FUTURE WH-CLAUSES IN DP-POSITIONS[1]

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Abstract

The paper presents Future wh-clauses (FWHCs), a previously unnoticed type of wh-clauses, and discusses its key properties. Namely, selection by a small class of accomplishment predicates, restriction for Future Tense in the wh-clause, NP-type non-presuppositional semantics, where the FWHC denotes an individual defined by a unique property, strong feeling of current relevance associated with the selecting predicates, and compatibility of the selecting predicates with 'since'-adverbials. It is argued (a) that FWHCs are interpreted as intensional definite DPs; (b) that in 'selecting' FWHCs the matrix predicates are used intensionally; and (c) that the selecting predicates have a 'perfect' component in their decomposed lexical structure. FWHCs are distinguished from Irrealis Free Relatives.

1. The Data

The paper addresses a construction of Greek (cf. (1)), which has the morphological appearance of a wh-interrogative complement but an NP-type reading.

(1)   eho   idhi   aghorasi *ti*   *tha foreso*   *sto parti*
       have-I   already   bought   what   will wear-I   at the party
       "I have already bought what I am going to wear at the party."

It is argued that the wh-construction in (1) constitutes a construction of its own. First, there is a requirement for Future Tense in the wh-complement (cf. ungrammatical (2), where the verb is in the Past Tense). I will hence refer to the wh-construction in (1) as Future wh-clauses (FWHCs).

(2)   *aghorasa *ti*   *foresa*   *sto parti*   apo ti vostoni
       bought-I   what   wore-I   at the party   from the Boston
       "I had bought what I wore at the party in Boston."[2]

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[2] The ungrammaticality of (2) in Greek appears puzzling given the grammaticality of its English translation. The English translation is OK because the wh-clause is interpreted as a presuppositional RFR. The intended reading, i.e. that of a non-presuppositional DP, is excluded for the English sentence, as well.

Second, FWHCs are selected by a small class of verbs, which include: *aghorazo* 'buy', *ferno* 'bring', *perno* / *piyeno* 'take to sb', *perno* 'take with one', *vghazo* 'keep', *krato* 'keep', *filao* 'save', *vazo* 'put', *etimazo* 'prepare', *mayirevo* 'cook', *ftiahno* 'make', *ravo* 'sew', *pleko* 'knit, crochet', *eklegho* 'elect', *dhialegho* 'choose' *vrisko* 'find', *vlepo* 'see', *eho* 'have made arrangements, find', *ghrafo* 'write up', *arhizo* 'start', *teliono* 'finish', *shedhiazo* 'design', *sidherono* 'iron', *pleno* 'wash', *tiligho* 'wrap up'.

Third, FWHCs have an NP-type non-presuppositional interpretation. The wh-clause in (1) cannot denote a familiar individual; example (1) is infelicitous in a context where the speaker has already shown the hearer a particular dress in some shop window, and is now telling the hearer that she (i.e. the speaker) has bought that dress. The wh-clause in (1) can only denote an individual which is defined by the unique property of being ear-marked for wearing at the party. While being non-presuppositional, the interpretation of FWHCs differs from that of nonspecific indefinites.

Last, there is a strong feeling of current relevance associated with the predicates that select FWHCs. Thus, in (1) the activity of *having bought x* is somehow relevant for current purposes. This strong feeling of current relevance is not due to the Present Perfect of the matrix verb in (1), and obtains with all tenses.

FWHCs are of interest for two main reasons. (a) They have a number of characteristics, none of which has an obvious explanation. The paper addresses the following issues: (i) the syntax and semantics of FWHCs; (ii) their limited distribution; (iii) the restriction for Future Tense; (iv) the source of the intensional reading of FWHCs; and (v) the source of the strong feeling of current relevance associated with the selecting predicates. The second reason why FWHCs are of particular interest is because the study of FWHCs intersects with a number of theoretical questions. These include (i) the relation between FWHCs, Realis Free Relatives (RFRs) and Irrealis Free Relatives (IFRs); (ii) the question whether wh-clauses can have NP-type semantics, and if so of what kind(s); (iii) DP-denotations; (iv) intensionality; and (v) the semantic decomposition of the selecting predicates.

Sections 2-3 show that FWHCs are a distinct creature from both RFRs and IFRs, all three of which fill DP-positions. FWHCs and IFRs share a number of similarities. A semantic analysis for FWHCs is provided in Section 4 (see claim (3) below).

(3)   a. FWHCs are interpreted as intensional definite DPs (semantic type <s,e>).

        b. In selecting FWHCs the matrix predicates are used intensionally.

In Section 5 FWHCs are assigned a syntactic structure where a null D selects a CP which functions as a predicate. The D head is responsible for the semantic interpretation of FWHCs. In Section 6 it is shown that the selecting predicates, besides being used intensionally, have a 'perfect' component in their decomposed lexical structure.

2. Future Wh-Clauses vs. Realis Free Relatives

RFRs and FWHCs share a small number of properties. In particular (a) neither RFRs nor FWHCs can have in their Spec of CP a phrase that includes a DP which dominates, but is not a projection of, the wh-word; (b) neither RFRs nor FWHCs allow for multiple wh-phrases; (c) neither RFRs nor IFRs can stack; and (d) extraction out of either RFRs or FWHCs is bad. Yet, as shown in detail next, FWHCs and RFRs have a considerable number of morphological, syntactic and semantic differences, on the basis of which it is claimed that

FWHCs and RFRs are distinct constructions. An alternative hypothesis, according to which FWHCs are RFRs with some special interpretation, due to the fact that they have embedded Future, does not seem to be tenable. One would need to show how the Future Tense could account for the morphological, syntactic and semantic differences between FWHCs and RFRs. I could see no way this could be done. Take, for instance, the non-presuppositional reading of FWHCs. Embedded Future in RFRs does not give rise to a non-presuppositional reading of the RFR. These objections do not carry over to a working hypothesis according to which FWHCs and RFRs are distinct types of a superordinate category, where the distinct properties of the two types of wh-clauses reduce to their distribution.

2.1 Morphological differences

(i) Formal marking

RFRs, but not FWHCs, are formally marked with the prefix *o –*, a definiteness marker, attached to the corresponding wh-words (e.g. *oti* 'what-RFR' vs. *ti* 'what-FWHC').

(ii) Unavailability of the *–dhipote* 'ever' marker of RFR wh-words on the FWHC wh-words.

(iii) Internal checking of the head features of the wh-phrase in FWHCs.

2.2 Syntactic differences

(i) Restriction for Future Tense

FWHCs, but not RFRs, obey a restriction for Future Tense. The tense in the wh-clause is Simple Future or Future Continuous when the event time of the wh-clause follows not only the event time of the matrix clause but also the utterance time. The tense in the wh-clause is Conditional Present when the event time in the wh-clause precedes the utterance time.

This restriction for Future Tense in the wh-clause most probably constitutes an epiphenomenon of a more basic property of FWHCs, or a consequence of a semantic property of the predicates that select FWHCs. Namely, for some reason the eventuality described in the wh-complement of a specific set of verbs is, in the particular reading we are exploring, obligatorily posterior to the event described by the matrix verb.

(ii) Only wh-words, not wh-phrases, can introduce FWHCs.

(iii) Syntactic movement

FWHCs, contrary to RFRs, cannot be passivized or topicalized. However, they can be syntactically focused, similarly to RFRs.

(iv) Anaphoric properties

As shown next, FWHCs allow for definite DP-anaphora, as RFRs, and null anaphora, unlike RFRs. In addition, FWHCs, but not RFRs, allow impersonal proforms.

(a) Null anaphora

Consider the exchange in (4), where the same predicate is used in A's and B's utterances. As shown by 4(B), null anaphora, i.e. the equivalent of *one* –anaphora in English, is possible. Null anaphora does not refer back to the entity introduced by the FWHC, but introduces a new entity with the property that it will be worn at the party by B.

(4)
A. eho   idhi   aghorasi *ti*   *tha foreso*   *sto parti*
    have-I   already bought   what   will wear-I   at the party
    "I have already bought what I am going to wear at the party."
B. egho   tha   _   aghoraso   avrio
    I   will   _   buy-I   tomorrow
    "I will buy what I am going to wear at the party tomorrow."

If we juxtapose (4) with ungrammatical (5) next, we see that null anaphora is only possible in the scope of a logical operator, the Future marker *tha* in 4(B).

(5)
A. eho aghorasi   edho ke poli kero   *ti*   *tha foreso*   *sto parti*
    have-I bought   it's a long time   what   will wear-I   at the party
    "It's a long time since I bought what I am going to wear at the party."
B. egho   *to /*_   eho aghorasi   apo tin perasmeni vdhomadha
    I   *it   have-I bought   since last week

(b) Definite DP anaphora

FWHCs also support definite DP anaphora when we want to refer back to the entity that was introduced by the FWHC (cf. (6)).

(6) eho   aghorasi *ti*   *tha foreso* *sto parti*   ; *to* eho   sti dulapa
     have-I   bought   what   will wear-I   at the party ; it   have-I   in the wardrobe
     "I have bought what I am going to wear at the party. It's in the wardrobe."

However, if the FWHC is in the scope of a logical operator, as in 7(A) where the FWHC is in the scope of the Future operator, definite DP anaphora will only be possible in modal contexts (cf. 7(B)); in 7(B) the pro subject, interpreted as a definite pronoun, is in the scope of the Necessity operator.

(7)
A. avrio   tha aghoraso   *ti*   *tha foreso* *sto parti*
    tomorrow   will buy-I   what   will wear-I   at the party
B. *(prepi)   pro   na ine   makri forema
    must-it   it   to be-it   long dress
    "Tomorrow I'll buy what I'm going to wear at the party. It must be/*is a long dress."

(c) Use of impersonal proforms

Moltmann (1997) has shown that verbs selecting intensional indefinite DPs allow only impersonal proforms (*something*, *what*, *-thing*) to stand for their complement, and disallow personal ones (*someone*, *whom*, *person*), regardless of the descriptive content of the complement NP. The use of impersonal proforms is taken by Moltmann to be an intensionality test. Crucially, FWHCs allow only an impersonal interrogative proform, i.e. *ti* 'what' (cf. (8) as an appropriate question for (1)).

(8) *ti*   / *pio praghma* / *pio adikimeno*   aghorases   ?
     what / which thing   / which item   bought-you   ?
     "What have you bought?"

2.3 Semantic differences

(i) FWHCs, contrary to RFRs, have a limited distribution (cf. Section 1).

(ii) FWHCs, contrary to RFRs, are interpreted as non-presuppositional DPs.

(iii) Strong feeling of current relevance associated with FWHCs, but not with RFRs

Consider example (9), where *aghorazo* 'buy', selects a FWHC in 9(a) and a RFR in 9(b). There is a strong feeling of current relevance associated with the activity of buying in 9(a) but not in 9(b). In particular, while 9(a) entails that the speaker is still, at the moment of utterance, in possession of what was bought, there is no such entailment in 9(b). The fact that in both 9(a) and (b) we have the same matrix predicate suggests that the semantic structure of the matrix predicate is different depending on whether its complement is a FWHC or not.

(9)
a. aghorasa   *ti*   *tha foreso*   *sto parti*
    bought-I   what-FWHC   will wear-I   at the party
    "I bought what I am going to wear at the party."
b. aghorasa   *afto pu   idha   sti vitrina*
    bought-I   what-RFR   saw-I   at the shop window
    "I bought what I saw at the shop window."

(iv) Narrow scope with respect to logical operators and quantifiers

In the absence of a logical operator, the interpretation of FWHCs seems to involve an existential quantifier. Interestingly, when there is a logical operator in the matrix sentence, the FWHC (or, more precisely, the existential quantifier) can only take narrow scope with respect to the logical operator (RFRs are known to have wide scope with respect to logical operators). Consider examples (10)-(16), which involve Negation, Question, the Future operator, an intensional operator, Necessity, Possibility and the Habitual operator.

(10)
a. **dhen**   eho aghorasi akoma *ti*   *tha foreso*   *sto parti*   Negation
    not   have-I bought yet   what   will wear-I   at the party
    "I haven't bought yet what I am going to wear at the party."
b. *∃x ¬   FUT[I wear x at the party] & [I have bought x]
c. ¬ ∃x   FUT[I wear x at the party] & [I have bought x]

(11)
a. ehis aghorasi   *ti*   *tha foresis*   *sto parti*   **?**   Question
    have-you bought   what   will wear-you   at the party   ?
    "Have you bought what you are going to wear at the party?"
b. *∃x Q   FUT[you wear x at the party] & [you have bought x]
c. Q ∃x   FUT[you wear x at the party] & [you have bought x]

(12)
a. **tha** aghoraso apo tora   *ti*   *tha foreso*   *sto parti*   Future
    will buy-I   soon   what   will wear-I   at the party
    "I will buy soon what I am going to wear at the party."
b. *∃x FUT   FUT[I wear x at the party]& [I buy x]
c. FUT ∃x   FUT[I wear x at the party]& [I buy x]

(13)

a.   **thelo**   na aghoraso   apo tora   *ti*   *tha foreso sto parti*   <u>Intensional</u>
        want-I   to buy-I   soon   what   will wear-I at the party
        "I want to buy soon what I am going to wear at the party."
b.   *∃x WANT   FUT[I wear x at the party] & [I buy x]
c.   WANT ∃x   FUT[I wear x at the party] & [I buy x]

(14)

a.   **prepi**   na aghoraso   apo tora   *ti*   *tha foreso sto parti*   <u>Necessity</u>
        must-it to buy-I   soon   what   will wear-I at the party
        "I must buy soon what I am going to wear at the party."
b.   *∃x πFUT[I wear x at the party] & [I buy x]
c.   π ∃x   FUT[I wear x at the party] & [I buy x]

(15)

a.   **bori**   na aghoraso   apo tora   *ti*   *tha foreso sto parti*   <u>Possibility</u>
        may-it   to buy-I   soon   what   will wear-I at the party
        "I may buy soon what I am going to wear at the party."
b.   *∃x _   FUT[I wear x at the party] & [I buy x]
c.   _ ∃x   FUT[I wear x at the party] & [I buy x]

(16)

    sinithos   etimazo   *ti*   *tha kano*   *sto mathima*   mia mera prin <u>Habitual</u>
    usually   prepare-I   what will do-I   in class   the day before
    "I usually prepare what I am going to do in class the day before."

In addition, FWHCs obligatorily scope below quantifiers (cf. (17)).

(17)

a.   piran   oli   mazi tus   *ti*   *tha dhiavasun*   *sto taksidhi*
        took-they   all   with them   what   will read-they   on the trip
        "They have all taken with them what they are going to read on the trip."
b.   ∀x [person′(x) → ∃y[thing′(y) ∧ FUT[read′(x,y)] ∧ PAST[take′(x,y)]]]
c.   *∃x[thing′(x) ∧ ∀y[person′(y) → FUT[read′(y,x)] ∧ PAST[take′(y,x)]]]

3. Future Wh-Clauses vs. Irrealis Free Relatives

On the basis of significant differences between FWHCs and IFRs, it is argued next that FWHCs are a distinct construction from IFRs (cf. example (18)), as well. The predicates that select IFRs include *eho* 'existential have', *ehi* 'there is', *dhino* 'give', *psahno* 'look for', *vrisko* 'find', *perno / piyeno* 'take to sb' and *ferno* 'bring'.

(18)   dhen eho *ti na foreso   sto parti*
        not   have-I   what   to wear-I   at the party
        "I have nothing to wear at the party."

3.1 Similarities between FWHCs and IFRs

FWHCs and IFRs share a fair number of morphological (cf. 19(a)-(c)), syntactic (cf. 20(a)-(c)) and semantic (cf. 21(a)-(b)) properties.

(19) Morphological properties
a. Both FWHCs and IFRs are not marked as RFRs.
b. Both FWHCs and IFRs do not allow for the *–ever* marker on wh-words
c. The head features of the wh-word in both FWHCs and IFRs are checked inside the
   wh-clause.

(20) Syntactic properties
a. Both FWHCs and IFRs cannot be passivized or topicalized.
b. Both FWHCs and IFRs support null anaphora.
c. Both FWHCs and IFRs allow impersonal proforms.
d. Both FWHCs and IFRs do not stack (for IFRs see Grosu and Landman 1998).
e. Neither FWHCs nor IFRs allow multiple wh-phrases.
f. Neither FWHCs nor IFRs allow for an explicit sortal in the wh-phrase.
g. Extraction out of both FWHCs and IFRs is bad.
h. Neither FWHCs nor IFRs can have in their Spec of CP a phrase that includes a DP
    which dominates, but is not a projection of, the wh-word.

(21) Semantic properties
a. Both FWHCs and IFRs have an NP-type, nonpresuppositional interpretation.
b. Both FWHCs and IFRs have narrow scope with respect to logical operators and
    quantifiers.

3.2 Differences between FWHCs and IFRs

The properties FWHCs share with IFRs raise the question whether FWHCs are in fact a
subcategory of IFRs. However, besides the similarities, there is a considerable number of
differences between FWHCs and IFRs (cf. (22)).

(22) Differences between FWHCs and IFRs:
a. FWHCs and IFRs have distinct tense requirements (Future Tense vs. *na* -clauses).
b. With FWHCs, but not with IFRs, the moment of utterance plays a role in the form of
    the verb.
c. With FWHCs, but not with IFRs, the eventuality described in the wh-clause is
    necessarily posterior to the one described in the matrix clause.
d. Strong feeling of current relevance with FWHCs, but not with IFRs
e. FWHCs and IFRs do not share the same distribution.
f. All the selecting predicates for FWHCs are accomplishment predicates; this is not the
    case with the selecting predicates for IFRs (cf. *psahno* 'look for', *eho* 'have').
g. IFRs, but not FWHCs, can serve as pivots of existential sentences.
h. FWHCs and IFRs have distinct NP-type interpretations.
i. FWHCs are in free distribution with definite DPs, while IFRs are in free distribution
    with indefinite DPs.
j. FWHCs, contrary to IFRs, lack an 'availability reading' (cf. Izvorski 1998).

Due to 22(a), it is impossible to substitute IFRs for FWHCs, and vice versa (cf. (23)-(24)).

(23)
a.   eho   idhi   aghorasi   *ti*   *tha foreso*   *sto parti*
      have-I   already   bought   what   will wear-I   at the party
      "I have already bought what I am going to wear at the party."
b.   *eho   idhi   aghorasi   *ti*   *na foreso*   *sto parti*
      have-I   already   bought   what   to wear-I   at the party

(24)
a.   dhen   eho   *ti*   *na foreso*   *sto parti*
     not   have-I   what   to wear-I   at the party
     "I have nothing to wear at the party."
b.   *dhen   eho   *ti*   *tha foreso*   *sto parti*
     not   have-I   what   will wear-I   at the party

As pointed out in Section 2.2 (cf. also 22(b)), the tense in FWHCs is Simple Future or Future Continuous when the event time of the wh-clause follows not only the event time of the matrix clause but also the utterance time, while it is Conditional Present when the event time in the wh-clause precedes the utterance time (cf. (25)). With IFRs, on the other hand, the moment of utterance plays no role in the form of the verb. More specifically, irrespective of whether the event time of the wh-clause follows or precedes the moment of utterance, the verb form in the IFR is the same (cf. 26(a) and (c), and the ungrammaticality of 26(b)).

(25)
a.   eho   idhi   aghorasi   *ti*   *tha foreso*   *sto parti*
     have-I   already   bought   what   will wear-I   at the party
     "I have already bought what I am going to wear at the party."
b.   iha   idhi   aghorasi   *ti*   *tha forusa*   *sto parti*
     had-I   already   bought   what   would wear-I   at the party
     "I had already bought what I would wear at the party."
c.   *iha   idhi   aghorasi   *ti*   *tha foreso*   *sto parti*
     had-I   already   bought   what   will wear-I   at the party

(26)
a.   dhen   tha eho   *me pion*   *na miliso*   apopse   sto parti
     not   will have-I to whom   to talk-I   tonight   at the party
     "Tonight at the party there will be noone to talk to."
b.   *dhen   iha   *me pion*   *na milusa*   htes   sto parti
     not   had-I   to whom   na would talk-I   yesterday   at the party
c.   dhen   iha   *me pion*   *na miliso*   htes   sto parti
     not   had-I   to whom   na talk-I   yesterday   at the party
     "Yesterday at the party there was noone to talk to."

The observation made in Grosu (1989:52) that IFRs "are semantically characterized … by 'future orientation'" does not hold, as shown by example (27), where the eventuality described in the IFR is simultaneous with the one described in the matrix (cf. 22(c)).

(27) apo ton perasmeno mina   dhen eho   *me pion na miliso*
      since the last month   not   have-I   with whom   to talk-I
      "It's a month now I have noone to talk to."

It is important to observe that FWHCs are not allowed as complements of existential or possessive predicates, which is the standard environment for IFRs crosslinguistically (cf. 22(g) and earlier example 24(b)). If we juxtapose the lists of selecting predicates for FWHCs and IFRs, we notice, however, that a couple of predicates, i.e. *vrisko* 'find', *ferno* 'bring' and *perno* / *piyeno* 'take to sb', can select both FWHCs and IRFs. This fact is shown not to be problematic for the claim that FWHCs and IFRs are distinct constructions. Where the 'same' predicate selects both FWHCs and IFRs, the predicate is claimed to appear in two distinct semantic structures. Crucially, as shown below for *vrisko* 'find' (cf. (28)), which selects both FWHCs and IFRs, there is a difference in interpretation depending on whether it selects a FWHC or an IFR. Namely, the FWHC in 28(a) denotes an individual that is defined by a unique property, while the IFR in 28(b) is interpreted as a weak DP.

(28)
a.   vrika   *pu*   *tha mino*   *sti Lefkosia*
     found-I   where   will stay-I   in Nicosia
     "I have found my future flat in Nicosia."
b.   vrika   *pu*   *na mino*   *sti Lefkosia*
     found-I   where   to stay-I   in Nicosia
     "I have found a place to stay in Nicosia."

With respect to point 22(h), it will be argued in Section 4 that FWHCs are interpreted as intensional definite DPs; as far as IFRs are concerned, Section 7 advances the working hypothesis that they are interpreted as intensional indefinite DPs. Points 22(g), 22(i) and 22(j) are adduced as pieces of evidence for the claim that FWHCs and IFRs have distinct interpretations. Examples (29) and (30) illustrate point 22(i), namely that FWHCs are in free distribution with definite DPs, while IFRs are in free distribution with indefinite DPs.

(29)
a.   eho   idhi   shedhiasi   *me ti*   *tha stoliso*   *to dhendro*
     have-I   already   designed   with what   will decorate-I   the tree
     "I have already designed what I am going to decorate the tree with."
b.   eho   idhi   shedhiasi   *ta stolidhia ya to dhendro*
     have-I   already   designed   the ornaments for the tree
     "I have already designed the tree ornaments."

(30)
a.   dhen   eho   *ti*   *na valo*
     not   have-I   what   to wear-I
     "I have nothing to wear."
b.   dhen   eho   *ruha*
     not   have-I   clothes
     "I have nothing to wear."

For those predicates that select both FWHCs and IFRs (e.g. *ferno* 'bring'), modulo the differences in interpretation, it is important to note two more factors that seem to play a role in determining whether they will select a FWHC or an IFR in a particular case. The two factors are (a) control of the wh-clause subject by an argument of the matrix clause and (b) the semantics of the wh-clause predicate. In general, FWHCs seem to favour subject control (cf. 31(a)); they are not good with object control (cf. 31(b)), unless the wh-clause predicate is a non-activity predicate (cf. 31(c)). IFRs, on the other hand, only allow subject control with two-place matrix predicates, and object-control with three-place matrix predicates (cf. 31(a)-(b) and (32)); unless the wh-clause predicate is a non-activity predicate (cf. 31(c)).

(31)
a.   efera   *ti*   **na /tha*   *etimaso*   *ya tin ekthesi modhas*
     brought-I   what   to   /will   prepare-I   for the fashion show
     "I have brought with me what I am going to prepare for the exhibition."
b.   mu   efere   *ti*   *na /*tha*   *etimaso*   *ya tin ekthesi modhas*
     to me   brought-he   what   to   /will   prepare-I   for the fashion show
     "He has given me what to prepare for the exhibition."
c.   su   efera   *ti*   **na /tha*   *hriastis*   *ya to ghliko*
     to you   brought-I   what   to   /will   need-you   for the cake
     "I have brought you what you are going to need for the cake."

(32) mu   efere   *ti*   *na etimaso*   */*na etimasi*   */tha etimasiya tin ekthesi*
      me   brought-he what   to prepare-I   /to prepare-he   /will prepare-he   for the show
      "He has given me stuff to prepare for the exhibition."

I will not attempt here to account for the distinct 'control' properties of FWHCs and IFRs. A possible line of investigation would be to examine whether this difference is somehow linked to the distinct semantic structures of the selecting predicates in the two constructions. Another line to pursue, not necessarily incompatible with the previous one, is to examine whether the 'control' properties of FWHCs and IFRs somehow follow from the 'definite' reading of FWHCs and the 'indefinite' reading of IFRs, respectively.

4. The Semantics of FWHCs

The construction-specific goal of the paper is twofold. On the one hand, to probe into the interpretation and the properties of FWHCs. On the other hand, to understand in what sense the predicates that select FWHCs form a natural class; which could in turn lead to an understanding of why they select FWHCs. It is argued that the key to both questions is *intensionality* (cf. claim 3(a)-(b)).

(3)   a. FWHCs are interpreted as intensional definite DPs (semantic type <s,e>).
        b. In selecting FWHCs the matrix predicates are used intensionally.

4.1   FWHCs are intensional definite DPs

So far we have seen (a) that FWHCs cannot denote a familiar individual; they denote an individual that does not necessarily yet exist, but is defined by a unique property (e.g. *being ear-marked for wearing at the party* in the case of (1)). And (b) that FWHCs are in free distribution with definite DPs. It is claimed that FWHCs are interpreted as intensional definite DPs[3] (semantic type <s,e>) (cf. 3(a)). The arguments in support of the intensionality claim for FWHCs appear in (33). The claim in 3(a) is that FWHCs are interpreted as intensional *definite* DPs, and not just intensional DPs. This is necessary in order to set apart intensional definite DPs from intensional indefinite DPs (see Moltmann 1997).

(33) FWHCs:
a.   denote an individual that is defined by a unique property; that individual cannot be a
       familiar one; also, the individual need not necessarily yet exist.
b.   show a ban on substitution
c.   do not allow for explicit sortals
d.   allow for impersonal proforms
e.   allow for *one* -/ null- anaphora

According to 33(b), it is not possible to substitute a DP for the FWHC, where the DP and the FWHC have the same reference (cf. (34)). Failure of substitution is known to be the standard test for intensionality.

(34)
a.   eho   idhi   aghorasi   *ti   tha foreso   sto parti*
       have-I   already bought   what   will wear-I   at the party
       "I have already bought what I am going to wear at the party."
b.   sto parti   tha foreso   *to kokino forema*
       at the party   will wear-I   the red dress
       "At the party I am going to wear the red dress."
c.   #eho   idhi   aghorasi   *to kokino forema*
       have-I   already bought   the red dress

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[3] If, as argued, FWHCs are interpreted as intensional definite DPs, the alleged definiteness marker, i.e. *o* -, of RFRs, should be reanalysed as a specificity marker or an extensionality marker.

"I have already bought the red dress."

Three more intensionality tests, which were introduced by Moltmann (1997), i.e. ban on explicit sortals, *one* -/ null-anaphora (cf. earlier (4)), and availability of impersonal proforms (cf. (8)), have been shown to apply successfully to FWHCs. Presumably, some other semantic characteristics of FWHCs, e.g. scoping below logical operators and quantifiers, could also be proposed as intensionality tests. Moreover, irrespective of whether the eventuality described by the FWHC is posterior or anterior to the utterance time, there is no entailment that the object will be or was actually put to the use described in the FWHC. The absence of such an entailment is again compatible with the proposed intensionality of FWHCs.

The question arises whether the restriction for Future Tense relates to the intensionality of FWHCs. It could be argued that the Future Tense of FWHCs marks the intensionality of FWHCs. Still, IFRs, which are also intensional, obey the restriction that they be nontensed. The fact that FWHCs and IFRs, both of which are intensional according to the intensionality tests, obey different tense requirements does not necessarily indicate that the requirement for Future Tense in FWHCs has a different source than intensionality. The Future operator in the FWHC could signal this particular type of intensionality that FWHCs have (more on this in Section 4.2), and which is distinct from the intensionality of IFRs.

How the semantics of FWHCs is derived from the basic semantics of a wh-clause is of particular interest. It is generally assumed that relative clauses denote functions characterising sets of individuals. Cooper (1983) has extended this assumption to all wh-clauses, claiming that wh-clauses in general are born with this type of meaning. Under Cooper's analysis this meaning can then type-shift in one of two ways – it can be mapped either into a question-type meaning or into an NP-type meaning to give a free relative. Following Cooper's claim that the root meaning of all wh-clauses is that of a property, I am proposing that in FWHCs the meaning of wh-clauses type-shifts into an NP-type meaning, which is, however, not the same as the meaning of a RFR.

4.2 The selecting predicates are used intensionally

It is not at all obvious how to characterize the predicates that select FWHCs. In terms of their semantics, they belong to the class of accomplishment verbs. This is not an adequate characterization as there are accomplishment predicates that do not select FWHCs. Neither is *creation predicates* an adequate description for two reasons: (a) not all selecting predicates are creation predicates (e.g. *aghorazo* 'buy'); and (b) these are creation predicates also when they take presuppositional DPs as their complements. The paper advances the claim in 3(b).

The general assumption is that we may have intensional definite DPs in the complement position of a few DP-predicates, essentially verbs expressing intentions, such as *look for* (as in *I am looking for the President*), *wish for* and the like. What will be argued for here is that it is not just these verbs that can be used intensionally. In particular, I have identified another class of DP-predicates (: the class of predicates which may select FWHCs) the complement DPs of which can, though not necessarily, be interpreted as intensional definite DPs. The intensional definite complements of these predicates are syntactically realized as either definite DPs or FWHCs (cf. the free distribution between FWHCs and definite DPs). The claim defended in this section is 3(b), repeated below. It is important to note that 3(b) is distinct from a stronger claim like 3′(b) below. It would be neither plausible nor possible to argue that predicates like *buy* , *get* , *keep* and *put* , among others, are only intensional in Greek.

(3)   b. In selecting FWHCs the matrix predicates are used intensionally.

(3′)   b. The predicates that select FWHCs are intensional.

It was argued in the previous section that FWHCs are intensional definite DPs. I am claiming in 3(b) that their intensionality is attributed to the selecting predicates, which have an intensional use, except for their highly frequent extensional use. The possible frames for the selecting predicates appear in (35). These predicates are used extensionally (a) when they select (in)definite DPs (cf. 35(a)), as well as when they take RFR complements; and (b) when they select an (in)definite DP and an 'as'-phrase modifying that DP (cf. 35(d)). In addition, I am putting forward the hypothesis that selection of FWHCs is not the only case where these predicates are used intensionally; in particular, that most of the predicates in question can also select intensional indefinite DPs, which are realized in Greek as null determiner DPs.

(35)   The set of predicates under examination select:
a.   (in)definite DPs
b.   FWHCs or definite DPs in free distribution with FWHCs
c.   null determiner DPs
d.   (in)definite DPs and DP-modifying phrases

It is one thing to claim that the entire Future wh-construction involves intensionality and another thing to attribute the intensionality of the construction to the selecting predicates, as defended here. On the other hand, it is not at all obvious what an alternative account for the intensionality of FWHCs would be like. If examples of FWHCs systematically involved some operator in the matrix clause, e.g. Negation, modals or generic adverbials, the intensionality of FWHCs could, in principle, be attributed to them[4]. This is not the case, however.

Attributing the intensionality of FWHCs to the selecting predicates cannot be the end of the story; we ultimately need an account for why these particular predicates can be used intensionally. It seems to me that the answer to this question lies in the construction in 35(d), where the predicates in question c-select an (in)definite DP and a DP-modifying 'as'-phrase (cf. (36)). Semantically, they s-select an individual and a property modifying that individual. The object-modifying phrase obligatorily has future orientation[5].

(36)   aghorasa   ena forema   ya kalo
        bought-I   a dress   as good
        "I have bought a dress to have it as my Sunday dress."

I am proposing to explore the following working hypothesis concerning the origin of the Future wh-construction; namely, that only those predicates that can select an extensional object and an object-modifying phrase with future orientation can alternatively select

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[4] Izvorski (1998), for example, derives the modality/intensionality of IFRs from the irrealis nature of the embedded clause.

[5] Consider in (1) an example where a predicate selects an object and an object-modifying phrase, which, however, does not have future orientation.
(1)   ton   ihan   ya pethameno
        him   had-they   as dead
        "They considered him dead."
The clause for the future orientation of the object-modifying phrase also correctly excludes predicates where the property modifying the individual is a result of the activity of the predicate/ impact of the predicate on a particular individual (as in *strike the iron flat* , for instance) from selecting FWHCs. For a predicate selecting an object and an object-modifying phrase to be able to also select FWHCs, the property modifying the individual selected by the verb should do no more than indicate the use in which the individual selected by the verb will be put.

intensional definite DPs with future orientation; these DPs are realized as either FWHCs or definite DPs. According to this hypothesis, the capacity of a predicate to appear in the construction 35(d) signals that this predicate can also select FWHCs. It can be shown, though I will not do it here for reasons of space, that all the predicates that select FWHCs have a c-selection frame which includes an object DP and an object-modifying phrase. Presumably, it is not a coincidence that precisely those predicates which can select an object and an object-modifying phrase can alternatively select FWHCs.We have seen that the class of predicates that take object-modifying phrases with future orientation coincides with the class of predicates which select FWHCs. Moreover, the interpretation of the sentences with object-modifying phrases bears similarities to the interpretation of the sentences with FWHCs. We can now explain the ungrammaticality of examples (37) and (38).

(37) *aghorasa   afto to forema *ti tha foreso   sto parti*
      bought-I   this the dress   what   will wear-I   at the party
      "I have bought this dress as what [i.e. the dress] I am going to wear at the party."
(38) *aghorasa   *ti   tha foreso   sto parti*   ya kalo
      bought-I   what   will wear-I   at the party   as good
      "I have bought what I am going to wear at the party as my good dress"

In (37) we see that it is not possible to substitute a FWHC for an object-modifying phrase. The ungrammaticality of (37) can be accounted for as a clash of selection requirements; namely, a predicate (e.g. *aghorazo*) cannot simultaneously select an extensional (i.e. *afto to forema*) and an intensional (i.e. *ti tha foreso sto parti*) complement. In (38) we see that a sentence cannot contain both a FWHC and an object-modifying phrase; presumably, because one of them will be redundant as they both target the same kind of argument. If FWHCs could be used extensionally, as (in)definite DPs can , example (38) would be grammatical (contrast the ungrammaticality of (38) with the grammaticality of (36)). The anticipated effect of the object-modifying *as* -phrase *ya kalo* in (38) would be to block the intensional reading of *aghorazo* 'buy' and force the extensional reading of the verb. This cannot happen in Greek because the form of the FWHC mark the wh-clause as intensional. The extensional use of *aghorazo* 'buy' would require an extensional wh-clause, i.e. a RFR. As shown in Section 2, free relatives are morphologically marked in Greek, which is why the FWHC in (38) cannot be interpreted as a RFR. The grammaticality of the English translation does not pose a problem. The English translation of (38) is grammatical, because the wh-clause in the English translation is read as an extensional complement, i.e. a RFR; this is possible because free relatives in English are not morphologically marked, as they are in Greek. If I am right in that the ability of a particular set of verbs to select FWHCs has its origin in their capacity to select a DP and a DP-modifying phrase with future orientation, it could be argued that the requirement for Future Tense in the wh-clause is precisely a consequence of the fact that the FWHC 'corresponds' semantically to the object-modifying phrase with future orientation in the construction where the same set of predicates select an object and an object-modifying phrase.

5. The Syntax of FWHCs

I have proposed that FWHCs are interpreted as intensional definite DPs. The syntax of FWHCs is examined next; it is proposed that they have a DP layer on top of CP (cf. (39)).

(39)

a. Future wh-clauses are DPs.

b. [DP [D ∅] [CP [wh-phrase] [C′ …]]

The D head, which is occupied by a null determiner, is responsible for the semantic interpretation of FWHCs; it checks the semantic complement feature of the selecting predicate, namely the requirement for an intensional definite DP. The D head selects a nominal predicate. The nominal predicate is realized as a wh-clause.

The distribution of FWHCs can be accounted for in terms of two different analyses (cf. (40)).

(40) Two possible analyses:
a.   FWHCs as such are selected by the specific set of predicates.
b.   The specific set of predicates, in this particular reading, select a particular semantic complement, i.e. intensional definite DPs, which can be realized as FWHCs.

The limited distribution of FWHCs strongly suggests selection. The claim that FWHCs are selected is not trivial. It is one thing to claim that FWHCs are placed in positions where a particular NP type is selected and another thing to claim that it is FWHCs as such that are selected. If it could be shown that intensional definite DPs in the complement position of this particular set of verbs, can be manifested as some other syntactic object besides FWHCs, we would have a strong argument for opting for analysis 40(b) over analysis 40(a). In fact, it has been shown (cf. earlier (29)), that intensional definite DPs can be realized as definite DPs or as FWHCs; which implies that claim 40(b), and not 40(a), is on the right track. But if FWHCs as such are not selected, we could in principle analyse FWHCs as (a subtype of) free relatives, provided what we understand by free relatives is wh-clauses in DP-positions. This analysis is compatible with the view that FWHCs, RFRs and IFRs are in 'complementary distribution'. RFRs are one of the possible canonical structural realizations of extensional DPs. While mainly extensional, RFRs can also be interpreted as intensional definite DPs, i.e. in the complement position of intensional verbs like *look for* (cf. *He is looking for whoever broke into his house*). IFRs, on the other hand, together with null determiner DPs are canonical structural realizations of a semantic type to be identified.

6. The selecting predicates have a 'perfect' component

Dowty (1972) has argued that the meaning of an accomplishment verb phrase invariably involves the coming about of a particular state of affairs. Given that the set of accomplishment predicates is larger than the set of predicates that select FWHCs, it will be investigated whether it is possible to describe the set of accomplishment predicates that select FWHCs by identifying more specifically the state they induce. On the basis of the pieces of evidence in (41) the paper advances the claim in (42).

(41) The selecting predicates, in selecting FWHCs:
a.   have a strong feeling of current relevance;
b.   are compatible with *apo* 'since'-phrases;
c.   allow Parakeimenos B (i.e. *eho* 'have' + past participle) as a Present Perfect form.

(42) The selecting predicates have a 'perfect' component as part of their aspectual structure.

I have called the state component of the predicates that select FWHCs 'the perfect component' to draw attention to the fact that it shares a couple of characteristics (cf. 41(a)-(b)) with the universal perfect. Properties 42(a)-(c) are presented next.

Sentences with FWHCs present a time reference puzzle. According to 41(b), the selecting predicates, which are notably eventive predicates, are compatible with *apo* 'since'-phrases (cf. (43)). This is not expected. On the contrary, we would expect the selecting predicates to be solely compatible with time adverbials that mark a point in time (cf. (44)).

(43) aghorasa   idhi   apo ton perasmeno mina *ti tha foreso sto parti*
      bought-I   already   since last month   what   will wear-I   at the party
      "It's already a month since I bought what I am going to wear at the party."

(44) htes   aghorasa *ti*   *tha foreso*   *sto parti*
      yesterday   bought-I   what   will wear-I   at the party
      "Yesterday I bought what I am going to wear at the party."

The preposition *apo* 'since, from' standardly marks the left boundary of a period of time, and is also compatible with the universal and the experiential readings of the semantic category "perfect". The right boundary may or may not be expressed, and it may contain the moment of utterance. It has been noted that the universal perfect can be formed only if the "underlying eventuality" (the eventuality referred to by the syntactic material occurring just below the perfect) is a stative verb or adjective or a progressive. Iatridou et al (2001) have argued that what is required is *unboundedness* , a notion related but not identical with stativity. An eventuality is described as unbounded when it is ongoing at an interval and is therefore not asserted to have reached an endpoint. The syntacticosemantic feature [unbounded] is realized by progressive or imperfective morphology. If so, as expected, *apo* 'since'-phrases are not compatible with eventive verbs / eventive Past Tense (cf. (45)).

(45) (*apo) tin paraskevi aghorasa   to ble mu forema
      since the Friday   bought-I   the blue my dress
      "(*Since) last Friday I bought my blue dress."

Given the ungrammaticality of (45), the availability of *apo* –phrases with predicates selecting FWHCs is puzzling (cf. (43)). In order to deal with this puzzle we must first specify whether it is the universal or the experiential reading that supports the *apo* 'since'–phrase in sentences with FWHCs. One piece of evidence for the 'universal reading' hypothesis is supplied by the fact that the adverbial modifier *idhi* 'already' is compatible with the meaning of these sentences (cf. (43)). We have seen that the universal reading is possible only if the underlying eventuality is unbounded, i.e. is ongoing at an interval and is therefore not asserted to have reached an endpoint; the syntacticosemantic feature [unbounded] is realized by progressive or imperfective morphology. However, the verb in (43), i.e. *aghorasa* 'bought', is in the perfective form and the eventuality described by the verb is bounded. It will be proposed that the answer to this puzzle is provided by the hypothesis in (42).

Concerning property 41(c), it holds for the selecting predicates irrespective of whether or not they are in the selection frame under investigation. Greek has two ways of forming Present Perfect: (a) with the Present Tense of the auxiliary verb *eho* 'have' and the Past Participle of the lexical verb (Present Perfect A), or (b) with the Present Tense of the auxiliary verb *eho* 'have' and the Past Participle of the lexical verb, where the Past Participle agrees in gender, person and number with the complement of the verb (Present Perfect B). While all verbs can form Present Perfect A, the set of verbs that can form Present Perfect B is limited. As argued in Veloudis 1991, the use of Present Perfect B forms is only allowed if the event is easily related to some result, that is if the event leaves recognizable traces on some individual. As shown by the grammaticality of 46(b) below, for those predicates that select FWHCs, among other complements, it is possible to substitute Present Perfect A for Present Perfect B.

(46)
a.   eho   idhi   aghorasi   *ti*   *tha foreso*   *sto parti*
      have-I   already bought   what   will wear-I   at the party
      "I have already bought what I am going to wear at the party."
b.   eho   idhi   aghorasmeno   *ti*   *tha foreso*   *sto parti*
      have-I   already   bought   what   will wear-I   at the party
      "I have already bought what I am going to wear at the party."

On the basis of 41(a)-(c) I advance the hypothesis that the predicates that select FWHCs include a 'perfect' component in their decomposed lexical structure. The 'perfect' component has as its left boundary the action described by the selecting verb; the event described by the FWHC may, but need not mark the right boundary of the 'perfect' component.

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