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English Dative Alternation and Evidence for a Thematic Strategy in Adult SLA

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INTRODUCTION

A body of recent work in second language acquisition is concerned with applying constructs from Chomsky's conception of Universal Grammar in both constructing an overall theory of SLA and explaining various phenomena in L2 learners (e.g., Flynn, 1984, 1987; Hilles, 1986; Phinney, 1987; White, 1985a, 1985b; papers in Flynn and O'Neil, 1988). A key linguistic construct that has received relatively little attention in SLA research is thematic roles—notions such as AGENT, THEME, GOAL, LOCATION, SOURCE, and others that are believed to contribute to semantic encoding and decoding. Although thematic roles (alternatively, thematic relations, semantic roles, case roles, θ-roles) have long been part of modern linguistic theory (cf. Gruber, 1965; Fillmore, 1968; Jackendoff, 1972), they have enjoyed increased popularity in the recent linguistic literature owing in part to their central role in Chomsky's (1981) government and binding (GB) theory, as embodied in the θ-Criterion.[1]

Various formulations of the θ-Criterion have been proposed, but the simple formulation in (1) will suffice here.

(1) **θ-Criterion** (Chomsky 1981, p. 36):
Each argument bears one and only one H-role, and each H-role is assigned to one and only one argument.

A set of thematic roles is associated with a verb in its lexical entry, and these thematic roles are assigned by the verb to its complements (i.e., subcategorized arguments) and to the subject of the sentence

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(through the combined meaning of the verb and its complements in GB theory).[2] Thematic roles thus can be taken to be lexical properties of verbs. The θ-Criterion, in conjunction with the Projection Principle, is intended to tightly constrain syntactic structures, these structures in large measure being projections of the lexical properties of verbs. If much of grammar rests on lexical properties, as Chomsky currently hypothesizes, and if language acquisition (relating to sentence grammar) to a large degree involves learning various lexical items, then thematic properties of verbs could play a discernible role in L2 acquisition. As an adult learner presumably approaches an L2 with a set of thematic roles intact,[3] aside from perhaps some (minor) adjustments for thematic differences in perceived L1-L2 corresponding predicates, one important task for the learner is most likely associating syntactic structures with various verbs, mediated by the thematic structure of those verbs.

Additionally, some research has identified thematic roles as important entities in language processing and first language acquisition. In a series of articles, Carlson and Tanenhaus (Carlson & Tanenhaus, 1988; Tanenhaus & Carlson, 1988) provide experimental evidence suggesting that thematic roles play a central role in language comprehension by providing a mechanism for making on-line semantic assignments and a mechanism for the interaction of various processing components (e.g., syntax, discourse structure, real-world knowledge). Various researchers (e.g., Grimshaw, 1981; Macnamara, 1982; Pinker, 1984) have proposed that semantics, and in particular thematic roles, contribute to the formation of the syntactic categories necessary for first language acquisition. Thus, thematic roles figure prominently in both theoretical and experimental work in the formal study of language.

Despite the centrality of thematic roles to GB theory, the SLA research alluded to above has concentrated primarily on purely syntactic principles, constructs such as subjacency, null subjects, branching direction, and so forth. The aim of this study is to suggest that thematic roles may constitute an important factor in SLA in the assignment of syntactic structures. In particular, results from a pilot study suggest that some L2 learners may use a thematic strategy when making acceptability judgments regarding the English dative construction. The evidence suggests that learners using this thematic strategy crosscut L1s and ability levels. Such results open

a new area of inquiry in SLA and point to another potential commonality with some views of L1 acquisition: the thematic strategy embodied in the semantic bootstrapping hypothesis (Pinker, 1984).

In the section below, English dative alternation and a current approach to its distribution is discussed. In the sections which follow, non-native speaker judgments are collected and analyzed; the thematic strategy apparent in the responses of some subjects is then outlined and discussed.

ENGLISH DATIVE ALTERNATION

The object of inquiry is non-native speaker judgments of the acceptability of a range of dative constructions in English. Of particular interest is the general productivity of the so-called "dative alternation," as exemplified in the pair of sentences in (2).

(2) a. John gave the book to Mary.
b. John gave Mary the book.

Many "dative" verbs such as *give* subcategorize either for an NP direct object and a PP indirect object (2a), what I will refer to as the "prepositional structure," or for an NP indirect object and an NP direct object (2b), the "double object structure." As is well-known, the dative alternation in (2), while widespread, is subject to certain conditions. Green (1974) and Oehrle (1975) have each noted the fact that one condition on whether or not a particular verb shows dative alternation is the verb's origin: by and large, the double object structure is limited to non-Latinate verbs ("native" verbs in the terminology of Mazurkewich and White, 1984). Thus, alongside *give* one finds that *donate*, a Latinate verb of similar meaning, can only occur in the prepositional structure.

(3) a. John donated a book to the library.
b.*John donated the library a book.

Other pairs include *tell* vs. *explain, show* vs. *demonstrate*, and so forth. There are, of course, lexical exceptions to this generalization.

Of greater interest here is the fact that in addition to the Latinate/non-Latinate distinction, a thematic condition has been proposed. Goldsmith (1980) suggests that the double object construction is limited to instances in which the indirect object is animate and a "projected possessor" of the direct object.[4] Goldsmith proposes this analysis to account for paradigms such as (4) and (5).

(4) a. John sent the package to Mary.
b. John sent Mary the package.
c. John sent the package to Washington, D.C.
d.*John sent Washington, D.C. the package.

(5) a. I owe five bucks to Joe Smith.
b. I owe Joe Smith five bucks.
c. I owe this example to Joe Smith.
d.*I owe Joe Smith this example.

In (4b) *Mary* is the projected possessor of the package, whereas in (4d) *Washington, D.C.* is simply a "location," the final destination of the package but not a "projected possessor." Similarly, in (5b) *Joe Smith* is a projected possessor of *five bucks* but does not stand in that relationship to *this example* in (5d).

Goldsmith's analysis is intended to cover all double object constructions, not just those that appear to alternate with *to*-datives. Thus, the paradigm in (6) is subject to the same explanation as above.

(6) a. Jane made a doll for Ann.
b. Jane made Ann a doll.
c. Jane made an announcement for Ann.
d.*Jane made Ann an announcement.

In (6b) *Ann* is the projected possessor of *a doll*, whereas in (6d) *Ann* is not a projected possessor (in any physical sense) of *an announcement*. Thus, Goldsmith's proposal accounts for dative alternations with both *to*-datives and *for*-datives.[5]

Owing to the hypothesized semantic/thematic restriction on dative alternation, English dative constructions offer a possible testing ground for investigating the potential relevance of thematic relations in SLA. Previous research (Mazurkewich, 1984a, 1984b;

Le Compagnon, 1984) has shown that, as expected with lexically-governed syntactic structures, L2 learners gain control of the English dative alternation only over time. On the basis of a study of French and Inuktitut L1 learners of English, Mazurkewich (1984b) proposes that the prepositional structure is less marked and presents evidence that L2 learners proceed from the less marked structure (the prepositional structure) to the more marked structure (the double object structure) in their acquisition of the English dative construction. Mazurkewich (1984a) and Le Compagnon (1984) focus on the influence of the syntactic structures allowed by the learners' L1 grammars (i.e., possible L1 transfer effects) with Mazurkewich rejecting the notion that transfer plays an important role and asserting that learners proceed from less marked to more marked constructions.[6] While some results of the present study bear on the issue of L1 transfer, other results indicate that some learners may use a thematic strategy for assigning syntactic structures independent of their particular L1.

SUBJECTS AND DESIGN

The study reported on here was a small scale pilot project designed to elicit acceptability judgments regarding dative alternation in English. Subjects were given a written copy of 35 test sentences and instructed to mark on a separate answer sheet whether they considered the English sentence "correct," "incorrect," or "don't know." Subjects were instructed that they were not being given a grammar test and should attempt to respond to the sentences according their own usage of English. The test sentences were randomized and interspersed with *for*-datives (not considered in the results) and a number of distractor items. The dative test sentences are given in (7); grammaticality judgments from a small native speaker control group are given here as well.

(7) Dative test sentences

*John asked a question to the teacher.
John asked the teacher a question.

Mary donated $10 to the Red Cross.
*Mary donated the Red Cross $10.

John explained the problem to Mary.
*John explained Mary the problem.

Mark gave the book to Joan.
Mark gave Joan the book.

John recommended a good restaurant to Mary.
*John recommended Mary a good restaurant.

The girl sent a card to the boy.
The girl sent the boy a card.

John sold the car to Harry.
John sold Harry the car.

John told a story to the children.
John told the children a story.

Responses were obtained from 37 subjects, all of whom were students enrolled in the intermediate and advanced grammar classes of the Iowa Intensive English Program—a fairly standard university-preparatory English language program, including 20 hours per week of communications skills, reading, writing, and grammar instruction. Students are assigned to classes on the basis of an in-house placement instrument including short reading, grammar, and listening tasks, a writing sample, and an oral interview. References below to intermediate and advanced students indicate the levels to which they were assigned within the program. As no important claims are being made about ability level and use of a thematic strategy, no attempt is made to independently determine the proficiency of the subjects' English; however, TOEFL scores of the intermediate level are in the 430-490 range and TOEFL scores for the advanced level in the 480-530 range. The L1s of the subjects included: Chinese (n = 9), Farsi (1), French (1), Greek (1), Indonesian (4), Italian (1), Korean (2), Japanese (9), Spanish (7), and Thai (2). The questionnaire was administered during regularly scheduled class periods, and subjects were allotted as much time as they desired to complete the task; no subject required more than 20 minutes.

RESULTS AND PRELIMINARY INTERPRETATION

Most of the subjects appeared to have little difficulty with the task. All subjects were able to complete the task in 20 minutes or less and none reported any difficulty when asked during post-test debriefing. Additionally, the number of "don't know" responses was quite low and tended to be concentrated among a few subjects (2 or 3). The inclusion of the equivocal responses had no significant impact on the results. A number of subjects had some difficulty with the pair of sentences containing the verb *recommend*. In fact, a majority of subjects either selected the "don't know" category or considered both sentences "incorrect." This indicates that results obtained from these items are among the most unreliable (perhaps due to subjects not knowing the word). Therefore, in the ensuing discussion, results with the verb *recommend* are disregarded for all subjects.

Table 1: Response groups identified in study

Group	Brief Characterization	n	L1s
1	Native or near-native English judgments	5	Chinese, Farsi
2	Mixed acceptability judgments	5	Chinese, Japanese, Thai
3	Double object construction judged unacceptable	7	French, Greek, Japanese, Spanish
4	Prepositions and double object constructions acceptable for all verbs	10	Chinese, Indonesian, Japanese, Korean
5	Double object construction acceptable for governed subset of verbs	10	Indonesian, Italian, Japanese, Korean, Spanish

On the basis of their responses, subjects fall roughly into one of five groups. A brief characterization of the different groups is given in Table 1. More complete discussion of the group characteristics are given in the discussion that follows.

The complete results for the dative test verbs are given in the text for each group in turn. I now describe each group and offer preliminary interpretation of the results.

Group 1: Native or Near-Native English Judgments

This relatively small group (n = 5) included subjects whose L1s were Chinese (4) and Farsi (1); two subjects were in the advanced level and three in the intermediate level. Subjects in this group had a fairly firm grasp of the fact that certain dative verbs cannot occur in the double object construction. Subjects were included in this group if they accepted at most one ungrammatical English dative construction. For example, as indicated in Table 2,[7] Subject 2 accepted as grammatical almost all double object ([NP NP]) sentences; this subject rejected the double object construction with *explain*, as would native speakers, but did accept the ungrammatical double object sentence

Table 2: Group 1 Results for Dative Test Verbs

Subject	[NP PP]	*[NP PP]	[NP NP]	*[NP NP]
1	(all)	*ask, donate	(all)	donate, *explain
2	(all)	*ask	(all)	*explain
3	(all)	*ask	(all)	donate, *explain
4	(all)	*ask	(all)	donate, *explain
5	(all)	*ask, donate	(all)	donate, *explain, send

NOTE: Key for all data tables
[NP PP] = prepositional structure considered acceptable
*[NP PP] = prepositional structure considered unacceptable
[NP NP] = double object structure considered acceptable
*[NP NP] = double object structure considered unacceptable
ALL = all test verbs fall into this category
(all) = almost all test verbs fall into this category—exceptions are noted
?verb = subject response was "don't know" for marked verbs in this category
*verb = native judgment for this construction with this verb

with *donate, *Mary donated the Red Cross $10.* Also, as shown in Table 2, all Group 1 subjects rejected the sentence *John asked a question to the teacher*, a sentence accepted by a sizable majority of the subjects.

Group 2: Mixed Acceptability Judgments

This group, comprised of five subjects whose L1s were Chinese, Japanese, and Thai (3 advanced, 2 intermediate), is essentially a non-group. Responses from subjects in this group displayed no discernible pattern. It is possible that some subjects in this group understand that some English verbs take the double object construction while others do not, but such a conclusion would be highly speculative. The data in Table 3 illustrate the lack of a cohesive pattern of responses here.

Table 3: Group 2 Results for Dative Test Verbs

Subject	[NP PP]	*[NP PP]	[NP NP]	*[NP NP]
6	(all)	send (?explain)	ask, *explain, give, send	*donate, sell, tell
7	*ask, donate, send	explain, give, sell, tell	give, tell	ask, *donate, *explain, sell, send
8	(all)	explain	ask, give, send	*donate, sell, *explain, tell
9	donate, explain, give	*ask, send, sell, tell	(all)	*donate
10		ALL	ALL	

As indicated in Table 3, one subject (Subject 6) considered the prepositional structure grammatical for all test verbs but partitioned the double object construction in the following way: grammatical for the set {ask, explain, give, send}, ungrammatical for the set {donate, sell, tell}. Another subject (Subject 8) allowed the double

object construction for the set {ask, give, send} but ruled it out for {donate, explain, sell, tell}. Again, this subject accepted the prepositional structure for almost all verbs.

Subject 10 is a bit of an anomaly. This subject rejected the prepositional structure for dative verbs in English, considering only the double object construction acceptable. Thus, unlike the other subjects in this group, Subject 10 is treating all of the test verbs in the same way, but in a way unlike any other subject in the pilot study. One could argue that these results constitute a slight variation on the pattern exhibited by either Group 3 (no double object construction) or Group 4 (productive dative alternation). However, given the present state of the findings, I elect to include these results in the elsewhere group.

Group 3: Double Object Construction Considered Unacceptable

This group (n = 7) included subjects whose L1s were French (1), Greek (1), Japanese (1), and Spanish (4); four were in the advanced level and three in the intermediate level. As shown in Table 4, these subjects considered all (or almost all) double object constructions to be unacceptable.

Table 4: Group 3 Results for Dative Test Verbs

Subject	[NP PP]	*[NP PP]	[NP NP]	*[NP NP]
11	ALL			ALL
12	(all)	explain	give	(all)
13	(all)	give	give	(all)
14	ALL		donate	(all)
15	ALL			(all) ?ask
16	(all)	explain		ALL
17	ALL			ALL

It is notable that with only a handful of lexical exceptions (none of which are included in the test verbs) double object constructions with full lexical NPs are ungrammatical in these languages. One might reasonably hypothesize that subjects falling into this group have superimposed their L1 grammar on the English sentences in rendering acceptability judgments.

This interpretation receives some support from Le Compagnon's (1984) study of the acquisition of English dative constructions by speakers of French. Le Compagnon reported L1 effects in both spontaneous speech and in grammaticality judgments tasks on the part of her subjects. In particular, the grammaticality judgments with full NP indirect objects (as opposed to pronominal indirect objects) show the same pattern as the Group 3 responses.

Group 4: All Verbs Show the Dative Alternation

This represents a comparatively sizable group of subjects (10) with a variety of L1s—Chinese, Indonesian, Japanese, and Korean—and a distribution of ability levels—7 advanced and 3 intermediate students. For this group almost every dative verb was acceptable in both the prepositional and double object structures.

Table 5: Group 4 Results for Dative Test Sentences

Subject	[NP PP]	*[NP PP]	[NP NP]	*[NP NP]
18	ALL		(all)	tell
19	ALL		(all)	?donate
20	(all)	give	(all)	*donate
21	ALL		(all)	send
22	ALL		(all)	?sell, send
23	ALL		(all)	ask
24	ALL		(all)	sell
25	(all)	explain	(all)	*donate
26	ALL		(all)	*donate
27	ALL		(all)	sell

One might hypothesize that learners in this group have recognized the fact that (in the main) dative verbs in English may be expressed with a prepositional structure or a double object structure. Although subjects in this group may consider one particular verb a lexical exception to the double object construction, these subjects accepted all dative sentences with the prepositional structure, including verbs such as *ask,* which is a lexical exception in English.

For example, one Japanese subject (Subject 18) considered all verbs candidates for either the prepositional structure or the double object structure with the exception of *tell*, which was

considered unacceptable in the double object construction. One speaker of Chinese (Subject 23) considered the double object construction an option for all verbs except *ask*. For whatever reason (see further discussion below), the subjects falling into this group have a fairly generalized rule—all (with perhaps one lexical exception) dative verbs tested can occur in either syntactic construction.

The Group 4 results are particularly interesting from the standpoint of previous work on L2 acquisition of dative alternation. Based on data from an acceptability judgment task administered to native Inuktitut-speaking and native French-speaking learners of English, Mazurkewich (1984b, p. 92) claims that overgeneralizations of the dative alternation are not found "in abundance." She uses this as an argument for taking dative alternation to be a lexical subcategorization property rather than a syntactic rule. The Group 4 results cast some doubt on this assertion about the relative scarcity of overgeneralization of the double object structure. (See also Subject 10, discussed above under Group 2.)

Group 5: A Semantically-Governed Subset of the Verbs Allows the Double Object Construction

Ten of the subjects (6 advanced, 4 intermediate) fall into this group. These subjects represent the widest variety of L1s—Indonesian, Italian, Japanese, Korean, and Spanish. Subjects in this group apparently recognize that the dative alternation is not completely productive in English. However, they arrived at an innovative rule for determining which verbs can alternate.

The results in Table 6 seem to indicate that while the results are not exactly perfect, the core of the data suggests that subjects in this group essentially treat the verbs *ask, explain,* and *tell* one way and verbs such as *donate, give, sell,* and *send* in another. Eight of the subjects allowed both sets of verbs to occur in the prepositional structure but allowed only verbs in the *ask* set to occur in the double object structure. The two remaining subjects treated the verbs slightly differently. Subject 36 allowed only the *give* set to occur in the double object construction, considering the double object construction with verbs from the *ask* set (plus *send*) unacceptable. Subject 37 accepted double object structures for both sets of verbs but restricted the prepositional structure to *ask, explain,* and *tell.*

Table 6: Group 5 Results for Dative Test Sentences

Subject	[NP PP]	*[NP PP]	[NP NP]	*[NP NP]
28	ALL		ask, *explain, tell	*donate,give, sell, send
29	(all)	tell	*explain, tell	(all)
30	(all)	donate	ask, *explain, tell (?donate)	give, sell, send
31	(all)	donate	ask, *explain, tell	*donate, give, sell, send
32	ALL		ask, *explain, give, tell	*donate, sell, send
33	ALL		ask, tell	(all)
34	ALL		ask, tell	(all)
35	ALL		ask, give, tell	*donate, *explain, sell, send
36	(all)	give	*donate, give, sell	ask, *explain, send, tell
37	*ask, explain, tell	donate, give, sell, send	ALL	

As stated above, the treatment of the two sets of verbs was not absolute. Two subjects in this category treated the set {ask, explain, give, tell} as a group and one other subject added *send* to {ask, explain, tell}. Additionally, some subjects only allowed a subset of the *ask* set in the double object construction. Two subjects allowed only {ask, tell} to alternate while another subject accepted alternation with the subset {explain, tell}.

This individual variation notwithstanding, the central fact is rather striking—the subjects that fall into this group recognize a difference between the two core sets of verbs and appear to make syntactic acceptability judgments accordingly. The two sets of verbs can be distinguished semantically: as used in the test sentences, the set {ask, explain, tell} involves transfer of information, while the set {donate, give, sell, send} involves transfer of some physically possessable object. I return to this matter in the following discussion.

The Case for a Thematic Strategy

I would like to suggest that the Group 5 results reflect the fact that L2 learners may have at their disposal a thematic strategy for assigning syntactic structures to particular verbs. As noted above, one can reasonably divide the sets of verbs {ask, explain, tell} and {donate, give, sell, send} along semantic lines. The linguistic construct of thematic roles (e.g. AGENT, THEME, GOAL, LOCATION) provides a framework for drawing this distinction.

Broadly speaking, dative verbs take three arguments which can be thematically designated AGENT, THEME, and GOAL.[8] Thus, one could assign any of these verbs predicate-argument structures such as:

(8) a. ask (AG, TH, GO)
    b. give (AG, TH, GO)

Predicate-argument structures such as (8a and b) present only a skeletal view, highlighting similarities of these verbs but obscuring differences.

The differences between the exemplified predicates can be captured through a more detailed thematic analysis, overlaying the "core" thematic roles with additional thematic specification. For example, the {ask, explain, tell} set can be distinguished from the {donate, give, sell, send} set in terms of the property of the GOAL arguments. Modifying Goldsmith's (1980) notion slightly, we might claim that the GOAL of verbs of the *give* set can be viewed as a "projected possessor" of the direct object NP. We might suggest then that the dative arguments of these verbs have the complex thematic designation [GOAL, POSS]. Conversely, verbs of the *ask*

set have a simple GOAL designation of the dative argument. This is a slight modification of Goldsmith's proposal inasmuch as he suggests that in order to account for the fact that a verb like *tell* can occur in the double object construction one must extend the notion of possessor to include possession (or receipt) of "knowledge." In analyzing the results reported here, it appears necessary to draw a stricter distinction and relegate the notion of "projected possessor" (interpreted as an additional POSS role here) to cases of physical possession.[9]

This thematic distinction can be used to account for the Group 5 responses. As we have seen, the *give*-type verbs have a more restricted syntactic distribution than do the *ask*-type verbs. That is, when the GOAL is something that can physically receive the THEME (i.e., [GOAL, POSS]) for Group 5, it must always be realized in a prepositional phrase (*to* NP) for eight of the subjects (and can only be realized as a bare NP for another subject). Conversely, when the GOAL is not a possible physical possessor of the THEME, it may be realized either as a PP or a bare NP. Clearly, one can hypothesize that these subjects are assigning syntactic structures on the basis of the thematic relations of the arguments of the predicate.

This syntactic assignment could take the following form. Those subjects who accept either structure for the *ask* set would assign lexical subcategorizations such as:

(9) *ask* {[___ NP PP], [___NP NP]} (GOAL)

and for the *give* set

(10) *give* [___NP PP] ([GOAL, POSS])

These lexical subcategorizations would be determined by the thematic specification of the GOAL argument in the predicate-argument structure, indicated in parentheses following subcategorization frames for convenience here.

Interestingly, one might further hypothesize that subjects in Group 4 operate in nearly the same fashion. Note that we can account for Group 1 results in terms of near-native control of dative verbs, Group 2 results in terms of almost no control of dative verbs, Group 3 results in terms of L1 interference, and now Group 5 results in terms of a thematic strategy. What remains is to account

for Group 4 results. I would like to suggest that the Group 4 results are consistent with a thematic account paralleling the Group 5 results. If correct, a thematic explanation may account for the majority of experimental results for the dative alternation. As noted above, all dative verbs have the same basic predicate-argument structure, reflected in (8). Recall, however, that subjects in Group 4 treat virtually all dative verbs the same, that is, all dative verbs can take either the prepositional or double object structure. We might claim that Group 4 subjects ignore the possible distinction between types of GOAL arguments, i.e. ([GOAL, POSS] vs. plain [GOAL]) and assign syntactic structures on the basis of the broader predicate-argument structure. Thus, all verbs with the argument set {AG, TH, GO} are assigned subcategorization frames as in (11):

(11) Verb (AG, TH, GO): {[___NP PP], [___NP NP]}

Although the Group 4 responses need not necessarily be analyzed in this way,[10] this analysis is plausible and is consistent with positing a thematic strategy for L2 learners.

One might claim that the Group 5 results are not particularly surprising; after all, some theoreticians have suggested that dative alternation is at least partially controlled by such thematic considerations. What is more difficult to explain, however, is the fact that nine of the subjects who appear to be operating with a thematic strategy apply it in a way that is inconsistent with the facts of English. If anything, these speakers are arriving at exactly the wrong rule. This fact suggests that the group 5 subjects are not making acceptability judgments based on memorized knowledge of particular English verbs but are actively using a thematic/semantic strategy. Importantly these speakers are all making the same thematic distinction. It may be that these subjects have arrived at this rule from a combination of the influence of English and of some independent universal of thematic structure. Such a position would account for the fact that the subjects basically applied the rule in the same way, rather than some of them judging that only the give set of verbs could occur in the double object construction and others judging that only the *ask* set of verbs could occur in the double object construction.[11]

CONCLUSION

In the present study I have attempted to show that a reasonable interpretation of the responses of at least one group of subjects (comprising more than 25% of the experimental group) provides evidence that L2 learners may apply a thematic strategy in assigning syntactic structures to English dative verbs. Given the fact that the data on which this conclusion is based come from a grammaticality judgment task, one might harbor reservations about the strength of this claim. Therefore, before continuing, I would like to examine the nature of the results reported here.

Grammaticality judgment tasks are being used with increasing frequency in SLA research. This is due in part to the direct application of Chomskyan grammatical theory (i.e., the principles and parameters model) in many studies and a concomitant assumption. This assumption, commonly accepted within much of formal linguistics, is that grammaticality judgments reflect a speaker's linguistic competence, whereas performance data can suffer from the interference of many largely nonlinguistic factors. Granting the viability of this assumption, data gathered from grammaticality judgment tasks, such as the one on which this study is based, have an important role to play in SLA research.

At the same time, the results should be interpreted with caution. A grammaticality judgment task may itself skew results. Such a task may lead a subject to adopt a translation strategy, that is, translating L2 to L1, in order to evaluate test sentences. This might then lead a subject to rely more heavily on his or her L1 in judging the acceptability of a sentence. Alternatively, a subject may unwittingly formulate a hypothesis regarding a particular set of data in response to a metalinguistic task. The particular formal solution a subject arrives at may not faithfully reflect his or her internal grammar of L2. One can clearly imagine other potential problems.[12] Thus one must also seek corroborating evidence from other sources.

However, many of these possible reservations seem to be answered by the data. Inasmuch as only seven of 37 subjects appear to have relied heavily on their L1 in determining acceptability of the English sentences, it would not appear that the task overwhelmingly biased results in that direction. This is especially true since reliance on L1 in learning an L2 is well documented. Also, the fact that so many subjects adopted the same thematic strategy casts doubt on the

subjects being unwittingly led to this as an idiosyncratic artificial solution. Again, more research will decide these issues.

One more word of caution is undoubtedly in order. As I have attempted to make clear throughout the discussion, the experimental results reported on are from a pilot study. The number of subjects studied is relatively small; for this reason no statistical analysis of the results was conducted. The low numbers certainly leave open the possibility that the "interesting" results obtained from the pilot study are due to chance. Clearly the next step is to pursue a larger scale study that perhaps includes more controls, more measures, and increased opportunities for random sampling. At the same time, as much work in theoretical linguistics is based on individual intuitions and judgments, the potential interest of individuals and what they may show in this case should not necessarily be overwhelmed by requirements of statistical significance.

Possible reservations acknowledged, the results reported here do point to a potentially important area for SLA research. Admitting a thematic account of the Group 4 and Group 5 results, it appears that some L2 learners may rely heavily on thematic strategies in acquiring a second language or some structures in a second language. If so, this represents yet another potential similarity between first and second language acquisition. Grimshaw (1981), Macnamara (1982), and Pinker (1984) have all proposed that in learning a first language, children rely heavily on a semantic strategy in constructing the syntactic categories hypothesized to be necessary for acquisition to take place—what Pinker has called "semantic bootstrapping." Among the constructs hypothesized to be relevant are thematic roles. As part of this hypothesis, Pinker argues that L1 acquirers associate thematic roles such as AGENT, THEME, and so forth with particular grammatical functions (e.g., subject, object), which are part of annotated phrase structures. Thus, thematic roles (and other semantic notions) contribute directly to the development of syntactic categories, functions, and morphology (such as case and agreement). Despite the fact that adults have presumably acquired the syntactic categories necessary to analyze language, in approaching a second language it seems plausible that some may adopt a semantic bootstrapping strategy (perhaps in a slightly altered form) as part of their battery of language learning strategies, especially in cases of trying to sort out

the structural idiosyncrasies of lexical items. Of course, much work remains to be done to determine the validity of such a hypothesis and, admitting its validity, the scope of such a strategy.

As the semantic bootstrapping hypothesis is relevant to L1 acquisition and is partially grounded in the fact that children do not have fully developed grammatical constructs at their disposal, one might hypothesize that a thematic strategy has more relevance in the early stages of L2 acquisition, when the L2 learner has not completely determined which of the universal set of grammatical constructs are most important. However, results from this study do not seem to support such a view. I have made no claims with respect to acquisitional sequence here. Interestingly, the numbers of "intermediate" and "advanced" students falling into each group was fairly equal. Granted, no independent measurement of proficiency was undertaken, so these groups may not be as heterogeneous as they currently appear. One might indeed find some correlation between the specific groups and some overall language proficiency measure. However, it may also be that the acquisition of lexical structures of this kind is not necessarily tightly bound to overall language proficiency inasmuch as dative alternation is a property of particular lexical items; one would thus expect the acquisition of vocabulary to proceed somewhat idiosyncratically. The fact that groups 4 and 5, those subject to a thematic account, include fairly equal numbers of intermediate and advanced learners indicates that the thematic strategy posited here may be available as a strategy throughout the course of SLA and not merely in initial stages.

Results of the present study suggest a potentially fruitful area of SLA research. A task as complex as learning a second language is arguably approached by different people in a variety of ways. The preliminary results reported here suggest that a thematic strategy may be one of a battery of learning strategies available to L2 learners. It may be viewed as a component of Polomska's (1988) acquisition strategies or added to McLaughlin's (1978) acquisition heuristics or incorporated into some other framework. Results of future research should determine the appropriate contribution of thematic roles in the acquisition of a second language.

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NOTES

[1] GB is neither the first theory to recognize thematic roles nor the only theory to accord them a central position. Frameworks including Fillmore's (1968) Case Grammar, Dik's (1978) Functional Grammar, Bresnan's (1982) Lexical-Functional Grammar, and others make use of thematic relations and often refer to them extensively in core analyses. A range of interpretations is given to the status of thematic roles; Chomsky (1981) treats them as syntactic entities, while Jackendoff (1987) views them as grounded in conceptual structure. However, their precise nature will not be taken up here. Throughout the present work I adopt a basic EST/GB framework for exposition in order to facilitate comparison with previous studies. In so doing, I have made a conscious decision not to incorporate a number of changes in the general GB principles and parameters framework. This decision rests on my conviction that the main theoretical point to be made here regarding a possible thematic strategy in SLA is independent of the particular theory of grammar to which one subscribes. The facts considered here could be discussed just as easily in other syntactic frameworks with no impact on the conclusions drawn.

[2] There are viable alternatives to such a thematic role assignment mechanism, but the precise nature of association of thematic roles and syntactic arguments falls outside the scope of this study.

[3] This assertion may be somewhat controversial. Although many assume that there is a universal inventory of thematic roles, well-articulated theories of thematic roles are elusive. For example, Ladusaw and Dowty (1988) argue that thematic roles are not grammatically significant entities at all. See also Dowty (1991). For present purposes, however, I will proceed under the more generally accepted assumption that an appropriately rich and precise theory of thematic roles can be achieved.

[4] Stowell (1981) makes a very similar proposal, claiming that the indirect object of the double object construction bears the role POSSESSOR.

[5] The present study does not treat both *to*-datives and *for*-datives because the results of the study indicated that particular L2 learners were not necessarily treating the two constructions in the same way. This finding is interesting in light of Mazurkewich's (1984a) report in her study of dative questions that French and Inuit learners of English were more advanced in their control of *to*-datives than *for*-datives. Hawkins (1987) reports a very similar finding and argues that the two subclasses of

datives should be considered separately when describing the developmental sequence of the dative construction in L2 learners of English. Thus, I leave consideration of the *for*-datives and their interaction with dative alternation to future work.

[6] Bardovi-Harlig (1987) and Newcomb (1992), in attempts to replicate Mazurkewich (1984a), in fact, found that in dative question and relativization constructions English L2 learners actually proceeded from marked to unmarked in the acquisitional sequence, contrary to Mazukewich's interpretation of her findings.

[7] Subject numbers were reassigned following analysis solely for ease of discussion.

[8] GOAL is the most frequently used term for the thematic role of the dative argument. Some systems use RECIPIENT rather than GOAL. Also, the AGENT of some dative verbs may have additional role specifications, notably SOURCE, as in Jackendoff's (1972) analysis of *sell* and others. Such additional thematic specifications might seem *prima facie* evidence against a narrow interpretation of the θ-Criterion. However, in the absence of an explicit theory of thematic roles, this is difficult to evaluate and peripheral to the issue at hand.

[9] The fact that there may be a number of ways to assign the POSS role to GOAL arguments (as hinted at in this discussion) may in some way account for the slightly variable class membership of the verbs in question. A larger corpus of data is needed before investigating such a possibility though.

[10] One might propose a purely syntactic account for Group 4 respondents, hypothesizing that these learners have a rule along the lines of Dative Shift in the Standard Theory that is free to transform any **NP to NP** sequence to the double object structure. Oehrle (1975), Baker (1979), and others have argued against such an analysis of the English dative alternation, citing lexical restrictions, learnability problems, and other arguments. However, given differences between first and second language acquisition, such considerations might be set aside as the Dative Shift analysis would be consistent with the Group 4 data.

[11] Of course, one cannot discount the fact that the sample size for the reported experiment is relatively small, and thus attribute the asymmetry to sampling error. Further consideration of the strength of the implications of this study appear in the conclusion.

[12] There is a growing literature questioning the validity and reliability of grammaticality judgment tasks in SLA research (e.g., Ellis, 1990, 1991; Goss, Ying-Hua & Lantolf, 1991; Lantolf, 1990). However, for a contrasting view of the value of grammaticality judgments in SLA research see Munnich, Flynn, and Martohardjono (1991).

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