOD was produced by the experimenters with all three recipient types (including the ungrammatical *I'm sending the chair a ball*), but most for the child as recipient. This means that the results may have been influenced by

the modeling, and the children might have been even more conservative had there been no modeling. Even so, they produced the DOD fewer times for inanimate recipients, despite an experimental task and modeling that encouraged them to do so. If the constraint was merely appended to a grammatical rule, there should be a stage in which children freely produce the DOD without regard to possession by an animate goal, but there is no evidence for this in spontaneous speech, and the experimental evidence suggests some reluctance to produce inanimate goals in the DOD as compared to animate goals.

Verb class constraint

In Pinker's theory, there is also a narrow level of lexical structure that he calls 'parameterized semantic structures,' because they include all of the grammatically relevant semantic features of a particular verb, not just the features that are linked to grammatical arguments. These structures determine verb class membership, because there are groups of verbs that share the same semantic features, differing only in idiosyncratic properties that are not grammatically relevant. For example, the verbs *throw*, *toss*, and *kick* all share the same narrow lexical structure specifying the motion involved: 'X [John] acts on Y [Mary] causing Y to have Z [a ball] by means of X acting on Z in some manner of instantaneous, non-continuous causation of motion' (adapted from Pinker, 1989:211f). At the level of narrow lexical structure, there is no semantic difference between *throw*, *toss*, and *kick*. At a more general conceptual level, the differences in the exact manner of motion must be specified, but they are not grammatically relevant. Because these verbs share the same semantic features, they participate in the same lexical alternations. This means that the verb class constraint is built into lexical structure just as the possession constraint is, but at a narrower level of detail.

Support for the existence of narrow classes of verbs that share the same semantic structure and lexical alternations comes from the second study reported in both Yoshinaga (1992) and Bley-Vroman and Yoshinaga (1992). Eighty-five native speakers of English were asked to rate the acceptability of six real and six made-up verbs occurring in the PD and DOD on rating scales from -3 to +3. Each verb was monosyllabic and appeared in a paragraph that

portrayed a possessional context, followed by the sentences to be judged. The real and corresponding made-up verbs were drawn from six different dative verb classes, with three of them permitting the DOD and three of them not. For example, the real verb *whisper* and the made-up verb *feen* were both used in situations portraying manner of verbal communication (e.g., *feen* meant communicating a message to a robot in a high-pitched voice), thus making them members of a verb class that does not permit the DOD (which also includes *murmur, shout,* and *yell*). The question was whether subjects would be able to recognize whether or not the made-up verbs alternated.

The researchers found that there was a significant effect for dativizability: the subjects were able to distinguish between the DOD and non-DOD verbs, both real and made-up. There was also an interaction between authenticity and dativizability, with the distinction between DOD and non-DOD being greater for the real verbs than the made-up verbs. For the real verbs, the contrast in ratings between the DOD and non-DOD verbs was 2.29 vs. -1.69, but for the made-up verbs, the contrast was 1.14 vs. -.56, a narrower, although significant, gap. Subjects were less able to distinguish between the DOD and non-DOD for made-up verbs, which is not surprising given the single exposure on which dativizability was decided. None of the verbs violated either the possession or morphological constraints, and thus were not rejectable on any grounds other than verb class membership. The only possible explanation for the results is that subjects were able to recognize the difference between alternating and non-alternating made-up verbs on the basis of the semantic characteristics of real verbs. This supports Pinker's theory that lexical alternations are determined by verb class membership at a narrow level.

Morphological constraint

In Pinker's theory, morphological structure is another piece of information listed in a verb's lexical entry that can be used to relate verbs to one another. Verbs that share morphological features can participate as a group in various types of lexical alternations. However, the question is whether morphological features influence lexical alternation at a broad or narrow level. Mazurkewich and White (1984) and Pinker (1984) proposed that the morphological constraint, like the possession constraint, is appended to the dative lexical rule

and operates at a broad level (e.g., 'NP1 PP alternates with NP2 NP1, only if NP2 is possessor of NP1, and only if the verb is morphologically native'). However, Pinker (1989) showed that only some of the verb classes obey the morphological constraint, which suggests that morphological classes interact with semantic verb classes at a narrow level.

The Gropen et al. (1989) and Yoshinaga (1992) studies discussed above were also designed to investigate the morphological constraint at a broad level, and included both mono- and poly-syllabic verbs as part of the experimental conditions. However, neither study found a significant effect for morphology overall, although Gropen et al. (1989) found an interaction effect between morphology and preposition type. Monosyllabic verbs were preferred over polysyllabic in the DOD only if the paragraph used the preposition *to* (that is, the recipient PD). Both studies found that a strong effect for morphology was evident for one situation in particular, in which the verb represented the transfer of property (e.g., *Bob pelled Sue his house* was far better in the DOD than *Bob orgulated Sue his house*). Gropen et al. concluded that the morphological constraint is more likely to be followed in more semantically transparent cases of transfer to recipients. Although these results are suggestive, the sensitivity of the morphological constraint to differences between narrow verb classes has not been investigated directly.

Additional support for the position that the morphological constraint operates at a narrow level in the lexicon comes from child overgeneralization data, because morphological errors look like other types of narrow verb class errors. Although children do not overgeneralize the DOD in non-possession situations, they do overgeneralize the DOD both for verbs outside of alternating classes (e.g., *say*), and for verbs that are morphologically excluded (e.g., *explain*; they produce utterances like *say me the story, explain me the story*; Gropen et al., 1989). Pinker (1989) suggests that both of these error types arise because verbs' lexical structures have not yet been fully acquired. Since lexical alternations depend upon both narrow semantic and morphological features to distinguish between verbs, until the necessary discriminating information is acquired, a child's verb classes will be too broad. This means that a verb's ability to alternate is decided at a narrow level, based on the child's representation of the verb's semantic and morphological characteristics. As the details are acquired and verbs get

distinguished from one another, overgeneralization errors retreat.

Discourse constraint

The discourse constraint is tied to pragmatic considerations rather than semantic structure, so it is outside the scope of Pinker's theory. However, it is necessary for the grammar to specify somewhere that the constituent Y in the DOD lexical structure cannot occur as a pronoun. What is needed is a way to specify that the DOD lexical structure brings the object into a focusing position and that this position is incompatible with a pronoun. If this is true throughout the grammar, it could be specified separately in a discourse component. If this is true only for certain lexical structures like the DOD, then it would have to be stated for each lexical structure, either by a feature such as dominance, or as part of a semantic structure that indicates focusing properties. Ertischik-Shir (1979) proposed that the feature [+ dominant] be added to the object in the DOD to block the occurence of pronouns in that position (with a statement elsewhere that [+dominant] ≠ pronoun). Borrowing Pinker's formalization, this would result in the following thematic core for the DOD:

$$X \text{ acts on } Z \text{ causing } Z \text{ to have } Y$$

          [+dom]

SUBJ   OBJ   OBJ

While there has been no empirical investigation of the discourse constraint on pronouns, Gropen et al. (1989) did investigate the discourse function of the dative in one of their studies, showing that eliciting the DOD is most successful either when it is modeled, or when the prompt mentions the goal, thereby setting up the object as the focus (new information) of the response. Sixteen children between 5;0 and 8;6 were shown actions in which an object was transferred in an unusual way between the experimenter or child to an animate toy. The action was described using a made-up verb, with modeling of either the DOD or PD, and then the child was asked either a theme-topic question to elicit the PD (*Can you tell me what I'm doing with the ball?*) or a goal-topic question to elicit the DOD (*Can you tell me what I'm doing with the*

mouse?). When the DOD was modeled, the children produced the DOD about half the time for both types of questions (50% for goal questions, 58% for theme questions). However, when the PD was modeled, the children produced the unmodeled DOD primarily in response to the goal question (44% for goal questions, 17% for theme questions), showing that they were sensitive to its discourse function.

III. Research design

In this study, the purpose was to investigate the lexical structures of dative verbs as well as the possession, verb class, and morphological constraints in native speaker production data. The discourse constraint on pronoun use was not investigated, but the discourse function of the dative was utilized to encourage production of the DOD.

Tasks
Two experimental tasks were administered to adult native speakers of English. The first was a free production writing task, in which the subjects used the verbs in sentences to describe a family's interactions. The second was an elicited production writing task, which directly encouraged use of the DOD to describe situations involving the same family. The elicited production task was administered second in order not to bias subjects' free production responses.

Subjects
The subjects for both experimental tasks were students at a community college in Hawai'i taking an introductory course in English composition. Thirty-five subjects participated in both tasks, and an additional sixteen subjects participated in the second task (for a total of 51). The subjects were native English speakers from both Hawai'i and mainland states. Five of the subjects also spoke a second language.

Test verbs
Eighteen test verbs were drawn from different narrow verb classes based on Pinker's (1989) proposal. They were grouped in contrasting pairs of verbs related to the possession, verb class, and morphological constraints:[3]

		DOD?
POSSESSION		
means of transfer of possession	*send*	yes
non-possessible benefit	*drive*	no
physical transfer of possession	*pass*	yes
non-possessible location change	*put*	no
physical transfer of possession	*give*	yes
adversely affected possession	*cost*	yes
VERB CLASS		
future intention of transfer	*offer*	yes
transfer of something deserved	*reward*	no
direction of continuous transfer	*take*	yes
manner of continous transfer	*carry*	no
manner of instantaneous transfer	*kick*	yes
manner of continuous transfer	*push*	no
general communication	*tell*	yes
manner of verbal communication	*whisper*	no
transfer of something obtained	*buy*	yes
transfer of something selected	*choose*	no
MORPHOLOGY		
transfer of something created		
monosyllabic	*make, bake*	yes
polysyllabic	*construct*	no

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[3] On task one, the verbs *tell* and *drive* were inadvertently omitted, and on task two, the verb *bake* was inadvertently substituted for *make*, although both are members of the same verb class.

These verbs were grouped both by constraint and by pairs that illustrate particular contrasts. Three of the verb contrasts were designed to check various features of the possession constraint. The first and second contrasts examined the difference between actions that are possessible and actions that are not. The third contrast examined the difference between a general possession verb and a verb from the class of negatively affected possession. For the verb class constraint, five contrasts examined the differences between pairs of semantically similar verbs, one of which does not permit the DOD. For the morphological constraint, one contrast examined the difference between two verbs from the same verb class, one of which is excluded from the DOD based on morphology (the Latinate, polysyllabic verb construct). The goal was to see how these verbs pattern in comparison with one another in native speaker production.

Research questions

1. Which lexical structures do English speakers produce for each verb?
2. What patterns of lexical alternation are evident across subjects' free production responses?
3. How willing are subjects to produce the DOD when it is directly elicited?
4. For each verb pair, how does production of the DOD relate to the possession, verb class, and morphological constraints?

IV. Free production task

Materials

In order to elicit dative lexical structures, it was necessary to focus subjects' attention on interactions between two characters, as in the DOD sentence *Sue made Ann a cake*. The subjects were given pictures of a family, including a husband and wife (Tom and Sue); a daughter (Ann); and a dog (Spot). Below the pictures was a list of 17 verbs and instructions to write sentences about the family, using each verb in only one sentence (see Appendix). Subjects were

told they could write anything they liked, and use any tense of the verb they wanted to. The first verb, *eat*, was used as a practice verb to make sure the subjects understood the task. To counterbalance for any effect of verb position on the responses, there were two versions with two different orders of verbs, distributed randomly.

The strategy of having the subjects focus on a particular family was successful, as out of 560 possible responses (35 subjects x 16 verbs), they produced 263 responses (47%) with a second character mentioned in the verb phrase. All subjects produced at least one such sentence, with an average of 7.5 per person.

Data coding

The first procedure in data coding was to identify the variety of lexical structures that were produced by the subjects for each verb. The subjects did use these verbs in the possession DOD, recipient PD, and benefactive PD lexical structures, but they also used them in a variety of other structures. Of these, there were four frequent and related lexical structures included in the investigation. These were labeled as goal, path, location, and theme semantic types. These share the same [__ NP PP] grammatical structure, so they had to be differentiated on the basis of semantically different function words. Listed below are examples of these types taken from the free production data:

POSSESSION (DOD)   Sue offered Ann a cookie.
                          The car cost Tom $10,000.

RECIPIENT (PD)   Ann sent a letter to her mother.
                          Sue passed the salt to Tom at dinner.
                          Tom whispered something to Ann.

BENEFACTIVE (PD)   Tom constructed a doghouse for Spot.
                          Sue makes dinner for her family every night.

GOAL   Sue carried Ann to bed.
                          Ann carried her books to school.
                          Tom took Ann to the park/home.

PATH   Sue took/carried/put Spot outside (in the yard).
                          Sue took/carried food across the room (to Spot).
                          Ann pushed Spot off of the table.

LOCATION   Ann put a doll on her bed.
                          Sue put a leash on Spot.
                          Tom whispered something in Ann's ear.

THEME   Sue kicked Spot [because she was angry].
                          Tom chose Sue.
                          Ann bought a new doll.
                          The house cost a lot of money.

Any sentence containing an animate noun as direct object and another noun as second object was coded as possession (POSS). If a sentence contained a direct object and an animate noun in a prepositional phrase using the prepositions *to* and *for*, it was coded as recipient (REC) and benefactive (BEN), respectively. Those with a direct object and a location encoded in a prepositional phrase using the preposition *to* were coded as GOAL. The lexical item *home* was also accepted as a goal, since it incorporates the preposition *to*. Any sentence containing a direct object followed by a preposition implying movement, e.g., *out, away, across, down, off, into*, etc. was coded as PATH, regardless of the various NP or PP phrases following the preposition. Those with a direct object followed by a prepositional phrase with *in, on,* or *at* were coded as location (LOC). And those that occurred only with an NP object were coded as theme (THM). The sentences that were coded as 'other' (OTH) varied from those with verbal complements (*Tom chose Sue to be his wife*) or comparatives (*Tom chose between a red tie and a blue one*), to verbs used as nouns (*Tom's boss made him an offer, Tom advertized a reward for Spot*), phrasal verbs (*put on a dress, take care of Spot, give Spot away*), or other semantic roles like intransitive goal (*Tom whispered to Sue*), accompaniment (*Tom took a walk with Spot*), or purpose (*The boss rewarded Tom for his work*). Any additional phrases following main clauses that were connected by conjunctions (e.g., *because, when, in order to*) or adverbial phrases (e.g., *at 3:00, every night*) were ignored. These criteria were developed throughout the data analysis process so that every sentence could be unambiguously classified.

Results

A two-way contingency table based on the frequency the test verbs occurred in each lexical structure was analyzed using a chi-square statistical test. Note that each subject contributed only one response per verb, which meets the criterion of independence within cells. This 16 x 8 table (verb x semantic structure) is shown in Table 2. The null hypothesis was that subjects would produce the verbs in each lexical structure with equal frequency. The results show that there is a statistically significant pattern of association between verb and lexical structure (n= 560, df=105, $c2$ = 911.76, p < .0001). This result

will be discussed with reference to the first two research questions.

1. Which lexical structures do English speakers produce for each verb?

In these data, different verbs were associated with different lexical structures. Only give and offer occurred frequently in the POSS lexical structure, only send occurred frequently in the REC lexical structure, and no verbs occurred frequently in the BEN lexical structure. Rather, the remaining 'dative' verbs appeared to be more strongly associated with other lexical structures. For example, take and carry occurred most often in the GOAL lexical structure, and push most often in the PATH lexical structure. Many of the verbs occurred most often with a theme object (THM; i.e., cost, kick, buy, pass, make, and construct). A few verbs (whisper, choose, and reward) occurred most often in other lexical structures. As far as production of the DOD was concerned, there were three layers of frequencies: give (26) and offer (21) with the most DOD; buy (10), send (7), and cost (7) with some DOD; and pass (3), make (3), construct (2), and take (1) with very few.

Table 2
Frequency test verbs were produced in various lexical structures.

VERB	POSS	BEN	REC	GOAL	PATH	LOC	THM	OTH
POSSESSION								
send [drive]	7		14	9	4			1
pass	3		4		1	1	21	5
put					21	8		6
give	26		4					5
cost	7						28	
SEMANTIC FEATURES								
offer	21	1	3				1	9
reward							1	34
take	1		1	15	10	1	3	4
carry		1	1	14	5		13	1
kick		1	2		1	1	28	2
push					14	1	15	5
[tell] whisper			4			1	1	29
buy	10	3				1	21	
choose		1					16	18
MORPHOLOGY								
make	3	3					23	6
construct	2	3					25	5
TOTALS	80	13	33	38	56	14	196	130

2. What patterns of lexical alternation are evident across subjects' free production responses?

Not only are the lexical structures produced for each verb of interest, but also the patterns of alternation, as shown in Table 3. The degree of variation in verbs' patterns is notable – almost as many combinations as possible are evident, with only a very few verbs sharing the same pattern. Even verbs that belong to the same verb class in Pinker's theory behaved differently. For example, give and pass are both members of the class of physical transfer, and carry and push are both members of the class of manner of continuous transfer, but pass behaved nothing like give, and carry behaved more like take than like push. Some verbs were rarely produced in lexical structures that are grammatical. For example, take and kick did not occur in either the POSS or REC lexical structures, and give and offer rarely occurred in the REC. This suggests that a verb is associated with certain lexical structures more strongly than others, despite grammaticality.

Table 3
Patterns of alternation associated with the test verbs.[4]

Alternating verbs:

give, offer	POSS	↔	REC				
pass	THM	↔	REC	↔	POSS		
cost	THM	↔	POSS				
buy, make	THM	↔	POSS	↔	BEN		
construct	THM	↔	BEN				
send	REC	↔	GOAL	↔	POSS	↔	PATH
take	GOAL	↔	PATH	↔	THM		
carry	GOAL	↔	THM	↔	PATH		
push	PATH	↔	THM				
put	PATH	↔	LOC				

Non-alternating verbs:

kick, choose	THM

[4] The bidirectional arrows (↔) represent my view that lexical structures alternate with one another without any one having precedence over another in the grammar. This does not preclude a particular verb being more strongly associated with one lexical structure than another.

These results are based on collapsing the data across subjects and need to be tested further within individuals. However, the data do suggest that verbs from different verb classes or even within the same verb class differ in how strongly they are associated with certain lexical structures, and differ in their pattern of lexical alternation, and that these differences are semantic. These results are consistent with Pinker's theory that lexical alternations operate at a narrow level based on verb semantic structure, but the differences and similarities across verbs clearly need to be explored further.

V. Elicited production task

Materials

The goal of this task was to directly elicit the DOD from subjects in various contexts of possession change, with a consideration of how elicitation was affected by the constraints on the DOD. The natural discourse context for the DOD is one in which an animate being is old information and an object changing possession is new information and thus is likely to occur after the possessor. In order to achieve a discourse context favoring the DOD, subjects were given pictures of the same family members as in task one, with the addition of an extra character, Sue's brother-in-law (Dave). The subjects listened to oral descriptions of interactions between these characters that used the 18 test verbs. Then they were asked a question about an unknown object that was being transferred or manipulated for the benefit of two of the characters. The subjects had to look at a picture to identify the unknown object, and then write a response to the question asked about the object (see Appendix).

For example, the researcher described a situation orally, such as: *Dave lives far away from Sue's family. At Christmas time, Sue mailed something so Dave could have it. What did Sue do for Dave?* The interaction between the two characters was presented by means of a purpose clause rather than a dative clause (*Sue mailed something so Dave could have it* rather than *Sue mailed something to Dave*). The question that followed used either *for* or *with* as the proposition, to appear natural yet avoid biasing for either the recipient PD or the DOD. The description focused attention on the object in the picture, which

in this case was of a radio. The subjects were expected to write down *Sue mailed Dave a radio (for Christmas)*, or something similar.

The description and question were repeated twice. In the space given for a response, the final question was also provided on the test paper (e.g., *What did Sue do for Dave?*), and the verb the subjects were to use was provided in parentheses (e.g., *mailed*). This format was developed in piloting the task, because of some subjects' tendencies to produce responses about only one of the characters, or responses containing a verb substitution. Providing the question ensured that subjects referred to both characters in their answer, and providing the verb ensured that subjects used that particular verb in their response. The task presentation moved very quickly from item to item, in order to prevent the subjects from thinking too much or going back and changing previous answers. They generally began responding sometime during the two repetitions of the description, and they had approximately 4 seconds beyond that in which to finish their answer.

In order to maintain the discourse coherence of the task, the interactions between the characters were organized around a few natural events (e.g., Ann's birthday, playing outside, Dave's visit, etc.; see Appendix). This means that the discourse context presented the family as a set of characters participating in three or four smaller interactions per event. This made the treatment of the characters as old information very natural. There were two versions of the task containing different orders between the situations, and different orders of interactions within situations, but the coherence of each larger situation was maintained. These two versions were administered randomly to three different groups, but due to the oral nature of the task input, each group had to share the same version.

The subjects were given one completed example and two practice examples with the grammatical DOD verbs *mail, get,* and *show,* to encourage production of the DOD. As the task administrator, I forced the subjects to use the DOD structure in the practice examples (checking each subject's paper to ensure that this was so), and I gave explicit instructions to use the DOD structure whenever possible during the test. I did this because in the pilot study, as in the Wilson et al. study with children (1981; reported in Gropen et al., 1989), even in the appropriate discourse context, subjects failed to produce many DOD structures without priming. Gropen et al. also had to do explicit pre-task priming of the DOD structure and several within-task reminders in

order to get children to produce the DOD. In this study, the DOD structure was strongly encouraged only in the initial practice phase. The subjects produced DOD structures 38% of the time (370 times out of 969 responses), with a range in DOD production from 0 to 94% depending on the verb, indicating that subjects were able to produce the DOD when they wanted to, and were willing to abandon it if it wasn't appropriate.

Data coding

The data were coded for whether or not subjects produced the DOD in their written response for each verb. The response had to have an animate character encoded as the first object of the verb, with the item in the picture encoded as the second object of the verb. All other constituents following the object noun phrases were ignored. Some of the DOD and non-DOD responses included:

DOD
Dave bought Ann a bird (for her birthday).
Tom told Ann a story (about a ghost).
The bet cost Dave $100.

non-DOD
Tom kicked the soccer ball (across the yard) to Ann.
Sue carried to Tom a glass of ice-cold water.
Dave bet money with Tom.
Sue chose a guitar.
Dave's boss rewarded him with a car.
Sue put a sandwich on the table (for Dave).
Dave whispered to Ann about a ghost.
Tom told Ann about a ghost.
Ann took a bone outside (for Spot).
Dave drove Sue to the store.
Dave drove a car to the store (for Sue).
Dave bet money on the game (with Tom).

Table 4

Analysis of variance of DOD production by verb.

Source	df	SS	MS	F	p
Between subjects	50	21.9	.44	1.9	.0001
Within subjects	867	194.5	.23		
Verb type	17	94.9	5.59	47.7	.0001
residual	850	99.6	.12		
Total	917	216.4			

Table 5

Mean and standard deviation of DOD production by verb.
Corresponding Scheffé tests for each pair of verbs.

	VERB	Mean	Std. Dev.	Scheffé F-test
POSSESSION	send	.78	.42	
	drive	0	0	7.88*
	pass	.39	.49	
	put	.02	.14	1.78*
	give	.94	.24	
	cost	.73	.45	.69
VERB CLASS	offer	.82	.39	
	reward	.12	.37	5.69*
	take	.31	.47	
	carry	.22	.42	.12
	kick	.12	.33	
	push	.12	.33	0
	tell	.71	.46	
	whisper	.02	.14	6.03*
	buy	.80	.40	
	choose	.04	.20	7.49*
MORPHOLOGY	bake	.47	.50	
	construct	.20	.40	.97

*p < .05

Results

A single-factor repeated-measures ANOVA was done to measure the variance of DOD production due to each verb. The results are shown in Table 4. The null hypothesis was that all verbs would occur in the DOD structure with equal frequency. This was rejected, however, since there was a significant effect for verb type on DOD production (n = 918, *df* = 17, p < .0001). The means and standard deviations for each verb are shown in Table 5. In the same table, the results of Scheffé tests between each pair of verbs are also shown. These results are relevant to the possession, verb class, and morphological constraints.

3. How willing are subjects to produce the DOD when it is directly elicited?

These results show that production of the DOD cannot be controlled by the task, or production would have been the same across verbs; in fact, subjects were affected differently by each verb. The means in Table 5 show that the effect was not split between verbs that are grammatical and those that are ungrammatical in the DOD, but rather that there was a range of frequencies (from 0 to 94%), with four distinct groups separated by wide gaps, as shown in Table 6.

Table 6
Frequency range of DOD production associated with test verbs.

strong DOD verbs (71-94% DOD)	give, offer, buy, send, cost, tell
moderate DOD verbs (31-47% DOD)	bake, pass, take
weak DOD verbs (12-22% DOD)	*carry, *construct, kick, *push, *reward
non-DOD verbs (0-4% DOD)	*whisper, *put, *choose, *drive

*ungrammatical in English

The layers in this table are revealing. Both the strong and moderate DOD verbs are grammatical in the DOD, but there is a large gap between them in how often subjects produced the DOD. This gap corresponds to the frequency differences noticed in the free production task. In task one, subjects produced the DOD for *give, offer, buy, send,* and *cost* the most (*tell* wasn't tested), and rarely for *make, pass,* and *take.* In an odd coincidence, even the frequency orders are perfectly correlated, with *give* being the most frequent in the DOD and *kick* being the least frequent on both tasks, with all of the other grammatical verbs in the same intermediate positions. It isn't possible to account for this by assuming that the subjects influenced themselves across tasks, since they produced the DOD for more verbs on task two (there were an average of 2.3 DOD responses per subject on task one, but 7.3 on task two).

Both the weak and non-DOD verbs are ungrammatical in English except for *kick,* which didn't behave like a dative verb in either task (it wasn't produced in either the DOD or PD on task one). The few ungrammatical DOD responses in the weak DOD group (12-22%) may have been due to dialect differences, a weak morphological constraint (for *construct*), or even partially the fast pace of the task and the instructions to try to use the DOD as much as possible.

The results suggest that frequency of association is an important variable in determining production in both the free and elicited production tasks. Production was influenced most by how strongly a verb is associated with the DOD. These results may explain the difficulty researchers have had eliciting the DOD even when the discourse context has been carefully controlled, because production of the DOD seems to depend on the particular verb even more than on grammaticality.

4. For each verb pair, how does production of the DOD relate to the possession, verb class, and morphological constraints?

There were three verb pairs that represented the broad semantic possession constraint. It was expected that subjects would not produce the DOD structure for non-possessional verbs, and that is confirmed. There were no DOD responses for the benefactive verb *drive,* and this is significantly different from the responses for *send,* a verb that has a possessional meaning.

There was only one response with the locational verb *put* in the DOD (2%), and this was significantly different from the responses for *pass*, a verb that is a moderate DOD verb (39%). Although *give* and *cost* are both possessional verbs, *cost* carries an adversative meaning, as in *the bet cost Dave $100*, but this made no difference. There was no significant difference in the way subjects treated these verbs, with both occurring frequently in the DOD structure. These results confirm previous findings on the possession constraint, supporting Pinker's claim that the DOD carries a possessional meaning across classes of verbs at a broad level of lexical structure.

There were five verb pairs that represented narrow semantic differences between classes of verbs. Three out of five pairs showed a significant difference between the verb that permits the DOD and the verb that does not, as in the *tell* (71% DOD) versus *whisper* (2% DOD) difference. This confirms the existence of a grammatical difference between the members of these particular pairs. However, there were two pairs that showed an unexpected result. These were the *take/carry* and *kick/push* pairs, for which there was a general preference for subjects not to put any of them in the DOD, and between which there was no significant difference. It was expected that *take* would occur readily in the DOD, as the target response was *Sue took Spot a bone*, which is grammatical. But in fact both *take* and *carry* occurred most often in PATH + GOAL structures (with a path preposition and a goal), as in *Sue took a bone outside to Spot/ Sue carried a glass of water outside to Tom*, a result that corresponded to the result in the free production task, in which both of these verbs occurred most frequently in the GOAL and PATH lexical structures. In addition, neither *kick* nor *push* occurred with much frequency in the DOD (12% each). Although *kick* is grammatical in the DOD (e.g. *Tom kicked Ann the soccer ball*), subjects preferred other structures, including the PATH and REC structures, as in *Tom kicked the soccer ball (across the yard) to Ann*. One question is whether this preference for encoding *kick* in the PATH or REC lexical structures is true for the whole class of verbs of manner of instantaneous motion (*kick, throw, toss, lob*, etc.), or whether *kick* is an exception.

There was only one verb pair that represented the morphological distinction between native and Latinate verbs, which was not investigated systematically. For this particular example, there was no significant difference

in the way subjects treated the native verb *bake* (47% DOD) and the Latinate verb *construct* (20% DOD), both of which belong to the class **transfer of something created.** It was expected that *bake* would occur more readily in the DOD structure (the grammatical target response was *Sue baked Ann a cake*); however, it occurred more often in the PD structure (*Sue baked a cake for Ann*). In contrast, *construct* should not have occurred at all in the DOD structure, because this verb class is one that obeys the morphological constraint (Pinker, 1989). However, Gropen et al. (1989) found that the morphological constraint was strongest for recipient verbs of transfer, and since *construct* is a benefactive verb, the constraint may be more permeable. Verbs of creation are benefactive, moderate, DOD verbs, and this may affect the morphological constraint.

VI. Conclusion

Pinker (1989) proposed that there are both broad and narrow levels of lexical structure and that participation in lexical alternations is determined by verb class membership at a narrow level of lexical structure. For the English dative alternation, there are three broad lexical structures: the recipient and benefactive prepositional datives (PD), and the possession double object dative (DOD). The DOD is restricted in productivity by possession, verb class, morphological, and discourse constraints, and there are fourteen dative verb classes defined by semantic and morphological features that differ in their ability to alternate. In this study, dative lexical structures and the possession, verb class, and morphological constraints on the DOD were investigated. The discourse constraint was not investigated because the tasks were designed to elicit the DOD in an appropriate discourse context.

The results of this study showed that lexical alternation depends on the semantic characteristics of individual verbs. The test verbs were largely drawn from different dative verb classes, and they patterned differently from one another in native speaker production. Subjects produced the test verbs in semantically different lexical structures, to different degrees, with different patterns of alternation, but not randomly. The existence of the possession constraint was supported: subjects did not produce *drive* or *put* in the DOD but did produce *cost* in the DOD. The existence of the verb class constraint was supported for certain pairs of verbs: *offer* vs. *reward, tell* vs. *whisper,* and

buy vs. *choose.* But it was not supported for *take* vs. *carry,* or *kick* vs. *push,* probably because none of these verbs is strongly associated with the DOD, one of the important findings of this study. The morphological constraint was not supported for *bake* vs. *construct,* probably because *bake* is not strongly associated with the DOD and the morphological constraint is weaker for benefactive, less direct cases of transfer like *construct* (Gropen et al., 1989).

Although this study supports Pinker's theory, it adds a new wrinkle: strength of association. Subjects used dative verbs in a variety of lexical structures besides the recipient, benefactive, and possession dative structures, the most important of which were the goal, path, and theme lexical structures. The verbs *give, offer, buy, send, cost,* and *tell* can be considered prototypical DOD verbs in English because they were produced in the DOD often in both the free and elicited production tasks. The verbs *make, bake, pass, take,* and *kick,* although grammatical in the DOD, cannot be considered DOD verbs because they were produced most often in lexical structures other than the DOD despite a discourse context that promoted the DOD. For example, *take* was produced in the goal (*Sue took Ann to school*) or path (*Sue took Ann across the street*) lexical structures far more often than the possession DOD (*Sue took Ann a book*) lexical structure, suggesting that the semantic characteristics of *take* are more strongly associated with **movement towards a goal along a path** than with **change of possession,** even though both are grammatical.

The results of this study suggest that strength of association with particular semantic lexical structures is an important part of lexical representation, because association determines productivity just as constraints do. Constraints restrict productivity because they are semantic or morphological conditions on whether or not a verb is permitted to alternate; strength of association restricts productivity because it follows from how close the semantic match is between a verb and a particular lexical structure. There are degrees of semantic closeness (Lakoff, 1972; Jackendoff, 1983; Frawley, 1992), and hence degrees of likelihood that a particular verb will occur in a particular lexical structure, even if grammatical. In order to completely understand lexical alternation, we need further investigation of the behavior of individual verbs in native speaker production, including the semantic relationship between verbs within and across verb classes, their patterns of alternation, and their degrees of association with different lexical

structures.

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APPENDIX

Task one verbs

1.	EAT	10.	KICK
2.	PUT	11.	CONSTRUCT
3.	CHOOSE	12.	GIVE
4.	OFFER	13.	PASS
5.	SEND	14.	WHISPER
6.	TAKE	15.	COST
7.	BUY	16.	MAKE
8.	CARRY	17.	REWARD
9.	PUSH		

Task two oral script

EXAMPLE

a.   Dave lives far away from Sue's family. At Christmas time, Sue mailed something so Dave could have it. What did Sue do for Dave?

(mailed)   <u>Sue mailed Dave a radio.</u>   [picture of radio]

PRACTICE

b.   Tom wanted to surprise Sue and get something from the florist. What did Tom do for Sue?

(got)   _____   [picture of flowers]

c.   Ann walked home from school. On her way, she found something on the sidewalk. When Ann got home, she showed what she found so Sue could see it. What did Ann do with Sue?

(found)   _____   [picture of stick]

ANN'S BIRTHDAY

1.   It was Ann's birthday and the whole family wanted to do something nice for her. Dave bought something he thought she would like. What did Dave do for Ann?

(bought)   _____   [picture of bird]

2.   Sue looked in a lot of stores to choose something special for Ann's birthday. What did Sue do for Ann?

(chose)   _____   [picture of guitar]

3.   Tom spent a lot of time constructing something so Ann could play in it. What did Tom do for Ann?

(constructed) _____   [picture of house]

4.   For Ann's birthday party, Sue baked something Ann would like. What did Sue do for Ann?

(baked)   _____   [picture of cake with candles]

DAVE'S VISIT

5.   Dave worked very hard and won a contest at work, and his boss rewarded something expensive. What did Dave's boss do for Dave?

(rewarded)   _____   [picture of car]

6.   Dave decided to visit Sue's family to show them his new car. When he arrived, Sue offered something to drink. What did Sue do for Dave?

(offered)   _____   [picture of cup and saucer]

7.   Sue needed some meat from the store to make dinner. Dave offered to drive to get the meat. What did Dave do for Sue?

(drove)   _____   [picture of car]

WATCHING FOOTBALL

8.   At dinner time, Dave wanted to watch a football game. While he was watching, Ann put something on the table so that Dave could eat. What did Ann do for Dave?

(put)   _____   [picture of sandwich]

9.   While Dave was eating, Sue passed something across the table so Dave could use it. What did Sue do for Dave?

(passed)   _____   [picture of salt shaker]

10.   Dave wanted to have a contest with Tom, so he bet something on the game with Tom. What did Dave do with Tom?

(bet)   _____   [picture of money]

11.   Dave's team lost the game, so his bet cost a lot of money. How much was the bet for Dave?

(cost)   _____   [picture of 100 dollars]

OUTSIDE

12.   The whole family went outside to have fun. Ann took something so Spot could have it in the yard. What did Ann do for Spot?

(took)   _____   [picture of bone]

13.   Ann was playing with Spot, and she pushed something across the grass so Spot could play with it. What did Ann do with Spot?

(pushed)   _____   [picture of kickball]

14.   Sue knew that Tom was thirsty, so she carried something outside so Tom could have a drink. What did Sue do for Tom?

(carried)   _____   [picture of glass with liquid]

15. Tom was playing with Ann, and he kicked something across the grass so Ann could learn how to play. What did Tom do with Ann?

(kicked) _____   [picture of soccer ball]

BEDTIME

16. It was time for Ann to go to bed, and Dave whispered a story about something to make Ann scared. What did Dave do to Ann?

(whispered) _____   [picture of ghost]

17. Tom didn't want Ann to be scared, so Tom told a story about something to make Ann happy. What did Tom do to Ann?

(told) _____   [picture of king]

GOODBYE

18. Dave had to leave to go back to work. Ann didn't want him to go, but she gave something to show Dave that she loves him. What did Ann do for Dave?

(gave) _____   [picture of mouth]

19. After Dave got back home, he wanted to send something to let Sue know he had a wonderful time at her house. What did Dave do for Sue?

(sent) _____   [picture of paper with writing]