

Recovery of Information in Relative Clauses:

Evidence from Greek and Hebrew

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Modern Greek has a Relative Clause Formation process by which the target of Relativization is deleted under identity with the head of the Relative Clause--these Relative Clauses are introduced by the invariant complementizer particle pu, which also introduces factive complements. (Greek also has a movement strategy for Relative Clauses, with an inflected Relative pronoun, but the details of this process are irrelevant here.) Examples of the deletion strategy are given below in (1):

- (1) a. xθes sinandisa enan anθropo_i pu den gnorizis ∅_i
yesterday met/1SG a-man/ACC COMP not know/2SG
'Yesterday, I met a man you don't know'
- b. o Yanis ine o anθropos_i pu edosa ∅_i to vivlio
John/NOM is/3SG the-man/NOM COMP gave/1SG the-book/ACC
'John is the man I gave the book (to)'.

The target of Relativization can be retained, in pronominal form, in these Relative Clauses, giving sentences such as (2):

- (2) a. xθes sinandisa enan anθropo_i pu den ton_i gnorizis
him/ACC
'Yesterday, I met a man that you don't know (him)'
- b. o Yanis ine o anθropos_i pu tu_i edosa to vivlio
to-him/GEN
'John is the man that I gave the book (to him)'

and in fact, the Pronoun-Retention strategy is obligatory for some speakers in the case of (2b), where the target is

an indirect object. Nonetheless, the analysis of Relative Clauses such as (1) as involving deletion is not controversial.

Greek has no general process sanctioning the absence on the surface of definite object pronouns, although such a process does exist for subject pronouns--(3b) with no overt subject pronoun is an acceptable (less emphatic) variant of (3a), but (3c) with no overt definite object pronoun as well, is not:

- (3) a. ego ton gnorizo
I/NOM him/ACC know/1SG
'I know him'
- b. ton gnorizo
'I know him'
- c. *gnorizo
'I know him'

Therefore, to produce Relative Clauses such as (1), some special deletion rule, presumably applying to structures as in (2), is needed to elide the object pronouns--a rule of Relative Deletion serves this purpose. In the case of Relative Clauses with a subject NP as the target of Relativization:

- (4) sinandisa enan anθropo_i pu Ø_i meni s tin Aθina
met/1SG a-man/ACC COMP _i lives/3SG in Athens/ACC
'I met a man who lives in Athens'

it is indeterminate whether the Subject Pronoun Drop rule of (3b) is responsible for the absence of a Relative Clause subject or the Relative Deletion rule--for non-subject targets, such as in (1), though, clearly the Relative Deletion rule is operative.

When the target of Relativization is the object of a preposition, and the deletion strategy is employed, Greek displays an interesting added wrinkle. Greek does not tolerate preposition stranding, and when the object of the preposition is deleted, the preposition itself is deleted along with its object. This is shown by sentences like (5):

- (5) o Yanis ine o anθropos pu eksartomaste
 John/NOM is/3SG the-man/NOM COMP depend/1PL
 'John is the man we depend on'.

The verb 'depend on', 1SG eksartame, cannot take a direct object in simple sentences, always occurring with the preposition apo 'from':

- (6) a. eksartomaste apo ton Yani
 depend/1PL from John/ACC
 'We depend on John'
 b. *eksartomaste ton Yani.

Thus, in these Relative Clauses with pu, a verb like eksartame superficially looks as if it could occur with a direct object.

The deletion strategy is not obligatory in Relative Clauses such as (5) with a prepositional-object target. Relative Clauses of the pattern in (2) are possible, with the object of the preposition retained in pronominal form, and the preposition also retained:

- (7) o Yanis ine o anθropos; pu apo afton; eksartomaste
 John/NOM is/3SG the-man/NOM COMP from him/ACC depend/1PL
 'John is the man that we depend on (him)'.

In such a case, though, the preposition is not deletable (as also in (6):

i.e. the ones which native speakers seem to accept most readily, are ones in which the preposition deleted is completely predictable, and thus uniquely recoverable. That is to say, the verb that is left in the Relative Clause is strictly subcategorized to occur only with the particular preposition that is deleted. For example, in (5), it can be noted that the verb eksartame 'depend' only occurs with the preposition apo 'from' (cf. (6))--it cannot take an object directly after it (cf. (6b)), nor can it be used with any other prepositions:

- (10) *eksartomaste se / me / ya ton Yani
 depend/1PL on with for John/ACC.

Similarly, in a Preposition Deletion sentence like (11):

- (11) to vivlio pu endiaferome ine afto
 the-book/NOM COMP be-interested/1SG is this/NTR
 'The book that I am interested in is that (one)'

the verb, endiaferome 'be interested', is one that cannot take a direct object in simple sentences, nor occur with any preposition other than ya 'for':

- (12) a. endiaferome ya afto to vivlio
 be-interested/1SG for this-the-book/ACC
 'I am interested in this book'
 b. *endiaferome afto to vivlio
 c. *endiaferome se / me / apo afto to vivlio
 in with from

An additional example of this type is offered by (13):

- (13) i kopela pu tha alilografiso ine i Maria
 the-girl/NOM COMP FUT correspond/1SG is Mary/NOM
 'The girl I'll correspond with is Mary'

in which the verb alilografo 'correspond' is strictly subcategorized to occur only with the preposition me 'with':

- (14) a. alilografo me tin Maria
 correspond/1SG with Mary/ACC
 'I am corresponding with Mary'
- b. *alilografo tin Maria
- c. *alilografo se / ya / apo tin Maria.
 to for from

Thus Preposition Deletion is best when the deleted preposition is totally predictable from the nature of the verb involved, and hence easily recoverable--no other preposition could be intended with these verbs, nor could these verbs be interpreted as being "transitive", i.e. taking nominal objects directly. This fact suggests that the notion of "predictable information" (in a sense other than strictly "discourse-predictable") can and should play an important role in syntactic descriptions, and furthermore, that it must be incorporated into the formal statement of a constraint against "non-recoverable" deletions.

This is particularly so because it is "recoverability" that is really at the heart of these Greek Preposition Deletion Relative Clause facts. The idiosyncratic lexical facts concerning the verbs eksartame, endiaferome, and alilografo and the single preposition they govern allow that preposition to be recoverable if absent on the surface due to the Relative Deletion process. The conditions under which the preposition can be absent are limited to instances in which the object of the preposition is deleted and not simply removed from its governing preposition--thus preposition dele-

tion, as well as preposition stranding, are impossible when the object is topicalized; instead, the preposition must move with its object (see also (9) regarding Relativization by movement):

- (15) a *tin filosofia, olos o kozmos kseri
 the-philosophy/ACC all-the-world/NOM knows/3SG
 oti endiaferome (ya)
 that be-interested/1SG for
 'Philosophy, everyone knows I am interested in'
- b. ya tin filosofia, olos o kozmos kseri oti endiaferome
 for
 'In philosophy, everyone knows I am interested'.

Nonetheless, though the conditions for preposition deletion are limited, they are still such as to ensure that the missing preposition will be recoverable from the surface form of the relative clause.

These facts from Greek Preposition Deletion Relative Clauses are paralleled by similar data from Hebrew which also involve the recoverability of prepositions which can be deleted in Relative Clause formation. Givón (1979: 40-41) has pointed out (see also Givón (1972; 1973)) that in Hebrew, while relativizing on objects of prepositions generally requires an obligatory resumptive pronoun plus preposition combination, e.g. lo 'to-him' (cf. the free preposition le 'to') in (16):

- (16) ze ha-ish she-natati lo/*Ø et ha-sefer
 this the-man that-I-gave to-him ACC the-book
 'This is the man to whom I gave the book'
 (Literally: "This is the man that I gave the book to him")

nonetheless, there is one condition under which the resumptive pronoun can be acceptably absent on the surface. When the head

noun of the relative clause is preceded by the same preposition as the coreferential prepositional object within the relative clause, then the combination of a resumptive pronoun together with the preposition is optional; for example:

(17) hu yashav al ha-kise she-yashavti (alav)
 he sat on the-chair that-I-sat on-it
 'He sat on the chair on which I sat'

(18) hu lakax et ha-kise she-yashavti alav/*Ø
 he took ACC the-chair that-I-sat on-it
 'He took the chair on which I sat'.

In (17), the preposition with the head noun is identical with the preposition in the relative clause, and the resumptive pronoun plus preposition combination is optional, whereas in (18), this condition is not met, and the resumptive pronoun plus preposition is obligatory in the relative clause. Givón notes that this condition is really one of recoverability of communicative function: "when the case-function of the deleted coreferential noun is recoverable from that of the head noun via identity, the resumptive pronoun--which 'carries' the case marking--may be dropped, otherwise it may not" (p. 41). The "EQUI"-like conditions (so-called by Givón (1975: 66)) for the absence of the preposition ensure that the preposition will be recoverable.

Thus in Hebrew, as in Greek, the conditions for the deletion of the preposition along with the prepositional-object target of Relativization are such that the deleted preposition is totally recoverable, and therefore, predictable from the

surface string--no information is lost through the absence of the preposition. Some degree of lexical information, as in Greek, though, is also crucial; that is, the lexical/semantic fact that the verb yoshev 'sit' cannot take a direct object would account for why an implied interpretation in (18) of *yashav et ha-kise is blocked. The difference between Greek and Hebrew, then, is a qualitative one, lying in the nature of the conditions under which prepositions may be absent in surface Relative Clauses. In Greek, recoverability is based on lexical considerations plus certain syntactic conditions (deletion) being met, whereas in Hebrew, syntactic conditions ("EQUI"-like in nature) seem to prevail. In each case, though, the conditions are such as to allow predictability of the prepositions and thus their total recoverability.

A further feature of Preposition Deletion Relative Clauses in Greek which is of importance for the question of the interpretation of Relative Clauses in general is the way in which potential ambiguities are resolved. The existence of the Preposition Deletion option means that some relative clauses will be potentially ambiguous--in particular, there are verbs in Greek which can occur with or without a preposition between them and their object, with slightly different meanings for the form with a preposition as opposed to the form without. For example, the verb milo with a direct object means 'talk to someone without that person talking back to you',

while milo with the preposition me 'with' means 'talk with someone, have a conversation':

(19) a. milusa afti tin kopela
 speak/1SG, IMPF this-the-girl/ACC
 'I was speaking to this girl (and she listened
 without responding)'

 b. milusa me afti tin kopela
 with
 'I was talking with this girl (i.e. having a con-
 versation)'.

Similarly, the verb xorevo 'dance', when it occurs with a direct object means 'lead someone in dnace', but when it occurs with the preposition me 'with', it has the meaning 'dance with someone, i.e. dance together with':

(20) a. xoreva to koritsi
 dance/1SG, IMPF the-girl/ACC
 'I was leading the girl in dance'

 b. xoreva me to koritsi
 with
 'I was dancing (together) with the girl'.

A relative clause with the object of one of these verbs as its target, then, is potentially ambiguous--because a preposition can be deleted in Relativization by the Preposition Deletion sub-type along with the deletion of its object, a sentence such as (21a) is potentially ambiguous in two ways, depending on whether the relative clause is taken to be from miluses me or plain miluses--the same holds for (21b), with the ambiguity being between xoreva me and plain xoreva:

(21) a. pya ine i kopela pu miluses?
 who?/FEM is the-girl/NOM COMP speak/2SG, IMPF

- b. i Anna ine to koritsi pu xoreva
 Anna/NOM is the-girl/NOM COMP dance/1SG.IMPF

Speakers, however, generally assign only one reading to these sentences, and that is what can be called the "superficial" reading, i.e. that which takes the verb to be sub-categorized just as it appears on the surface, without a preposition. Thus (21a) has the reading (22a), and (21b) has the reading (22b):

- (22) a. Who is the girl you were talking to (and she listened without responding)?

- b. Anna is the girl I was leading in dance.

The readings indicated in (22) are the primary readings speakers assign to these sentences--it is only upon reflection that they see the second reading, that with a preposition with the verb in the relative clause.

Thus it appears that speakers interpret Relative Clauses at a superficial level--if their processing involved reconstructing the derivation of the Relative Clause (i.e. undoing the generative rules, as it were), there would be no principled way of resolving the ambiguities, no way of deciding which of several possible readings is intended. However, with interpretation done first on the surface form, the non-preposition sub-categorization for these verbs would be taken as primary, which accords with speakers' intuitions about these Relative Clauses.

This is not to say that speakers cannot undo the rules,

so to speak, for they certainly can be aware of the ambiguities, and under appropriate contextual conditions, the prepositional-reading may emerge more strongly. But their initial reading of these sentences indicates that they are "read off of the surface", in a manner of speaking, and in general, this suggests something about the way in which people recover meaning from such sentences when they first encounter them.

This aspect of Greek Relative Clauses is again paralleled by a similar situation in Hebrew. Although a preposition plus resumptive pronoun can be absent in appropriate Relative Clauses, provided it is recoverable, there are pragmatic constraints on its deletion. Givón (1979: 41) gives the following pair of sentences:

(23) a. hu yashav al ha-kise she-axalti alav
 he sat on the-chair that-I-ate on-it
 'He sat on the chair on which I ate'

≠ b. hu yashav al ha-kise she-axalti
 'He sat on the chair that I ate'
 *He sat on the chair on which I ate'

and notes that (23b), though acceptable, does not have the same interpretation as (23a), "since the sense of direct-object relativization ('I ate the chair') impinges upon the correct interpretation if the pronoun is not retained". Thus a Hebrew sentence like (23) is interpreted as if it were "read off of the surface"; presumably the most usual expectation with a verb meaning eat is that the object eaten will be mentioned, not where that object was eaten. Thus again, lexical

information interacts with surface interpretation to produce the proper reading of the Relative Clause. The difference between Greek and Hebrew in this case seems to be one of degree--whereas Greek allows the non-superficial reading as a secondary interpretation, giving prominence to the "superficial" reading, Hebrew suppresses the non-superficial reading altogether.

These two sets of facts from Greek, and their parallel facts from Hebrew, then, together suggest that Relative Clauses are interpreted in terms of their superficial form combined with lexical and even pragmatic (in the case of eat in (22b)) considerations. This result, plus the necessary role of predictability and recoverability in the interpretation and form of Relative Clauses in Greek and Hebrew, suggest further that non-formal, surface-oriented models of syntactic description may in fact come closer to providing correct insights into the way language works than strictly formalistic models of grammar. It is hoped that the further study of Relative Clauses of this kind cross-linguistically not only will sharpen the understanding of this construction but will also contribute to a clearer picture of the form of Linguistic Theory.

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