Dative questions: A study in the relation of acceptability to grammaticality of an English sentence type*

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Abstract

Generative grammarians have contended that English sentences of the type Who(m) did you give the book? (what are here called 'dative questions') are ungrammatical. The incorporation of the necessary restrictions in the grammar of English to account for this, however, requires a weakening of linguistic theory. It would be desirable, therefore, to account for the restriction within performance theory, as has been proposed by Jackendoff and Culicover (1971). Their particular account is shown here to be inadequate. In the course of trying to devise a better account, we found, by two different questionnaire-type experiments, that some English speakers, all from metropolitan New York City, accept dative questions. On the basis of this finding, we theorize that the observed variation in acceptability of dative questions is best accounted for by differences in the perceptual strategies for determining the grammatical relations in perceived clauses that different populations of English listeners use. There are thus no dialect differences, strictly speaking, for dative questions; they are all grammatical for all English speakers.

1. Grammaticality and acceptability

It is not always easy to determine the grammatical status of expressions in a given language, for at least three reasons. First, speakers' judgments that certain expressions are unacceptable do not guarantee that they are ungrammatical, since there may be

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1. We use the term 'language-independent' throughout this paper specifically to mean 'independent of the rules that generate the sentences of any given language'. The principles are certainly not to be considered 'independent of language itself', since they are intended to be the rules according to which linguistic structures are perceived.

language-independent[1] perceptual principles that make certain perfectly grammatical sentences seem ungrammatical (Chomsky, 1965; Bever, 1970; Kimball, 1973). Second, the converse is also true: Judgments that expressions are acceptable do not guarantee that they are grammatical (Otero, 1972; Langendoen and Bever, 1973). Finally, there are many expressions for which speakers do not give consistent acceptability judgments; such inconsistency has misled many linguists into postulating the existence of 'dialects' for which there is often no geographic, socioeconomic or other language-independent basis (Labov, 1972). In this paper, we consider a type of English sentence which has, until very recently, been considered ungrammatical because the various linguists who have studied it have all found it unacceptable. We question the decision to label this type of sentence ungrammatical; first because it appears to lead to an *ad-hoc* complication of the rules of English syntax, second because there are many English speakers who find the sentence-type in question to be acceptable and third because there seems to be a language-independent perceptual principle that accounts for both the unacceptability of the sentence type and the variability found in those acceptability judgments.[2]

2. The interaction of the Dative transformation with various other movement transformations in English

There is a well-known syntactic transformation in English that puts the underlying indirect object into the position of the direct object; that is, immediately following the verb. The characteristic preposition of the indirect object (*to* or *for* in most cases) is then deleted (whether by the same rule that performs the movement of the indirect object or by a later rule of Preposition Deletion is of no concern to us here). We call this movement rule the Dative transformation (Fillmore, 1965; Ross, 1968; Kuroda, 1968; Klima, 1970; Fischer, 1971; Jackendoff and Culicover, 1971; Edmonds, 1972 all treat the Dative transformation in some detail). According to this transformation in some detail). According to this transformation, we may derive the sentences in (2) from the structures that also underlie those in (1).

(1)   a. The traveler gave documents to the clerk
      b. My grandmother bought a radio for my sister
(2)   a. The traveler gave the clerk documents
      b. My grandmother bought my sister a radio

We now consider sentences in which the underlying indirect object is moved to a new position in the sentence; first those in which Dative has not applied, and second

those in which Dative has applied (the asterisk '*' indicates those sentences which are unacceptable to the linguists that have studied sentences of this type).

(3) a. i. *The clerk was given documents to by the traveler
      ii. *My sister was bought a radio for by my grandmother
   b. i. The clerk was given documents by the traveler
      ii. (*) My sister was bought a radio by my grandmother[3]

(Passive)

(4) a. i. Harriet is tough to write letters to
      ii. Harriet is tough to buy clothes for
   b. i. *Harriet is tough to write letters
      ii. *Harriet is tough to buy clothes

(*Tough* Movement)

(5) a. i. It's Harriet (that) I gave the watch to/ It's Harriet to whom I gave the watch/ It's to Harriet (that) I gave the watch
      ii. It's Harriet (that I bought the watch for/ It's Harriet for whom I bought the watch
   b. i. *It's Harriet (that) I gave the watch
      ii. *It's Harriet (that) I bought the watch

(Clefting)

(6) a. i. These people, I wouldn't send a penny to
      ii. Elsie, I wouldn't buy anything for
   b. i. *These people, I wouldn't send a penny
      ii. *Elsie, I wouldn't buy anything

(Topicalization)

(7) a. i. This is the person (that) Selma sold the car to/ This is the person to whom Selma sold the car
      ii. Do you know the person (that) I made this dress for?/ Do you know the person for whom I made this dress?
   b. i. *This is the person (that) Selma sold the car
      ii. *Do you know the person (that) I made this dress?

(Relativization)

(8) a. i. Who(m) did you give this book to?/ To whom did you give this book?
      ii. Who(m) did you make this dress for?/ For whom did you make this dress?
   b. i. *Who(m) did you give this book?

3. Fillmore (1965) judges all sentences like (3bii) unacceptable. Jackendoff and Culicover (1971, p. 400) hold that such sentences vary in acceptability, depending on whether or not the indirect object comes to 'have' the direct object. Thus for them (3bii) would be acceptable, but not (i).

(i) *My sister was played a tune by my grandmother

The issues raised by this difference of opinion on acceptability are interesting but not within the scope of this paper.

ii. *Who(m) did you make this dress?

(Question Formation)

According to the judgments just given, the interaction of Dative and Passive is the opposite of that of Dative and the other movement transformations considered. Dative must apply if the underlying indirect object is to undergo Passive; it must not apply if the indirect object is to undergo *Tough* Movement, Clefting, Topicalization, Relativization or Question Formation.[4] It is easy to see why failure to apply Dative leads to unacceptability when the indirect object is made subject by Passive: Such sentences are ungrammatical because Passive can only move the noun phrase of a preposition phrase into subject position if the preposition phrase immediately follows the verb (Jackendoff and Culicover, 1971, p. 398). What is not so easy to see is why the examples in (3b) are acceptable whereas the (b)-examples in (4)-(8) are not.

One possible explanation makes use of a fundamental formal difference between Passive and the other movement transformations under consideration. Passive is not an unbounded movement rule; the others are.[5] One could then claim that what makes the (b)-examples of (4)-(8) unacceptable is their ungrammaticality, and that they are ungrammatical because their derivations violate the principle that no indirect object that has undergone Dative may be moved by any unbounded movement transformation.

3. An attempt to explain the interaction from universal grammar, which fails

It would be highly desirable if we could formulate a principle of universal grammar from which the English-specific principle just formulated would follow as a direct result. The reason for this is that the most adequate formalization of the English-specific principle is in terms of a derivational constraint, the undesirability of which notion has, in our judgment, been amply demonstrated. (Chomsky, 1972; Baker and Brame, 1972; Langendoen and Bever, 1973).[6] A language-universal principle that has

4. It is immaterial to us whether Relativization and Question Formation are two rules in English or two manifestations of the same rule (*Wh*-Fronting). Evidence that they are two rules is presented in Langendoen (1973).

5. On this distinction, see Ross (1968). We say that a movement transformation is unbounded if it can move a constituent across an unlimited number of unmatched left brackets labeled S; otherwise a movement transformation is bounded. Thus, for example, Question Formation is unbounded because

sentences like (i) are grammatical.

(i) Who(m) did you say that Georgette found out that Marian was known to have been seen with?

But Passive is bounded because sentences like (ii) are ungrammatical.

(ii) *Frieda was believed that they had heard from by Irene (i.e., as Passive of: Irene believed that they had heard from Frieda)

6. The derivational constraint would be formulated along the following lines. In a derivation, a noun phrase that has been moved

been suggested recently by Klima (1970) and Ruwet (1973) looks promising in this connection. In its crudest form, the principle states that syntactic transformations may not create structures that permit the existence of syntactic ambiguity that depends *solely* on the grammatical relations of two constituents in a sentence; we may call this the constraint on relational ambiguity principle (CRAP).[7] Among other things, CRAP can be used to explain the observation made by Chomsky (1965, p.128) that although it is generally possible to topicalize direct objects in German, sentences in which the direct object cannot be distinguished inflectionally from the subject cannot undergo direct-object topicalization. That is, Chomsky claims that although there is a general process in German involving Topicalization and Subject Postposing that permits the derivation of sentences like (9) from structures like those underlying (10), (11) cannot be obtained from (12) because, if the derivation of (11) were allowed, (11) would have the same surface structure as (13), in which the two noun phrases bear the opposite grammatical relations.

(9)   a. Heute kommt die Frau. 'Today, the woman comes'
      b. Den Mann sieht die Frau. 'The man, the woman sees'
(10) a. Die Frau kommt heute. 'The woman comes today'
      b. Die Frau sieht den Mann. 'The woman sees the man'
(11) *Das Mädchen sieht die Frau. 'The girl, the woman sees'
(12) Die Frau sieht das Mädchen. 'The woman sees the girl'
(13) Das Mädchen sieht die Frau. 'The girl sees the woman'

As Chomsky observes, the ordinary mechanisms of transformational grammar would

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by Dative may not be moved again by any unbounded movement rule. The best alternative to the derivational constraint within an *Aspects*-type theory would be to mark all noun phrases that undergo Dative with some arbitrary feature and add to the structural conditions on all unbounded movement transformations in English the stipulation that they are inapplicable to noun phrases carrying that feature.

7. Klima's version of CRAP is somewhat different. It reads: 'When there are multiple occurrences of the same category in one construction, without lexical or morphological differentiation, then a simple algorithm exists for distinguishing their function and no transformation will have such an effect as to interfere with the effectiveness of the algorithm' (quoted in Ruwet, 1973, p. 426). This formulation, however, is defective in at least two critical respects. First, for 'transformation', Klima should have something like 'transformational derivation', since presumably he would want to allow the possibility of a derivation in which a transformation applies so as to interfere with the algorithm only to have a second transformation undo its effect. Second, his formulation is not couched in universal terms, since the algorithm Klima refers to will differ from language to language. In English, for example, the algorithm Klima posits for distinguishing the function of direct object from the function of indirect object is that the indirect object is the noun phrase that immediately follows the verb (in the absence of morphological evidence). Moreover, this algorithm, if true, is not a grammatical principle, but rather a principle of language

not be able to account for the cases in which the application of Topicalization and Subject-Postposing in German would result in an unacceptable sentence, since the cases involve 'accidents' of morphology to which the transformations in question could not possibly be sensitive. CRAP, however, provides what seems to be the most direct and intuitively satisfying account.[8]

Returning to the problem of the interaction of Dative with the various movement transformations in English, we see that CRAP also predicts that the (b)-examples in (4)-(8) are ungrammatical because there is nothing in the *structure* (including morphology) of those examples that permits us to determine which of the two object noun phrases in each is the direct object and which the indirect object. That is, if those examples were grammatical, they would be relationally ambiguous. This fact becomes clearer if we consider an example in which the direct object is animate.

(14)   *Who(m) did Selma send the doctor?

If (14) were grammatical, there would be no dispute about its relational ambiguity. It would mean the same thing as either (15a) or (15b).[9]

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perception (that is, a language-independent principle in the sense given in footnote 1). Hence it can have no bearing on the question of whether a given sentence is grammatical. For further discussion of Klima's version of CRAP, see footnotes 9 and 16.

8. However, although the existence of CRAP as a linguistic universal would remove the need for a high-powered constraint (presumably a transderivational constraint) from the grammar of German, CRAP is itself a device as powerful as a transderivational constraint. In effect, it is an instruction to block a derivation given the existence of another derivation which results in the same surface structure as the first but with the constituents in different grammatical relations (or, both derivations may be blocked; see footnote 9). Thus the explanatory power of CRAP is strongly limited. It does not prevent the existence of grammars with rules that could create relational ambiguity but only prevents the derivation of relationally ambiguous sentences when those rules are used. It would be more interesting if there were a principle that really limited the class of grammars that could be acquired by stipulating that certain rules could not be a part of a grammar that had certain other rules because of the problem of relational ambiguity. But, apparently, there is no such principle.

9. As formulated in footnote 6, the English

specific derivational constraint would actually block only the derivation of (14) from the structure that underlies (15a). The derivation of (14) from (15b) would be permitted, since Question Formation is moving the direct object, not the indirect object. From the version of CRAP given in the text, on the other hand, it would follow that both derivations would be blocked, since in both cases syntactic transformations that create an ambiguous structure are being applied. This contrasts with the German situation involving Topicalization and Subject Postposing, in which one derivation is not blocked because it does not involve the application of relational-ambiguity-creating transformations. Since none of the linguists we have cited who have investigated the problem under consideration took into account sentences like (14), we have no way of knowing whether they would judge (14) as unacceptable on both readings, or unacceptable only on the reading of (15a) and acceptable on the reading of (15b). We suspect that opinion would be divided on this matter, some finding that (14) is unacceptable on both readings, in conformity with our version of CRAP, and others that (14) is acceptable on the reading of (15b) only, in conformity with Klima's version of CRAP and the derivational constraint formulated in footnote 6. We take up this matter of varying acceptability judgments below in Section 6.

(15)   a.   Who(m) did Selma send the doctor to?/ To whom did Selma send the doctor?

      b.   Who(m) did Selma send to the doctor?

Similarly, convincingly ambiguous examples could be constructed using any of the other unbounded movement rules together with Dative.

However, CRAP falsely predicts that the examples in (3b), which illustrate the interaction of Dative and Passive, are also ungrammatical, since structurally the surface-subject noun phrase could be taken to be either the underlying direct or indirect object. This fact, again, emerges most clearly when we consider an example that contains an underlying animate direct object.

(16)   The rich client was offered the young lawyer by the senior partner

That is, (16) is the passive version of either (17a) or (17b).

(17)   a.   The senior partner offered the rich client the young lawyer (i.e., The senior partner offered the young lawyer to the rich client)

      b.   The senior partner offered the young lawyer the rich client (i.e., The senior partner offered the rich client to the young lawyer)

To save CRAP, we must therefore specify that it blocks a derivation of a relationally ambiguous sentence only if at least one unbounded movement transformation is applied in it.[10]

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10. Alternatively, one could eliminate reference to boundedness in the statement of CRAP if one could substantiate the claim that (16) cannot be derived from (17b) and that hence (16) is not relationally ambiguous. This could be done by strictly enforcing the requirement that the noun phrase made subject by Passive must either be immediately postverbal or contained in a preposition phrase that is immediately postverbal; in (17b), the noun phrase undergoing Passive is separated from the verb by another noun phrase.

By so restricting Passive, however, we would also be predicting that both sentences in (i) are ungrammatical.

(i)   a.   A book was given Mary by Nancy

      b.   *A dress was bought Mary by Nancy

According to both Fillmore (1965) and Jackendoff and Culicover (1971, pp. 398, 400), only sentences in which a *for*-dative is made subject by Passive are unacceptable. Nevertheless, Jackendoff and Culicover accept the limitation on the structural description of Passive discussed above and derive sentences like (ia) from the structure that underlies (ii) by a later, optional rule they call, simply enough,

To Deletion (1971, p. 404).

(ii)   A book was given to Mary by Nancy.

But if Jackendoff and Culicover are right, then sentences like (16) remain relationally ambiguous, and CRAP continues to make the wrong prediction. To save CRAP without imposing the limitation on boundedness, one would have to insist that the proposed rule of *To* Deletion is not part of the grammar of English and that (ia), while acceptable, is nonetheless ungrammatical.

Now, as we observed in the opening paragraph of this paper, it is possible that a class of sentences can be considered acceptable but ungrammatical. But to show that such a class [for example, the class of sentences like (ia)] must be viewed in that way, one must be able to demonstrate a language-independent behavioral principle according to which those sentences are acceptable, despite their ungrammaticality. In particular, it will not suffice to say simply that such sentences are acceptable 'by analogy', for then the questions arise, by analogy to what, and why this analogy and not some other. In the case of (ia), we know of no language-independent principle that could be

But even this limitation is inadequate. Ruwet (1973) points out that the application of Question Formation (an unbounded rule) and a rule he calls Stylistic Inversion creates sentences with relational ambiguity in French; one example he cites is (18).[11]

(18)   Quels soldats commandent ces officiers? 'Which soldiers command these officers?' or 'Which soldiers do these officers command?'

Exactly the same sort of ambiguity appears in German and English (in English it is limited to sentences containing the main verb *have* and no auxiliary verbs), as in the examples in (19).

(19)   a. Was hat deine Katze in den Pfoten?

b. What has your cat in its paws?

In light of such examples, it is clear that there can be no syntactic mechanism for ruling out relational ambiguity in all cases, whether language-universal or language-specific. This raises the possibility that there is some alternative explanation for the unacceptability of the (b)-examples in (4)-(8), which does not classify those examples as ungrammatical. One such explanation for the cases in (8b), in which Dative interacts with the application of Question Formation to the indirect object resulting in sentences which we henceforth shall call dative questions (DQs), has been proposed by Jackendoff and Culicover (1971). We consider now their proposal in detail.

4. Critique of Jackendoff and Culicover's perceptual-strategy explanation for the unacceptability of dative questions

Although we limit our attention in this section and in what follows to DQs, what we have to say will largely carry over to sentences like the (b)-examples in (4)-(7).[12]

Jackendoff and Culicover's motivation for proposing a perceptually based account of the unacceptability of DQs, like ours, is based on the realization of the difficulty of accounting for the unacceptability of that sentence type in the grammar of English

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appealed to; indeed it is the very acceptability of (ia) that gives rise to the ambiguity of (16)! We conclude that (ia) is acceptable because it is grammatical, that (16) is relationally ambiguous, and therefore that CRAP, if it is to be saved from this particular objection, must make reference to the boundedness of the transformational rules involved.

11. Although Ruwet (1973) devotes the bulk of his article to a defence of CRAP from French syntax, he is prepared to abandon it if the two readings would not both be likely in a given context. But this amounts to an admission that

the principle is not part of linguistic theory but at most a rhetorical principle: Relationally ambiguous sentences are avoided except in the case where only one interpretation is likely given the context.

12. We have some informally collected evidence that there is some variation in the acceptability of the (b)-examples in (4)-(7); in particular that the examples in (3b) are considerably less acceptable than the others. We are not prepared at the moment, however, to explain this variation.

(see especially p. 411 of their article).[13] According to their account, DQs are unacceptable because a listener cannot determine from their perceived structure what grammatical relation to assign to the interrogative constituent. To show why this is so, Jackendoff and Culicover propose the following two-stage account of how listeners assign grammatical relations to noun phrases.

First, grammatical relations for noun phrases that occur in their underlying positions by undoing a bounded-movement rule (such as Passive, Dative or Subject-Verb Inversion) are established. Second, grammatical relations for noun phrases that have been moved by unbounded rules[14] are established by fitting them into any remaining perceived gaps. The crucial point is that although an unbounded-movement rule will always leave a gap (namely, the position formerly occupied by the moved constituent), the gap will not always be readily perceivable. Let us call this second stage of Jackendoff and Culicover's proposal for the perceptual determination of grammatical relations the Gap-Filling Principle (GFP). To see how GFP works, consider its application to DQs and their variants in which Dative is not applied.

(20) a. What did John give to Mary?
      b. What did John give Mary?
      c. Who(m) did John give a book to?
      d. *To whom did John give a book?

To explain the acceptability judgments in (20), Jackendoff and Culicover (1971) reason as follows (we change their example numbers to conform to ours).

> In each sentence, the presence of the *wh*-word signals that the interpreter of the sentence must look for a gap into which the *wh*-word can fit. In (20a), *to* follows *give*, which can never happen in a declarative sentence. One can thus conclude that *what* must have been fronted from between these two words. In (20b),

13. However, Jackendoff and Culicover, in another passage, express the view that the mechanisms that account for perceptual difficulty are to be accounted for in the grammatical description of a language. In connection with the transformation called Extraposition from NP, they say the following: '... the constraint on Extraposition from NP, which is very awkward to state in terms of conditions on application of transformations, becomes much clearer in terms of the difficulty of correctly interpreting the resulting strings. By permitting problems of string interpretation as possible sources of *ungrammaticality* [emphasis ours], we can eliminate this otherwise unexplained constraint. However, we must leave open for the present the question of how to incorporate this innovation into the theory of grammar' (1971, pp. 406-407). Given what they say on p. 411, we charitably interpret this passage as containing a lapse; Jackendoff and Culicover, we believe, are not really proposing that a theory of grammar should contain within it a theory of *how* sentences are perceptually processed.

14. Jackendoff and Culicover's exact wording (1971, p. 410) is that 'NPs which have been moved away from arbitrary positions (such as NPs fronted by *wh*-fronting) are then fitted into remaining gaps'. As far as we can determine, rules which move constituents from arbitrary positions are coextensive with rules which are unbounded.

give Mary is a permissible sequence in a declarative sentence, so *what* need not have come from between them. In fact, if it had, the impossible string **give something Mary* would have to be the corresponding declarative VP form. However, nothing follows *Mary*, and the verb *give* requires two objects. *Give Mary something* is a possible declarative VP form, so one can conclude that *what* has been fronted from the end of the sentence.

In (20c), *give a book* is a possible string in a declarative VP, and the bare preposition at the end shows that *whom* must have come from the end of the sentence. In (20d), again *give a book* is a possible string, and so no gap is noticed at the stage where *Whom did John give a book* has been perceived. At this stage, the listener's hypothesis is that *whom* has been fronted from the end; hence the preposition *to* is expected to follow *book*, as in (20c). Imagine the hearer's consternation when the expected *to* does not arrive. The sentence is therefore judged unacceptable, since it is expected to be (20c) and then fails to conform to that expectation (p. 409).

To summarize, sentences like (20d) are said to be unacceptable because the gap left by the fronting of the questioned constituent is not noticeable; sentences like (20a-c) are acceptable because the gap is noticeable.

There are several respects in which this explanation for the judgments in (20) is faulty. First, consider the treatment of (20a). While it is certainly unlikely that the string *give to Mary* would appear in a declarative sentence,[15] it is certainly not impossible, since examples like (21) are certainly acceptable.

(21)   Whenever he is feeling charitable, John gives to Mary

More seriously, consider a sentence like (22), which has exactly the same structure as (20a).

(22)   What did John write to Mary?

Since *to* can follow *write* in a declarative sentence, and probably does so quite frequently in ordinary usage, it would seem that listeners many times, if not invariably, would fail to notice a gap between *write* and *to* in (22); nevertheless, no one would find (22) unacceptable.

Now consider (20d). According to GFP, this sentence is unacceptable because no gap can be perceived within its VP. Now consider (23), which is structurally parallel to (20d) except that where a nominal direct object appears in (20d) a sentential one appears in (23).

(23)   *Who(m) did John tell that Mary was staying?

Example (23) contains the surface VP *tell that Mary was staying*, which is impossible

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15. Jackendoff and Culicover do not intend for us to conclude that interrogative sentences are transformed back into declarative sentences in perception; it is just that in declarative sentences constituents generally appear where they also happen to appear in deep structure.

in a sentence not transformed by some movement rule. Moreover, the element that has been moved out of that VP must appear between the verb *tell* and the sentential object, and hence a gap must be noticeable in that position. According to GFP, therefore, (23) should be acceptable, but it is not. Still another problem with GFP as it applies to (20d)-type sentences is that it predicts that sentences like (14), repeated here for convenience, should be acceptable on the interpretation that the postverbal noun phrase is the indirect object.

(14)   *Who(m) did Selma send the doctor?

This is so because *who(m)* can be fitted into the gap following the postverbal noun phrase (but see footnote 9).

Thus, GFP, despite its intuitive plausibility, cannot as such provide a perceptually based explanation for the unacceptability of DQs. We must conclude either that there is some other language-independent account of their unacceptability or that, indeed, DQs are ungrammatical. One piece of evidence that would tip the scales against the latter conclusion would be the existence of a population of otherwise ordinary English speakers who find DQs acceptable. For such speakers it would be impossible to maintain that DQs are ungrammatical, since an acceptable sentence type can only be considered ungrammatical if there is a language-independent explanation for its acceptability (see Langendoen and Bever, 1973, for discussion). But for the sentence type under consideration, the problem up to now has been just the opposite: To find a language-independent basis for their unacceptability. Furthermore, there is no problem in accounting for the acceptability of DQs within the grammar of English, since they arise upon application of generally accepted transformations to well-formed base structures.

Furthermore, the difference between the population that accepts DQs and the one that does not need not be viewed as a dialect difference in the strict sense that the two populations possess two slightly different internalized grammars. Rather, the difference could be just as plausibly explained on the basis of a difference between the perceptual mechanisms by which the two populations attempt to understand DQs. In the next section, we present the evidence that the relevant population exists; in the section following that, we provide an alternative to Jackendoff and Culicover's explanation of the unacceptability of DQs that accounts for the different acceptability judgments regarding DQs.

5. Demonstration that a population that accepts DQs exists

5.1 *Result of a pilot study on DQs*

In a pilot study conducted with undergraduates at various campuses of The City

University of New York and at Rutgers University in New Brunswick, New Jersey, we found that our subjects had no objections at all to DQs of any sort. In particular, we found that many of our subjects spontaneously interpreted genuinely ambiguous DQs like (14) in exactly the way opposite to that predicted by both GFP and Klima's version of CRAP (see footnote 9). That is, such a sentence would often be interpreted as (15a) rather than as (15b). On the basis of this pilot study, we conducted in the spring of 1971 more careful studies to substantiate the claim that many people from metropolitan New York City find DQs to be acceptable. We were particularly interested in subjects' responses to genuinely ambiguous sentences like (14) because rather than ask for acceptability judgments directly (a methodologically unsound technique, since one has no way of knowing whether the responses are bona fide acceptability judgments), we wanted to infer those judgments by indirect techniques. The fact that subjects can respond to DQs does not necessarily mean that they accept such sentences, but if they consistently respond to genuinely ambiguous DQs in a way that indicates that they interpret them in the manner of (15a) (in which the postverbal noun phrase is taken to be the direct object), then for them DQs are acceptable because such interpretations are only possible if DQs are acceptable.[16]

5.2 *Two experiments on DQs*

In the first experiment, we constructed a questionnaire consisting of fifteen sentences, in which *S*s were instructed to 'add the word "to" once to each of the...sentences so as not to change the meaning'. This questionnaire is given in Appendix 1; for convenience we refer to it as the *To*-Insertion Form (TIF). The fifteen sentences were written in full capital letters with equal spacing between the words. They were of three types. (1) Five sentences were of the type (24).

(24)   What did you show the landlord? [Example (1) on TIF]

These were control sentences, since they are undisputedly grammatical, and only the postverbal noun phrase can be reasonably construed as the indirect object. (2) Five sentences were DQs of the type (25).

(25)   Whom did you give the ball? [Example (3) on TIF]

These were also control sentences, since, although they are of the type that we have

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16. That is, if an ambiguous sentence like (14) is interpreted as (15b), the *S* may be responding to it on the pattern of acceptable non-DQs, such as (i).

(i)   What did Selma send the doctor?

If, however, the *S*'s response indicates that he or she construes the postverbal noun phrase in an ambiguous DQ as a direct object, there is no non-DQ model that he or she could possibly be using as a basis for that response; hence the acceptability of DQs for that *S*.

For *S*s that do not accept DQs, the ability of interpreting (14) as (15b) is not to be taken as evidence that GFP or Klima's version of CRAP (see footnote 9) is correct for those *S*s, since again, those *S*s may be using (i) as a basis for that *interpretation* in a task situation like those describe below in section 5.2.

seen have been considered ungrammatical, the postverbal noun phrase can be reasonably construed only as a direct object, and perhaps because of the coercive effect of the experimental situation it was almost always so judged. (3) Five sentences were ambiguous DQs of the type (26).

(26)   Whom did you send the woman? [Example (12) on TIF]

These were the experimental sentences that we believed could be interpreted in two ways. Besides (26), we used the following sentences.

(27)   Whom did you offer the man? [Example (2) on TIF]

(28)   Whom did you lend the team? [Example (4) on TIF]

(29)   Whom did you show the woman? [Example (9) on TIF]

(30)   Whom did you refer the person? [Example (14) on TIF]

The fifteen sentences were arranged pseudo-randomly as to type. TIF was administered to 48 subjects consisting of undergraduates at Brooklyn College and at Rutgers University, and of professional persons at Bell Laboratories in Piscataway, New Jersey. The *S*s were instructed that 'there are no right or wrong answers: We are interested only in where you think the word [*to*] can be added'.

The results of this experiment suggested several changes in the form. First, the task did not in any straightforward way require *S*s to interpret sentences as they would if they were to encounter them spontaneously in speech or writing. The form was structured much like a typical Scholastic Aptitude Test question and so may have involved the *S*s' conscious knowledge about English grammar. Second, we felt that the ordering of the first two sentences on TIF [examples (24) and (27) above] might be introducing perceptual-set bias, since the initial *what* of example (24) might start a pattern of response in which the postverbal noun phrase is the indirect object throughout. Third, we felt that examples (28) and (30) [examples (4) and (14) on TIF] were not entirely satisfactory. Example (28) seemed to cause may *S*s trouble, and (30) was being uniformly interpreted only in one way (unlike the others), namely with the postverbal noun phrase as the direct object. Fourth, we felt that the use of *whom* rather than *who* throughout may have promoted the interpretation of that word as the indirect object (for many persons, *whom* is only used spontaneously when a preposition precedes).

Accordingly, a new form was devised, a form in which *S*s were asked to 'answer the ... questions with a full sentence using the same verb'. This form is shown in Appendix 2; we refer to it as the Answer Form (AF). In this form, we replaced *whom* by *who(m)*, with the instruction to 'read "Who(m)" as either "Who" or "Whom", depending on how you would say it in ordinary conversation'. We interchanged the positions of examples (24) and (27), so that (27) became example (1) on AF and (24) became example (2) on AF. We replaced examples (28) and (30) by the following sentences.

(31) Who(m) did you recommend the man? [Example (4) on AF]
(32) Who(m) did you direct the person? [Example (14) on AF]
We also instructed Ss that if they felt that more than one kind of answer was appropriate, to write additional answers, but not to cross out or erase their first answer, as we were particularly interested in their first response.

AF was administered to 79 Ss, who were undergraduates at Baruch and Hunter Colleges of C.U.N.Y. Shortly afterwards, AF was administered to part of the same population that originally received TIF (30 in all), and TIF was administered to part of the same population that originally received AF (44 in all). This was done to insure against a confound of population differences with form differences.

Finally, we decided to try out TIF, with *who* replacing *whom* throughout, as shown in Appendix 3. This form was administered to 68 undergraduates at Brooklyn and Hunter Colleges and Rutgers University, none of whom had been previously used as Ss in this study, and to 44 undergraduates at S.U.N.Y. at Buffalo (we thank David Hays for his help in administering the form there). This was done specifically to test our hypothesis that *whom* is more likely to attract the word *to* than *who*, and to run the test on Ss from outside metropolitan New York City.

Table 1. *Forms vs. populations for the three sentences in common to the To-Insertion (Whom) and Answer Forms*

Sentence	Popula-tion*	Form**	Postverbal noun-phrase is:				N
			Indirect object	Direct object	Ambig-uous	No Interpre-tation	
(27)							
Who(m) did you	A	AF	21	4	3	2	30
offer the man?	B	AF	73	6	0	0	79
[Ex. (1) on AF, Ex. (2) on TIF]	A	TIF	17	23	6	2	48
	B	TIF	14	23	1	6	44
(29)							
Who(m) did you show	A	AF	14	12	4	0	30
the woman?	B	AF	55	22	1	1	79
[Ex. (9) on AF and TIF]	A	TIF	12	28	8	0	48
	B	TIF	10	29	5	0	44
(26)							
Who(m) did you	A	AF	15	12	2	1	30
send the woman?	B	AF	45	30	3	1	79
[Ex. (12) on AF and TIF]	A	TIF	13	28	6	1	48
	B	TIF	13	30	1	0	44

* Population A: Brooklyn College, Rutgers University, Bell Laboratories
  Population B: Baruch College, Hunter College.
** AF: Answer Form; TIF: *To*-Insertion Form

5.3 *Results*

In Table 1, the grammatical relations assigned to the postverbal noun phrases in the first TIF (using *whom*) and AF for the three experimental sentences that they have in common are tabulated. Comparing the same forms against the different populations on which they were administered, we find that there is no significant population difference, using the Chi-Square method. For example (27), $p < .5$; for example (29) $p < .5$; for example (26), $p < .5$.

If we now add the populations together by form we obtain the results given in Table 2 (the results of TIF using *who* on metropolitan New York City populations are also included in this table). The differences between AF and TIF using *whom* are significant, using the Chi-Square method. For example (27), $*p < .001$; for example (29), $*p < .001$; for example (26), $*p < .001$. The differences between AF and TIF using *who* are significant for two of the three sentences; for (27), $*p < .001$; for (29), $p < .3$; for (26), $*p < .001$.

Table 2. *Answer Form vs. To-Insertion Forms (both Whom and Who) for metropolitan New York City populations**

| Sentence | Form | Postverbal noun-phrase is: | | | | |
		Indirect object	Direct object	Ambig-uous	No Interpre-tation	N
(27)						
Whom(m) did you	AF	94	10	3	2	109
offer the man?	TIF (*Whom*)	31	46	7	8	92
	TIF (*Who*)	30	30	6	2	68
(29)						
Who(m) did you	AF	69	34	5	1	109
show the woman?	TIF (*Whom*)	22	57	13	0	92
	TIF (*Who*)	33	30	5	0	68
(26)						
Who(m) did you	AF	60	42	5	2	109
send the woman?	TIF (*Whom*)	26	58	7	1	92
	TIF (*Who*)	20	42	4	2	68

* For AF and TIF (*Whom*), the populations are Baruch, Brooklyn and Hunter Colleges, Rutgers University and Bell Laboratories.
For TIF (*Who*) the populations are Brooklyn and Hunter Colleges and Rutgers University.

In Table 3, the grammatical relations assigned to the postverbal noun phrases for the experimental sentences not in common to AF and the two TIFs are tabulated

for the metropolitan New York City populations (again, since internal population differences are nonsignificant, the figures are added together). For the five experimental sentences, the differences between TIF using *whom* and TIF using *who* are nonsignificant, except for example (29). For (27), $p < .2$; for (29), $*p < .01$; for (26), $p < .7$; for (28), $p < .7$; for (30), $p < .3$.

Table 3.   *Answer Form and To-Insertion Forms (Whom and Who) for the sentences not common to those forms for metropolitan New York City populations**

Sentence	Form	Postverbal noun phrase is:				N
		Indirect object	Direct object	Ambig-uous	No Interpre-tation	
(31) *Who(m) did you recommend the man?* [Ex. (4) on AF]	AF	34	63	4	8	109
(32) *Who(m) did you direct the person?* [Ex. (14) on AF]	AF	2	94	2	11	109
(28) *Who(m) did you lend the team?* [Ex. (4) on TIF]	TIF (*Whom*) TIF (*Who*)	30 26	51 39	10 2	1 1	92 68
(30) *Who(m) did you refer the person?* [Ex. (14) on TIF]	TIF (*Whom*) TIF (*Who*)	7 8	77 56	5 1	3 3	92 68

* See Table 2 for the population breakdown by forms.

Finally, in Table 5, we give a detailed analysis of the AF responses to examples (29) and (26) [examples (9) and (12), respectively, on AF]. In this table, we correlate the responses to (29) and (26), which are the only minimal pair among our experimental sentences (they differ only in the verb). In addition, we distinguish between responses which are syntactically and semantically appropriate and those which are inappropriate. For example, (33) is an appropriate response to (29), whereas (34) is inappropriate.

(33)   I showed the woman a friend
(34)   I showed the woman a hat

Both responses indicate that the postverbal noun phrase *the woman* in (29) was

Table 4. *To-Insertion Form (Who) vs. population (metropolitan New York City and Buffalo, New York)*

Sentence	Population*	Postverbal noun-phrase is:				N
		Indirect object	Direct object	Ambig-uous	No Interpre-tation	
(27)						
Who did you offer	C	30	30	6	2	68
the man?	D	38	2	2	2	44
(29)						
Who did you show	C	33	30	5	0	68
the woman?	D	27	9	6	2	44
(26)						
Who did you send	C	20	42	4	2	68
the woman?	D	27	11	4	2	44
(28)						
Who did you lend	C	26	39	2	1	68
the team?	D	13	24	5	2	44
(30)						
Who did you refer	C	8	56	1	3	68
the person?	D	3	38	2	1	44

* Population C: Brooklyn and Hunter Colleges and Rutgers University
  Population D: SUNY at Buffalo

Table 5. *Analysis of responses to examples (29) and (26) in Answer Form*

Postverbal noun phrase is:	Both responses appropriate	One or both responses inappropriate	N
1. I.O. in both (29) and (26)	42	9	51
2. I.O. in either (29) or (26); D.O. in the other	12	12	24
3. I.O. in either (29) or (26); ambiguous in the other	2	0	2
4. D.O. in either (29) or (26); ambiguous in the other	2	0	2
5. Ambiguous in both (29) and (26).	3	0	3
6. D.O. in both (29) and (26)	19	6	25
7. No interpretation for one or both (29) and (26)	0	2	2
Total of 4, 5, 6	(24)	(6)	(30)
Grand total	80	29	109

interpreted as indirect object; however the latter response is inappropriate because the noun phrase that answers the question *who(m)*? is inanimate. A syntactically inappropriate answer would be (35).

(35)   I showed the woman

In (35), there is no second object; in fact the question is not really answered at all. For purposes of classification, *the woman* is assumed to be direct object, since that is how the sentence would be analyzed out of context.

5.4 *Discussion*

We consider here the following matters: (1) The differences in the responses to the two tasks, (2) the differences between TIF with *whom* and with *who* and the difference between the Buffalo and New York City populations, (3) the intrasentential differences, particularly on AF, and (4) the establishment of a New York City population that accepts DQs.

Concerning task differences, we find that in general AF favored the interpretation of the postverbal noun phrase as indirect object, whereas TIF favored its interpretation as direct object (but less so when the interrogative word was *who* rather than *whom*). Thus TIF provided a task that enhanced the appearance of the ability to interpret DQs in a way contrary to the predictions made by both GFP and CRAP. However, we are willing to discount that evidence on the basis of the relative artificiality of that task as compared to the question-answering task in AF and to rest our case for the existence of a population that accepts DQs on the AF responses.

Concerning the difference between TIF with *whom* and TIF with *who*, we note that although the difference is nonsignificant except for example (29), the difference is in the predicted direction: *Whom* is more likely to be taken as indirect object than *who*. The reason significance was achieved for (29) may be that there were relatively many ambiguous responses to it in TIF with *whom*. These responses were not included in the calculation for significance. However, we have no explanation why just this example deviated from the general pattern. On the other hand, the difference between the New York City and Buffalo populations on TIF with *who* convincingly shows that a population selected from outside New York City will treat DQs in conformity with the linguistic and psycholinguistic descriptions considered in Sections 2 through 4.

The most striking intrasentential variations are to be found between the three sentences in common to the two forms (26), (27) and (29) and two of the four sentences not in common to them, namely (30) and (32). For AF, the contrast is most striking between (27), in which 94 *S*s considered the postverbal noun phrase to be the indirect object and only 10 *S*s considered it the direct object, and (32), in which only 2 *S*s considered the postverbal noun phrase to be the indirect object and 94 *S*s considered

it the direct object. For TIF (both *who* and *whom* varieties, New York City populations only), compare (27), in which 61 *S*s took the postverbal noun phrase to be an indirect object and 76 took it to be a direct object with (30), in which 15 *S*s considered the postverbal noun phase to be an indirect object and 133 *Ss* considered it a direct object.

The reason for this set of differences has to do with a grammatical oddity inherent in examples (30) and (32). If we put them back into declarative form [replacing *who(m)* by *someone*], considering *who(m)* to be the indirect object, as most of our *S*s did, we obtain ungrammatical sentences.

(36)   *You referred someone the person

(37)   *You directed someone the person

The results are similarly ungrammatical if *who(m)* is considered the direct object. Thus we must assume that examples (30) and (32) are also ungrammatical, and that our *S*s were forced in the experimental situation to interpret them in terms of the closest salient grammatical sentences (Katz 1964). For (30) and (32), they are the following.[17]

(38)   Who(m) did you refer the person to?

(39)   Who(m) did you direct the person to?

This accords with the experimental facts, since in both (38) and (39), the postverbal noun phrase is the direct object.

We take up now the matter of most importance to us: The establishment of the existence of a population that accepts DQs, and for whom therefore DQs are grammatical. This, we claim, is shown in Table 5, in which we examine the responses to two non-problematic DQs in AF, examples (29) and (26). In section 5.1 above, we argued that if *S*s are consistently able to interpret the postverbal noun phrases of DQs as direct objects, then DQs for them must be acceptable, since there are no analogical grammatical sentences on the basis of which they could interpret DQs in that way. The number of *S*s that treated the postverbal noun phrases as direct objects in both (29) and (26) without error is 24, or 22 percent of the total number of *S*s that filled out AF. This means that at least one-fifth of our *S*s from metropolitan New York City find DQs acceptable. We suspect that the actual population, expressed as a percentage of fluent metropolitan New York City English speakers, is considerably larger than this figure would indicate, but we are content with having shown that it is at least this large.

17. This is so, since listeners would conclude from the fact that neither *refer* nor *direct* undergo Dative that the postverbal noun phrase must be the direct object. The minimum syntactic change, therefore, is to add the appropriate preposition (*to*) to the interrogative word. Our purpose in including these patently ungrammatical sentences in the questionnaires was to see whether they would be treated differently from DQs whose grammaticality status was the subject of investigation. And indeed they were.

6. An explanation based on the perceptual determination of grammatical relations for the variation in the acceptability of DQs

In this section, we show how the variation in the acceptability of DQs could be accounted for as a consequence of the different perceptual rules used by English-speaking listeners for assigning grammatical relations to noun phrases. We assume that such relations are assigned while the sentence itself is being actively processed, and that the end of each perceived constituent is a potential decision point for determining the grammatical relations that obtain within that sentence.[18] In (40), we give a schematization of a DQ, with the potential decision points (DPs) indicated underneath.

(40)

Who(m)	did	you	V	NP
0	1	2	3	4	5

In (41), we state the perceptual rules that are applicable in the processing of DQs and indicate for each rule the decision point in (40) at which it is applicable first.[19]

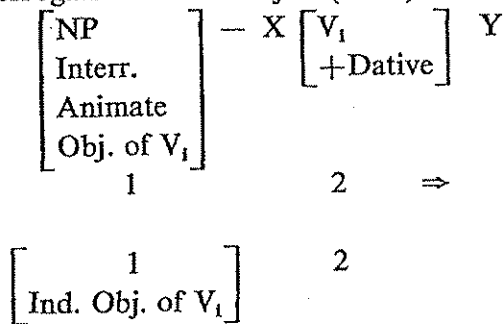(41)   a. Subject and object in inverted sentences (DP 3)

$$
\begin{bmatrix} NP \\ Interr. \end{bmatrix} - \begin{bmatrix} V_1 \\ Aux. \end{bmatrix} - NP - X
$$

$$
\begin{array}{cccc}
1 & 2 & 3 & 4 \quad \Rightarrow \\
\begin{bmatrix} 1 \\ Obj.\ of\ V_1 \end{bmatrix} & 2 & \begin{bmatrix} 3 \\ Subj.\ of\ V_1 \end{bmatrix} & 4
\end{array}
$$

18. These assumptions can be strongly motivated simply from consideration of the rapidity and precision of speech comprehension. Although they have not received direct experimental support, the assumptions have also been used by other psycholinguists in the construction of more elaborate hypotheses that have received experimental support.
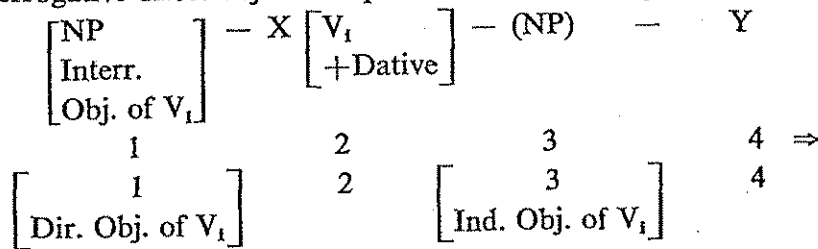
19. We assume that the system of perceptual rules is designed to recover essentially the surface structures of sentences (as in Kimball, 1973) and 'annotations' of those surface structures that indicate the deep grammatical relations and perhaps certain other aspects of deep structure, where those are different from surface structure. The rules in (41) are a subset of the annotating rules. We cast them in the form of transformational rules because that is a convenient and revealing framework. The subscript 'i' on the category symbol 'V' (for 'verb') is an abstract inidicator of the clause in which that verb is the main verb; for simplicity, we assume that all the constituents mentioned in the rules of (41) are members of the same clause. The feature specification [+Dative] indicates that the verb permits application of Dative within its clause. The specifications [Dir. Obj. of V_i] and [Ind. Obj. of V_i] are assumed to substitute for the specification [Obj. of V_i]. Thus rule (41a) may mark certain noun phrases as objects of a particular verb; rules (42b,c,d) may then replace that specification with the more precise specifications as direct or indirect objects.
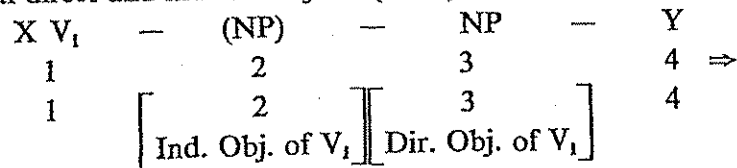
b. Interrogative indirect object (DP 4)

$$
\begin{bmatrix} \text{NP} \\ \text{Interr.} \\ \text{Animate} \\ \text{Obj. of } V_1 \end{bmatrix} - X \begin{bmatrix} V_1 \\ +\text{Dative} \end{bmatrix} \quad Y
$$

$$
\begin{array}{ccc}
1 & \quad & 2 \quad \Rightarrow
\end{array}
$$

$$
\begin{bmatrix} 1 \\ \text{Ind. Obj. of } V_1 \end{bmatrix} \quad 2
$$

c. Interrogative direct object and postverbal indirect object (DP 5)

$$
\begin{bmatrix} \text{NP} \\ \text{Interr.} \\ \text{Obj. of } V_1 \end{bmatrix} - X \begin{bmatrix} V_1 \\ +\text{Dative} \end{bmatrix} - (\text{NP}) \quad - \quad Y
$$

$$
\begin{array}{cccc}
1 & 2 & 3 & 4 \quad \Rightarrow
\end{array}
$$

$$
\begin{bmatrix} 1 \\ \text{Dir. Obj. of } V_1 \end{bmatrix} \quad 2 \quad \begin{bmatrix} 3 \\ \text{Ind. Obj. of } V_1 \end{bmatrix} \quad 4
$$

d. Postverbal direct and indirect objects (DP 5)

$$
\begin{array}{ccccc}
X \ V_1 & - & (\text{NP}) & - & \text{NP} & - & Y
\end{array}
$$

$$
\begin{array}{cccc}
1 & 2 & 3 & 4 \quad \Rightarrow
\end{array}
$$

$$
1 \quad \begin{bmatrix} 2 \\ \text{Ind. Obj. of } V_1 \end{bmatrix}\begin{bmatrix} 3 \\ \text{Dir. Obj. of } V_1 \end{bmatrix} \quad 4
$$

Rules (41a) and (41d) are independently needed for the perceptual processing of a wide variety of English sentence types and must be considered part of the set of listening strategies of everyone who is fluent in English. Rule (41c) embodies a specific case of Klima's 'simple algorithm' for picking out direct and indirect objects in the event an object has been moved out of postverbal position. It, too, may be presumed to be shared by everyone who is fluent in English.[20] Rule (41b), however, is limited to those speakers who accept DQs; it accounts in fact for their ability to interpret those sentences in the manner in which the grammar of English dictates that they must be interpreted. To see this, consider first how rules (41a,b,c,d) assign grammatical relations to sentences of the type (40), and second how rules (41a,c,d) do so. At DP 3, rule (41a) marks *who(m)* to be an object of the main verb and *you* the subject. At DP 4, rule (41b) specifies that *who(m)* is in fact the indirect object of the

20. Hankamer (1973, p. 52) reports that he does not accept sentences such as (i) in which the direct object in a sentence that has under-

gone Dative is fronted.
(i) What did Harry sell Jerome?
We can explain his inability to accept sentences

verb. At DP 5, rule (41c) is inapplicable (the interrogative noun phrase is already specified as the indirect object), but rule (41d) is applicable; it marks the postverbal noun phrase to be the direct object of the verb.

If rule (41b) is left out, the following perceptual derivation is obtained. At DP 3, as before, rule (41a) marks *who(m)* as an object of the main verb and *you* as subject. At DP 4, none of the rules of (41) are applicable. At DP 5, rule (41c) applies, marking the interrogative noun phrase to be the direct object and the postverbal noun phrase the indirect object. In case the postverbal noun phrase is animate, the result is not unacceptable, but if it is inanimate, the result is unacceptable, since it is not possible for an indirect object to be inanimate while the direct object is animate.[21] Thus DQs are acceptable in case listeners have internalized rule (41b) and unacceptable in case they have not.

At this point, we must emphasize that we have not demonstrated experimentally that English speakers who accept dative questions have internalized a perceptual rule like (41b), but only that the postulation of such a rule does provide an explanation for their ability to accept such sentences, without having to posit that they speak and understand a different dialect of English from everyone else. However, it should be possible to test experimentally whether a perceptual rule like (41b) exists. First, one must isolate two populations, one containing *S*s that accept dative questions and the other *S*s that do not. If *S*s that accept dative questions do so on the basis of their having a rule that marks interrogative animate noun phrases as indirect objects as soon as they have heard a main verb that undergoes Dative, then such subjects should have demonstrably greater difficulty (as measured, for example, by latency to respond) in dealing with sentences like (42) than *S*s that do not accept DQs.

(42)   Who(m) did you send home?

The reason is that *who(m)* must be the direct object of *send* in (42), but *S*s who employ (41b) upon hearing *send* will mark *who(m)* as indirect object and will have to correct that assignment once they discover that there is no other direct object. On the other hand, the presence of a perceptual rule like (41b) should enhance *S*s' ability to understand sentences like (43).

(43)   Who(m) did you write yesterday?

---

like (i), an inability which he alone among the numerous linguists that have investigated the dative construction has testified to, by saying that he lacks rule (41c). Accordingly, the interrogative noun phrase will be marked as an object, but not any particular kind of object, such as direct or indirect.

21. Thus the rules in (41), like GFP and Klima's version of CRAP, fail to account for the unacceptability of ambiguous DQs, if indeed they are unacceptable (see footnote 9). One possible source for their unacceptability within the framework of (41) would be an interaction of rules (41b,c) in which the interrogative noun phrase becomes simultaneously specified as indirect and direct object. This must remain, however, a conjecture for the time being.

In (43), *who(m)* is the indirect object despite the fact that no direct object is present in surface structure. Thus the claim that the acceptability of DQs depends on the presence of a particular perceptual rule that not every English speaker possesses is empirically testable in a straightforward way. Regardless of the outcome of experiments testing the hypotheses advanced in this section, however, we believe that a solid basis for considering that dative questions are grammatical in English has been established.[22]

22. We regret that we read too late for inclusion in our theoretical discussion the interesting and provocative paper by Hankamer (1973), in which he asserts, among other things, that he can see no basis for distinguishing between rules of grammar and so-called perceptual strategies. We hope that this paper will be viewed as providing at least one such basis. Concerning Hankamer's proposed 'no-ambiguity condition', which bears considerable resemblance to the principles discussed and dismissed in Sections 3 and 4 and which appears superior to them in a number of respects, we note simply that it is supported by remarkably idiosyncratic and otherwise unjustified acceptability judgments, such as the one pointed out in footnote 20. If those judgments cannot be supported, neither can the condition.

Appendix 1

To-Insertion Form Using WHOM

ADD THE WORD 'TO' ONCE TO EACH OF THE FOLLOWING SENTENCES SO AS NOT TO CHANGE
THE MEANING. THERE ARE NO RIGHT OR WRONG ANSWERS: WE ARE INTERESTED ONLY
IN WHERE YOU THINK THE WORD CAN BE ADDED.

1.	WHAT	DID	YOU	SHOW	THE	LANDLORD	?
2.	WHOM	DID	YOU	OFFER	THE	MAN	?
3.	WHOM	DID	YOU	GIVE	THE	BALL	?
4.	WHOM	DID	YOU	LEND	THE	TEAM	?
5.	WHOM	DID	YOU	OFFER	THE	CANDY	?
6.	WHAT	DID	YOU	LEND	THE	CAPTAIN	?
7.	WHOM	DID	YOU	SEND	THE	PACKAGES	?
8.	WHAT	DID	YOU	GIVE	THE	TEACHER	?
9.	WHOM	DID	YOU	SHOW	THE	WOMAN	?
10.	WHOM	DID	YOU	SHOW	THE	DRESS	?
11.	WHAT	DID	YOU	OFFER	THE	STUDENTS	?
12.	WHOM	DID	YOU	SEND	THE	WOMAN	?
13.	WHOM	DID	YOU	LEND	THE	MONEY	?
14.	WHOM	DID	YOU	REFER	THE	PERSON	?
15.	WHAT	DID	YOU	SEND	THE	BOY	?

LANGUAGES OTHER THAN ENGLISH YOU SPEAK OR HAVE STUDIED. IF MORE THAN ONE,
LIST IN ORDER OF DECREASING FLUENCY _____

HAVE YOU TAUGHT ENGLISH? _____YES _____NO

Appendix 2

Answer Form

Please answer the following questions with a full sentence using the same verb.
For example:
Q. Who(m) did you see?
A. I saw the man.

Read 'Who(m)' as either 'Who' or 'Whom', depending on how you would say it in ordinary conversation.

If you feel that more than one kind of answer is appropriate, write additional answers. Please do not change your first answer to each question. There are no right or wrong answers. Your first answer is the best one.

1. Q. Who(m) did you offer the man?
   A.

2. Q. What did you show the landlord?
   A.

3. Q. Who(m) did you give the ball?
   A.

4. Q. Who(m) did you recommend the man?
   A.

5. Q. Who(m) did you offer the candy?
   A.

6. Q. What did you lend the captain?
   A.

7. Q. Who(m) did you send the packages?
   A.

8. Q. What did you give the teacher?
   A.

9. Q. Who(m) did you show the woman?
   A.

10. Q. Who(m) did you show the dress?
    A.

11. Q. What did you offer the students?
    A.

12. Q. Who(m) did you send the woman?
    A.

13. Q. Who(m) did you lend the money?
    A.

14. Q. Who(m) did you direct the person?
    A.

15. Q. What did you send the boy?
    A.

_____

Are you a native speaker of English? ____Yes ____No

How long have you been a resident of Greater New York City _____

Have you ever taught English ____Yes ____No

Appendix 3

To-Insertion Form Using WHO

ADD THE WORD 'TO' ONCE TO EACH OF THE FOLLOWING SENTENCES SO AS NOT TO CHANGE
THE MEANING. THERE ARE NO RIGHT OR WRONG ANSWERS: WE ARE INTERESTED ONLY
IN WHERE YOU THINK THE WORD CAN BE ADDED.

1.	WHAT	DID	YOU	SHOW	THE	LANDLORD	?
2.	WHO	DID	YOU	OFFER	THE	MAN	?
3.	WHO	DID	YOU	GIVE	THE	BALL	?
4.	WHO	DID	YOU	LEND	THE	TEAM	?
5.	WHO	DID	YOU	OFFER	THE	CANDY	?
6.	WHAT	DID	YOU	LEND	THE	CAPTAIN	?
7.	WHO	DID	YOU	SEND	THE	PACKAGES	?
8.	WHAT	DID	YOU	GIVE	THE	TEACHER	?
9.	WHO	DID	YOU	SHOW	THE	WOMAN	?
10.	WHO	DID	YOU	SHOW	THE	DRESS	?

11.	WHAT	DID	YOU	OFFER	THE	STUDENTS	?
12.	WHO	DID	YOU	SEND	THE	WOMAN	?
13.	WHO	DID	YOU	LEND	THE	MONEY	?
14.	WHO	DID	YOU	REFER	THE	PERSON	?
15.	WHAT	DID	YOU	SEND	THE	BOY	?

LANGUAGES OTHER THAN ENGLISH YOU SPEAK OR HAVE STUDIED. IF MORE THAN ONE, LIST IN ORDER OF DECREASING FLUENCY _____

HAVE YOU EVER TAUGHT ENGLISH? ____YES ____NO

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Résumé

Les grammariens de la Grammaire Généra-
tive ont soutenu que les phrases anglaises du
type *who (m) did you give the book?* (que nous
appellerons interrogations au datif) ne sont
pas grammaticales. Cependant, l'incorporation,
dans la grammaire de l'anglais, des restrictions
nécessaires pour rendre compte de ce fait
nécessite un affaiblissement de la théorie lin-
guistique. Il serait donc souhaitable de pouvoir
rendre compte de cette restriction dans le
cadre de la théorie de la performance. Cela a
été proposé par Jackendoff et Culicover (1971).
On montre ici que cette position n'est pas
recevable. En essayant de trouver une meilleure
proposition on a remarqué, avec deux ex-
périences de type questionnaire, que quelques
locuteurs de langue anglaise — tous originaires
de la ville de New York — acceptaient les
interrogations au datif. A partir de là on a
émis l'idée que l'on rendait mieux compte de la
variation observée dans l'acceptabilité des
interrogations au datif par des différences dans
les stratégies perceptives utilisées par les dif-
férentes populations de locuteurs pour déter-
miner les relations grammaticales des proposi-
tions perçues. Ainsi il n'y a pas de différences
de dialecte, à strictement parler, pour les
interrogations au datif; elles sont toutes gram-
maticales pour tous les locuteurs anglais.