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ABSTRACT

This serial is intended as a forum for the presentation, in print, of the latest original research by the faculty and students of the Department of Linguistics and other related departments at the University of Kansas. Papers include the following: "Inferentials: The Story of a Forgotton Evidential" (Gerald Delahunty); "Knowledge of Idiomaticity: Evidence from Idiom Calquing and Folk Literalization" (Zili He); "A Cyclic Approach to Simple Cliticization" (Hunter Huckabay); "On Japanese Causative: Review of Shibatani's Notion of Causative" (Misaki Shimada); "NP Predication and Full Saturation" (Thomas Scroik); and "A Type of Reduplication in Turkish" (Mubeccel Taneri). (JL)

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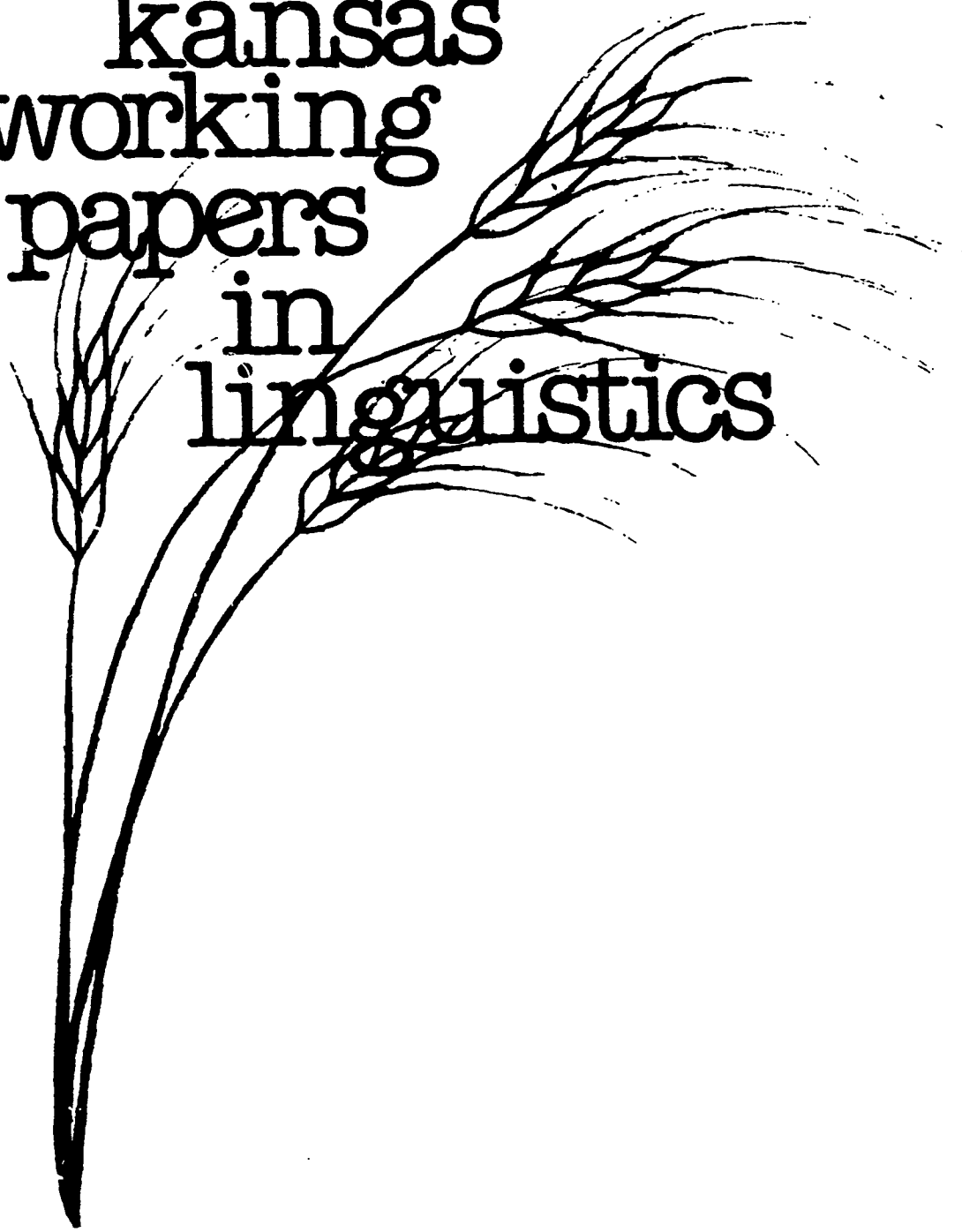

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INFERENTIALS: The Story of a Forgotten Evidential

Gerald P. Delahunty

Abstract: Recent work in language and text has explored such broad functional categories as evidentiality and affect, and has examined their cross-linguistic occurrences and manifestations. This paper focusses on a single construction, explores its variations, and describes and explains its pragmatic and textual functions. This rare construction, exemplified by It is that women in Ireland are not a form of prayer, occurs in several languages, denoting inferentiality, an aspect of evidentiality.

Introduction

This paper describes the grammatical, pragmatic, and textual properties of a sentence form which is both rare and rarely written about. The construction is illustrated by:

(1) It is that women in Ireland are not a form of prayer.

I have been sporadically collecting examples of this sentence type for several years, and in recent months, I have been watching for them in everything I read and listening for them in conversations and on the radio. In spite of this effort, I have as yet found less than 50 examples. In Jane Austen's six novels, I found only 7.

The rarity of the construction is matched by the rarity with which it is mentioned by linguists. I know of only two references to it, and in both the construction is mentioned merely as an appendix to the discussion of another sentence form. Delahunty (1982) mentions it as a type of cleft sentence; Quirk et al (1985) mention it in a footnote to their discussion of obligatory extrapositive constructions.

The form has no generally used name, and I have given it several over the last year or so, each

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reflecting a stage in my understanding of it. Most recently I have been calling it the Inferential. The reason for this name will, I trust, become clear as we proceed.

Before I begin discussing the sentence form itself, I would like to characterize, somewhat baldly and indelicately, how I see the field of linguistics from the point of view of someone interested in determining, describing, and explaining the properties of a particular construction.

Some linguists begin with what they take to be a discourse feature, for example, cohesion, evidentiality, focus, given/new information, theme, or topic, and and then explore its expression in texts (eg. Chafe 1986, Halliday and Hasan 1976; Prince 1979; Gundel 1988; Rochemont 1986). Others begin with marked sentence structures, such as topicalized sentences (Ward 1988), left dislocated sentences (Prince 1984), cleft sentences (Prince 1978), and then explore the discourse correlates or functions of the construction. They are generally satisfied with simply correlating form and function(s), and typically do not attempt to explain why a specific form functions as it does.

Some linguists rely primarily on their own intuitions and created data to inform them about the functions of the constructions they investigate (eg. Rochemont 1986); others base their analyses on data collected from texts or discourse -- so called "corpus studies" (eg. Kies 1988; Ward 1988; Prince 1978, 1984). These two approaches are probably not as distinct as they might seem, as even those who work from a corpus must rely on their intuitions to guide them in interpreting their data and generalizing from it. In fact, given that the roles sentences play in texts and their connections with their contexts are rarely stated overtly, analysts have no choice but to rely on their intuitions, which must then be characterized and accounted for.

A number of assumptions are shared by many if not all linguists. First, that their goal is to discover the general patterns of language structure and use (i.e. to "capture generalizations"); second, that textual structures are realized in sequences of sentences; and third, that language use is intentional and its interpretation involves inferring speakers' (the term includes writers) intentions.

The present study is, for the most part, a corpus study, though its purpose is to describe and explain intuitions regarding the interpretation of the inferential construction and the roles it plays in texts. I assume that communicated meaning has both conventional and non-conventional aspects. The conventional aspects are unpredictably and arbitrarily associated with expressions. The non-conventional aspects are meanings inferred from the conventional meanings, the fact that they have been uttered, Grice's (1967) Cooperative Principle and Maxims of Conversation, and in some cases their contexts.

I will begin by providing an overview of the inferential construction, its syntax and lexis. I will then explore its relationships to other sentence types, describing in particular how the construction can be modified by negation, modals, adverbs, and complementizers. Third, I will discuss five hypotheses regarding the construction's functions. Finally, I will relate the interpretation of inferentials to their semantics and particularly to their pragmatics.

Overview of the Inferential Construction

Characteristically, inferentials are sentences in which a tensed subordinate clause is embedded as the complement of a form of be whose subject is expletive it. I will refer to the embedded clause of an inferential, corresponding to that women in Ireland are not a form of prayer in (1), as "the clause," and the part to which the clause is subordinate as "the matrix," corresponding to it is in (1).

Expletive it subjects occur in a number of constructions, including meteorological, extrapositive, and cleft, respectively:

(2) It rained.
(3) It upsets me that we have had no snow.
(4) It was the hail that damaged my roof.

The inferential is particularly like the cleft construction as each has a matrix comprising expletive it and a form of be. Moreover, the cleft focus, underlined in (4) and (5), is frequently interpreted as contrastive, as is the clause of the inferential:

(5) It wasn't Jimmy that caused the S and L crisis; it was Ronny.

That the it subject of the inferential matrix is expletive, that is, non-referential and devoid of semantic import, is easily demonstrated. It cannot be questioned:

(6) *What is that women in Ireland are not a form of prayer?

Nor can it be replaced by any other pronoun:

(7) *That/this is that women in Ireland are not a form of prayer.

In languages such as Italian and Spanish (so-called "Pro-drop" languages), which, as we will see below, also have inferential constructions, the expletive subject must be empty.

The other obligatory component of the matrix is a form of be, which normally links pairs of entities or entities and qualities:

(8) Edgar is the chef.
(9) Edgar is in the kitchen.
(10) Edgar is very clever.

In each of these examples both the subject and the complement of be are meaningful and referential. We can, for example, sensibly question either:

(11) Who is the chef?
(12) Where is Edgar?

In the inferential, however, the copula links a clause with a meaningless, non-referential subject, so its semantics is obscure at best. Moreover, in a language like Hungarian, which also has an inferential construction, both the expletive subject and the copula are omitted. It seems reasonable to conclude that both it and be of the matrix are semantically (and as we will see, truth conditionally) null.

Modifications/Elaborations/Relations

The inferential construction interacts with various grammatical systems of the language. The most

particularly relevant elaboration in this context is the set of ways in which the degree of certitude with which an assertion is made can be expressed. The first method of indicating this is by including modals (only may, could, and might occur in my corpus) in the matrix clauses:

(13)a. It is that he lacks some forms of imagination.
b. It must/may/etc. be that he lacks some forms of imagination.

A second system that English uses to modify the degree of confidence associated with a sentence is embedding it as the complement of sets of verbs, adjectives, and nouns, which often occur as the complements of be and which may be associated with an expletive it subject. From the perspective of these two possibilities, the matrix copula of an inferential may be viewed as being in paradigmatic contrast with verbs such as seem and appear:

(14)a. It is that I'm not pretty enough.
b. It seems/appears that I'm not pretty enough.
(15) It is obvious/clear/etc. that I'm not pretty enough.
(16) It is a fact/the truth/a possibility/etc. that I'm not pretty enough.

If we see inferentials as in paradigmatic contrast with constructions such as these, we might reasonably assume that the clause is the complement of a zero head. In which case, (14a) would be analysed as:

(17) It is [e] that I'm not pretty enough.

The entire inferential structure may be (and in actual use, very often is) modified by adverbs such as perhaps:

(18) Perhaps, it is that women in Ireland are not a form of prayer. (Gogarty 1968:59)

It is also modifiable by the addition of adverbs within the matrix:

(19)a. It was only that the Celts had retained archaic practices once also at home in Italy. (Powell 1983:180)

b. It was just that it was raining. (Irving 1973:213-4)
c. It was simply that he had no interest in a girl child. (Bradley 1982:108)

These adverbs occur in the position in which such adverbs appear in non-inferential sentences:

(20) John has just left.

The set of possible complementizers provides yet another device for indicating modality. The complementiser that is optional:

(21) "Oh, it's I'm not pretty enough." (Donohue transcript no. 03120, cited in Kies 1988)

The complementizers as if and as though are very common alternatives to that. Clearly, (22a) represents a stronger claim than (22b):

(22)a. It was that neither had heard him.
b. It was as if neither had heard him. (Ludlum 1983:233)

As if/as though generally indicate counterfactuality, and I will not attempt to deal with sentences of that sort in this paper, although they occur more frequently than their inferential relatives.

The final modification I wish to mention here is negation. The negative particle not may be inserted into the matrix in the position it would have in any clause, after the tense-indicating verb:

(23) It is not that one fears treachery. (Murdoch 1975:43)

Or after the modal:

(24) It couldn't be he'd be goin' in it agin. (Somerville and Ross 1977:264)

Modals and negation in inferentials may occur in either or both the matrix and the subordinate clause, a possibility not available in simple sentences:

(25)a. It may be that I will have tasks for you as cruel as those the Great Mother has laid on me. (Bradley 1982:136)

b. *I may will have tasks for you as cruel as those the Great Mother has laid on me.

(26)a. It is not that the model is not wrong.

b. ?The model is not not wrong.

Of my 49 examples, 16 are positive and unmodalized (2 of these are questions); 6 are positive and modalized; and 27 are negative. Five of my examples are modified by external adverbs: two each by perhaps and if, and one by thus. Twelve examples are internally modified by adverbs: five by only, four by just, two by simply, and one by (not) so much. We find the same range of modifiers associated with the focus of a cleft sentence:

(27)a. It was just/only to Bill that we spoke.

b. Perhaps, it was simply because they were too hungry to cook that they ate out.

We can summarize this discussion characterizing the inferential as a copular matrix with expletive subject and tensed complement clause, which may be modified by the addition of modals, negation or adverbs. We can represent it as the following formula:

(28) (ADV) it (MOD) (NEG) be (ADVP) (COMP) S

As predicted by the present analysis, this construction is not idiosyncratic to English. Analogous constructions exist in other languages with the same interpretations as their English counterparts. The German, French, Italian, Spanish, and Hungarian translations of (29) are well-formed, structurally analogous to the English, and appropriate to the context.[1]

(29) But behind the smile is a "We vs. Them" attitude that has set the whole tone for his Administration's relations with the press. It's not that he hates the press the way Nixon did, it's just that he is insensitive to the press' role in our society and sees the media generally as something to be manipulated, but not trusted. (L.A. Times 12/18/83)

German:

(30) Es ist nicht, dass er die Presse hasst, wie Nixon es tat. Es ist nur, dass er nicht feinfühlig gegenüber der Rolle der Presse

in unser.: Gesellschaft und dass er die Medien generell als etwas sieht, das manipuliert werden muss und dem man nicht trauen kann.

French:

(31) Ce n'est pas qu'il deteste la presse comme Nixon, c'est seulement qu'il est insensible au rôle de la presse dans notre société et considère en général les medias quelquechose à manipuler mais pas quelquechose à quoi se fier.

Spanish:

(32) No es que odie la prensa como Nixon, es que insensible a la función de la prensa en nuestra sociedad y, por lo general, ve el medio como algo para ser manipulado pero no digno de la confranza. (NB. No overt subject in matrix.)

Italian:

(33) Non é che lui odi la stampa come Nixon, é solo che é insensibile al ruolo della stampa nella nostra societá, e in generale considera i mezzi di comunicazione como qualcosa da manipolare non qualcosa su cui contare. (NB. Again no overt subject in matrix.)

Hungarian:

(34) Nem mintha gyűlölné a sajtót ahogy Nixon tette, csak éppen érzéketlen a sajtó társadalmi szerepe iránt, általában úgy tekinti a hírközlést mint valamit amit manipulálni lehet, de megbízni benne nem. (NB. The matrix contains neither a subject nor a copula, but the clause is subordinate in form.)

It may seem methodologically odd to base the claim that this construction exists in other languages on translations of an English example. However, the well-formedness of the construction and its surrounding text, and their contextualized meanings have been checked with native speakers of the languages in question. This is simply a benign modification of

field linguists' practice. Lest any discomfort remain, the following example is from a naturally occurring conversation in Italian:

(35) (E cracks her knuckles; D looks unhappy)
E. Non ti piace? (Not you please?)
Does this upset you?
D. Non e che non mi piace,
(Not is that not me please,)
ma ti fai male.
(but you does bad)
It is not that it bothers me,
but it is bad for you.

Functions/Uses

In this section I consider a number of hypotheses regarding the functions of the inferential. Two of the functions that I consider are derived from earlier work; the remainder are derived from the corpus.

Structural: The first hypothesis is that the construction is merely a structural device with which no meaning is associated other than that of the clause. As a device it allows modals, negation, and adverbs to be positioned so that the entire clause is within their scope. It also allows the omission of redundant matrix modals, etc. in a text in which a series of clauses are coordinated, as in:

(36) It might be that the heat capacity of the oceans is larger than current models calculate, that the sun's output has declined slightly or that volcanoes have injected more dust into the stratosphere than is currently known, thereby reducing the solar energy reaching the ground. (Schneider 1989)

The matrix It might be is followed by three coordinated clauses, each of which is in the scope of the modal might, which appears only once in the sentence. If the information in the clauses were expressed in a form other than the inferential, the modal would have to be repeated in each clause. The inferential structure thus allows an elegant and parsimonious parallelism.

In the following example the inferential matrix provides the sole position in which only can modify the

clause and carry the intended contrast with extraordinary:

(37) Caesar understood well the propitiatory nature of sacrifice amongst the Gauls, but of course there was nothing extraordinary in this custom in Gaul, or in the wider Celtic domain; it was only that the Celts had retained archaic practices once also at home in Italy, as in Greece, but now long outmoded. (Powell 1983:180)

However, consideration of the contexts in which the above examples occur suggests that structural elegance and parsimony are not the sole purposes in choosing this construction. The inferential in (37) indicates not just that there was nothing extraordinary about this custom in Gaul, but also why.

Possibility and Reflection: Quirk et al, in the footnote in which they refer to the construction, suggest that it is related to obligatory extrapositive sentences like:

(38) It seems that everything is fine. (Quirk et al 1985:1392)

and that it may be 'used for expressions of possibility and (especially) for reflective questions.' However, Quirk and his colleagues stack their deck. Their examples are:

(39)a. It may be that she no longer trusts you.
b. Could it be that you left the keys in your office? (Quirk et al 1985:1392)

The second example is a question, and in both examples the matrix contains a modal. The double underlined inferential in (40) is one of my two interrogative examples, both of which can regarded as reflective questions, although that is not all that can relevantly be claimed about them:

(40) She has us all in her hand. How can she have such power over us all? Or is it that she is the only mother Morgause has ever known? She was a grown woman when Morgause was born, she has always been mother, as well as sister, to both of us. Their mother, who had been too old for childbearing, had died giving birth to

Morgause. (Bradley 1982:10-11. Emphasis in original.)

However, the two inferentials in my corpus which are positive, non-interrogative, unmodalized, and unmodified by adverbs do not indicate possibility:

(41) A problem like this gentleman talked about so openly might be just a normal pattern for him, and that couple would feel better if that woman knew it was his normal pattern, she might find it much easier to accept than if she thought, 'Oh, it's I'm not pretty enough.' (Donohue transcript no. 03120)

(42) Caesar is a tyrant - both as husband and as ruler. It is not that, like other tyrants, he is chary of according liberty to others; it is that, loftily free himself, he has lost all touch with the way freedom operates and is developed in others; always mistaken, he accords too little or he accords too much. (Wilder 1987:194)

Even the following, which contains an adverb, simply asserts that Uther Pendragon had no particular interest in a girl child:

(43) Not that Uther was ever unkind to me; it was simply that he had no particular interest in a girl child. (Bradley 1982:108)

This suggests that the form itself may not express possibility; rather, Quirk et al's choosing modalized forms misled them.

Nonetheless, the form is quite compatible with the expression of possibility, as the modalized forms I have collected show:

(44) It may be that you have received report of her death from other sources. It may also be true - and we pray that it will be so - that by the time this letter is safe in your hands, her servants will have been set free. (Garrett 1983:140)

And reflection, even in declaratives:

(45) Is she on a par with your mother and mine and with my aunt? - I do not know. It may be that her virtues have that inflexibility that mars those of her husband and her father, joyless men. (Wilder 1987:212)

As I noted earlier, an inferential may be modified by an adverb such as perhaps, thus providing another means of indicating possibility or reflection:

(46) He had got past the stage of reason, even his power of mocking at himself was dead, or perhaps it was that there seemed no longer anything that could be mocked at. (Somerville and Ross 1977:209/10)

(47) 'He groans when a really good-looking girl meets him. The prettier the worse it takes him. Sometimes he's damned rude.'
'Perhaps it is that women in Ireland are not a form of prayer?' (Gogarty 1968:58-9)

These examples suggest that possibility is indicated by a modal or an adverb, not by the inferential form itself. I conclude that the possibility/reflection hypothesis is both too strong and too weak. Not all inferentials are used to indicate possibility or reflection, and many require richer interpretations. For example, the following (modalized) inferential indicates the cause of, or explanation for, Caesar's excesses:

(48) Caesar shrinks from no responsibility. He heaps more and more upon his shoulders.
"It may be that he lacks some forms of imagination." (Wilder 1987:174)

Explanations/Accounts: The next hypothesis I consider is that the information in the clause of an inferential is offered as an explanation for whatever circumstances are under discussion. This interpretation occurs amongst all three types, positive unmodalized, modalized, and negative inferentials.

The inferential in (46) is a tentative reformulation or reinterpretation of the information presented immediately before it, but it also seems to provide an explanation for the character's current state of mind. (49) is a tentatively proposed

explanation for 'why European women are utterly without interest for' the author's friend:

(49) Perhaps, it is that women in Ireland are not a form of prayer?'

(50) is an explanation for the couple's sexual difficulties:

(50) 'Oh, it's I'm not pretty enough.'

The underlined negative inferential in (51) rejects I did not think of it as an explanation for Wentworth's not writing to Anne Elliot:

(51) 'Tell me if, when I returned to England in the year eight, with a few thousand pounds, and was posted into the Laconia, if I had then written to you, would you have answered my letter? would you in short, have renewed the engagement then?'
'Would I!' was all her answer; but the accent was decisive enough.
'Good God!' he cried, 'you would! It is not that I did not think of it, or desire it, as what would alone crown my other success. But I was proud, too proud to ask again.' (Austen 1980:233)

However, not all inferentials have a clear explanatory function, as those that follow demonstrate. The first reflects a constraint on narrators:

(52) You are to understand, Father, that though she was buried meanly and with heretical ceremony, that though she was not allowed to have the service of a priest of her faith at the time of her death, she died as much in the faith and for the faith as any of our martyrs here.
It may be that you have received report of her death from other sources. It may also be true - and we pray that it will be so - that by the time this letter is safe in your hands, her servants will have been set free. (Garrett 1983:140)

This passage occurs in the novel in a letter in which the writer reports the death and interment of Mary, Queen of Scots. It reflects the constraint that those who purport to be purveying news must not tell what is

already known to the addressee. The clause does not represent the reason for the letter; that comes later. Rather, it suggests that the writer is aware that his addressee may wonder why the letter is being written at all. By employing the inferential, the writer adverts to an assumption that he thinks may be made by the letter's reader.

Another example inconsistent with the account hypothesis is:

(53) Perhaps, then, it is not that what is denied must first have been asserted, or that positive facts are more real or more basic than negative ones, but simply that knowledge of a positive fact counts for more than knowledge of a negative one. (Horn 1989:47)

in which a hypothesis discussed earlier in the text is rejected.

These two examples function in ways typical of the majority of the negative inferentials in my corpus, all but two of which can be interpreted as rejections of propositions which are known to, or inferrable by, the audiences to whom the discourse is addressed. The two which are not compatible with this interpretation are counterfactuals in the scope of <u>if</u>, illustrated by:

(54) <u>If it wasn't that I'm afraid you might be tired after your walk</u>, I'd ask you to help me with a very painful bit of work that I was just at when you came. (Somerville and Ross 1977:230)

The majority, however, are similar to:

(55) Nobody doubts her right to have precedence of mamma, but it would be more becoming in her not to be always insisting on it. <u>It is not that mamma cares about it least in the world</u>, but I know it is taken notice of by many persons.' (Austen 1980:47)

In this example, one of the Miss Musgroves denies an inference which might be made by her audience, Anne Elliot, about why she wishes Anne's sister, Mary, not to insist upon the prerogatives due to her rank. That inference is, of course, that the elder Mrs. Musgrove is unhappy at her daughter-in-law's higher rank.

Contrast: Delahunty (1982) claims that the inferential construction is a type of cleft and that its clause corresponds to a cleft focus. Given that cleft foci are often contrastively interpreted, we should not be surprised to find that inferentials often express a contrast between the information in the clause and information in the context.

I begin with positive, unmodalized inferentials. Many follow a context in which a negative assertion is made and their function seems to be to propose the substitution of the information in the clause for the rejected assertion. This pattern is particularly clear in cases where a negated inferential precedes a positive one, in an elegant parallel structure which we might call "tandem inferentials." (29) above is one such; (56) is another:

(56) It is not that, like other tyrants, he is chary of according liberty to others; it is that, loftily free himself, he has lost all touch with the way freedom operates and is developed in others; always mistaken, he accords too little or he accords too much. (Wilder 1987:194)

Not all positive inferentials occur in tandem constructions; but a negative occurs prior to many:

(57) He had not been cruel to her, or if he was, it was only that he seemed to know little of women's bodies and how to use them. (Bradley 1982:24)

(58) Not that Uther was ever unkind to me; it was simply that he had no particular interest in a girl child. (Bradley 1982:108)

This pattern suggests that the form indicates a contrast between the truth of the inferential clause and the truth of some other assumption locally relevant in the discourse. The contrastive interpretation of the construction is in keeping with the contrastive function often associated with cleft sentences, thus supporting the claim in Delahunty (1982) that the two constructions are related. However, just as it is not the case that every cleft focus is contrastive, not every inferential requires or admits a contrastive interpretation. (57) seems not to be contrastive

(although it could be so interpreted if it were not in the scope of the conditional or if he was).

Negative Inferentials: Because they do not entirely parallel their positive counterparts, negative inferentials (that is, inferential constructions with a negated matrix) require a brief separate comment. We should expect negative inferentials simply to deny the inferences licensed by their positives, and for the most part this is how they function. Clearly, negative inferentials reject the truth of the information in the clause:

(59) "Nance was sayin' Lambert was gone to Dublin again, but what signifies what the likes of her'd say; it couldn't be he'd be goin' in it agin and he not home a week from it." (Somerville and Ross 1977:264)

However, they may reject, not the truth, but the relevance of an assertion or an assumption at the point in the discourse at which they occur:

(60) On principle I usually avoid introducing my friends and acquaintances to each other. It is not that one fears treachery, though of course one does. What human fear is deeper? But endless little unnecessary troubles usually result from such introductions. (Murdoch 1975:43)

That this discourse is not contradictory follows from the fact that matrix negation does not entail the negated non-inferential. Similarly, the negative inferential in (61) is compatible with either the model being right or being wrong. Its function is to forestall the reader's assumption that the author's litany of the model's inadequacies leads to the conclusion that it is wrong:

(61) Lichardus' model is a variant of a broader explanation of the cultural change seen throughout both Northern and Central Europe in the Late Neolithic. . . [Paragraph continues detailing problems with Lichardus' model.] It is not that the model is wrong; there is just not enough evidence proposed to evaluate it. (Mallory 1989:253)

They may also deny an inference which would provide a plausible explanation relevant in the context:

(62) It is a recurrent joke among writers of farces that wives rejoice in being beaten by their husbands. It reflects, however, an eternal truth - that there is a great comfort in knowing that those who love you love you enough to take the responsibility for marking out the permissible. Husbands often err - but in both directions. Caesar is a tyrant - both as husband and as ruler. It is not that, like other tyrants, he is chary of according liberty to others; it is that, loftily free himself, he has lost all touch with the way freedom operates and is developed in others; always mistaken, he accords too little or he accords too much. (Wilder 1987:194)

The first, negative, inferential rejects as an explanation of Caesar's tyranny that he is chary of according liberty to others, a perfectly plausible explanation for his behaviour as a ruler and as a husband, and an inference that might be made by any reasonable audience. The second, positive, inferential proposes that the correct explanation, the relevant inference, is that Caesar, loftily free himself, has lost all touch with the way freedom operates in others.

A negative inferential may also deny a plausible interpretation or extrapolation from its context, in the following case, the reasonable extrapolation that demon lovers are usually grossly cruel:

(63) It was as if I had known Christian as a real woman in some previous incarnation, and were now reliving, perhaps as a punishment, some doomed perverted spiritual pattern. (I suspect there are many such couples.) Or as if she had died long before and come back to me as a demon lover. Demon lovers are always relentless, however kind in life. And it was sometimes as if I could 'remember' Christian's kindness, though all now was spite and demonry. It was not that she was usually, though she was sometimes, grossly cruel. (Murdoch 1975:91-2)

They may also deny a commonsense assumption, such as that spies fear being discovered:

(64) Will not pause there if he can help it. "For the simple reason," he abruptly allows, "that in another place and at another time I knew them both." . . . "It is not that I would fear discovery," says he interrupting. "I have never done any serious disservice to either one - at least nothing they would be likely to know of. And even if they should have cause to mistrust me, I am Sir William Cecil's man, and he has been a patron to them both. But - you should understand this well enough and without knowing too much - there would be questions. There would be, if only for the sake of friendship and good manners, a delay I cannot afford. (Garrett 1983:173)

Only one of my collection of negative inferentials contains a modal, (59) above. Clearly the negative takes scope over the modal and we can paraphrase it as:

(65) It is not possible that he'd be goin' in it again (sic).

We are justified in interpreting this as the negation of a possibility.

Many of the inferentials in the corpus, both positive and negative, contain matrix adverbs, typically only, just, or simply, adverbs that also modify the focus of clefts. One function of clefts is to indicate that the focus exhaustively lists the elements of which the clause is true (Horn 1981). Exhaustive listing seems closely related to contrast, which denies the truth or relevance of one proposition and asserts the truth or relevance of another. In clefts these adverbs strengthen the suggestion of exhaustiveness, thus strengthening the contrast; in inferentials, they seem to weaken the contrast by limiting its domain. In the following example, the contrast between Darcy and "we all" is initially proposed to be that he likes his own way, but is subsequently downgraded to his merely being richer than the others, and so better able to afford to indulge himself:

(66) I do not know any body who seems more to enjoy the power of doing what he likes than Mr. Darcy.'
'He likes to have his own way very well,' replied Colonel Fitzwilliam. 'But so we all do. It is only that he has better means of having it than many others, because he is rich, and many others are poor.' (Austen 1963:153/4)

Similarly, the following passage denies that medieval Irish history was more complex than that of other comparable societies; the inferential limits the contrast to the fact that the Irish situation is simply not as poorly documented:

(67) There is certainly no reason to assume that the history of Ireland at this time was any more complex than the history of other peoples at a comparable stage of development; it is only that in the case of most other peoples it is even less well-documented. (Richter 1988:32)

In examples which contain matrix adverbs and negation, the adverb falls within the scope of the negative. When the adverb is only, the exhaustiveness of the inference is denied. The following passage asserts that Anne Elliot could never accept Mr. Elliot both because her feelings were adverse to him and her judgment was against him:

(68) She never could accept him. And it was not only that her feelings were still adverse to any man save one; her judgement, on a serious consideration of the possibilities of such a case, was against Mr. Elliot. (Austen 1980:152)

When the adverb is just or simply, the denial may be either of exhaustiveness or of a limitation of the domain of contrast:

(69) 'I wish, I wish she hadn't met Arnold.'
'You're very attached to Arnold, aren't you?'
'Yes.'
'It's not just that you care what he thinks?'
'No.' (Murdoch 1975:117)

(70) It is not simply that I have forgotten the long trail of my own accomodations. Our common enemy is that Lockean heritage: (Perry 1981)

So, there is a general, though not perfect parallelism between positive and negative inferentials. The negative denies the various inferences licensed by the positive. Typically, negative inferentials occur in the context of a contrasting claim, most clearly exemplified in the tandem constructions. We can reasonably interpret the pattern as: "The inference to draw from this information is not thus and so; rather it is such and such."

Many negated inferentials raise the issue of where an inference rejected by a negative inferential comes from. The rejected proposition is often left unexpressed, giving the impression that the speaker has reached a point in the discourse where s/he figures that the audience might be entertaining the assumption expressed in the clause, and that it should be scotched as expeditiously as possible.

Inferences and Inferentials

Our search for an adequate account of the functions of the inferential construction has so far led us to examine four hypotheses: that the form is an interpretationally neutral structural device for positioning operators whose scope is the entire clause; that it suggests possibility or reflection; that it proposes explanations; and that its clause contrasts with some other locally relevant proposition. Clearly, while each hypothesis accounts for some examples in the corpus, none accounts for them all, and so we need a more general hypothesis.

The final hypothesis is that the form can be viewed as a pragmatic instruction to its audience to infer a relationship between the construction and its context that goes beyond the mere addition of the information conventionally denoted by the clause (hence the label "inferential"). This assumption is quite consistent with all but the first of the earlier hypotheses, as each can be viewed as a specific way in which the information in the clause is related to its context. Consider the following pair:

(71)a. Women in Ireland are not a form of prayer.
b. It is that women in Ireland are not a form of prayer.

(71a) merely reports that women in Ireland are not a form of prayer; (71b) on the other hand, invites the inference that a richer interpretation is warranted. The author and autobiographer, Oliver Gogarty, is discussing his friend McLoren's sexual difficulties with one of his 'informants.' McLoren as a young man stationed with the British army in India apparently had sexual relations with a sacred temple courtesan ('a form of prayer'), which were of such intensity and duration that 'European women are utterly without interest' for him. We are invited by the inferential to conclude that Gogarty views the fact that Irish women are not a form of prayer as the reason for McLoren's sexual difficulties. The relevant context is given in:

(72) 'He groans when a really good-looking girl meets him. The prettier the worse it takes him. Sometimes he's damned rude.'
'Perhaps it is that women in Ireland are not a form of prayer?' Let it not be thought that I was heartless or that I did not do my best for McLoren. At the risk of being misunderstood, I wrote to India to a Diotima whom I knew, to a lady who 'had intelligence in love', asking what might be done. (Gogarty 1968:58-9)

The adverb perhaps and the question mark are consistent with this view as they indicate that the inference is tentative. The remarks which follow the inferential make clear the diagnostic interpretation of its clause.

If we assume that audiences create meanings by drawing inferences, and if we also assume that a speaker's goal is to ensure that the audience draws only the inferences he or she intends, then we can view the inferential form as having two closely related uses. First, its positive form functions as an instruction to the audience to infer richer connections between the information communicated by its clause and its context than would be licensed if the clause occurred unembedded. Second, the negative inferential indicates that an inference which may be plausible in the context is not intended by the narrator. The adverbs and modals which occur in many inferentials

indicate the degree of faith the speaker has in the inference. This analysis is compatible with, but broader than, the possibility/reflection, contrast, and explanation hypotheses.

Meaning

Linguistic meaning may be divided into conventional and non-conventional aspects. The conventional, arbitrary, unpredictable aspects of meaning associated with linguistic forms are frequently conceptualised in terms of entailments and conventional implicatures. Conventional implicatures are features of the meaning of an expression which are not entailed, but which are nonetheless arbitrary and unpredictable. Like entailments, they cannot be worked out and so must be learned as the core meanings of words are learned. Typical cases of conventional implicature are associated with words such as even, manage, but:

(73)a. Even Fred managed to get to the head of the Amazon.
b. He eats it, but he doesn't like it.

Even suggests that Fred is the least likely person to manage to get to the head of the Amazon. Manage suggests that the task was not easy; but suggests something like in spite of or contrary to expectation. These suggestions are not logical implications of the meanings of the words, although they are represented in dictionaries.

Looked at from this point of view, the conventional meaning of (74a) is indistinguishable from that of (74b):

(74)a. It is that it was raining.
b. It was raining.

Suffice it to say that if one is true, the other must also be true. The important issue for now is, if the positive inferential construction and its non-inferential counterpart have the same conventional meanings, how and why do speakers distinguish between the forms?

While the positive forms are conventionally synonymous, the negative and modalized forms are not. More specifically, an inferential with negation or a

modal in the matrix is not synonymous with a negated non-inferential or one with the same modal. Consider:

(75)a. It is not that one fears treachery, though of course one does. (Murdoch 1975:43)

b. ?One does not fear treachery, though of course one does.

The first of these is a consistent piece of text; the second is contradictory. Clearly the effects of negation in the matrix of an inferential differ from its effects in a non-inferential construction.

There is a palpable, though subtle difference in interpretation between a matrix modalized inferential and a corresponding non-inferential with the same modal, as the following show:

(76)a. Caesar shrinks from no responsibility. He heaps more and more upon his shoulders.
"It may be that he lacks some forms of imagination. It is very certain that he gives little thought to the past and does not attempt to envisage the future clearly. He does not cultivate remorse and does not indulge in aspiration." (Wilder 1987:174)

b. Caesar shrinks from no responsibility. He heaps more and more upon his shoulders.
"He may lack some forms of imagination."

The modalized inferential in the first (and actual) version explains why Caesar shrinks from no responsibility. The modalized non-inferential in the second (modified) version can be interpreted as suggesting that the speaker is merely adding to the previous assertions, though with no great confidence, the assertion that Caesar lacks certain forms of imagination.

Pragmatics

Linguistic communication involves both decoding conventional symbols and inferring significance from the choice of words and syntactic structures, as well

as from the textual and situational contexts in which they occur. I will assume that the non-conventional component can be represented by Grice's Cooperative Principle and Maxims of Conversation. These apply to all kinds of linguistic communication, spoken or written. They are also assumed to be universal, which partially accounts for the fact that analogous forms occur, even in languages unrelated to English.

On the non-conventional side of the linguistic ledger are the two types of conversational implicature: particularized conversational implicatures limited to, and dependent upon, particular contexts, and generalized conversational implicatures, which are associated with the utterance of an expression unless contradicted by the context.

Characteristically, conversational implicatures can be calculated using the literal meaning of an expression, the CP and Maxims, and in the case of particularized implicatures, the context.

What I wish to claim is that the special status of the clause of an inferential is a generalized conversational implicature, and thus calculable. The calculation might go as follows:

A speaker or writer has used an inferential such as (1) which means, conventionally speaking, the same as the corresponding non-inferential (77).

(1) It is that women in Ireland are not a form of prayer.
(77) Women in Ireland are not a form of prayer.

So, given a choice between (1) and (77), why would a speaker choose the expression that includes the semantically empty _it_ and _be_?

(1) cannot mean just (77) because this would violate the maxim of manner, specifically the injunction to be brief. It would also violate the maxim of relation, as _it_ and _be_ would have no relevance.

Nor can (1) convey less than (77) because (77) represents the conventional meaning of (1), the minimal information represented by both. If (1) meant less than (77), a hearer could not work out the significance of (1) as _it_ and _be_, having no conventional meaning, give hearers no clue as to what information in (77) to disregard. Consequently, a speaker using (1) to convey

less information than (77) would be in violation of the maxim of manner's injunction against obscurity.

It follows that (1) must have more significance than (77). This extra significance cannot be conventional because if it were the speaker would be being obscure and so in violation of manner, and perhaps also in violation of quantity in not supplying sufficient information for the circumstances, as we are given no clues as to what that conventional extra might be.

Consequently, the extra significance associated with (1) must have to do with the status of the information represented in it. We can view this special status from the point of view of the maxim of quality. If the speaker had used (77) he would merely have made a claim which he believed to be true and warranted by sufficient evidence. That is, the source of the evaluation of the claim as true or false and the knowledge and interpretation of the evidence upon which this evaluation is based are located in the speaker. The warrant for their truth is the fact of their utterance and the maxim of quality.

What inferentials do is locate the warrant for the truth or falsity of the claim outside of the speaker. The particular warrants for the truth or falsity of the claim are matters for interpretation in the local context. The construction indicates that the clause is taken to be inferred or inferrable, and the context determines the particular grounds for inferring the clause. Technically, the special status of the clause as inferred or inferrable is a generalized conversational implicature, and its local interpretation as an account, possibility, or reflection is a particularized implicature, dependent upon the specific local context.

Conclusion

Given that a speaker must guide an audience along a narrow interpretational path, licensing certain inferences and preempting others, it should not be surprising that languages provide sentence structures which indicate that information is inferred. Nor should it be surprising to find that these forms occur in identifiable patterns designed specifically to

indicate that the narrator wishes the audience to draw, not this inference, but that other one.

Chafe (1986:271) use the term "evidentiality" 'to cover any linguistic expression of attitudes toward knowledge.' He does not include the construction that I have been calling the "inferential" among evidentials. There can be no doubt, however, that the construction expresses an attitude toward knowledge and should therefore be classed as an evidential.

NOTES

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KNOWLEDGE OF IDIOMATICITY: Evidence from Idiom Calquing and Folk Literalization

Zili He

Abstract: To the synchronic linguistic analyst, an idiom is, by nature, semantically noncompositional. However, the language-user-in-culture may know (among other things) how the association between the nonliteral and the literal meanings of an idiom is culturally motivated. This paper looks at such cultural knowledge of idiomaticity, with evidence from IDIOM CALQUING--the literal borrowing of idioms across languages, and FOLK LITERALIZATION--the re-creation of literal meanings for idioms.

Introduction

A 'decoding' idiom (Makkai 1972) is commonly defined as a multimorphemic form which is noncompositional in meaning. Whether or not an expression is idiomatic is categorically determined by computation within the synchronic language system. The expression is mechanically segmented into its component morphemes; if the meanings of the parts do not constitute the meaning of the whole according to the general principles of syntax and semantics, the expression is declared noncompositional, hence idiomatic. Within the framework of a generative grammar, various attempts have been made to explain at what stage(s) of the derivation process, in what section(s) of the grammar machinery, and by what mechanism(s) of rules or constraints, the generation of an idiom in a sentence is fulfilled, with the intended nonliteral interpretation and the predicted transformational deficiencies (e.g. Katz & Postal 1963, Weinreich 1969, Fraser 1970, Katz 1973, Jackendoff 1975, Chomsky 1980, etc.). As for noncompositionality, it is usually held that 'no part of the idiom has retained any literal interpretation' (Fraser 1970:33), or that the idiom is necessarily ambiguous between its nonliteral and literal meanings, whose relation is arbitrary by definition (Weinreich 1969).

The above view of idiomaticity, which emphasizes the absence of semantic part-whole relation, is typically the view of a synchronic linguistic analyst. To her, the failure of systematic computation is signifi-

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cant and decisive; other matters, such as cultural and historical knowledge, are of no concern at all. But from the standpoint of an ordinary language-user-in-culture, an expression is idiomatic not as the result of analysis or computation--she does not normally do such things intentionally. What does idiomaticity mean to her, then? Asked differently, what does she know when she knows that an expression is idiomatic? Intrigued by Makkai's (1972) idea of a category of 'cultural idioms', I have proposed a partial answer to such questions by developing the notion of 'cultural idiomaticity' (He 1989c:142, presented here in its narrower sense):

> [For the language user in the culture,] idiomaticity is fundamentally a matter of cultural awareness: (i) She knows that a given expression is a conventional (i.e. publicly recognized and frequently used) expression, which, with its nonliteral meaning, embodies an established, significant cultural concept; (ii) She knows how its nonliteral and literal meanings are culturally associated; (iii) She knows in what contexts of cultural experiences and with what cultural background knowledge the expression is understood and used.

The discussions in this paper pertain mainly to (ii) above, namely, the language user's knowledge concerning the culturally motivated nonliteral-literal association in idiomatic expressions. This sort of cultural knowledge of idiomaticity may reflect the genuine origin; it may be the product of popular folk etymology; or it may just be a sporadic invention for the nounce. To provide empirical evidence for such cultural awareness, two particular phenomena will be looked at: idiom calquing--the literal borrowing of idioms across languages, and folk literalization--the re-creation of literal meanings for idioms.

The Cultural Nonliteral-Literal Association

Chafe (1968) uses the term 'literalization' technically to talk about an idiom (a single semantic unit) being converted into a literal post-semantic arrangement, as part of the process of encoding meanings into sounds within the framework of generative semantics. While I am not concerned with a formal account of idiom generation, I have found his following observations particularly enlightening:

> ...speakers are quite aware, among other things, of literalizations and the relation between idioms and their literal counterparts. If this were not so, many puns would be impossible to create or appreciate, and literature would be a very different and much duller thing than it is. (p.124)
>
> ...the idiom 'bury-the-hatchet' has a meaning which is more transparently related to the meaning of its literal counterpart than is the case with 'kick-the-bucket'. We are apt to imagine the burial of a hatchet as an act symbolic of peace-making. (p.125)

My above stated idea of cultural idiomaticity is, in fact, an extension of Chafe's thoughts about the speakers' awareness of the relation between idioms and their literal counterparts, and about the transparency, in some cases, of this relation, as in "bury-the-hatchet". To repeat here for fuller consideration, I have argued that, for the language user, knowledge about idiomaticity is not based on linguistic analysis, but is essentially a matter of cultural awareness concerning (among other things) the nonliteral-literal association involved. Hence, THE MORE AWARE, THE MORE IDIOMATIC.

Let us consider the following three examples taken from Chinese, Russian, and English, respectively:

(1) huà shé tiān zú 画蛇添足 (draw snake add feet)

(2) V Tulu so svoim samovarom В Тулу со своим самоваром (to Tula with one's own samovar) [Tula--a place name in the Soviet Union; samovar--a metal urn used by Russians for heating water for making tea.]

(3) carry coals to Newcastle

If a language user has no knowledge whatsoever about their being conventional expressions with nonliteral meanings, she will naturally take them literally as ad hoc expressions (cf. Grace 1987). If she happens to find them listed side by side in a book of comparative Chinese-Russian-English idioms (without any cultural footnotes), then she knows that they are idioms, meaning more or less the same thing, namely, 'do something wholly unnecessary'. Knowing these idioms only in this way is, strictly speaking, no more than the memorization of pieces of special linguistic knowledge.

The knowledge of idiomaticity as such is lifeless, because it is cultureless.

In reality, I believe that the English version (3) should feel much more idiomatic than (1) or (2) to those readers of this paper who know, as a matter of cultural knowledge, that to carry coals to Newcastle is to do an unnecessary thing <u>because</u> Newcastle is a major coal center in England. For those who know this culturally, we can further say that the more abstract nonliteral content of the idiom ('doing something wholly unnecessary') is re-conceptualized in terms of the more concrete and imagerial literal content of the idiom ('carrying coals to Newcastle'), and that this specific nonliteral-literal association is conventionally established in the cultural conceptual system. It is precisely due to such cultural conceptual association, I contend, that the expression is taken by the language-user-in-culture to be idiomatic.

The nonliteral-literal association in the Chinese idiom (1) is highly familiar to most language users in the Chinese culture. It is based on a very popular historical story about a snake drawing contest, the rule being that the first contestant who finished drawing a snake would win a drink. In the story, the man who indeed first finished the snake was adding feet to it when the next man who finished the snake claimed the drink. Hence, 'to add feet to a snake' is to add something superfluous which actually ruins the effect--'to do something wholly unnecessary'.

The cultural knowledge involved in the idiomaticity of the Russian expression (2) is, <u>accidentally</u>, parallel to that involved in (3): Tula is famous for manufacturing samovars, thus 'going to Tula with one's own samovar' is 'doing something wholly unnecessary'. Without knowing this piece of Russian culture, can one conjecture the nonliteral-literal connection, say, on the basis of her knowledge about (3)? Yes, she probably can. If she takes what she guesses to be <u>the</u> association, we have a successful case of re-creating the nonliteral-literal association for an idiom. Then for her, (2) is idiomatic, culturally. However, a point I stressed earlier is crucial here: 'The more aware, the more idiomatic.' I would argue that with much cultural experiences and knowledge in relation to Tula, samovar, the Russian way of living, thinking and talking, etc., one can play with the idiomaticity of (2) creatively, for instance, by deliberately changing its literal make-up, altering its nonliteral meaning, applying it in unusual contexts, and so forth.

Idiomaticity, as a matter of cultural awareness, is, for the language-user-in-culture, truly something real and alive which can be brought into deliberate and creative use.

Idiom Calquing

As Crystal (1985:40) defines it, calquing is 'a type of borrowing, where the morphemic constituents of the borrowed word or phrase are translated item by item into equivalent morphemes in the new language.' If an idiom is necessarily non-compositional in the strictest sense that it has only a nonliteral meaning and that no part of it actually contributes to its interpretation (Fraser 1970), then for it to be borrowed from one language into another through calquing will be inconceivable (Makkai 1972).

Are all idioms genuinely noncompositional and therefore not subject to calquing? Kiparsky (1976) doubts it. He gives examples of "bury the hatchet" being borrowed into many European languages: "die Streitaxt begraben" (German), "begrava stridsyxan" (Swedish), "haudata sotakirves" (Finnish), etc., and remarks that 'such verbatim transfer would be inexplicable if they were treated as unanalyzable expressions whose parts had, in the phrases, no meanings of their own' (p.80).

I agree with Kiparsky and would further argue that idiomatic expressions whose nonliteral-literal associations are culturally motivated are, in principle, susceptible to calquing, on condition that the cultural knowledge involved is transmitted along with the expressions. This phenomenon, the literal borrowing of idioms across languages, I would call IDIOM CALQUING. Here are some examples of calqued idiomatic expressions in Chinese:

(4) yī shí liǎng niǎo 一石兩鳥 (one stone two birds) from "to kill two birds with one stone" 'to achieve two aims with a single effort': the nonliteral-literal association is vividly transparent.

(5) è yú yǎn lèi 鱷魚眼淚 (crocodile tears) from "crocodile tears" 'a hypocritical show of sorrow': this is based on an old belief that crocodiles wept while eating their preys.

(6) pī zhè yáng pí dè chái láng 披著羊皮的豺狼 (clothed-in sheep skin 's wolf) from

"a wolf in sheep's clothing" 'a dangerous, ruthless person who appears to be gentle and harmless': this is from one of Aesop's stories, in which a wolf in a sheep's skin succeeded in entering the field where sheep were kept.

(7) xuě nóng yú shuǐ 血浓于水 (blood thicker than water) from "blood is thicker than water" 'one should have more loyalty to people who are related to one than to other people': here the association is again quite obvious on the basis of our common knowledge about blood and water.

I have also found in English writings the following literal translations of Chinese idiomatic expressions (often accompanied by cultural footnotes):

(8) to be cowshedded: from guān niú péng 关牛棚 (be-locked-up-in cow shed) 'to be locked up in a guarded room and interrogated'; during the cultural revolution, those regarded as 'class enemies' were called niú-guǐ-shé-shén 牛鬼蛇神 (cow-ghost-snake-spirit), so the places where they were detained were called niú péng 牛棚 (cow shed).

(9) iron rice bowl: from tiě fàn wǎn 铁饭碗 (iron rice bowl)'a secure job in a state-run workplace'; such a job provides one with a permanent means of livelihood, just like a rice bowl made of iron, which will never be broken.

(10) one big pot: from dà guō fàn 大锅饭 (big pot-of rice) 'egalitarianism'; the food is cooked in a large pot, so that each person is treated the same way as everyone else.

The above examples of idiom calquing show that the literal meaning and the nonliteral-literal association of an idiom could be known to the language-user-in-culture and could be loaned across languages and cultures.

Folk Literalization

I contend that the language user may know the literal meaning of an idiomatic expression and how it is culturally associated with the nonliteral meaning. Such knowledge, however, may be a matter of what I

would call FOLK LITERALIZATION, which stems from her desire to make some sense of the 'literal' meaning of an idiom when the genuine cultural nonliteral-literal association is unknown or unclear. Let us start with an English example: "a flash in the pan" meaning 'a brief, intense effort that produces no really significant result'. By way of folk literalization, it is thought by some that the literal meaning refers to seeing something shiny when washing gravel in a pan searching for gold--but it really turns out to be nothing. The genuine connection, nevertheless, is as follows:

> This takes us back to the days of the flint-lock musket...[in which] sparks produced from a flint struck by a hammer ignited powder in a small depression or pan; this powder was the priming by which the charge was exploded. ...even when the operations worked well there was always the possibility that the priming or powder in the pan would merely burn harmlessly, just emitting a flash (Funk 1985:153-54).

The following is a pair of idiomatic compounds whose origin can be traced back to The Book of Songs, the earliest collection of Chinese poetry dating to the period between the eleventh and the sixth centuries B.C.:

(11) nòng zhāng 弄璋 (play-with scepter) 'give birth to a boy'

(12) nòng wǎ 弄瓦 (play-with spindle) 'give birth to a girl'

On the basis of a traditional view about the social role differentiation between men and women lie the original nonliteral-literal associations: Let the baby boy play with scepters, so that he will esteem virtue; let the baby girl play with spindles, so that she will get used to her future work.

What is of interest to us here is the folk literalization of (12) by some language users. The term wǎ 瓦 was used in ancient Chinese for anything made of fired clay. In this particular context it referred to the spindle, which was then made of fired clay. As a result of culture change, people in modern times are no longer acquainted with spindles, especially spindles made of fired clay, let alone the custom of using them as plaything for baby girls. Moreover, due to seman-

tic change, wǎ 瓦 has lost its general reference and is now used mainly to mean 'tiles'. Hence, no trace is left for the modern language user to see the original cultural nonliteral-literal association. By folk literalization, some language users take the literal meaning of (12) to be 'play with tiles'. That is indeed a reasonable re-creation because tiles are something valueless as compared to scepters, and so the essential element in the original nonliteral-literal association--having a girl is not as good as having a boy--is maintained. Some users further interpret nòng 弄 as 'make', and therefore take 'make a tile' for giving birth to a girl, in contrast with 'make a scepter' for giving birth to a boy.

The folk literalization of (12), nòng wǎ 弄瓦, can even be found in some professional translations of The Book of Songs. For example, in Legge (1967:233), it is translated as 'their playthings tiles'; in Ya-ge Li (1981:246), 'they will have tiles to play with.' A translation which reflects the ancient customs is Waley's (1937:284): 'gives her a loom-whorl to play with.'

Let us look at another example of folk literalization:

(13) huí cháo 回潮 (re-turn moist)
'resurgence'

This idiomatic compound refers to the revival of old ideas, customs, or things. Its literal meaning spells the turning moist again of things having been sun- or fire-dried. Nevertheless, the word cháo 潮 is also commonly known with the meaning 'tide' or 'trend'. Many language users, therefore, folk-literalize (13) as 'the returning tide'.

It will be a mistake to think that folk literalization of idiomatic expressions is illegitimate and, therefore, should not be taken seriously in the discussion of the language user's cultural knowledge of idiomaticity. On the contrary, I would suggest that, for the most part, such cultural knowledge might be FOLK in nature, for the ordinary language user is not an etymologist or a cultural historian. In my opinion, knowledge (about the nonliteral-literal association in an idiom) resulting from folk literalization, which is based on one's general cultural awareness, should be fully operative when put to conscious and creative use.

Folk Literalization in Loans

A special and interesting phenomenon of folk literalization can be seen in some loans in Chinese. A borrowed expression consisting of a sequence of nonsense foreign sounds can be regarded as idiomatic, just as Hockett (1958) and Conklin (1962) grant every morpheme idiomatic status on account of the fact that its meaning cannot be deduced from its structure. But when the nonsense syllables are given written shape in the form of Chinese characters, something literally intrepretable could accidentally result. Then we can say that such a borrowed expression has a 'literal' meaning as well as a nonliteral, idiomatic meaning. There is, in principle, no cultural association between the nonliteral and literal meanings for these terms, as shown by the examples below:

(14) yōu mò 幽默 from "humor": Literally, yōu 幽 means 'secluded', and mò 默 means 'quiet'. I have noticed that yōu mò 幽默 did occur in an ancient poem as a native free expression, meaning literally 'deep and quiet' (see Cihai 1948:486). But in modern Chinese it exists exclusively as the borrowed version of "humor", which has nothing at all to do with 'secluded and quiet' (see also Wu et al. 1936:785-86).

(15) mǎ lā sōng 马拉松 from "marathon": The three Chinese characters say 'a horse pulling a pine tree,' which does not allude to Pheidippides' run from Marathon to Athens to transmit news of the Greek victory over the Persians.

(16) fù ér hào shī 富而好施 from "full house" (a term in poker, referring to a hand containing three of a kind and a pair): The literal meaning is something like 'wealthy and generous,' which by no means relates to the nonliteral meaning.

However, where possible, an effort is quite often made to match borrowed nonsense syllables with sensible Chinese characters, so that the resulting expression could have a literal meaning that nicely associates with or even dramatically adds to the nonliteral meaning. Here are some fine examples:

(17) kǔ lì 苦力 from "coolie" (originally from Tamil "kuli", meaning 'hired servant'): Literally, kǔ 苦 means 'hard and bit-

ter', lì 力 means 'physical effort'. A vivid picture is depicted of a person doing heavy labor for little pay.

(18) liú lián 榴槤 from "durian" (fruit name in Malay, from "duri" 'thorn', the fruit having a hard prickly rind): Chinese in South East Asia sentimentally re-interpret the fruit name liú lián (written 榴槤) as the homophonous compound liú lián (written 留連) which means literally 'to be so attached (to a place) that one cannot bear to leave'. The cultural association lies in the fact that durian has a very strong smell that is notoriously offensive to outsiders, but to durian lovers it has the best flavor in the world--if one loves the fruit durian, he will love and linger about the land.

(19) pī tóu shì 披头士 from "the Beatles": The characters pī 披 'hang down over' and tóu 头 'head' form the literal meaning 'long hair hanging down on the head'. The term shì 士 is a classical word for 'person'. Through folk literalization the feature of the Beatles' hair style is captured.

(20) wéi tā mìng 维他命 from "vitamin": Literally, weí 维 is 'sustain', tā 他 , 'his', and mìng 命 , 'life'. Therefore, "vitamin" becomes '(something which) provides nourishment for one's life' in Chinese written form.

(21) kě kǒu kě lè 可口可乐 from "Coca Cola": The first kě 可 can be used as a verb in classical Chinese, which means 'be pleasant to'. The word kǒu 口 is 'mouth'. The second kě 可 functions like an affix, '-able', being attached to lè 乐 'enjoy'. Hence in Chinese, "Coca Cola" becomes literally 'tasty and enjoyable'.

(22) bǎi shì kě lè 百事可乐 from "Pepsi Cola": The character bǎi 百 means 'one hundred', a term that stands for the idea of 'all'. The word shì 事 means 'matters'. The whole expression says '(Drink Pepsi Cola, and) everything will be enjoyable'.

What is demonstrated in these examples, (17) to (22), is the practice to folk-literalize the nonsense components of a borrowed expression, in consideration of its nonliteral meaning, and thus to create a cultural nonliteral-literal association. Consequently, the borrowed expression becomes truly, i.e. culturally, idiomatic.

Summary

Part of what the language user knows about (at least some) idioms is how their nonliteral and literal meanings are culturally associated. Such knowledge of idiomaticity can be brought to consciousness and thus subject to investigation and description. Supporting evidence can be found in idiom calquing and folk literalization.

For the synchronic linguistic analyst, idiomaticity poses a serious challenge to the systematization of language. With the notion of cultural idiomaticity, taking the standpoint of the language user, many different and interesting things can be explored: the way knowledge of idiomaticity might be mentally represented; the possible organization of an important part of one's knowledge of culture in the form of knowledge of idiomaticity; the extraordinary communicative effectiveness and rhetorical power of the use of idioms; the conscious and deliberate manipulation of cultural knowledge in the creative uses of idioms, etc.

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A CYCLIC APPROACH TO SIMPLE CLITICIZATION

Hunter Huckabay

Abstract: A sentence such as *I am going to find the store* may be reduced to *I[mə] find the store*. This reduction consists of a reduction of the auxiliary, changing *I am* to *I'm*, and an adjunction of infinitival *to* onto *going* to derive *gonna*. From there, *gonna* is reduced to produce the complex clitic *I[mə]*. This series of reductions can either be implemented consecutively, without interacting with other operations, or the reductions can be derived cyclically. The cyclic approach avoids a number of conceptual and empirical problems while also establishing the fundamental nature of cyclicity.

Certain varieties of Southern American English allow the interesting and hitherto unattested case of simple cliticization given in (1b), which derives from the full form given in (1a)[1].

(1a) I am going to eat some boudin.
(1b) I [mə] eat some boudin.

A "simple" clitic, according to Zwicky's 1977 definition, occurs when an otherwise independent morpheme, acting as a clitic, is adjoined to a host without causing a linear reordering of the syntactic string[2]. Remarkably, (1b) contains a reduced matrix verb whereas the more familiar cliticizations in English reduce nonlexical categories such as INFL, infinitival *to*, auxiliary, and the negative particle. Crucial to the operation of this exceptional brand of cliticization is the presence of auxiliary *am* and the verb *go*, appearing in its present participle form and exercising its subcategorization option for an S' complement. Given these restrictions, the clitic presented in (1b) is not a token from a paradigm, as (2) demonstrates, because no other form of *be* will participate in the required matrix verb reduction.

(2a) *You [rə] eat some boudin.
(2b) *He [zə] eat some boudin.
(2c) *We [rə] eat some boudin.
(2d) *Y'all [rə] eat some boudin.
(2e) *They [rə] eat some boudin.

Furthermore, this sort of cliticization does not result from some general morphological or phonological process that attaches to *am* some vowel taken from the stem of any main verb that takes an S' complement[3]. As shown by (3) and (4), (1b) is the product of a unique relationship existing between *am* and *going*, as only these two elements will combine successfully to derive the sort of clitic that is under inspection.

(3a) I am wanting to drink a Dixie.

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(3b) *I [mə] drink a Dixie.
(4a) I am having to drink a Dixie.
(4b) *I [mə]drink a Dixie.

Having discerned the exceptional nature of the cliticization found in (1b), we might investigate the derivation of the clitic found there in hopes that such an effort will disclose important properties holding of cliticization in general. According to Kaisse 1985, the process of simple cliticization takes an S-structure such as (5a) as its input and restructures this syntactic representation to join the clitic to its host as in (5b). Following the restructuring of the syntax, an allomorph corresponding to the newly structured clitic is selected, and (5c) results. Thus, (5) demonstrates the process of Auxiliary Reduction (AR).

(5a) He is discussing the Baltic secession.
(5b) [[He] is] discussing the Baltic secession.
(5c) [hiz] discussing the Baltic secession.

Consideration of these processes in those cases in which (1b) derives from (1a) will reveal that the restructuring rules of simple cliticization must apply in a cyclic interaction with the selectional rules of allomorphy. Without a cyclic instantiation of these components of the grammar, as will become clear, we will be forced into theoretically untenable claims concerning the derivation of (1b).

That simple cliticization can apply in a cyclic frame work has been argued by Bresnan 1971, though she has cliticization interact on a cyclic basis with syntactic rules. But Bresnan's formulation of clitic cyclicity is suspect in that other than utilizing the bracketing created by the syntax, simple cliticization does not respond to the syntactic component, a response Kaisse 1985 implies is crucial when she situates the operations of simple cliticization in a post S-structure position. In Kaisse's model, the processes of restructuring and allomorphic selection that produce simple clitics function in an autonomous component of the grammar that is separate from the syntax, and so by extrapolation the operations of cliticization would work within their own independently defined cycles. If the derivation of (1b) necessitates the cyclic action of the forces of simple cliticization without outside intervention by other branches of the grammar, then the clitic in (1b) has provided significant support for Kaisse's claims about the existence and autonomy of a component of the grammar responsible for the processes of simple cliticization. In addition, ascribing cyclicity to simple cliticization equips the component responsible for cliticization with some of the same machinery attributed to the syntactic and phonological components. Thus, we have further arguments that a grammar, though segmented into distinct components, nevertheless operates according to general, overriding cognitive principles, one of those principles being cyclicity.

Before turning to the alternatives available as possible derivations of (1b) and embarking on an explication that assumes *I[mə]* is a cliticized form composed of more than a reduced form of auxiliary *am* and an attached vowel, I should first mount some evidence proving that this form is indeed a clitic. This evidence must crucially extend beyond that gathered to argue that the AR yielding *I'm* is a process of cliticization. In other words, since I want to prove that *I[mə]* involves cliticization beyond that producing *I'm*, evidence supporting my claim

regarding *I[mə]* should not likewise apply to prove that *I'm* is a clitic. To establish the cliticized status of *I[mə]* we can turn to the tests supplied by Zwicky and Pullum 1983 and Zwicky 1985 to discount two other likely analyses for the form: (1) that *I[mə]* is composed of the well-established clitic *I'm* and an inflectional affix ə, or (2) that *[mə]* in (1b) somehow forms an independent word in the manner of particles.

Ruling out the possibility that *I'm* is inflected with ə in (1b) is straightforward considering an "absolute" test Zwicky and Pullum 1983 offer to distinguish between clitics and affixes. According to these authors, only clitics can attach to a form that already contains a clitic. Once a clitic has adjoined to an independent word, an affix is no longer eligible to attach to that structure. Thus, cases of clitics being added to clitics through, for instance, multiple AR are commonplace as demonstrated by familiar sentences such as (6b), where the cliticized form of *have* attaches to the cliticized form of *will*. Further, clitics can be added to affixes, as in (7a) when auxiliary *will* reduces and attaches to the genitive NP *Sherman's*. However, an affix can never be attached to a clitic without provoking the ungrammaticality associated with (7b) where the host-clitic form of *Sherman'll* is inflected with the possessive affix.

(6a) John will have retraced Sherman's March by June.
(6b) John'll've retraced Sherman's March by June.
(7a) I want a sword that will lay waste to Atlanta, and Sherman's'll do fine.
(7b) *I want a sword that will lay waste to Atlanta, and Sherman'll's do fine.

In the case of (1b), as I will argue extensively later, a coherent account of the derivation of *I[mə]* will posit an initial instance of AR, yielding the clitic *I'm*. From there, *gonna* is reduced to adjoin to *I'm* and an appropriate allomorph is chosen for this adjunction structure. Thus, when (1a) serves as the source, (8) is some intermediate step in the derivation of (1b).

(8) I'm gonna eat some boudin.

In other words, when *gonna* is reduced, it is attached to the clitic *I'm* that has resulted from AR. (7b) and the arguments of Zwicky and Pullum 1983 prove that an affix cannot attach to a clitic, so ə, when it attaches to the clitic *I'm*, must not be an affix. Plainly, since ə is attached to a clitic, then by this reasoning, must itself be a clitic and the entire structure *I[mə]* a complex clitic.

On the other hand, to establish that *I[mə]* represents one clitic rather than two words, we can consult the tests proffered in Zwicky 1985 which are designed to distinguish clitics from particles. Though Zwicky warns that in the case of theoretical primitives such as "word" and "clitic" we can only construct lists of characteristics as opposed to formulating a definition, applying the tests provided by Zwicky reveals that *I[mə]* has every characteristic that may be attributed to a clitic and no characteristic that is associated with a particle. While any of Zwicky's tests leads to the conclusion that *I[mə]* behaves as a clitic, we will consider here only a random assortment of the touchstones.

For instance, an examination of the phonological constituency of *I[mə]* reveals that this unit forms a phonological word as a clitic would rather than a phonological phrase consisting of independent words. The phonological cohesiveness of *I[mə]* is best demonstrated by the observation that the internal sandhi rule of nasalization can spread the nasal feature belonging to *m* onto the schwa. Thus, *I[mə]* has a nasalized variant *I[mə̃]*. As Zwicky points out, internal sandhi rules apply only within phonological words, and so nasalization gives a symptomatic basis for concluding that *I[mə]* represents a single, discrete (cliticized) word.

Furthermore, Zwicky notes that while independent words combine either with other words or with phrases (e.g., a preposition combines with either a noun or a noun phrase), any item that seeks only a word as syntactic partner must be a clitic or an affix[4]. Thus, if the distribution of an item can be characterized in terms of its willingness to combine only with single words and it is not an affix (cf. (6) and (7)), then that item must be a clitic. As was discussed above, the occurrence of the *I[mə]* form depends crucially on the presence of the auxiliary *am* followed by the main verb *go*. In other words, the combination entailed by *I[mə]* by the concatenation of individual words without regard for the phrasal constituency involved. As such, this construction has the narrow distribution associated with clitics rather than particles.

In addition, syntactic movement provides a useful metric for determining whether an element is part of a word or if it is itself an independent word. As with all syntactic processes, movement operates on a syntactic constituent, which can comprise a word but not a subpart of the word. Therefore, the syntax can move words but may not disturb their components. (9) proves that no subpart of the *I[mə]* construction may be independently moved (cf. (9a-c)), though the entire form, being a single word and thus a syntactic constituent, can be moved (cf. (9d))[5].

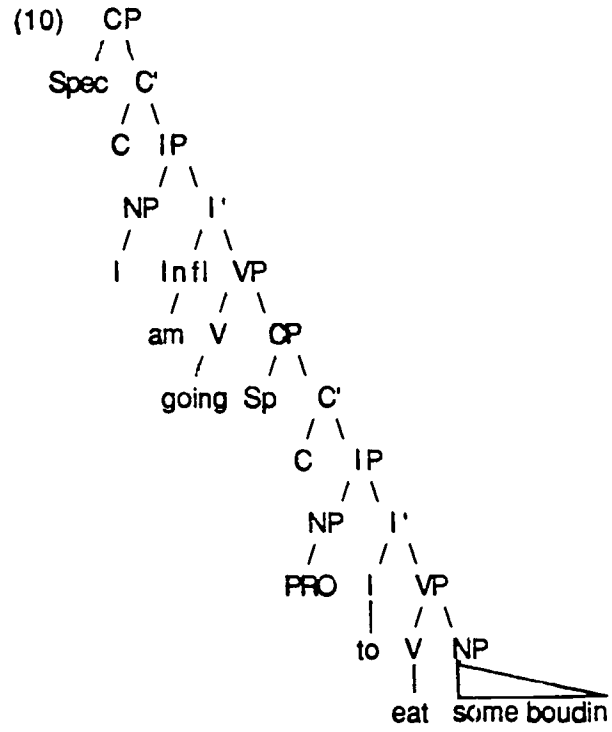
(9a) *I, on the other hand, [mə] root for the Huskies.
(9b) *m'I [ə] root for the Huskies?
(9c) *I'm, on the other hand, [ə] root for the Huskies.
(9d) What [I [mə]]$_i$ do is t$_i$ root for the Huskies.

So by (6)-(7) and the attendant arguments we have seen that *I[mə]* does not involve inflection, and by the tests from Zwicky 1985 we have ascertained that *I[mə]* shows none of the earmarks associated with particles. Thus, *I[mə]* can only be analyzed as a pure simple clitic, whose derivation owes to a complex and extensive reduction of a significant portion of a sentence. Let us now turn to a study of that derivation.

To discover how the grammar can generate (1b)[6], I should first identify the constituent processes of cliticization at work in (1b) as well as the direction of those processes. An investigation of (1b) and certain of its counterparts points to three distinct encliticizations, where two of these encliticizations proceed independently and the third takes the other two as input. To grasp the mechanisms of these separate processes, suppose the phrase marker for (1a),

from which (1b) is derived in the relevant cases, is as presented in (10), whose X-bar structure is suggested by Chomsky 1986.

(10)



Now, to move from (1a) to (1b), the auxiliary of (1a) cliticizes onto its subject in a routine instance of AR illustrated by (11a) while infinitival *to* cliticizes onto *going* in an unspectacular demonstration of *to*-contraction shown in (11b).

(11a) I'm going to eat some boudin.
(11b) I am gonna eat some boudin.

The AR in (11a) is accounted for by Kaisse 1985 with the Government Condition given in (12), and the instance of *to*-contraction seen in (11b) is regulated by Lobeck's 1983 condition given in (13).

(12) The Government Condition: Auxiliaries may cliticize only onto a constituent that they govern.
(13) *to*-contraction: *to* may encliticize to a host verb that governs the minimal S' (=CP according to Chomsky 1986) containing *to*.

Government is based on c-command, as these two related notions are defined in (14) and (15).

(14) α c-commands ß iff. α does not dominate ß and every maximal projection that dominates α dominates ß.
(15) α governs ß iff. α c-commands ß and every maximal projection that dominates ß dominates α.

Returning to (10) and its relation to (11) as mediated by (12) and (13), we see that *am* in (10) governs the subject NP, so that in (11a) the auxiliary has cliticized onto an NP it governs in accord with (12). Likewise, *to* in (10) is contained in a CP (or S') that is governed by *going*, enabling the encliticization of *to* onto *going* in (11b) as provided for by (13). Thus, the government relations in (10) are such that AR and *to*-contraction can apply without innovation beyond the establishment of (12) and (13). Furthermore, AR and *to*-contraction can carry on more or less oblivious to each other as evidenced by the fact that in (11) neither process affects the execution of the other. So, to derive (1b) from (1a), AR and *to*-contraction will proceed initially in the manner just described to arrive at an intermediate stage corresponding to (16).

(16) I'm gonna eat some boudin.

Once these more familiar cliticizations have been effected to create a string along the lines of (16), a third operation must meld the clitic resulting from AR with that resulting from *to*-contraction to derive a complex clitic. Evidence supplied by pause insertion phenomena (cf. (17)) and by (9a) suggests that this final step is a product of encliticization rather procliticization.

(17a) I [mə] ... lose my job.
(17b) *I ... [mə] lose my job.

Also, any claim that the cliticization of *gonna* onto *I'm* need not occur last in the sequence described here is squelched by (18), which demonstrates that AR as well as *to*-contraction feeds the final reduction of *gonna*. That is, unless *am* is reduced in (1a). *to*-contraction and *gonna*-reduction would yield the unacceptable output of (18).

(18) *I am ə lose my job.

As Ellen Kaisse (personal communication) points out, *gonna* appears to require an NP-host to license its reduction. As such, the cliticization of *gonna* onto the auxiliary obligatorily follows the incorporation of the auxiliary into the subject NP by the execution of AR. When *gonna* adjoins to *I'm*, an allomorph corresponding to the entire string of adjunctions is selected, yielding the surface form *I[mə]*[7].

Clearly then, in the dialects in which *I[mə]* is produced grammatically, (1b) is derived by an encliticization that takes as input the structure in (16) built by the parallel action of AR and *to*-contraction. Viewing the subsequent process of *gonna*-reduction within a derivational framework exposes the advantages of a cyclic design for the grammatical component hosting the restructuring rules of cliticization and the selectional rules of allomorphy.

Certainly, we could derive (1b) without invoking cyclicity. Supposing AR and *to*-contraction to apply simultaneously, a non-cyclic derivation for (1b) would have to conform to (19).

(19) output of syntax: [NPI] [AUX am] [VP [V going] [S' to eat some boudin]]
cliticization I: [NP[I] am$_i$] [AUX t$_i$] [VP [V[going] to$_j$] [CP t$_j$ eat some boudin]]
cliticization II: [NP[[I] am$_i$] [going] to$_j$]$_k$] [Aux t$_i$] [VP [V t$_k$] [CP t$_j$ eat some boudin]]]
allomorph: [NP[I] mə] [Aux t$_i$] [VP [V t$_k$] [CP t$_j$ eat some boudin]]]
selection

As mentioned earlier, according to the model advocated by Kaisse 1985, a process of simple cliticization, under the aegis of cliticization I and II above, first restructures the bracketed string supplied by the syntax so that the clitic, leaving a trace in its original position, is adjoined to its host. Subsequently, the rules of allomorphy read the rebracketed string to discern the appropriate phonological variant for the host-clitic cluster, and the final derivational stage is reached in (19).

Problems with the sort of representation created by (19) abound. First off, we end up with a string so littered with traces that eventually three consecutive empty categories stack up. Such a situation may not be unimaginable, but it is so irregular and ungainly as to immediately alert us to search for a more elegant account for (1b). Also, according to the current demands of government-binding theory, each of the empty categories in (19) must be properly governed[8], and in this sentence only *I[mə]* would have the lexical salience to be a proper governor. So by the structure of (19), one cliticized NP must properly govern three traces buried at varying depths within the phrase marker. The improbability of this set of circumstances is accented by Zagona's 1982 claim that a cliticized auxiliary cannot license even one trace. That is, in (20a) the VP trace can be properly governed and therefore licensed by the full auxiliary *is*. However, when that auxiliary is reduced by cliticization in (20b), the VP trace cannot be licensed due to the inability of a cliticized auxiliary to properly govern a trace.

(20a) He said he would be eating the king cake, and [VP eating the king cake]$_i$ he is t$_i$
(20b) *He said he would be eating the king cake, and [VP eating the king cake]$_i$ he's t$_i$

Given this restriction on the proper government of traces, no trace in (19)—much less all three traces—could be properly governed by the cliticized auxiliary found in *I[mə]*.

Another objection provoked by the proliferation of traces in (19) is the concern raised by the environment that *[going] to]* must move out of. In particular, following the first round of cliticization, *[going] to]* is encased by traces, a frame from which that constituent must be extracted by a second restructuring operation. Again, while it may not be impossible for cliticization to pluck an item out from between two traces, that sort of action is unlikely given the well-known reluctance of the clitic to move when any disturbance exists in its vicinity (cf. King 1970, Lakoff 1970). In fact, the

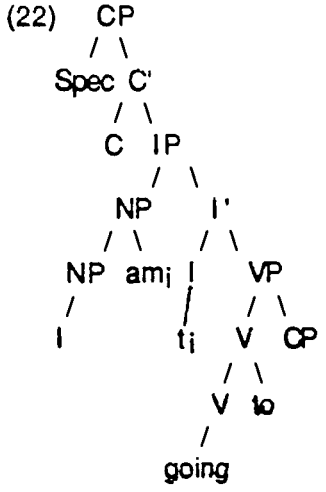
ungrammaticality of (21) provides direct evidence that *gonna* will not reduce when immediately followed by a syntactic gap.

(21a) You're going to visit the Conderama and I'm gonna __ too
(21b) *You're going to visit the Conderama and I[mə] __ too

Furthermore, because the derivation in (19) would submit the "constituent" *[[[am] going] to]* to the rules of allomorphy for interpretation, a non-cyclic account of (1b) must claim that the chunk of the sentence represented by this constituent will be associated in the lexicon where it has a variant listing in the form of a suppletive allomorph. If this brand of allomorphic representation does indeed exist, then the unacceptability of (3b) and (4b) is puzzling since the lexicon would be just as likely to list a cliticized form for *[[[am] wanting] to]* and *[[[am] having] to]* as it is to list one for *[[[am] going] to]*. Certainly frequency of occurrence offers no basis for discrimination.

Related to this problem is the fact that such an approach does not utilize the allomorphs *I'm* and *gonna* which must be listed for sentences such as (11) and (16). In fact, the derivation in (19) implies that these variants have no role in deriving (1b). So, in one sense the non-cyclic approach leans heavily on the rules of allomorphy by requiring a listing for the suppletive allomorph of an improbable form, while in another sense this approach does not utilize the rules of allomorphy to their full extent, as well-motivated, pertinent allomorphs are ignored.

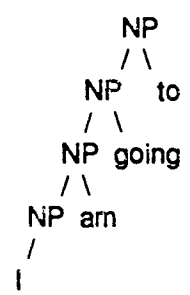
Finally, contrary to the usual government requirements restricting cliticization, cliticization II in (19) does not join together elements that are structurally related by government. The relevant configurational relations are illustrated by (22), a representation of the string that cliticization I produces in (19).



In (22), the NP *I*, which heads the category acting as the host for the impending *gonna*-reduction, bears no recognized structural relation with the clitic *[[going] to]*. That is, by the definitions in (14) and (15), the host and the clitic neither c-command nor govern each other. As such, cliticization II in (19) functions without regard for any of the structural guidelines such as (12) and (13) which control all the other forms of simple cliticization. Therefore, the operation of cliticization II directly and immediately onto a structure created by cliticization I, as a non-cyclic approach would have it, is incompatible with the evidence indicating that syntactic structure dictates the possibilities for simple cliticization.

Also, the non-cyclic derivation of (1b) necessitates another structural oddity following cliticization II. Because of the wholesale adjunctions onto the subject, before the selection of the cliticized allomorph and after all restructuring has taken place, we end with a subject NP whose phrase marker is given in (23).

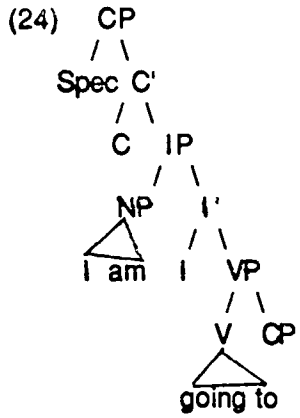
(23)



Contrary to the usual English formations, the head is deeply embedded and separated by a substantial amount of material from its maximal projection. Further, (23) is created by extensive left-branching, a highly marked construction in English. Avoiding constructions such as (23) which derive from the equally undesirable (22) should therefore be a premium concern when trying to account for (1b).

If we allow a cyclic derivation of (1b), as well as slight amendments to Mohanan's 1982 Opacity Principle and to Kaisse's 1983 NP-Host Condition, the problems raised by (19) disappear. To Mohanan's Opacity Principle we simply add the tenet that morphological information generated by one syntactic cycle is invisible at the next cycle just as in the original Opacity Principle the morphological information generated by one stratum of the phonology cannot be analyzed as we proceed to the next stratum. Part of the vanishing morphological information will be the traces left by the restructuring caused by cliticization. Since simple cliticization by definition only deals with string vacuous movements, the traces it leaves behind can be erased without any syntactic disruption. As the result of the structure created by morphological operations in one cycle becoming opaque at the next cycle, the adjunction structures and the attendant bracketing created by the restructuring of the first cycle's cliticizations will not be visible at the next cycle. Once the bracketing created during the cycle of cliticization I is abolished, (22) is transformed into (24).

(24)



In (24), with the excess bracketing created by cliticization I cleared away, the eventual host to *gonna*-reduction, *I*, appears in a position that c-commands the clitic *going to* which will be joined to the subject NP via cliticization II. Thus, as a result of the proposed modification of Mohanan's Opacity Principle, the host-clitic interaction in the case of *gonna*-reduction will now be mediated by the structural relationship of c-command.

To capture the role of c-command in constraining *gonna*-reduction, we will invoke and modify Kaisse's NP-Host Condition, which is given in (25).

(25) The NP-Host Condition: Auxiliaries may cliticize only onto a c-commanding NP.

So that it will apply to cases of *gonna*-reduction, (25) will be adjusted to permit verbs, in addition to auxiliaries, to cliticize onto a c-commanding NP[9]. As (24) shows, in a case such as (1b) the adjustment of Mohanan's Opacity Principle erases superfluous structure created by cliticization I to allow the subject host to c-command the clitic *[going to]*. Thus, when the NP-Host Condition has the form of (26), it properly constrains the operation of *gonna*-reduction.

(26) The NP-Host Condition: Reducible verbs may cliticize only onto a c-commanding NP.

With the Opacity Principle and the NP-Host Condition altered in the ways discussed above, the advantage of a cyclic derivation of (1b) becomes clear. Such a derivation is fleshed out in (27).

(27) **Cycle 1**
output of the syntax: [NP I] [Aux am] [VP [V going] [CP to eat some boudin]]
cliticization: [NP[NP I] am$_i$] [Aux t$_i$] [VP [V[V going] to$_j$] [CP t$_j$ eat some boudin]]
allomorph: [NP I]m]$_i$ [t$_i$] [VP [V gonna]$_j$ [CP t$_j$ eat some boudin]]
selection

Cycle 2 (By the Opacity Principle, the extra bracketing created in the previous cycle disappears as do the traces created in that cycle.)
output of cycle 1: [NP Im] [VP gonna [CP eat some boudin]]
cliticization: [NP [Im] gonna$_i$] [VP t$_i$ [CP eat some boudin]]
allomorph: [NP [Im]ə]$_i$ [VP t$_i$ [CP eat some boudin]]
selection

The problem caused by the proliferation of traces in (19) does not arise in (27) as the extended Opacity Principle ensures that the traces generated in Cycle 1 are not available for analysis in subsequent cycles. In particular, *I[mə]* now is expected to properly govern only one trace rather than the three empty categories it must govern in (19). Also, the final operation of cliticization no longer is forced to deal with an element that is surrounded by traces so that *gonna* does not move when a trace follows it, an environment shown by (21b) to be incompatible with *gonna*-reduction.

Also the rules of allomorphy under the cyclic derivation are used in a more consistent way. The intermediate allomorphs *I'm* and *gonna* both have a hand in the selection of *I[mə]*, and the lexicon must only list the irregular suppletive form for *[[Im] gonna]*, a far more likely candidate for allomorphic variation than *[[[[I] am] going] to]*, the unwieldy full form submitted to the rules of allomorphy by the restructuring operations of (19). In addition, we now have a principled explanation for the impossibility of (3b) and (4b). To derive those sentences via a cyclic approach, at the conclusion of the first cycle *to*-contraction would be effected by the selection of an allomorph for *[[wanting] to]* and *[[having] to]*. However, as Lobeck 1983 makes clear, *to*-contraction occurs only when the host verb is drawn from a select set of verbs which includes the progressive *going* but does not include *wanting* or *having*. Thus, in the derivation of (3b) and (4b), due to lexical restrictions on *to*-contraction, Cycle 1 could not be completed to feed Cycle 2 because at the close of Cycle 1 we cannot select an allomorph for *[[wanting] to]* or for *[[having] to]*. Hence the singular ability of *going* to appear in this sort of construction: *go* is the only verb with a progressive form hosting *to*-contraction and so this verb provides the only environment amenable to *to*-contraction and the progressive auxiliary *am*, an essential contributor to the formation of *I[mə]*. Without a cyclic approach we lose this argument because, as shown in (19), *to*-contraction never applies and therefore the peculiarities of this form of cliticization would be irrelevant to an explanation of the unacceptability of (3b) and (4b).

Finally, as noted above, the interaction of the extended Opacity Principle with the cyclic operation of the simple cliticizations at work in (1b) allows the restructuring of the string to proceed in adherence to the configurational restrictions of c-command and government which also direct other forms of simple cliticization. That is, removing the excess bracketing created by cliticization I *in* (27) according to the extended Opacity Principle structurally relates the elements crucial to cliticization II through c-command so that *gonna*-reduction proceeds under the auspices of the NP Host Condition. Therefore, utilizing the cyclic derivation of *I[mə]* shown in (27) allows us to capitalize on

existing principles such as the NP-Host Condition to characterize a construction like (1b), which given its complexity and its ostensible oddness, would at first appear to require constraining principles meant only to account for its properties. The fact that we can avoid such a complication in the grammar in regard to (1b) is a testament to the value of the cyclic derivation illustrated in (27). With this derivation, we can explain novel cases with principles motivated by entirely different constructions.

So by deriving (1b) within a cyclic framework, the operation of *gonna*-reduction can be brought into the fold of other forms of simple cliticization in terms of the allomorphic and syntactic principles controlling it. Also, a cyclic design for the grammatical component handling simple cliticization would align this component with the more established syntactic and phonological components. Thus, the cyclic approach outlined above both explains data emanating from the grammar of a specific language and standardizes the components forming the whole of a universal grammar.

NOTES

1 An anonymous reviewer points out that (1b) does not in all cases derive from (1a) since there are speakers who regularly produce (1b) and never produce (1a). For these cases, we will assume *I[mə]* has become lexicalized so that the simple clitic in (1b) is generated directly by the lexicon rather than being derived by the grammatical processes I will be describing throughout this paper. The clitic in (1b) for these speakers is therefore a lexical derivative. However, since (1b) is generally interpreted as (1a) as shown by the fact that a speaker in a formal setting will usually transcribe (1b) as (1a), for those speakers who make use of the full form (1a), I will take (1a) to provide the syntactic input which is transformed into (1b) by the phonological processes of cliticization. In this case, we will say that (1b) is grammatically derived.

2 A simple clitic contrasts with a special clitic, such as *lo* in (i), where the relation between the cliticized form (i) and its full-form (ii) is obscured by the syntactic reordering attendant to special clitics.

(i) Juan lo vió
Juan it saw
"Juan saw it"
(ii) Juan vió el libro
Juan saw the book

3 In fact, as we shall see, the vowel attached to *am* is not "taken" from *gonna* as such but is part of the suppletive allomorph chosen from the lexicon as the lexical representative of the structure created when *am* and *gonna* are adjoined.

4 As Zwicky points out, some clitics do combine with phrases. Still, the point remains that only clitics combine only with words.

5 Incidentally, the sentences of (9) can be subjected to another of Zwicky's tests to prove that *I [mə]* is a unitary word. This test states that if an element is bound to a host and therefore cannot occur isolated from that host, then the element in question should be a clitic. (9a-c) shows that no subpart of the *I[mə]* construction can appear in isolation, and so each constituent is bound to the overall clitic.

6 Again, we are considering the dialects where *I[mə]* is derived grammatically rather than generated directly by the lexicon.

7 An anonymous reviewer points out that it is unclear whether the stressed or unstressed vowel in *gonna* is preserved in the complex clitic *I[mə]*, and indeed the grammar itself obfuscates the issue. Allomorpn selection for irregular, suppletive forms is wholly idiosyncratic, choosing an unpredictable token from the lexicon rather than phonologically altering the input form. Thus, the schwa in *I[mə]* derives from neither vowel in *gonna* (though a likely hypothesis is that the strong, stressed vowel asserts itself as the salient element), with the entire form ob the complex clitic being an idiosyncratic character of the lexicon.

8 "Proper government," as posited by Chomsky 1981 and followed thereafter by government-binding theory, holds that an empty category must not only be governed according to the definition of government given in (15), but its existence must be licensed through government by a category with sufficient lexical weight to recover the semantic content of the phonologically null category.

9 Ellen Kaisse (personal communication) points out that *gonna* shares many characteristics with auxiliaries. Like an auxiliary, *gonna* doesn't inflect while it does convey tense and take bare VP complements. Perhaps then, *gonna* is analyzed as an auxiliary, in which case the NP-Host Condition can handle *gonna*-reduction without further renovation.

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ON JAPANESE CAUSATIVE:
Review of Shibatani's Notion of Causative

Misaki Shimada

Abstract: In this article, characteristics of Japanese causative constructions are reviewed and discussed based on an article by Masayoshi Shibatani (1976), who has worked extensively in Japanese causative. First, the nature and definitions of the causative are discussed. Then, the types of Japanese causative are presented; finally, a categorization of verbs according to their causativity is suggested. The article concludes by underscoring the value of the notion of causativity and a categorization of verbs.

Masayoshi Shibatani (1976) has examined Japanese verbs using causation as a tool for classifying them. He categorizes verbs into two groups, namely causative verbs and noncausative verbs, and further subdivides the causative verbs into several smaller groups.

Shibatani states that a sentence is defined as causative when the following two conditions are met (1976:230-240). One is that 'the relationship between two events is such that the speaker believes the occurrence of one event, the 'caused event' has been realized at t_2, which is after t_1, the time of the causing event.' The second condition is that:

> "the relation between the causing and the caused event is such that the speaker believes the occurrence of the caused event is wholly dependent on the occurrence of the causing event; the dependency of the two events must be to the extent that it allows the speaker to entertain a counterfactual inference that the caused event would not have taken place at that particular time if the causing event had not taken place, provided that all else had remained same."

According to this definition, verbs such as tatu (stand), agaru (go up), aku (open) are noncausative (see 1a,c), while verbs such as tateru, ageru, akeru, are causative (1b,d).

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(1) a. Kodomo ga tatta.
The child stood up.
b. Kodomo o nikai ni ageta.
I sent the child upstairs.
c. Doa ga aita.
The door opened.
d. Doa o aketa.
I opened the door. (I caused the door to open.)

In traditional grammar, we call the first group intransitive, and the second group transitive. Here arises a question of how these two notions, causation and transitivity, are related. Let us examine this question below.

(2) a. Zyon o korosita.
I killed John.
b. Zyon ga sinda.
John died.
c. Piza o tabeta.
I ate pizza.

It is clear that sentence (2a) is a causative sentence, i.e., "I caused John to die", and sentence (2b) is not. Then, how about (2c)? One could argue that it may be causative because the speaker 'decided to eat (first event)' and then the pizza was consumed (second event), and the second event is solely dependent upon the first event. However, it is not a causative sentence in the usual sense. Therefore, we need to show that verbs korosu and taberu have different qualities.

The first difference between the two is the fact that the agent's action is on the pizza in sentence (2c), and pizza is an inanimate object. On the other hand, the agent's action is on John, an animate object, in sentence (2a). Let us examine more examples.

(3) a. Hanabi o sora ni ageta.
I sentt up a firework into the sky.
b. Kodomo o nikai ni ageta.
I sent the child upstairs.
c. Taroo (no e) o kami ni kaita.
I drew (a picture of) Taro.
d. Taroo o okosita.
I woke Taro up.
e. Haha ni tegami o kaita.
I wrote a letter to my mother.

An observation here is that when the direct object is animate, the verb is always causative (3b,d). Sentence (3c) is not causative the despite the fact that it has an animate object. What is happening here is that an inanimate object e (picture) is understood. When the direct object is inanimate some sentences are causative (3a), and others are non-causative (3c,e). Therefore, we can conclude that there are at least three kinds of transitive verbs. One is those verbs that take an animate direct object (causative verbs), the second is those that takes an inanimate direct object and are still causative, and the last is those that take an inanimate direct object and are non-causative.

Another observation made by Shibatani is that the verb korosu has an intransitive counterpart sinu, whereas taberu does not. Shibatani defines verbs with a noncausative lexical counterpart as 'lexical causative' and those without an intransitive lexical counterpart as 'productive causative.' Since a verb such as taberu does not have a lexical intransitive counterpart, and only way to make the verb causative is to add the ending -saseru, it is considered a productive causative verb. Here we can define lexical causative verbs as a subgroup of transitive verbs since all lexical causative verbs indicate that the agent is acting on something.

We now focus on the differences between two types of causative verbs. Shibatani states that productive causative involves an embedded sentence in the deep structure, and lexical causative does not, and, therefore, some ambiguity occurs in productive causative sentences and no ambiguity results in lexical causative sentences. He uses several tests to prove to be the case. For example,

(4) a. Tanaka wa Taroo o kyuu ni tomaraseta.
Tanaka made (let) Taro stop suddenly.
Or, Tanaka suddenly made (let) Taro stop.
b. Tanaka wa Taroo o kyuu ni tometa.
Tanaka made Taro stop suddenly.
c. Tanaka wa Taroo ni kagami ni ututta zibun o misaseta.
Tanaka made (let) Taro see self in the mirror.
Or, Tanaka made (let) Taro see self in the mirror.
d. Tanaka wa Taroo ni kagami ni ututta zibun

o miseta.
Tanaka made Taro see self in the mirror.

Sentences (4a) and (4c) are both productive causative and ambiguous. For sentence (4a), kyuu ni can modify the action of either the causee or causer, and for sentence (4c), the reflexive pronoun zibun can be co-referential either with Tanaka or Taro. On the other hand, sentences (4b) and (4d) are both lexical causative and they are not ambiguous. Kyuu ni in (4b) clearly modifies the action of the causer, and zibun in (4d) refers only to Tanaka.

Shibatani also discusses the semantic differences of the two causatives (1976:251-273). One of the claims he makes is that which causative the speaker chooses depends on what the causer's true intrest is. If the causer's interest lies beyond the caused event, Shibatani believes the speaker uses the lexical causative, but if the causer's interest is the caused event itself, he believes that the speaker uses the productive causative.

(5) a. Tanaka wa kodomo o gakkoo no mae de orosita.
Tanaka dropped the child off in front of a school.
b. Tanaka wa kodomo o gakkoo no mae de orisaseta.
Tanaka made the child get off in front of a school.
c. Tanaka wa kodomo o ginkoo no mae de orosita.
Tanaka dropped the child off in front of a bank.
d. Tanaka wa kodomo o ginkoo no mae de orisaseta.
Tanaka made the child get off in front of a bank.

Shibatani claims the speaker used the lexical causative in sentence (5a) because the purpose of the caused event, i.e., dropping the child off in front of the school, was more than the caused event itself. It probably was to take the child to the school. On the other hand, the speaker used the productive causative in sentence (5b) because the caused event itself was the purpose of the utterance. It might have been because of a flat tire or mechanical failure.

Shibatani states that we must have a conventional purpose associated with the caused event in order to explain a sentence such as (5a). However, without conventionl purpose, we can use sentences (5c) and (5d). We have no specific inference about what the purpose is beyond the caused event, i.e., dropping the child off in front of a bank.

Although Shibatani does not mention it, one further interesting observation can be made about lexical causative verbs. Some causative-noncausative pairs behave somewhat differently from others. For example,

(6) a. Kodomo ga tatta.
The child stood up.
b. Kodomo o tataseta.
I made the child stand up.
c. Ie o tateta.
I built the house.
d. Ie o tatesaseta.
I made (someone) build the house.

Here we find a pair of intransitive and transitive verbs (6a,c) and their respective causative expressions (6b,d). However, in (7) one of the alternatives does not exist. For example, although the verb form in sentence (7b) looks morphologically correct, it is not acceptable.

(7) a. Doa ga aita.
The door opened.
b. *Doa o akaseta.
c. Doa o aketa.
I opened the door.
d. Doa o akesaseta.
I made (someone) open the door.

Examples in (8) further show this gap.

(8) a. Taroo ga okita.
Taro woke up.
b. ??Taroo o okisaseta.
??I had Taro wake up.
c. Taroo o okosita.
I woke Taro up.
d. Taroo o okosaseta.
I had (someone) wake Taro up.

Some lexical causative verbs belong to the same category as (6), e.g., agaru/ageru (lift), sinu/korosu (die), etc., and some belong to the type (7), e.g., yakeru/yaku (burn), nagareru/nagasu (float), simaru/simeru (shut), etc.

Reasons why these verbs behave differently seem to play an important role in determining the categories of the verbs. One observation is the animate/inanimate distinction. If the causee of the intransitive verb's causative (7b) is inanimate, the sentence will be unacceptable, and if the causee of the causative is animate (8b), the sentence will be questionable.

This is made even clearer when the -te ageru ending is added. The expression -te ageru means that the subject will perform a favor for the object which in this case is the causee. We cannot give any favor to an inanimate object. I have mentioned that agaru/ageru pair belongs to the same group as in (6), in which all four series are acceptable. However, depending on the status of the causee, acceptability changes.

(9) a. Kodomo o nikai ni agarasete ageta.
I did a favor of sending the child upstairs.
b. *Hanabi o sora ni agarasete ageta.
I did a favor of sending the firework into the sky.

(10) a. *Raito o kiesasete ageru.
I will do a favor of turning the light off.
b. Taroo kun, kimi o kiesasete ageru.
Taro, I will do you a favor of making (you) invisible. (assuming the speaker has some kind of magical power and Taro always wanted to be invisible)

An observation here is that when the causee of the causative of an intransitive verb is an animate noun, the sentence is acceptable, but when it is inanimate, it is not acceptable. However, for the verb okiru/okosu/?okisaseru/okosaseru series, a questionable consequence results. Sentence (8b) is highly questionable even though the object or causee of the sentence is Taro, who is, of course, animate. However, okisaseru can be acceptable in the following situation.

(11) Taroo wa saiminzyutu ni kakatta mama nemurituzukete ita node watasi ga okisasete ageta.
Since Taro has been hyponized and kept sleeping, I did Taro a favor of waking (him) up.

What we observe here is that the causer of the event has to have some power or authority over the causee or the caused event, and the causee must be willing to see the caused event to happen. This leads me to believe that this construction can be used as the permissive causative rather than the regular causative, somewhat similar to English sentence 'I let you...'

Let us now examine the relationship between the permissive causative and the regular causative.

(12) a. Taroo o gakkoo e ikaseta.
I made Taro go to school. Or,
I let Taro go to school.
b. Taroo ni piza o tabesaseta.
I made Taro eat the pizza. Or,
I let Taro eat pizza.

Both sentences in (12) are ambiguous since they can be interpreted in two ways: 1) 'I' forced Taro to engage in an action even though he was not willing to do so, or 2) 'I' gave Taro permission to do the action since he wanted to do so. Now we examine the lexical causative verb series.

(13) a. Taroo ga tatta.
Taro stood up.
b. Taroo o tataseta.
I made Taro stand up, or I let Taro stand up.
c. Ie o tateta.
I built a house.
d. Ie o Taroo ni tatesaseta.
I made Taro to build a house. Or,
I let Taro build a house.

Two interpretations are possible for both causatives created by adding -(sa)seru (13b,d), but only one interpretation is available for (13c). Thus, we can conclude that any productive causatives (i.e., non-lexical causatives) can work as the permissive causative or the regular causative depending upon the

context.

When -te ageru is added to those ambiguous sentences above, an interesting consequence results. (See 14)

(14) a. Taroo o gakkoo ni ikasete ageta.
I did (Taro) a favor by letting him go to school.
b. Taroo ni piza o tabesasete ageta.
I did (Taro) a favor by letting him eat the pizza.
c. Taroo o tatasete ageta.
I did (Taro) a favor by letting him stand up.
d. Ie o Taroo ni tatesasete ageta.
I did (Taro) a favor by letting him build a house.

By adding -te ageru to the ambiguous sentences, the ambiguity is resolved and only the permissive causative becomes possible. In (15a), the context shows that the verb is the regular causative; see what happens when we add -te ageru to it:

(15) a. Taroo wa sarada wa tabetaku nai to itta ga, watasi wa Taro ni sarada o tabesaseta.
Taro said he didn't want to eat salad, but I made him eat it.
b. *Taroo wa sarada wa tabetaku nai to itta ga, watasi wa Taro ni sarada o tabesasete ageta.
*Taro said he didn't want to eat salad, but I did Taro a favor by making him eat it.

In (15b), since the context tells that Taro is not willing to eat salad, a conflict results when we add -te ageru. Hence, we may use -te ageru as a test to determine if a sentence is regular causative or not.

Shibatani also discusses the difference between direct and indirect causatives (1976:267-269). In direct causation, the causer orally, physically, or manipulatively forces the causee to do something. In indirect causation, however, the causer does not directly cause the event to occur. For example, all the sentences we have discussed so far involve some

sort of physical movement on the part of the causee. The indirect causative, however, deals mainly with causee's mental state.

(16) a. Taroo wa Hanako o yorokobaseta.
Taro made Hanako happy (by doing something or saying something).
b. Taroo wa hanako o kanasimaseta.
Taro made Hanako sad (by doing something or saying something).

In both sentences in (16), Taro caused the change in Hanako's mental state, and Taro did not do anything directly; rather he did something which in turn made Hanako's mental state change. Thus, in the indirect causative, the causer causes the causee's mental state to change indirectly by doing or saying something else, whereas the direct causative involves some sort of physical movement on the causee whichthe causer initiates by doing something directly to the causee.

As we have seen, Shibatani presents a number of interesting points about Japanese verb classification. First, he divides all verbs into two categories, causatives and noncausatives, and we have found that all causative verbs are transitive, and, in fact, causative verbs are a subgroup of the transitive verbs. All transitive verbs that take an animate direct object are causative, and some other verbs that take an inanimate direct object can be causative. We have also lea ned that within the causative sentences, there are two different types, namely the 'lexical causative' which has a noncausative lexical counterpart and the 'productive causative' which does not have a lexical counterpart in noncausative. In the latter case, we must create the causative counterpart morphologically by adding the -saseru ending. These productive verbs are ambiguous since they can be interpreted as the regular causative or the permissive causative, and this is made clear by adding the -te ageru ending. We have also found that the causative form of the intransitive could only be acceptable when the causee is an animate object, and the causer has some sort of authority or power over the caused event. Shibatani divides the causatives further into two different types, direct and indirect. He discusses two different types of the caused event, physical change or mental change. When we examine verbs in the indirect causative construction, we find that they express some sort of

mental or emotional state; thus we can call these 'verbs of emotion.'

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NP PREDICATION AND FULL SATURATION

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Abstract: This study extends Safir's (1987) analysis of Noun Phrase (NP) Predication. It argues that, for NPs to function predicationally, they must satisfy not only Safir's Predicate Principle, but also the Predicate Condition (a condition which requires NP predicates to be fully saturated).

Introduction

Safir (1987) claims that nonanaphoric, nonpronominal Noun Phrases must be classified, in accordance with the Predicate Principle (1), as either Predicate-NPs or Argument-NPs.

(1) Predicate Principle
A potential referring expression (PRE) is a predicate or else free.

This classification, Safir argues, is empirically motivated by the grammatical differences between (2 a-b) and (2c).

(2a) There_k is $[\text{a boy}]_k$ in the room

(2b) John_k seems $[\text{a fool}]_k$

(2c) *John_k saw $[\text{a fool}]_k$

If bound NPs are Predicate-NPs and if predicates are not arguments, hence not subject to argument relations such as Binding Principle C and the TH-Criterion, the grammatical patterns expressed in (2) have a natural explanation.[1] That is, (2 a-b) are grammatical, even though they seem to have a Binding Principle C violation in their chains (there_k, a man_k) and (John_k, a fool_k), because the Predicate-NPs are exempt from binding violations; and (2c) is ungrammatical because (a fool_k) as a Predicate-NP is not an argument, so the chain lacks a TH-role and the Patient TH-role is left unfilled in (2c) -- in violation of the TH-Criterion.

Although the Predicate Principle provides an explanation for (2), it does not give any insight into the grammaticality differences between (2 a-b) and (3 a-b).

(3a) *There_k is $[\text{the man}]_k$ outside

(3b) *John_k seems $[\text{the fool}]_k$

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Left unexplained by Safir is the reason why the definiteness of the NP affects its ability to function as a predicate.

In this paper, I will propose a condition on NP Predication to differentiate (2 a-b) from (3 a-b). This condition, the Predication Condition (4), requires the extensional properties of predicates to be shared by any NP that functions predicationally.

(4) Predication Condition (PC)
An NP can function as a predicate if and only if it is bound and fully saturated.

The PC delimits NP-Predicates to NPs that have rigidly specified reference-sets (extensions).

Predicate-NPs

The claim that NPs can act as predicates is not unique to Safir. Logicians have, for some time, given the NP 'a man' the ontological status of a predicate in propositions like (5).

(5) John is a man.

What is unique to Safir is the claim that the predicate-status of an NP is determinable syntactically, by whether or not a referential NP is bound. In this section, I will further examine Safir's Predicate Principle by investigating constraints on the predicational properties of NPs.

Safir notes that definite and indefinite NPs possess different predicational properties, as is illustrated in (6)-(7).

(6a) $John_k$ seems a $fool_k$

(6b) *$John_k$ seems the $fool_k$

(7a) I consider $John_k$ a $fool_k$

(7b) *I consider $John_k$ the $fool_k$

The indefinite NP 'a fool' in (6a) and (7a) functions as a predicate; on the other hand, the definite 'the fool' in (6b) and (7b) lacks the predicational property.

Since the Predicate Principle (1) limits the class of Predicate-NPs only in terms of free-ness, the above distribution escapes the Predicate Principle. After all, the (in)definiteness of an NP has, according to the Predicate Principle, no bearing upon predicationality. The Predicate Principle, then, does not suffice to account for the predicational property of NPs because it cannot explain the data in (6)-(7).

Now if we are to explain the predicational property fully, we must determine the range of NP-types that have this property. Limiting observations to (6)-(7), we would be tempted to enlist the notion of (in)definiteness in our explanation of the predicational property. However, if we consider a complete range of NP-types -- indefinites, nonrestricted definites, restricted definites, titles, names, quantified NPs -- we will discover that (in)definiteness does not determine the pattern of predicationality:

(8a) John is a man

(8b) *John is the man

(8c) John is the man that I like most

(8d) John is the President

(8e) That is Ronald Reagan

(8f) That is the smell of pot

(8g) John is everything bad

(9a) I consider him a man

(9b) *I consider him the man

(9c) I consider him the man I like most

(9d) I consider him the President

(9e) I consider him Ronald Reagan

(9f) I consider that the smell of pot

(9g) I consider him everything bad

(Note: In (8) and (9), I am not making any distinctions between predicational and list readings because I am following Safir in assuming the Predicate Principle -- a syntactic principle which is insensitive to the semantic predicational/list differentiation.) The sentences in (8) and (9) demonstrate that the predicational property does not conform to the (in)definiteness of an NP. That is, even though (8 c-f) are all definite NPs, they still can function predicationally. So, we cannot, as have Safir (1985, 1987) Higginbotham (1987), explain Predicate-NPs in terms of the feature [Definite].

NP Predication

The predicational distribution illustrated in (8)-(9) is best explained by appealing to the extensional property of predicates. The extension of a predicate is the set of n-tuple arguments that satisfy the predicate-relations in a given model.[2] This extension is rigidly specified for a predicate; that is, the extension provides an all and only reference-set of n-tuple arguments satisfying the predicate. Importantly, the rigid specificity of the extension is required to make semantic satisfaction of n-tuple arguments decidable -- a partial specificity for a predicate could not determine whether or not any given n-tuple satisfied the predicate.

Let us now assume that an NP will function predicationally only if it has the extensional property of predicates. This assumption requires all NP-Predicates to derive from NPs with a rigidly specified extension (denotation) -- such NPs will be said to be "fully saturated."

Given that an NP can be predicational only if it is fully saturated, we can test an NP for predicate potential by checking whether or not the NP has anaphoric potential. If an NP can be anaphoric, taking reference from another source, then the NP cannot be fully saturated because its extension (reference) is not exhaustively self-contained. Testing the NPs in (8) and (9) for anaphoric potential produces the following pattern:

(10a) ?*$[\text{A man}]_k$ walked in. Then $[\text{a man}]_k$ left.

(10b) $[\text{A man}]_k$ walked in. Then $[\text{the man}]_k$ left.

(10c) *$[\text{A man (I like)}]_k$ walked in. Then [the man I like]$_k$ left.

(10d) *$[\text{A president}]_k$ walked in. Then $[\text{the President}]_k$ left.

(10e) *$[\text{A man}]_k$ walked in. Then $[\text{John}]_k$ left.

(10f) *$[\text{A smell}]_k$ arose. Then [the smell of pot]$_k$ disappeared

(10g) ?*$[\text{Men}]_k$ stood up. Then [every man sick]$_k$ left.

The sentences in (10), which are constructed so that the second NP in each example matches the possible Predicate-NPs in (8) and (9), demonstrate that the only NP with anaphoric potential is the nonrestrictive definite NP 'the man.' This result is not unexpected. We know that titles (10d) and names (10e) are fully referential; we also know that restricted definites ((10c) and (10f)) can limit the definiteness of the NP sufficiently to make it fully referential[3]; and we know that

indefinites (10a) such as 'a man' is made fully referential by the existence of the class 'men'; but we also know that nonrestricted definite NPs like 'the man' place insufficient limitations on the class of things like 'men' to refer uniquely without further contextual information. So it is only nonrestricted definites that, as is shown by their anaphoric potential, can lack full saturation.

Given that only the nonrestrictive definite in (10) is not fully saturated, we would expect that all NPs but the nonrestricted definites would function predicationally. This expectation is corroborated by the distributions in (8) and (9). Therefore, by appealing to "full saturation" of an NP, we can provide a natural explanation for the distributions in (8) and (9) -- an explanation that we can formalize as the Predication Condition (11).

(11) Predication Condition (PC)
An NP can function as a predicate only if it is fully saturated.

As stated, the PC is a necessary condition for NP Predication, but it is not a sufficient condition. That is, the fact that the NP 'Ronald Reagan' in (12) is fully saturated does not make it a predicate.

(12) Ronald Reagan$_k$ is the President$_k$.

If names and titles, as fully saturated NPs, were always incorporated into the predicate, then both NPs in (12) would be predicational and (12) would be a argument-less predicate rather than a sentence. To insure sentence-hood for (12) and predicationality for only the title in (12), we need to specify a sufficiency condition on NP predication. We need not look far for such a condition -- after all, Safir stipulates this condition as a binding condition in the Predicate Principle (1). Building Safir's requirement that A-bound, referential NPs are predicates into (11), we can revise the PC as (13).

(13) Predication Condition
An NP functions as a predicate if and only if it is bound and fully saturated.

PC (13) correctly predicts that, in (12), the title 'The President' will be predicational because it is both bound and fully saturated, but the name 'Ronald Reagan' will not be predicational because it is not bound.

Some Predictions

We have argued thus far that the Definiteness Effect shown

in (6) and (7) should be replaced by the Full Saturation Effect shown in (8) and (9). In this section, I will give additional support for the Full Saturation Effect by demonstrating that only by viewing NP predication in terms of full saturation can we account for There Insertions Sentences (TISs) and for Adverb Incorporation.

Recently, there has been a great deal of interest in TISs (see Reuland and Meulen (1987)). Much debate has centered around the fact that (14a), a sentence with a postverbal indefinite NP, is grammatical but that (14b), a sentence with a postverbal definite NP, is ungrammatical.

(14a) There is a man waiting for you

(14b) *There is the man waiting for you

A current GB-approach to TISs (Reuland (1985)) explains the differences in (14) by assuming (I) that there is a coindexing chain between 'there' and the postverbal NP and (II) that coindexing the indefinite marker 'there' with a definite NP leads to a logical contradiction.

If Reuland's explanation is empirically adequate, it should be able to account for TISs with a more complete set of postverbal NPs, as in (15).

(15a) When you arrive, there will be a man waiting to talk to you

(15b) *When you arrive, there will be the man waiting to talk to you

(15c) When you arrive, there will be the man that you like most waiting to talk to you

(15d) When you arrive, there will be the President waiting to talk to you

(15e) When you arrive, there will be John waiting to talk to you

(15f) When you arrive, there will be the smell of pot in your room

(15g) When you arrive, there will be everyone there cheering

(As before, following Safir's Predicate Principle, I do not differentiate the "list" reading from the "predicational" reading.) The fact that not only indefinites -- but also names,

tities, restricted definites, and restricted quantifiers -- can be postverbal in (15) is problematic for Reuland's explanation of TISs; after all (15 c-g) should, according to Reuland, produce the same logical contradiction that (14b) does because they would permit an indefinite marker "there" to be coindexed with a definite NP.

With the Predication Condition (13), we can provide a more adequate account of TISs than does Reuland. Assuming, as does Chomsky (1981), Reuland (1985), and Safir (1987), that existential 'there' and the postverbal NP are coindexed, we can appeal to the PC to explain the distribution in (15). That is, since coindexed referential NPs are predicates by (1), they must satisfy the Predication Condition. But the only NPs that satisfy the PC are fully saturated NPs; therefore, only fully saturated postverbal NPs will be well formed predicates. The PC correctly predicts that only (15b), a There insertion Sentence with an unsaturated postverbal NP, will be ungrammatical in (15).

The PC also makes a prediction about the predicate potential of bare-NP adverbials like those in (16).[6]

(16a) Mary will see John [some day]

(16b) I saw John [everywhere imaginable]

(16c) Max pronounced my name [every way imaginable]

Given that Predicate-NPs must satisfy the binding condition in (13), we would expect that none of the NP adverbials in (16) would incorporate into the predicate since none of the NP adverbials are bound. However, if we assume, following Enc (1985, 1987), that the Tense-element of INFL is coindexed with the temporal adverb and that this Tense-element is a Referential Expression that provides the temporal argument of the verb, we can assign (16a) the indexing relations expressed in (17).

(17) Mary $INFL_k$ see John $[\text{some day}]_k$

If we further assume, following Stroik (1987), that the NP adverbial is VP-internal, then we can assign (16a) the GB S-structure stated in (18).

(18) $[\text{Mary } [_{I'}\ I_k\ [_{VP} \text{ see John } [\text{some day}]_k]]]$

Under the above assumptions, NP adverbials like those in (16a) are predicational, according to the Predication Principle (1), because they are bound. This conclusion, together with the fact that neither place nor manner adverbials are bound leads to two predictions: (I) NP adverbials of time will show the full saturation effects that arise in (15) and (II) NP adverbials of

place or manner, which do not have predicational status, will not distribute like NP adverbials of time. The sentences in (19) and (20) test the above predictions.

(19a) Mary will see John [some day]

(19b) *Mary sees John [the day]

(19c) Mary will see John [the day that Reagan arrives]

(19d) Mary will see John [Monday]

(19e) Mary saw John [Christmas morning]

(19f) Mary saw John [the day before last]

(19g) Mary sees John [every day]

(20a) John will see Mary [some place]

(20b) *John sees Mary [the place]

(20c) *John will see Mary [the place that Reagan arrives]

(20d) *John will see Mary [Wisconsin]

(20e) *John saw Mary [The Garden State]

(20f) *John saw Mary [the place near here]

(20g) John sees Mary [every place]

The sentences in (19) and (20) confirm our predictions: NP adverbials of time in (19) distribute as do the predicates in (15), denying predicate status only to NPs that are not fully saturated (nonrestricted definite NPs (19b)), while NP adverbials of place, which are not predicates, have a distribution which is saturation-insensitive.

Toward a Theory of Full Saturation

My approach to NP predication is built around the notion of "full saturation." In this secion, I will develop a theory of full saturation that links the level of saturation of an NP to its internal structure.

My sense of "saturation" diverges from Frege's -- Frege introduced "saturation" to differentiate terms that denote (saturated terms) from the terms that do not denote (unsaturated terms). I use the term, not as a binary feature that

distinguishes referring from nonreferring categories, but as a feature sensitive to the degree of reference possessed by any NP. Motivation for my sense of "saturation" comes from the fact that although both "the smell" and "the smell of pot" refer (hence, both are saturated), only the latter term rigidly expresses its referent (is fully saturated). "Saturation" then is extended here to mark the differing degrees of referentiality that NPs possess.

It is my claim that the saturation of an NP can be calculated from the syntactic structure of the NP. This claim develops out of some observations made by Higginbotham (1987). Higginbotham notes that indefinite articles differ from definite articles in that the former are interpreted as if they were adjectives. That is, just as "brown cow " is interpreted as (21a), "a lawyer" is interpreted as (21b).

(21a) brown(x) & cow(x)

(21b) a(x) & lawyer(x)

To explain the adjectival nature of various quantifiers Q, including the indefinite article, Higginbotham proposes (22).

(22) A quantifier Q is of adjectival character if and only if it is symmetric, in the sense that "Q A are B" is always equivalent to "Q B are A" (ranging over pluralities A, B).

Under Higginbotham's semantic interpretation rule (22), indefinite Determiners are adjectival in character, but definite articles are not. This "semantic" difference can be observed in (23) and (24), where the (a)-example is logically equivalent to the (b)-example in (23), but not in (24).

(23a) Some men are barbers

(23b) Some barbers are men

(24a) The men are barbers

(24b) The barbers are men

Higginbotham uses the adjectival differences between articles to explain, among other grammatical phenomena, TISs. He claims that TISs require the postverbal NP to have a Q with adjectival character. Hence, (25a), a TIS with an adjectival Q, is grammatical; whereas (25b), a TIS without an adjectival Q, is ungrammatical.

(25a) There is some smell lingering in your room

(25b) *There is the smell lingering in your room.

Since the definite article is not adjectival in nature, Higginbotham would predict that it should be impossible to have a grammatical There Insertion Sentence with a postverbal NP that has a definite article in the SPEC-position. The examples in (26) disconfirm this prediction.

(26a) There is the smell of pot in your room

(26b) There is the smell you hate most lingering in your room

The evidence in (26) suggests that Higginbotham's appeal to adjectivized articles as an explanation for TISs, and for NP predication in general, is in principle incorrect.

Although Higginbotham's theory cannot explain NP predication, its core assumption (that definite articles have different relations with the head N of an NP than do indefinite articles) is correct and forms the basis of a theory of saturation.

Let us assume, following Higginbotham's analysis suggested in (21), that an indefinite article has an "adjectival" relation with the head N; however, let us depart from Higginbotham's approach by assuming that the above relation is expressed both syntactically and semantically. (This latter assumption, if correct, would establish a natural connection between the form and the meaning of an NP and would free our theory from requiring interpretative rules such as (22).) From the above assumptions, we can conclude that the reason that an indefinite article has an adjectival relation with the head N, while a definite articles does not, is that the articles have different structural relations with N. Since this conclusion flies in the face of current GB-representations of the internal structure of NPs, it bears further investigation.

In the GB-framework, the internal structure of a phrase (X") is stipulated by X-bar Theory. According to X-bar Theory, any head (X) can take two types of argument: an external argument and an internal argument. These arguments have specific structural relations with the head (X) — relations expressed in (27).

(27a) X" --> SPEC X'

(27b) X' --> X Y"

(Note: read (27) as stating that the external argument of X is in SPEC, the sister of X' and that the internal argument (Y") of X

is the sister of X.) Applied to the structure of N", (27) assigns representation (29) to both (28a) and (28b).

(28a) the man

(28b) a man

(29) $[_{N''}\ [_{SPEC}\ DET]\ [_{N'}\ [_{N}man]]]$

Given that current GB-analyses of N" structure place all Determiners in the external argument position, the NPs in (28), under these analyses, cannot be differentiated structurally.

Although X-bar Theory, as expressed in (27), is incompatible with my earlier assumption that the NPs in (28) have different structural representations, some recent research into X-bar Theory resolves the incompatibility. Stroik (1987) argues that the argument-head relations required for natural language are not those stipulated in (27), but the relations stated in (30).[4]

(30a) $X^{j} \dashrightarrow SPEC\ X^{j-1}$

(30b) $X^{k} \dashrightarrow X^{k-1}Y''$
for $j,k \in \{1,2\}$ and $i \neq j$ and where
$X^{1} = X'$ and $X^{2} = X''$.

(30) generalizes X-bar Theory: it permits the argument-head relations given in (31) as well as the relations in (27).

(31a) $X' \dashrightarrow SPEC\ X$

(31b) $X'' \dashrightarrow X'\ Y''$

That is, Stroik's version of X-bar Theory allows the argument in SPEC (the external argument in (27)) to be either the internal argument (sister of X) or the external argument (sister of X') of a head X.[5]

Now if we apply (30) to the NPs in (28), we can derive the following structures for them.

(32a) $[_{N''}\ [_{SPEC}\ the]\ [_{N'}\ [_{N}man]]]$

(32b) $[_{N''}\ [_{N'}\ [_{SPEC}\ a\ ]\ [_{N}man]]]$

Importantly, the structures in (32) not only can provide a structural differentiation for the NPs in (28), but they also can explain why the indefinite article has an adjectival interpretation that the definite article lacks. That is, under the assumption that X modifies Y if and only if X and Y are

sisters (see Zubizarreta (1982) for support for this assumption), the indefinite article in (32b) has an adjectival (sister) relation with N, while the definite article -- which is a sister of N', not of N -- does not enter into an adjectival relation with the head N.[6]

Although (32) affords an explanation for the adjectival interpretation (or absence of it) given to the examples in (28), we need to motivate (32) independently and we need to demonstrate that (30) derives only (32) and not any other representation seemingly compatible with (30).

Support for (32), as the structural representation of (28), comes from conjunction data and from scopal data. Conjunction data do not directly demonstate that (32) gives the correct structure for the NPs in (28), but the data do show that the NPs in (28) must, as (31) suggests, have different structural relations between the articles and the head Ns. Consider the conjunctions in (33).

(33a) a man and a woman that love each other

(33b) the man and the woman that love each other

(33c) *a man and the woman that love each other

(33d) *the man and a woman that love each other

The grammaticality of the phrases in (33) depends on whether or not the reciprocals in the relative clauses have antecedents. Since a plural antecedent for the reciprocal will emerge only if the structures [Det man] and [Det woman] can be conjoined, the results of (33) suggest that the appropriate conjunction occurs in (33 a,b), but not in (33 c,d). Now if we assume that identical categories can be conjoined, then we must conclude that [Det N]'s in (33 a,b) are identical categories, while the [Det N]'s in (33 c,d) are not. Importantly, this conclusion requires that the articles in (33 c,d) have different relationships with the head Ns; hence the evidence in (33) is only compatible with versions of X-bar Theory like (30), which can allow multiple argument relations between SPEC and the head of a category.

Although the evidence in (33) supports the assumption underlying (30) (i.e., that the SPEC and the head of a category can enter into multiple structural relations), it does not support the specific formalization given in (30). For this latter support, we turn to scopal relations. Let us consider the scopal readings for the NPs in (34).

(34a) The man that everyone gave money to today

(34b) A man that everyone gave money to today

The NPs in (34) permit different scopal relations between [Det man] and 'everyone'. The NP in (34a) is ambiguous, having the reading in which everyone gave money to the same man and the reading in which there is possibly a different man given money by everyone. On the other hand, the NP in (34b) is unambiguous; it has only the reading in which everyone gave money to the same man. If both NPs have structure (35) — the structure generated by (27) — then the scopal differences cited above are surprising.

(35) $[_{NP}$ [Det] $[_{N'}$ man $[_{S'}$ O_k that $[_S$ everyone$_j$ $[_S$ e_j gave money to $e_i]]]]]_k$

That is, given that (35) describes the structure of the NPs in (34) and given May's (1985) Scope Principle, which states that two operators will engage in free scopal relations if they are included in all the same maximal projections, we would predict that both NPs in (34) would be ambiguous because O_k and everyone$_j$ in (35) are included in the same maximal projections: S' and NP_k.[7] This prediction, although correct for (34a), is incorrect for (34b). So, to explain the NP-reading of (34b), we must assume that (35) is not the structure of of (34b).

We can deduce the correct NP-structure for (34b) by determining the structural relations that are required to account for the scopal properties of (34b). Since (34b) is unambiguous, the structure for (34b) must prevent the operator O_k in the restrictive clause from having scopal relations with the universal quantifier 'every', or else the operators will engage in free scopal relations (and (34b) will be predicted to be ambiguous). Importantly, the above relations are prevented for an operator O_k if it is coindexed with an operator that c-commands it, as in (36)-(37).

(36a) John told some stories$_k$ to everyone$_j$

(36b) Some stories$_k$ are hard $[_{S'}$ O_k to tell e_k to everyone$_j$]

(37a) Who$_k$ does everyone$_j$ like e_k

(37b) Who$_k$ did John convince e_k $[_{S'}$ O_k that everyone$_j$ would give money to e_k]

Notice that the a-examples in (36)-(37) are ambiguous, but the b-examples are not. The difference in ambiguity can be explained in the following way. In the a-examples of (36)-(37), the i-operators share maximal projections with the j-operators, so the operators engage in free scopal relations. On the other

hand, in the b-examples, even though the j-operators and O_k appear to engage in free scopal relations, these relations are obviated by the fact that the j-operators enter into scopal relations only with the most dominant i-operator, the operators that are coindexed with and structurally superior to O_k.

The evidence in (36)-(37) suggests that, in (34b), the wh-operator O in the relative clause does not participate in scopal relations with the universal quantifier 'every' because the operator O is coindexed with some other operator. Since the relative clause in (34b) modifies something in the NP itself, the wh-head of the relative clause must be indexed to an operator within the NP. The only logically possible operator that is both in the NP and outside the relative clause is the quantified phrase that could be formed out of the remaining elements in the NP: Det and N. In other words, conditions on scopal relations have forced us to assign (34b) structure (38).

(38) $[_{NP}\ [_A$ Det N$]_k\ [_S \cdot O_k \ldots]]$

The fact that A_k and O_k are coindexed in Structure (38) prohibits scopal relations between O_k and any quantifier in S' since the only scopal relations licensed in (38) between an i-indexed operator and any quantifier within S' are relations between A_k and the quantifiers. Given structure (38), we can make a prediction about scopal relations in (34b): we can predict that the maximal boundary S' intervening between A_k and the quantifiers in the relative clause in (38) will prevent free scopal relations between [a man] and the universal quantifier (thereby allowing only the reading in which the structurally superior quantifier [a man] has broad scope).

One question about (38) remains. That is, what is the category A? Is it N" or N'? The answer seems to be that A is N'. There are two arguments that favor the N'-analysis. First, if A is N", then the relative clause would modify the NP and it would be a non-restictive relative. As such a relative, we would predict that (40), like (39), would be ungrammatical because NPs cannot be modified by two non-restrictive relatives.

(39) *My sisters, who voted for Reagan, whoever they are

(40) A man that Mary saw today, whoever he is

The grammaticality of (40) then contradicts the N"-analysis of A. Second, as Williams (1986) notes, t_k in (41 a,b) can be reconstructed as N' (41a), but not as N" (41b).

(41a) I saw [the $[_N \cdot$pictures of each other$]_k$ that John and Mary took t_i]

(41b) *I saw [[$_{N''}$ each other's pictures of it]$_k$ that John and Mary took t_k]

If Williams's analysis is correct, we are forced to conclude that A in (38) must be N', rather than N".

The two foregoing arguments support an analysis of (34b) in which the indefinite article combines with the head N to form an N' category. Importantly, in combination with our analysis of (34a), our analysis of (34b) requires X-bar Theory (30) -- a theory that provides the NPs in (34) with two different argument structures: one in which the definite Det-argument of N is the sister of N' and one in which the indefinite Det-argument is the sister of N.

Although X-bar Theory (30) permits the variant NP-structures that are required to explain (34), it does not guarantee that only the indefinite articles are sisters of the head N. To insure the appropriate relations between Determiners and Head nouns in (28) and (34), we need to postulate the Determiner Generalization (42).

(42) Determiner Generalization
A determiner is an N'-sister if and only if it is [+Def]

The Determiner Generalization forces the definite article to be the sister of the N'-category and the indefinite article to be the sister of the Head N; consequently, it correctly allows (34a) to have only structure (35) and (34b) to have only structure (38).

If the sole function of the Determiner Generalization were to derive constituent structure for (34), the Determiner Generalization (42) would be but an ad hoc mechanism. However, (42) has explanatory power beyond (34); it serves to explain three other types of data. First, the Determiner Generalization will allow us to offer a syntactic explanation for (43)-(45).

(43a) The only man *(in the room) died

(43b) *An only man in the room died

(44a) The tallest man *(in the room) died

(44b) *A tallest man in the room died

(45a) The bigger man *(of the two) died

(45b) *A bigger man of the two died

The fact that the grammaticality of the above a-examples depends upon on the presence of the PP-argument strongly suggests that the quantifiers (only, biggest, and bigger) modify N' (N + PP). Therefore the NPs in (43)-(45) all have the same structure -- (46).

(46) $[_{NP}$ [Det] $[_{N'}$ ...]]

Since the Det in (45) is the sister of N', our Determiner Generalization lets us correctly predicts that only the definite article will be able to replace Det in (46); hence, the grammaticality of the a-examples and the ungrammaticality of the b-examples.

The second type of data that the Determiner Generalization allows us to explain is data involving Wh-Extraction out of NPs. Consider the following examples.

(47a) Who did you see a picture of e

(47b) *Who did you see the picture of e

(47c) *Who did you see John's picture of

(48a) Which country don't you know any man from e

(48b) *Which country don't you know the man from e

(49a) What would they enjoy a discussion of e

(49b) ?*What would they enjoy the discussion of e

(49c) *What would they enjoy her discussion of e

In (47)-(49), a wh-element can be extracted out of an NP only if it has an indefinite SPEC-argument. Finding an explanation for why the definiteness of the SPEC-argument affects the grammaticality differences in (47)-(49) has escaped GB Theory. The problem for GB Theory is that its explanation for the ungrammaticality of the above (b)- and (c)-examples cannot explain the grammaticality of the (a)-examples. That is, the GB-account of, say, (47b) is that the sentence violates Bounding Theory by crossing more than one bounding node (NP or S, in English).[8] Although this account will mark (47b) as ungrammatical, it also predicts that (47a) should be ungrammatical because the wh-element in (47a) crosses the same two bounding nodes that the wh-element in (47b) does. So, GB theorists simply claim (47a) to be marked in terms of Bounding Theory and offer no real explanation for its grammaticality.

We can, however, avoid the explanatory problems cited above if we accept X-bar Theory (30) and the Determiner Generalization. Since (30) and the Determiner Generalization syntactically differentiate the (a)-examples in (47)-(49) from the (b)- and (c)-examples by assigning the SPEC-argument in the former an N'-sisterhood and the SPEC-argument in the latter an N-sisterhood, we can account for the grammaticality differences in (47)-(49) through the following line of argument. Let us assume that NP and S provide the only bounding nodes in English, but an NP or an S is a bounding node if and only if its SPEC-argument is an external argument (i.e., a sister of N' or INFL'). From this assumption, we can explain the data in (47)-(49). That is, in the (a)-examples, the SPEC-argument, in accordance with the Determiner Generalization, is not an external argument of N, so the NP-node is not a bounding node -- therefore the wh-element can be extracted because it crosses only one bounding node (S); in the (b)- and (c)-examples, on the other hand, the SPEC-argument is an external argument of N, so the NP-node is a bounding node and, consequently, wh-extraction out of the node would cross two bounding nodes (NP and S), in violation of Bounding Theory. Besides explaining (47)-(49), the above analysis accounts for Extraction out of the multiply embedded NPs given in (50)-(51).

(50a) Who does John have a picture of a picture of e

(50b) *Who does John have the picture of the picture of e

(50c) *Who does John have the picture of a picture of e

(50d) *Who does John have a picture of the picture of e

(51a) Who is John a character in a novel by e

(51b) *Who is John the character in the novel by e

(51c) *Who is John the character in a novel by e

(51d) *Who is John a character in the novel by e

Since my analysis of Bounding Theory does not count NPs with indefinite SPEC-arguments as bounding nodes, I predict that it will be possible to wh-extract out of an NP embedded in another NP only if all the NPs have indefinite SPEC-arguments. My prediction is corroborated by the examples in (50)-(51), where only the (a)-examples -- those with NPs with indefinite SPEC-arguments -- permit wh-extraction.[9]

The third type of data that the Determiner Generalization explains is the full saturation of NPs.[10] That is, the Determiner Generalization leads to a Theory of Full Saturation, a

theory that specifies conditions on the rigidity of reference that an NP possesses. In a Theory of Full Saturation, what needs to be accounted for is why, although both (52a) and (52b) are saturated (referential), only (52b) is fully referential.

(52a) the man

(52b) a man

As mentioned earlier in this paper, (52b) gets its full referentiality from the existence of the class 'man' and (52a) lacks full referentiality because the exact specification of the definite NP is not established in the NP.

Higginbotham (1983) anticipates a solution to the full saturation problem in (52). To explain saturation, Higginbotham suggests that the N'-category has an open position in it which must be bound by the specifier if the NP is to be saturated. So, Higginbotham assigns structure (53) to an NP.

(53) $[_{NP}$ Det $[_{N'}$ man, <1>]]

If the Det-node is filled, it can bind the argument slot <1> in N', thereby saturating the NP.

Since I do not accept (53) as the representation for all NPs permitted by X-bar Theory (30), I cannot directly use Higginbotham's analysis of saturation to develop a theory of full saturation. However, I will accept Higginbotham's primary assumption that there is an empty slot in the NP that must be bound. From a referential perspective, what needs to be bound within an NP is the referential restrictions that are to be placed on the class term, the N head. That is, the open slot in the NP is not in N', but in N; it is only by limiting, through binding, the possible ways that the class term can be selected that full reference can be guaranteed. If we assume that open referential slot is in N, then we can assign the NPs in (52) the following structures derived from X-bar Theory (30) and the Determiner Generalization:

(54a) $[_{NP}$ $[_{SPEC}$ the] $[_{N'}$ $[_{N}$ man <1>]]]

(54b) $[_{NP}$ $[_{N'}$ $[_{SPEC}$ a] $[_{N}$ man <1>]]]

With the structures given in (54), we can make a strong hypothesis about the saturation differences between (52a) and (52b): (52b) is fully saturated because its open N-slot is bound by a sister argument of N and (52a) is not fully saturated because its open N-slot is not bound by a sister-argument of N. We will formalize the above hypothesis as the Full Saturation Condition (55).

(55) Full Saturation Condition
An NP headed by an N is fully saturated if and only if the the open slot of the head N is bound by a sister argument of N.

(Since reference restriction is a form of modification and since modification is a relationship between sister constituents (see Zubizaretta (1982), the role of the sister argument in determining full saturation has a great deal of intuitive appeal.)

Besides correctly predicting the saturation differences of the NPs in (52), the Full Saturation Condition (FSC), in combination with the Predicate Condition (13), makes two other correct (and important) predictions. For one, the FSC predicts that, due to the N-sisterhood of indefinite SPEC-arguments, all NPs with an indefinite determiner will be fully saturated; hence these NPs will have predicate status. The sentences in (56) test this prediction.

(56a) He is a baseball player

(56b) He is a baseball player on a major league team

(56c) He is a baseball player on the best major league team

(56d) He is a baseball player that likes to slide

As predicted, all the NPs in post-copular position do have predicational status.

The other prediction that follows from the FSC and the Predicate Condition is that NPs with definite SPEC-arguments will function predicationally only if the head N has a N-sister argument to bind the open N-slot. In other words, only definite NPs with structure (57) can be predicational.

(57) $[_{NP}\ [_{SPEC}$ Det] $[_{N'}$ N X]], where X is an argument of N

Now consider the sentences in (58).

(58a) *That is the smell

(58b) That is the smell of pot/a man

(58c) *That is the smell of the man

(58d) That is the smell that makes me gag

We can see that (58 a,b,d) accord with our prediction: (58a) is ungrammatical because the post-copular NP is unsaturated, hence non-predicational; (58c) is grammatical because the PP in the post-copular NP binds the open N-slot, making the NP fully saturated and predicational; and (58d) is grammatical because the S' argument in the post-copular NP binds the open N-slot, also making the NP fully saturated and predicational. Unfortunately, we mispredict (58c). We would expect (58c) to be predicational for the same reasons that (58b) and (58d) are; so, the ungrammaticality of (58c) is surprising in our theory.

By comparing (58b) and (58c), we can get some insight into the reason why (58c) is ungrammatical. Since the only difference between (58b) and (58c) concerns the prepositional argument, let us assume that this argument is the source of the ungrammaticality of (58c). Careful scrutiny of (58 b,c) suggests that the prepositional arguments differ only in their degree of saturation: the prepositional argument being fully saturated in (58b) 'a man', but not in (58c) 'the man'. Assuming that the degree of saturation is indeed the cause of the ungrammaticality of (58c), we would expect (58c) to be grammatical if we make the prepositional argument sully saturated. We can fully saturate the prepositional argument by giving the NP head a sister argument.

(59a) That is the smell of the man that I hate most

(59b) That is the smell of the man near Bill

(59) strongly suggests that the argument binder of the open N-slot in an NP must itself be fully saturated for the NP to be fully saturated. The ungrammaticality of (58c) and the grammaticality of (59 a,b), then, requires us to reformulate the Full Satruation Condition as (60).

(60) Full Saturation Condition
An NP headed by an N is fully saturated if and only if its open N-slot is bound by a fully saturated argument-sister of N.

As we have seen in the sentences in (56), (58), and (59), the Full Saturation Condition and the Predicate Condition give us a syntactic explanation for the predicate status of an NP: for an NP to be a predicate, it must have a well defined extension, so it must be fully saturated (referential) itself -- a condition that arises only if the sister-arguments of an N sufficiently restrict the reference of the class N.

Conclusion

In this article, I propose a new approach to the NP Predication. I show that the attempt to reduce NP Predication to the Definiteness Effect is wrong in principle because the Definiteness Effect is but one manifestation of a more general condition on NP Predication, which I call the Full Saturation Effect. I demonstrate that the Full Saturation Effect (hence, NP Predication) is the effect that the rigidity of denotation has on predication. Finally, I develop a syntactic explanation for the Full Saturation Effect in terms of the internal structure of the NP itself, arguing that the predicational capability of an NP is a function of its own internal argument relations.

NOTES

1 Binding Principle C states that all R(eferring) Expressions must be free (i.e., not c-commanded by, and coindexed with, an expression in an A(rgument)-position. The TH-Criterion guarantees that every argument is assigned a TH-role (agent, patient, etc.).

2 In model theoretic semantics, the extension of any n-place predicate P is the set S of all n-tuples of arguments such that for any n-tuple $\langle a_1,\ldots,a_n\rangle$ in S

(i) $P(\langle a_1,\ldots,a_n\rangle) = 1$

That is, the extension of P exhaustively lists all the arguments that make a predicate a true proposition in a given model.

3 My claim that only NPs with a rigid extension can function predicationally predicts that restricted definite NPs will be predicational under a referential interpretation, but not under an attributive interpretation. Notice that in (i) the NP must have a referential reading.

(i) That is [the man that shot Bill]

4 X-bar Theory (30) is my revision of Stroik (1987). Stroik's version of X-bar Theory is stated in (i).

(ia) $X^k = X^{k-1}, Y''$

(ib) $X^{max} = Z'', X^n$

for $1 \leq k \leq n$ and where n is the number of modifiers and complement arguments (Y") of X

X-bar Theory (i) parameterizes the directionality of predicate-argument relations (permitting, for example, a right branch subject and a left branch object in English). My revision (30) of (i) also parameterizes the above directionality (assuming that "subject" is the external argument of a predicate and

"object" is an internal argument), while referring to the constituents of X" currently accepted in GB (i.e., SPEC, X, X', and Y").

5 Stroik (1987) finds motivation for his revision of X-bar Theory in Experiencer constructions, constructions that reverse grammatical relations (anaphoric relations, scopal relations, and binding relations).

6 Zubizarreta (1982) formal definition of modification is as follows:

(i) In the configuration $[_C ... A ... B ...]$, where
  (a) C is a projection of B
  (b) C immediately dominates A and B
  (c) A = Adj, Adv
  Then A modifies B.

Condition (i.a) guarantees that a modifier must be the sister of the term it modifies.

7 For May, if two operators O_k and O_j are such that O_k governs O_j, then the operators are free to take on any type of relative scope relation (May 34).

8 Chomsky (1986) defines the basic concept of Bounding Theory as (i).

(i) B is n-subjacent to A iff there fewer than n+1 barriers for B that exclude A.

For links in an argument chain $(...A_k, A_{k+1} ...)$, the links must be 0-subjacent, crossing less than 2 barriers.

9 My approach to bounding, although it explains the data in (50)-(51), needs some refinement because it incorrectly predicts that the wh-movement in (i) should be well formed.

(i) Which country did a man from leave

10 In the Fregean sense of "saturation," the NPs in (52) are both saturated (referential). The referentiality of these NPs differs from the referentiality assignable to the nominal constructions in (i). (Note: read the constructions in (i) as non-generics.)

(ia) man
(ib) man in the bathtub
(ic) man that lives Mary

The constructions in (i) are unlike the NPs in (52) in that they do not select any referent; these constructions then are unsaturated. Since the saturation differences between (52) and (i) can be located in the presence or absence of the SPEC-argument, we can hypothesize the following Principle of Saturation.

(ii) Principle of Saturation
  An NP is saturated if and only if its

SPEC-argument is filled.

Even though (ii) explains the saturatedness of (52) and (i), it needs to be revised if it is to account for the saturation of the NPs in (iii).

(iiia) John

(iiib) Mrs. Reagan

The Principle of Saturation, as stated in (ii), could be read as predicting that the NPs in (iii), which lack SPEC-arguments, should be unsaturated. To differentiate (i) from both (52) and (iii), we can revise (ii) as (iv).

(iv) Principle of Unsaturation
An NP is unsaturated if and only if its SPEC-argument is not filled.

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A TYPE OF REDUPLICATION IN TURKISH

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Abstract: This is an attempt to describe one of several types of reduplication in Turkish, based on a piece of data elicited from 32 native speakers.* What was known as an *irregular case* revealed itself as a complicated pattern of dissimilation. Although some rules postulated can account for most of the data, some varying forms call for more research for a more unified explanation.

There is a reduplication phenomenon in Turkish in which intensity in semantic content of adjectives and adverbs is signaled. In the literature reduplication is characterized as "an affixation of a Consonant-Vowel skeleton, which is itself a morpheme, to a stem" (Marantz 1982:437). Turkish differs from many languages that exhibit various types of reduplication processes in that in Turkish an additional, linking phonological element besides the reduplicate is involved. Observe the following:

kara	'black'	kapkara	'jet black'
yassı	'flat'	yamyassı	'completely flat'
temiz	'clean'	tertemiz	'very clean'
yamuk	'uneven'	yasyamuk	'shapeless'
esk'i	'old'	epesk'i	'very old'

In the above forms the first vowel and any preceding consonant is reduplicated and prefixed to the full

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form with one of the linking elements (henceforth LE), -p-, -s-, -m-, or -r-.

The choice of LE's is viewed as not having "any discernible phonological conditioning" (Swift 1961:123). The purpose of this paper is to try to identify the nature of the seemingly irregular formation and present a formal description of this type of reduplication in Turkish.[1]

Reduplicated forms of about 300 adjectives and adverbs were obtained from a total of 32 native speakers (see Appendix A and Appendix B). Initially the author intended to consider possible different usages varying with the age and sex of her subjects, and for this reason the 32 speakers were selected to represent 4 different groups identified as 1. male-adults (from age 18 to 35), 2. other males (age 35 and above), 3. female adults (from age 18 to 35), and 4. other females (35 and above). It was observed, however, that differences in usage did not originate from the age or sex of the individual but, partly from regional differences and, most of all, from differing registers.

If a subject happened to be interested in language, good about visualizing a situation, and felt comfortable with the conductor of the elicitation, he or she would generously apply the reduplication to many items. Otherwise, most of them refrained to committing themselves to many kinds of usage. If, however, speakers were provided a possible context, they would either go along with a suggested reduplication or point out that they had heard the form but never used it. Such intolerence in the usage of some possible forms seems to be due to a covert concern about the possiblity of being stigmatized socially or culturally. The layout of the data, therefore, does not disclose any age and sex differences in usage. Nor do the data reveal systematic regional differences at present since the elicitation was not originally designed to achieve this.

When the data given as Appendix A are examined, it may seem that the results of the elicitation are incredibly unpredictable. Though there is sometimes a significant difference in the functional load (indicated parenthetically as the number of subjects who used the intensified form), the speakers often displayed an array of different choices of the inserted linking elements. The following examples are illustrative:

-p-	-m-	-s-	-r-
čepčevik' (5)	čemčevik' (2)	česčevik' (2)	čerčevik' (2)
'very swift'			
čüpčürük' (17)	čümčürük' (2)	čüsčürük' (2)	
'completely rotten'			
g'epg'evšek' (8)	g'emg'evšek' (2)	g'esg'evšek' (2)	-
'very loose'			
kapkatɨ (7)	kaskatɨ (22)	-	-
'very thick; stiff'			
k'öpk'ötü (8)	k'ömk'ötü (1)	k'ösk'ötü (9)	-
'extremely bad'			
yɨpyɨrtɨk (10)	yɨmyɨrtɨk (4)	yɨsyɨrtɨk (3)	-
'completely torn; negatively bold'			

The above examples, though not entirely representative, show there is a great deal of variability in the choice of LF's. There is also a tendency toward a certain regularity of choice depending on several phonological features of consonants in a given stem. Speakers, however, are aware of the different competing forms, as most of the subjects pointed out that it does not bother them to hear *gepgevšek'*, *gemgevšek'* or *gesgevšek'* 'very loose'. Some go even further in their reasoning for the different augmented forms of the same stem saying that they have different contexts for certain different reduplicated forms. For example, they would never use *kapkatɨ* 'very thick; stiff' in a sentece like *čoǰuk kapkatɨ oldu* 'The child became stiff'. For them *kapkatɨ* and *kaskatɨ* have different colligations as it is illustrated below:

1. ilajɨ alɨr almaz, čoǰuk ***kaskatɨ*** oldu

   'As soon as he took the medicine, the child became stiff.

2. *kapkatɨ* bir čorba olmuš

   'The soup has turned out to be very thick.'

So in at least some cases different augmented forms of the same stem have gained specialized meanings, but this does not account for the forms that are used interchangeably.[2]

In the strings of the segments within a stem, in spite of all the irregularities described above, the striking thing is that the subjects never used some certain forms. These have provided a considerable clue about the nature of the formation. For instance, while some had the form *dapdalgin* 'pensive' and others had *dasdalgin*, nobody ever uttered **dardalgin* or **damdalgin*. With respect to the impossible strings of segments that came about with LE's attached, adjectives and adverbs fall into several subclasses according to what LE(s) is/are possible with them. Observe the following:

	-p-	-m-	-s-	-r-
1.	-	bembejerik'l'i (3) 'very adroit'	besbejerik'l'i (7)	-
2.	-	bemberek'etl'i (2) 'very fertile'	besberek'etl'i (4)	-
3.	-	bembeter (1) 'extremely bad'	besbeter (19)	-
4.	-	bombol (6) 'extremely abundant'	bosbol (12)	-
5.	-	bümbütün (1) 'very complete'	büsbütün (25)	-
6.	-	pamparlak (1) 'extremely shiny'	pasparlak (18)	-
7.	-	bomboš (29) 'very empty'	-	-
8.	-		pespembe (24) 'very pink'	-

9.	dopdoğru (6) 'straight'	-	dosdoğru (26)	-
10.	dopdolu (30) 'very full'		dosdolu (1)	-
11.	kapkaranlık (29) 'very dark'	-	kaskaranlık (1)	-
12.	yapyarım (5) 'half'	-	yasyarım (7)	-
13.	sapsağır (13) 'deaf'	-	-	-
14.	sapsağlam (27) 'as healthy as it could be'	-	-	-
15.	-	-	-	čarčabuk (29) 'very hastily'
16.	-	-	-	tertemiz (22) 'very clean'
17.	-	-	-	sersefil (23) 'very destitude'
18.	čıpčıplak (1) 'completely naked'	-	-	čırčıplak (25)
19.	sıpsıjak (13)	sımsıjak (19) 'warm'	-	-
20.	yüpyük'sek'(7)	yümyük'sek' (5) 'very high'	-	-
21.	tepters (7)	temters (15) 'extremely ill-tempered'	-	-

22. čepčevik'(5) čemčevik'(2) česčevik'(2) čerčevik'(2)

'very swift'

It is crucial to notice that the choice of the LE is based solely on how dissimilar it is to the following consonants. Conditioning factors include primarily the first two consonants of the stem although all seem to have some bearing on the selected LE. Let us now look closely at the consonants in the stems which present the highest frequency load for a particular LE. Observe the following determining environments for the LE -p-:

Augmented Form	*Number of the Speakers*	*Gloss*	*LE*	*Consonants in Stems*
čöpčörök'	17	rotten	-p-	č-r-k'
dapdar	29	tight	-p-	d-r
dopdolu	30	full	-p-	d-l-
g'epg'enč	24	young	-p-	g'-nč
g'epg'eniš	21	wide	-p-	g'-n-š
g'öpg'öl'önč	16	funny	p-	g'-l'-nč
g'öpg'ör	17	thick	-p-	g'-r
japjanlɨ	26	lively	-p-	j-nl-
japjansɨz	22	with no life	-p-	j-ns-z
kapkalɨn	25	thick	-p-	k-l-n
kapkara	27	black	-p-	k-r-
kapkaranlɨk	29	dark	-p-	k-r-nl-k
k'epk'esk'in	16	sharp	-p-	k'-sk'-n
kɨpkɨrmɨzɨ	23	red	-p-	k-rm-z-
kɨpkɨzgɨn	19	angry	-p-	k-zg-n
kɨpkɨzɨl	22	crimson	-p-	k-z-l
kopkoyu	24	dark	-p-	k-y-

sapsağlam	27	healthy	-p-	s-gl-m
sapsarı	23	yellow	-p-	s-r-
sipsivri	26	sharp	-p-	s-vr-
sopsolgun	18	faded	-p-	s-lg-n
supsulu	19	watery	-p-	s-l-
taptatlı	17	sweet	-p-	t-tl-
taptaze	30	fresh	-p-	t-z-
yapyalnız	25	lonely	-p-	y-ln-z
zapzayıf	19	skinny	-p-	z-y-f

As it is observed in the above list, the consonants in the stems exhibit an unnatural class. What is excluded among them, however, is any segment that shares the point of articulation with the LE -p-. The following rule accounts for the forms with -p- above:

$$\emptyset \rightarrow p \;/\; [-syl]_i \; [+syl]_j \; +\_\_+ \; \begin{matrix}[-syl\ \ ] \\ [-bilab]_i\end{matrix} \; [+syll_j$$

$$\begin{matrix}[-syl\ \ ] & [+syl] & [-syl\ \ ] \\ [-bilal] & & [-bilal]\end{matrix}$$

The above rule states that the LE -p- appears in a duplicated form if the consonants in stem have the feature [-lab].

In order to establish a phonetic environment for the LE -s-, the following reduplicated forms with the highest frequency load need to be examined:

Augmented Form	*Number of the Speakers*	*Gloss*	*LE*	*Consonants in Stems*
besbeter	19	worst	-s-	b-t-r
büsbütün	25	completely	-s-	b-t-n
dosdoğru	26	straight	-s-	d-gr-
kaskatı	22	stiff	-s-	k-t-
koskocaman	25	big	-s-	k-c-m-n

masmavi	23	blue	-s-	m-v-
mosmor	23	purple	-s-	m-r
pasparlak	18	shiny	-s-	p-rl-k
pespembe	24	pink	-s-	p-mb-
tastamam	28	complete	-s-	t-m-m
tostoparlak	29	round	-s-	t-p-rl-k
yusyuvarlak	29	round	-s-	y-v-rl-k

The above list also presents a set of heterogeneous classes of segments which exlude only one class with the feature [+sibilant]. A rule formulated such as the following will correctly derive the forms in the list above:

$$\emptyset \rightarrow s \;/\; [-syl]_i \; [+syl]_j \; +\_\_+ \; \begin{bmatrix} -syl \\ -sibilant \end{bmatrix}_i \; [+syll_j$$

$$[-syl\ ] \; \left([+syl]\right) \; \left([-syl\ ]\right)$$

The above rule allows -s- as a LE in the above data only if the first stem consonant has the feature [-sibilant].

The following forms represent the environments where the LE -m- appears:

Augmented Form	*Number of the Speakers*	*Gloss*	*LE*	*Consonants in Stems*
bembeyaz	24	white	-m-	b-y-z
bombok	25	excrement	-m-	b-k
bomboš	29	empty	-m-	b-š
bombozuk	19	defective	-m-	b-z-k
dimdik	25	straight	-m-	d-k
dümdüz	26	smooth	-m-	d-z
simsiyah	19	black	-m-	s-y-h
s̈ims̈j̈ak	29	hot	-m-	s-j-k
s̈ims̈k̈s̈	19	tight	-m-	s-k-

yamyassɨ	25	flat	-m-	y-ss-
yamyaš	29	wet	-m-	y-š
yemyešil'	30	green	-m-	y-š-l'

The above environments lead to the following rule:

$$\emptyset \rightarrow m \;/\; [-syl]_i\ [+syl]_j\ +\_\_+\ \begin{bmatrix}-syl\\-nas\\-tril\\-lat\end{bmatrix}_i\ [+syll]_j$$

$$\begin{bmatrix}-syl\\-nasal\\-trill\\-lat\\-lab\end{bmatrix}\left(\begin{bmatrix}+syl\end{bmatrix}\right)\left(\begin{bmatrix}-syl\\-nasal\end{bmatrix}\right)$$

These rules account for the LE of the majority of Turkish reduplications encountered so far. There are forms, however, which do not meet the structural descriptions of any of the rules formulated above. The consonants occurring in them preclude the appearance of the LE's, -p-, -s-, and -m-. These remaining cases, members of a very small class, accept -r- as the LE in their reduplicated forms given as the following:

Augmented Form	*Number of the Speakers*	*Gloss*	*LE*	*Consonants in Stems*
čarčabuk	29	quicly	-r-	č-b-k
čɨrčɨplak	25	nude	-r-	č-pl-k
sersefil'	23	miserable	-r-	s-f-l
tertemiz	22	clean	-r-	t-m-z

The four stems above do not have other forms except *sefil* 'miserable', which only one subject out of 32 used with the LE -p-. The rest were constructed with only -r- because the consonants in the stems are less similar to -r- than any of the rest of the three LE's. One might question why the stem *sɨjak* 'hot' does not take -r- but -p- or -m-. How does *sɨjak* differ from *sefil'*, with a frequency of 23? The segment *j* in *sɨjak* blocks -r- whereas -f- in *sefil'* favors it due to the point of articulation the former but not the latter shares with -r-. The rule for this small class is as follows:

$$\emptyset \rightarrow r \;/\; [-syl]_i\ [+syl]_j\ +\_\_+\ \begin{matrix}[-syl\ ]\\ [-trill]_i\end{matrix}\ [+syll_j$$

$$\begin{matrix}[-syl\ ]\\ [-trill]\end{matrix}\quad [+syll\quad \begin{matrix}[-syl\ ]\\ [-trill]\end{matrix}$$

Upon close examination of the data given in Appendix A, it becomes clear that forms with initial vowels permit only the LE -p- except for *ufak* 'small', which will be discussed later. Therefore, the LE -p- has the widest range of occurrence. This fact also strengthens the assumption of a dissimilarity condition on the choice of the LE, for the fact that only -p- among the four LE's seems to be the most dissimilar to vowels from both articulatory and acoustic points of view.

Concerning the range of the application of the rules for other LE's, the forms that permit -s- as the LE constitute the next largest class after the one with -p-. Then comes -m- followed by -r-, which seems to be the least preferable LE.

These facts suggest a possible hierarchy in the usage of the LE's, giving the unmarked status to -p- followed by -s-, -m-, and -r- in that order. This assumption is strengthened by the fact that the consonants in *čevik'* must be viewed quite equally different to any of the four LE's since all four forms can be seen as possible forms although only one of the rules postulated above predicts the LE -r- to appear in this stem. In spite of this fact the functional load of *čepčevik'*, with -p- as the LE, illustrated as the following, is greater than the rest of the forms:

-p-	-s-	-m-	-r-
čep- 5	čes- 2	čem- 2	čer- 2

Items with varying forms like *čevik'* above seem to support the assumption of an unmarked status of the LE -p-.

In spite of the unmarked status of the LE -p- in usage, the less identical the inserted LE with respect to the following consonants the more preferable it is as the functional load in parenthesis indicate. For instance *besbeter* 'very bad', which 19 subjects prefered in their usage, established itself as the principle form over the form *bembeter* (used by only one person). A question may arise as to why some speakers chose the

less dissimilar LE while a more dissimilar alternative is avaiable for them, for instance in the case of *pampərlak* (1) instead of *pasparlak* (18).

The following list examplifies the rather puzzling varying usage of the LE's:

-p-	-s-	-m-	-r-
čapčarpək (2)	časčarpək (4)		
'crooked'			
čepčevik (5)	česčevik (2)	čemčevik (2)	čerčevik (2)
'swift'			
dapdalgən (10)	dasdalgən (2)		
'pensive'			
depdeğersiz (4)	desdegersiz (1)		
'wothless'			
depderin (25)	desderin (1)		
'deep'			
dopdolu (30)	dosdolu (1)		
'full'			
dopdoğru (6)	dosdogru (26)		
'straight'			
gepgeč (6)	gesgeč(1)	gemgeč(4)	
'late'			
gepgevšek (8)	gesgevšek (2)	gemgevšek (2)	
'loose'			
gəpgəri (10)	gəsgəri (1)		
'gray'			

göpgöčük (9) gösgöčük (3)

'fallen down'

göpgölgeli (1) gösgölgeli (2)

'shady'

güpgülünč (16) güsgülünč (1)

'hilarious'

güpgünešli (9) güsgünešli (2) gümgünešli (1)

'sunny'

güpgüzel (15) güsgüzel (4) gümgüzel (1)

'pretty'

japjazip (1) jasjazip (1)

'attractive'

kapkaranlɨk (29) kaskaranlɨk (1)

'black'

k'apk'arlɨ (13) k'ask'arlɨ (1)

'snowy'

kapkatɨ (7) kaskatɨ (22)

'stiff'

kapkavruk (4) kaskavruk (10)

'scorched'

kipkinli (1) kiskinli (1)

'vindictive'

kɨpkɨrmɨzɨ (23) kɨskɨrmɨzɨ (1)

'red'

kɨpkɨzɨl (22) kɨskɨzɨl (1)

'red'

kopkojaman (2) koskojaman (25)

'big'

kopkolay (13) koskolay (10)

'easy'

kopkorkak (1) koskorkak (3) komkorkak (1)

'coward'

kopkorkunč (14) koskorkunč (1)

'terrible'

kopkoyu (24) koskoyu (7)

'dark'

k'öpk'ötü (8) k'ösk'ötü (9) k'ömk'ötü (1)

'bad'

kupkuduruk (6) kuskuduruk (4) kumkuduruk (1)

'wild'

kupkuvvetli (2) kuskuvvetli (3)

'strong'

k'üpk'üčük' (10) k'üsk'üčük' (6) k'ümk'üčük' (5)

'small'

napnarin (11) nasnarin (2)

'delicate'

napnazik' (6) nasnazik' (1)

'agreeable'

nepnešel'i (3) nesnešel'i (1)

'cheerful'

nupnurlu (7)	nusnurlu (1)	
'limunous'		
upufak (6)	usufak (2)	
'tiny'		
yapyakɨn (11)	yasyakɨn (6)	
'near'		
yapyamuk (2)	yasyamuk (11)	yamyamuk (2)
'flat'		
yapyarɨk (4)	yasyarɨk (1)	
'split'		
yapyarɨm (5)	yasyarɨm (7)	
'yarɨm'		
yapyašlɨ (13)	yasyašlɨ (1)	yamyašlɨ (1)
'old'		
yɨpyɨrtɨk (10)	yɨsyɨrtɨk (3)	yɨmyɨrtɨk (1)
'torn'		
yopyorgun (8)	yosyorgun (10)	
'tired'		
yupyumušak (5)	yusyumušak (7)	yumyumušak (7)
'soft'		

In the case of some variations between a form with a high frequency load and the one with a very low frequency load, i.e., *dopdolu* (30) 'very full' and *dosdolu* (1), the exception may be regarded as a mistake. Related to this assumption, one of the subjects remarked that if a context were provided, the most common form would emerge. Otherwise, the way the subjects were providing a form would be in a mechanical fashion with no real usage overtones. In other cases, such as *kopkolay* (13), *koskolay* (10) and *k'üpk'üčük'* (10), *k'üsk'üčük'* (6), *k'ümk'üčük'* (5), some admitted that they were not quite

sure which one they would use, pointing out that all would seem to be fine. Hesitations of this kind may be due to the fact that the LE's in question have almost the same dissimilative degree with respect to the consonants in the stem. For instance, in *k'öpk'ötü* (8), *k'ösk'ötü* (9), and *k'ömk'ötü* (1) the distinctive features of each LE as opposed to the consonants of the stem are as follows:

	LE's			*Stem Cons*	
	/p/	/s/	/m/	/k/	/t/
Syllabic	-	-	-	-	-
Consonantal	+	+	+	+	+
Sonorant	-	-	+	-	-
Nasal	-	-	+	-	-
High	-	-	-	+	-
Back	-	-	-	+	-
Low	-	-	-	-	-
Anterior	+	+	+	-	+
Coronal	-	+	-	-	+
Voiced	-	-	+	-	-
Continuant	-	+	-	-	-
Lateral	-	-	-	-	-
Sibilant	-	+	-	-	-

As the above illustrates, -p- is more dissimilar to /t/ than is /s/ in terms of place of articulation whereas /s/ is more dissimilar to /t/ than -p- in terms of manner of articulation. When the /k/ in *k'ötü* is taken into consideration, /s/ seems to be the best choice since manner of articulation makes /s/ more dissimilative to all consonants in the stem than /p/ would be. To a certain extent it is not clear which scales the speakers are employing for their dissimilative processes. It may be possible that when minute contrasts are involved, it does not make much difference which way they go. The lexical item *ufak* 'small' with the forms *upufak* (6) and *usufak* (2), for instance, supports this assumption since

it shows that although -p- is the most dissimilar segment among the LE's, if the item has an initial vowel, some speakers may still unconsciously consider other facts also to establish the most striking dissimilation. Therefore, for some speakers, apparently, -f- in *ufak* makes -p- a poor candidate for a LE, and their choice may become -s- in spite of a general tendency that -p- is the LE when the initial segment in a stem is a vowel. Given the indeterminate nature of the strings of consonants in stems in a lexicon, to formulate rules that can account the process in every word seems to be difficult.

The following are the variations on the usage of -p- and -m- where -s- is exluded:

-p-	-m-	gloss
dipdik (1)	dimdik (25)	straight
güpgüč (2)	gümgüč (4)	difficult
güpgür (17)	gümgür (2)	thick
sapsaf (1)	samsaf (1)	naive
sapsalak (6)	samsalak (1)	stupid
sapsarkɨk (7)	samsarkɨk (1)	hanging
sapsarp (1)	samsarp (3)	steep
sepsert (4)	semsert (16)	hard
sepsessiz (10)	semsessiz (4)	quiet
sɨpsɨkɨčɨ (3)	sɨmsɨkɨčɨ (1)	dull
sopsolak (1)	somsolak (1)	left handed
sopsoğuk (16)	somsoguk (2)	cold
sopsoyut (1)	somsoyut (1)	abstract
söpsök'ük' (3)	sömsök'ük' (4)	torn
supsusuz (11)	sumsusuz (1)	waterless
šapšaššɨ (3)	šamšaššɨ (1)	squint eyed
šepšek'erl'i (9)	šemšek'erl'i (1)	sweet

taptatsɨz (15)	tamtatsɨz (1)	tasteless
taptaze (30)	tamtaze (2)	fresh
tepters (2)	temters (15)	ill-tempered
tiptitiz (4)	timtitiz (1)	peevish
tiptiz (1)	timtiz (5)	high pitched
tuptuzlu (15)	tumtuzlu (4)	salty
yapyağɨz (5)	yamyağɨz (1)	dark-skinned man
yapyassɨ (4)	yamyassɨ (24)	flat
yepyeşil' (2)	yemyeşil' (30)	green
yɨpyɨkɨk (2)	yɨmyɨkɨk (5)	fallen down
yüpyük'sek' (7)	yümyük'sek' (5)	high
zɨpzɨt (5)	zɨmzɨt (6)	opposite

The following are the variations between -s- and -m- where -p- is exluded:

besbeğerik'l'i (7)	bembeğerik'l'i (3)	skillful
besberek'etl'i (4)	bemberek'etl'i (2)	fertile
besbeter (19)	bembeter (1)	bad
bombol (12)	bosbol (6)	abundant
büsbütün (25)	bümbütün (1)	complete
časčarpɨk (4)	čamčarpɨk (2)	crooked
koskopuk (4)	komkopuk (1)	broken
paspak (3)	pampak (3)	clean
pasparlak (18)	pamparlak (4)	shinny
tastamam (28)	tamtamam (1)	complete
yasyamuk (11)	yamyamuk (2)	uneven
yusyuvarlak (29)	yumyuvarlak (1)	round

The following are the variations between -p- and -r- where -s- and -m- are exluded:

sepsefil (1)	sersefil (23)	miserable
sapsakat (1)	sarsakat (1)	disabled

For each variation above, arguments in favor of the LE with the highest frequency load can be presented.[3] Yet some choices on a LE may beg questions about the dissimilative process. Concerning some variations that seem to weaken the assumption of a dissimilative process, it is quite possible to think that some different data could have been elicited had the subjects been provided with possible contexts for the augmented forms. There were about 300 items that the speakers were required to deal with, which took about 45 minutes to complete. Therefore, the occurrence of so many variations may be thought partly to be the result of a mechanistic manner employed in the production of the forms. The investigation, however, seems to have revealed that a certain reduplication in Turkish is a dissimilative process of a certain LE with respect to the consonant segments in the stem.

NOTES

1. There are several other types one of which is closely related to the case under investigation, which is considered to exhibit "more complex reduplicative patterns" (Swift 1961:124). A possible explanation for these irregular augmented forms with the insersion of the same extra phonemic segnents, -p-, -m-, and -r-, will not be dealt within this paper.

2. It seems to be obvious that the augmented form *kaskatś* has assumed a different semantic content. Moreover, there are some augmented forms whose stems are obsolete. For instance, the form *tamtakśr* 'nothing left' is the only one in use whereas the morpheme *takśr* has no meaning, and is never used.

3. In spite of the general pattern of dissimilation that the data revealed, there are few items that appear to be inconsistent with this fact. For example

yumušak 'soft' is one of them with a considerable frequency load. Seven speakers out of 32 prefered *yumušak* with the LE -m- in the duplicated form of this item. Further research may reveal if there is an independent principle that sometimes seems to override the general pattern of duplication.

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APPENDIX A

-p-

stem	*gloss*	*number of respondents*	*varying forms*
ahl'aksɨz	immoral	1	
ahmak	stupid	5	
ağɨr	heavy	18	
ak	white	19	
akɨlsɨz	stupid	11	
aksi	disagreeable	12	
ajel'e	quick	10	
ajɨ	hot	13	

al'evl'i	flaming	1			
alək	stupid	6			
alə̇ngan	sensitive	6			
aljak	low	11			
amačsə̇z	aimless	1			
ani	sudden	7			
aniden	suddenly	6			
anlamsə̇z	meaningless	10			
anlayə̇šlə̇	understanding	4			
anormal'	abnormal	5			
antika	antique	1			
aptal	stupid	2			
arə̇zalə̇	defective	3			
arzulu	willing	1			
aškək	in love	10			
atešl'i	ardent	1			
aydənlək	bright	26			
aynə̇	same	21			
azgən	furious	17			
čalə̇škan	hard-working	4			
čarpək	crooked	2	čas- 4	čam- 2	
ček'imser	abstainer	2			
čevik'	swift	5	čes- 2	čem- 2	čer- 2
čevre	surrounding	8			
čəplak	nude	1			

čürük'	rotten	17	čüs- 2	čüm 2
jambaz	acrobat	1		
janlı	alive	26		
jansız	lifeless	22		
jazip	attractive	1	jas- 1	
dalgın	pensive	10	das- 2	
dar	narrow	29		
değersiz	worthless	4	des- 1	
derin	deep	25	des- 1	
dik'	steep	1	dim- 25	
dil'siz	mute	1		
diri	alive	27		
doğru	straight	6	dos- 26	
dolu	full	30	dos- 1	
dostča	friendly	1		
duru	clear	7		
duygusuz	insensitive	1		
dürüst	honest	10		
düz	straight	5	düm- 26	
ek'il'i	planted	2		
ek'sik'	lacking	7		
ek'ši	sour	19		
el'verišl'i	useful	3		
ender	rare	1		
endišel'i	worried	3		
erdeml'i	virtuous	1		

erg'in	mature	6		
esk'i	old	21		
evvel'	before	1		
eyik'	oblique	12		
eyl'enčel'i	amusing	1		
eyri	crooked	29		
ezil'miš	smashed	3		
ezik'	smashed	26		
g'eč	late	6	g'es- 1	g'em- 4
g'enč	young	24		
g'eniš	wide	21		
g'erg'in	taut	8		
g'evšek'	loose	8	g'es- 3	g'em- 4
gᵉri	grey	10	gᵉs- 1	
g'öčük'	fallen down	9	g'ös- 3	
g'öl'g'el'i	shadowy	1	g'ös- 2	
g'üč	difficult	2	g'üm- 4	
g'üčl'ü	strong	14		
g'ül'ünč	ridiculous	16	g'üs- 1	
g'ündüz	day time	8		
g'ünešl'i	sunny	9	g'üs- 2	g'üm- 1
g'ür	thick	17	g'üm- 2	
g'üzel'	nice	15	g'üs- 4	g'üm- 1
hassas	sensitive	6		
hasta	ill	2		

haŝin	harsh	2	
haylaz	idle	5	
heyeĉanlɨ	excited	2	
hiddetl'i	angry	1	
hissiz	callous	8	
hoŝ	pleasant	6	
hudutsuz	limitless	1	
huysuz	ill-tempered	13	
hünerl'i	adroit	2	
ik'iz	twin	1	
inje	thin	31	
insafsɨz	pitiless	2	
iri	big	29	
istek'l'i	willing	5	
iŝtahlɨ	having appetite	4	
iyi	fine	6	
ɨlɨk	lukewarm	25	
ɨslak	wet	26	
kalɨn	thick	25	kas- 4
kahvereng'i	brown	2	
kara	black	27	kas- 3
karanlɨk	dark	29	kas- 1
karlɨ	snowy	6	
k'arlɨ	profitable	13	k'as- 1
karŝɨ	opposite	7	
katɨ	hard	7	kas- 22

kavruk	scorcted	4	kas- 10	
kayɨp	lost	1		
k'esik'	cut	4		
k'esk'in	sharp	16		
k'inî'i	vindictive	1	k'is- 1	
kɨrmɨzɨ	red	23	kɨs- 1	
kɨzgɨn	angry	19		
kɨzɨl	crimson	22	kɨs- 1	
koǰaman	big	2	kos- 25	
kolay	easy	13	kos- 10	
korkak	cowardly	1	kos- 3	kom- 1
korkulu	frightening	3		
korkunč	terrible	14	kos- 1	
koyu	dark	24	kos- 7	
k'ötü	bad	8	k'ös- 9	k'öm- 1
kudurmuk	wild	6	kus- 4	kum- 1
kuralsɨz	irregular	1		
kuru	dry	22		
kurumuš	dried up	1		
kuškulu	nervous	1		
kutsal	sacred'	1		
kuvvetl'i	strong	2	kus- 3	
k'üčük'	tiny	10	k'üs- 6	k'üm- 5
narin	delicate	11	nas- 2	
nazik'	agreeable	6	nas- 1	

nəzlɨ	coquetish	8	
neşel'i	cheerful	3	nes- 1
nurlu	limunous	7	nus- 1
olasɨ	possible	1	
olumlu	possitive	4	
olumsuz	negative	1	
olgun	mature	2	
öfk'el'i	choleric	1	
öl'g'ün	faded	11	
öl'ü	lifeless	11	
önde	ahead	7	
özg'ün	original	5	
özl'ü	sticky	8	
renk'l'i	colorful	8	
sabɨrlɨ	patient	1	
sabunlu	soapy	1	
saf	naive	1	sam- 1
sağɨr	deaf	13	
sağlam	healthy	27	
sakat	disabled	1	sar- 1
salak	stupid	6	sam- 1
sarɨ	yellow	23	
sarkɨk	hanging	7	
sarp	steep	1	sam- 3
sefil'	miserable	1	ser- 23
sert	hard	4	sem- 16

sesl'i	having voice	5	
sessiz	quiet	10	sem- 4
sevejen	compassionate	2	
seviml'i	appealing	5	
sevinčl'i	joyful	1	
sinirl'i	nervous	8	
siyah	black	1	
sıǰak	hot	13	sım- 19
sıkı	tight	4	sım- 19
sıkıjı	boring	3	sım- 1
sıkıntılı	dull	4	
sivri	sharp-pointed	26	
soğuk	cold	16	som- 2
sokulgan	sociable	1	
solak	left-handed	1	som- 1
solgun	faded	18	
somut	concrete	1	
soyut	abstract	1	som- 1
sök'ük'	ripped open	3	söm- 4
sulu	watery	19	
susamış	thirsty	1	
susuz	waterless	11	sum- 1
süsl'ü	ornamented	4	
süzg'ün	weak	11	
šašı	squint-eyed	3	šam- 1

şahane	magnificient	7	
şaşkın	confused	12	
şek'erl'i	sweet	9	şem- 1
şirin	affable	8	
şişman	fat	9	
şuh	coquetish	1	
taşlı	stony	5	tam- 1
tatlı	sweet	17	
tatsız	tasteless	15	tam- 1
taze	fresh	30	tam- 2
ters	ill-tempered	7	tem- 15
titiz	peevish	4	tim- 1
tiz	high-pitched	1	tim- 5
turunçu	orange	1	
tuzlu	dusty	15	tum- 4
ufak	tiny	6	us- 2
ulu	great	14	
uslu	good-natured	25	
uğurlu	auspicious	7	
uğursuz	inauspicious	4	
uygun	suitable	14	
uygunsuz	inappropriate	6	
uysal	conciliatory	7	
uyumlu	harmonious	1	
uyumsuz	discordant	6	
uzak	a long way	25	

uzun	long	28			
ünl'ü	well-known	10			
ütül'ü	ironed	1			
üzg'ün	sad	17			
üzüntül'ü	sad	2			
yağız	dark-skinned (man)	5	yam- 1		
yakın	near	11	yas- 6		
yaldızlı	gilt	6			
yalnız	alone	25			
yamuk	uneven	2	yas- 11	yam- 2	
yarık	split	4	yas- 1		
yarım	half	5	yas- 7		
yassı	flat	4	yam- 25		
yaşlı	elderly	13	yas- 1	yam- 1	
yeşil'	green	2	yem- 30		
yıkık	demolished	2	yım- 5		
yırtık	torn	10	yıs- 3	yım- 1	
yolsuz	with no roads	4			
yorgun	tired	8	yos- 10		
yosunlu	mossy	3			
yumuşak	soft	5	yus- 7	yum- 7	
yük'sek'	high	7	yüm- 5		
yünl'ü	woolen	1			
zayıf	thin	19			
zek'i	intelligent	5			

zeng'in	wealthy	11				
zɨt	opposite	5	zɨm- 6			

-s-

stem	*gloss*	*number of respondents*	*varying forms*		
babaǰan	good-natured	3			
beǰerik'l'i	skillfull	7	bem- 3		
bel'l'i	obvious	8			
benǰil'	selfish	4			
berek'etl'i	fertile	4	bem- 2		
beter	worse	19	bem- 1		
bol	abundant	12	bom- 6		
boylu	tall	12			
böl'ük'	in bits	8			
bunak	imbecile	10			
bunamɨš	imbecile	2			
bütün	whole	25	büm- 1		
büyük'	big	8			
čabuk	quick	2	čar- 29		
čarpɨk	crooked	4	čap- 2	čam- 2	
čevik'	swift	2	čep- 5	čem- 2	čer- 2
čürük'	rotten	2	čüp- 17	čüm- 3	
ǰazip	attractive	1	ǰap- 1		
dalgɨn	pensive	2	dap- 10		
darɨlmɨš	offended	1			
değersiz	worhtless	1	dep- 4		

derin	deep	1	dep- 25
dipsiz	bottomless	1	
doğru	straight	26	dop- 6
dolu	full	1	dop- 30
düšk'ün	fallen on hard times	1	
fakir	poor	6	
gaddar	cruel	3	
g'eč	late	1	g'ep- 6 g'em- 4
g'evrek'	tender	5	
g'evšek'	loose	3	
gïri	grey	1	gïp- 10
g'öčük'	caved in	3	g'öp- 9
g'öl'g'el'i	shadowy	2	g'öp- 1
g'öl'ünč	ridiculous	1	g'öp- 16
g'ünešl'i	sunny	2	g'öp- 9 g'öm- 1
g'özel'	nice	4	g'öp- 15 g'öm- 1
kaba	crude	8	
kalïn	thick	4	kap- 25
kara	black	3	kap- 27
karanlik	dark	1	kap- 29
k'arlï	profitable	1	k'ap- 13
katï	stiff	22	kap- 7
kavruk	roasted	10	kap- 4
k'inl'i	vindictive	1	k'ip- 1
kïrmïzï	red	1	kïp- 23
kïzïl	crimson	1	kïp- 22

koʃaman	big	25	kop- 2	
kolay	easy	10	kop- 13	
kopuk	broken off	4	kom- 1	
korkak	cowardly	3	kop- 1	kom- 1
korkunč	fearfull	1	kop- 14	
koyu	dark	7	kop- 24	
k'ötü	mean	9	k'öp- 8	k'öm- 1
kuduruk	furious	4	kup- 6	kum- 1
kumlu	sandy	2		
kuvvetl'i	strong	3	kup- 2	
k'üčük'	small	6	köp- 10	küm- 5
manasiz	meaningless	2		
mavi	blue	23		
mor	purple	23		
narin	slim	2	nap- 11	
nazik'	kind	1	nap- 6	
nešel'i	cheerful	1	nep- 3	
nurlu	luminous	1	nup- 7	
pak	pure	3	pam- 3	
parlak	shining	18	pam- 1	
pek'	firm	1		
pembe	pink	24		
pil'el'i	with pleats	1		
piratik'	practical	1		
tamam	complete	28	tam- 1	

tombul	plump	8		
toparlak	round	29		
tuhaf	queer	4		
ufak	small	2	up- 6	
vahši	wild	1		
yakın	near	6	yap- 11	
yamuk	uneven	11	yap- 2	yam- 2
yapışkan	adhesive	1		
yarık	cracted	1	yap- 4	
yarım	half	7	yap- 5	
yaşlı	elderly	1	yap- 13	yam- 1
yırtık	torn	3	yıp- 10	yım- 1
yobaz	bigot	2		
yorgun	tired	10	yop- 8	
yumuşak	soft	7	yup- 5	yum- 7
yuvarlak	round	29	yum- 1	

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stem	*gloss*	*number of respondents*	*varying forms*	
baška	different	7		
bejerik'l'i	skilful	3	bes- 7	
bež	beige	3		
berek'etl'i	fertile	2	bes- 4	
beter	worse	1	bes- 19	
beyaz	white	24		
bitišik'	contiguous	4		

bok	excrement	25			
bol	abundant	6	bos- 12		
boš	empty	29			
bozuk	defective	19			
buruşuk	wrinkled	8			
bütün	whole	1	büs- 25		
čarpɨk	crosswise	2	čap- 2	čas- 4	
čevik'	swift	2	čep-5	čes- 2	čer- 2
čürük'	rotten	2	čüp- 17	čüs- 2	
dik'	upright	25	dip- 1		
düz	straight	26	düp- 5		
g'eč	late	4	g'ep- 6	g'es- 1	
g'evšek'	loose	4	g'ep- 8	g'es- 3	
g'ök'	green/blue	10			
g'üč	hard	4	g'üp- 2		
g'üněšl'i	sunny	1	g'üp- 9	g'üs- 2	
g'ür	abundant	2	g'üp- 17		
g'üzel'	nice	1	g'üp- 15	g'üs- 4	
kopuk	broken off	1	kos- 4		
korkak	cowardly	1	kop- 1	kos- 3	
k'ötü	mean	1	k'öp- 8	k'ös- 9	
kuduruk	furious	1	kup- 6	kus- 9	
k'üčük'	small	5	k'üp- 10	k'üs- 6	
misk'in	poor-spirited	1			
pąk	clean	3	pas- 3		
parlak	bright	1	pas- 18		

paslɨ	rusty	1	
puslu	misty	4	
pürüzsüz	smooth	2	
saf	naive	1	sap- 1
salak	stupid	1	sap- 6
sarkɨk	pendulous	1	
sarp	steep	3	sap-1
sert	hard	16	sep- 4
sessiz	quiet	4	sep- 10
sɨjak	hot	19	sɨp- 13
sɨkɨ	tight	19	sɨp- 4
sɨkɨjɨ	boring	1	sɨp- 3
sinirli	nervous	1	
siyah	black	27	
soğuk	cold	2	sop- 16
solak	left-handed	1	sop- 1
soyut	abstract	1	sop- 1
sök'ük'	unstitched	4	söp- 3
susuz	waterless	1	sup- 11
šašɨ	cross-eyed	1	šap- 3
šek'erl'i	sweet	1	šep- 9
tamam	complete	1	tas- 28
tašlɨ	stony	1	tap- 5
tatsɨz	tasteless	1	tap- 15
taze	fresh	2	tap- 30

ters	peevish	15	tep- 7		
titiz	fastidious	1	tip- 4		
tiz	sharp (of voice)	5	tip- 1		
tuzlu	salty	4	tup- 15		
yağız	dark skinned (man)	1	yap- 5		
yamuk	uneven	2	yap- 2	yas- 11	
yassı	flat	25	yap- 4		
yaš	wet	29			
yašlı	elderly		yap- 13	yas- 1	
yešil'	green	30	yep- 2		
yıkık	demolished	5	yıp- 2		
yırtık	torn	1	yıp- 10	yıs- 3	
yumušak	soft	7	yup- 5	yus- 7	
yuvarlak	round	1	yus- 29		
yük'sek'	high	5	yüp- 7		
zıt	opposite	6	zıp- 5		

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stem	*gloss*	*number of respondents*	*varying forms*		
čabuk	quick	29	čas- 2		
čapraz	crosswise	1			
čevik'	swift	2	čep- 5	čes- 2	čem- 2
čıplak	naked	25	čıp- 1		
sakat	disabled	1	sap- 1		
sefil'	miserable	23	sep- 1		
temiz	clean	22			

APPENDIX B

The following are the adjectives for which reduplicated forms were not generated in the elicitation conducted to obtain the data:

ahl'akdɨšɨ	immoral
anaršik'	anarchistic
antiseptik'	antiseptic
bašsɨz	leaderless
beşl'eyiji	nutritious
bil'imşel'	scientific
čapkɨn	dissolute
dehšetl'i	dreadful
dostane	friendly
efl'atun	lilac-color
evvel'je	before
farksɨz	indistinguishable
fedak'ar	self-sacrificing
fersiz	without rediant
hünerl'i	talented
il'k'	first
il'tihaplɨ	inflamed
mantɨksɨz	illogical
misk'in	wretched
muhteşem	magnificent
mukaddes	sacred
müstesna	extraordinary

sapa	off the road
sapık	perverted
sünepe	slovenly
şaşaalı	splendid
şevk'l'i	eagar
şüphel'i	suspicious
tam	just
ulusal	national
usdışı	illogical
vezinsiz	with no metre (poetry)
zorba	violent