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DISJUNCTION IN FREE CHOICE AND POLARITY IN MALAGASY*

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1. Introduction

The goal of this paper is to explore Free Choice Items (FCI) and Negative Polarity Items (NPIs) in Malagasy (Western Austronesian). Both are illustrated in (1).

(1) a. **Free Choice Item**

Na inona	na inona	mahatahotra	azy.
or what	or what	CAUSE.fear	3(ACC)

'Anything can frighten him.'

b. **Negative Polarity Item**

Tsy matahotra	na inona	na inona	izy.
NEG fear	or what	or what	3(NOM)

'He fears nothing.'
[Dez 1990: (1865), (1837)]

The examples in (1) show that Malagasy uses the same item for both FCIs and NPIs. This overlap is not unusual – consider English *any* (see Haspelmath 1997 for several other examples). What is striking about the Malagasy data, however, is that FCIs and NPIs are made up of a *wh*-element (e.g. *inona* 'what') and the disjunctive morpheme *na*. Thus the Malagasy equivalent of *anyone* is literally *or who or who*, *anything* is *or what or what*, etc.

The main objective of this paper is descriptive rather than theoretical. I begin in section 2 with some relevant background on Malagasy syntax. In sections 3 and 4 I lay out the distribution of FCIs and NPIs in Malagasy. Section 5 discusses the implications for theories of these elements. In particular, I show that the Malagasy data support the hypothesis that disjunction is inherently polarity sensitive (Higginbotham 1991, Amritavalli 2003). Disjunction in the scope of negation gives rise to an NPI while disjunction in the scope of a modal or generic leads to the FCI interpretation. Although I point out these connections to the theoretical literature, a more thorough analysis of the Malagasy data awaits future research. Section 6 concludes and identifies some of the remaining questions.

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2. Malagasy

Malagasy is a VOS language spoken in Madagascar. The example in (2) illustrates this order and also shows that certain adverbials (e.g. time) typically appear after the subject.[1]

(2) Nividy trondro tany Ambohibao izahay tamin'ny Talata.
buy fish there Ambohibao 1PLEX(NOM) with'DET Tuesday
'We bought fish in Ambohibao on Tuesday.'
[Rajemisa-Raolison 1971: 89]

Although the word order is fairly rigid, preverbal subjects are possible, marked with *dia* (topic) or *no* (focus).[2]

(3) a. Ny mpianatra dia mamaky teny.
DET student TOP read word
'The students, they are reading.'

b. Ny mpianatra no mamaky teny.
DET student FOC read word
'It is the students who are reading.'
[Rajemisa-Raolison 1971: 30]

Two aspects of Malagasy grammar are relevant to this paper: disjunction and quantification. There are two disjunction markers, *na* and *sa*. Simplifying somewhat, *na* is the all-purpose disjunction while *sa* is reserved for alternative questions.

(4) a. Manorata na mamakia boky.
write or read book
'Either write or read a book.'

b. Hijanona ianao sa handeha?
stay 2SG(NOM) or go
'Will you stay or go?'
[Rajemisa-Raolison 1971: 148-149]

Turning now to quantification, Malagasy has no quantificational determiners. To express the equivalent of 'each', 'every', 'some', the grammar employs adjectives and adverbs. In other words, Malagasy has A-quantification rather than D-quantification. Crucially for this paper, Malagasy also lacks a determiner equivalent to 'no' – instead disjunction+*wh* is used (plus sentential negation). We have already seen an example in (1b); a further example is given in (5).

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[1] Unless otherwise indicated, all data are from my own fieldwork with native speakers.

[2] In certain cases, preverbal subject are not overtly marked, e.g. (1a). In such cases, however, there is usually an intonational pause between the subject and the rest of the sentence, suggesting the subject has been fronted, perhaps via topicalization.

(5) Na saka inona na saka inona dia tsy mihaza alika.
or cat what or cat what TOP NEG hunt dog
'No cat hunts dogs.'

As illustrated in (1a) and (6), FCIs also use disjunction+*wh*. Comparing (5) and (6) we see that the crucial difference is the presence of negation *tsy* in (5).

(6) Na saka inona na saka inona dia mihaza voalavo.
or cat what or cat what TOP hunt rat
'Any cat hunts rats.'

Note that these disjunctive *wh*-phrases are not simple existential indefinites – for such indefinites, the existential construction (7a) or common nouns *zavatra* 'thing' or *olona* 'person' (7b) are used.[3]

(7) a. Misy mandondona ambaravarana.
exist knock at-door
'Someone is knocking on the door.'

b. Nahita zavatra ve ianao?
see thing Q 2SG(NOM)
'Did you see something?'
[Dez 1990: (1207), (1251)]

As a final point, the precise form of NPIs and FCIs can vary. Dez (1990) gives the following examples of possible variants when the disjunctive *wh*-phrase is combined with a common noun, in this case *mpivarotra* 'merchant'.

(8) a. na iza na iza mpivarotra
or who or who merchant

b. na iza mpivarotra na iza mpivarotra
or who merchant or who merchant

c. na mpivarotra iza na mpivarotra iza
or merchant who or merchant who

d. ny mpivarotra na iza na iza
DET merchant or who or who
'whichever/no merchant'
[Dez 1990: (1834)]

I assume that all of these forms are semantically equivalent and set aside for future research a more in-depth analysis of their structure.[4]

[3] Nor can *wh*-phrases in Malagasy be used as indefinites.

Summing up, the data in (5) and (6) above show that Malagasy patterns with many other languages in using the same lexical item for both NPIs and FCIs (cf. English *any*; see Haspelmath 1997 for more examples). As mentioned above, what distinguishes Malagasy from English is the presence of an overt disjunctive morpheme *na*. In the next sections, I provide an overview of the distribution of FCIs and NPIs in Malagasy, before turning to the significance of disjunction.

3. Free Choice

As in English and other languages, FCIs in Malagasy are limited to particular contexts: modals (e.g. *maha-* in (9a)), imperatives (9b), conditionals (9c), and generics (9d).

(9) a. Na inona na inona mahatahotra azy.
or what or what CAUSE.fear 3(ACC)
'Anything can frighten him.'

b. Ento aty ny mpianatra na firy na firy.
bring here DET student or how-many or how-many
'Bring here however many students there are.'

c. Na iza na iza no milaza izany, aza inoana.
or who or who FOC say that, NEG believe
'If anyone says that, don't believe it.'

d. Na saka inona na saka inona dia mihaza voalavo.
or cat what or cat what TOP hunt rat
'Any cat hunts rats.'

FCIs are therefore not allowed in episodic sentences (cf. (9a)).

(10) *Na iza na iza manao izany.
or who or who do that
*'Anyone does that.'

Unlike in English, FCIs are not licit in embedded questions or comparatives.

[4] I don't know, for example, if it is possible to have a three-way disjunction+*wh* or whether it is possible to have two different lexical heads and retain the FCI/NPI interpretation.

(11) a. * Manontany tena aho raha tonga na iza na iza.
ask self 1SG(NOM) if come or who or who
'I wonder if anyone came.'

b. * Lehibe kokoa Rabe noho na iza na iza mpianatra.
big more Rabe than or who or who student
'Rabe is bigger than any student.'

It has been argued in the literature that FCIs are a special kind of indefinite (Jespersen 1933, Vendler 1967, Jackendoff 1972, Horn 2000, Giannakidou 2001). In particular, they are indefinites that invoke indiscriminate choice. Malagasy overtly marks this choice with the use of the disjunctive morpheme *na*.

4. Negative Polarity

NPIs in Malagasy can be in any position: subject (12a), object (12b), adjunct (12c).

(12) a. Tsy mahatakatra izany na iza na iza.
NEG CAUSE.reach that or who or who
'No one can afford that.'
(lit.) 'Anyone can't afford that.'

b. Tsy matahotra na inona na inona izy.
NEG fear or what or what 3(NOM)
'He doesn't fear anything.'

c. Tsy hitako na aiza na aiza ny ondriko.
NEG find.1SG or where or where DET sheep.1SG
'I can't find my sheep anywhere.'

Although subject NPIs are possible (12a), they are limited in distribution, as seen in (13a,b).[5] To express the intended meaning, a negated existential construction is used instead, as in (13c). Note that the presence of the NPI in (13c) is optional.

(13) a. * Na iza na iza tsy nanongo an'i Koto.
or who or who NEG pinch ACC'Koto
'No one pinched Koto.'

b. * Na iza na iza tsy marary.
or who or who NEG sick
'No one is sick.'

[5] Changing the word order in (13a,b) does not affect grammaticality.

c. Tsy misy marary (na iza na iza).
NEG exist sick or who or who
'No one is sick.'

Subject NPIs seem to have the same licensing conditions as FCIs; for example, they are licensed by modality, as in (14).

(14) Na iza na iza tsy mahatsongo an'i Koto.
or who or who NEG CAUSE.pinch ACC'Koto
'No one can pinch Koto.'

Finally, as in English, NPIs can also be licensed by negative verbs, such as *manda* 'deny'.

(15) Nanda aho fa mahatakatra izany na iza na iza.
deny 1SG(NOM) C CAUSE.reach that or who or who
'I denied that anyone can afford that.'

Thus NPIs in Malagasy are quite similar to NPIs in English, with the added wrinkle that they are possible in the subject position (subject to some restrictions).

At this point, we see that FCIs and NPIs in Malagasy appear to have a "normal" syntactic distribution. Clearly more research is needed to determine the precise distribution of these elements, but for present purposes I assume that whatever licensing conditions apply to English FCIs and NPIs also apply to their Malagasy equivalents. I now turn to a discussion of how the morphosyntactic form of FCIs and NPIs in Malagasy relates to their interpretation.

5. Why Disjunction?

As we have seen, both FCIs and NPIs are complex elements in Malagasy, made up of a disjunction marker *na* and a *wh*-phrase. I propose that disjunction plays an important role in determining the interpretation of these elements. Moreover, the polarity-sensitivity of NPIs and FCIs arises, as I argue below, due to the presence of disjunction.

Turning first to FCIs, it has been argued in the literature that FCIs are a special kind of indefinite (Jespersen 1933, Vendler 1967, Jackendoff 1972, Horn 2000, Giannakidou 2001). For these researchers, FCIs are indefinites that invoke indiscriminate choice. In fact, Jackendoff (1972) and Jayaseelan (2001) explicitly claim that the meaning of *any* as disjunctive (*this or this or this or*…). This interpretation is sometimes referred to as "infinite disjunction". The Malagasy data support this analysis given that disjunction is overtly marked in FCIs. But is there more to the role of disjunction in an FCI?

Researchers have long thought that disjunction is either a polarity item itself or related to polarity. For example, Higginbotham (1991) considers examples such as (16), where disjunction can be interpreted as conjunction.[6]

[6] For discussion of the connection between disjunction and polarity in Hungarian, see Szabolcsi (2002, 2004) and Szabolcsi and Haddican (2004).

(16) John plays chess or checkers (so he'll play whichever you please)

To account for the dual interpretation of *or*, Higginbotham proposes that *or* is always accompanied by *either*, which can be either null or overt. For Higginbotham, *either* patterns with *any*: its interpretation depends on the licensor. The NPI-type licensing leads to a disjunctive reading; the FCI-type licensing leads to a conjunctive reading. The details of this analysis are not important for the purposes of this paper. What is crucial is the link between disjunction and polarity. This link is supported by the fact that Malagasy uses overt disjunction to create polarity items.

Turning now to the meaning of *any*, Lee and Horn (1995) argue that the semantics of *any* combines indefiniteness and *even*. In other words, *any* is associated with a scale. The Malagasy disjunction *na* also appears to be associated with a scale[7] – it is used in conjunction with the particle *aza* to mean 'even':

(17) a. Tonga ihany aho, na mangatsiaka aza ny andro.
arrive only 1SG(NOM) or cold even DET day
'I arrived even though it was cold.'

b. Na Rabe aza dia dokotera.
or Rabe even TOP doctor
'Even Rabe is a doctor.'

The same morphemes (*na* 'or' and *aza* 'even') are also used in the NPI 'not even a single':

(18) a. Tsy namaky na boky iray aza ny mpianatra.
NEG read or book one even DET student
'The student didn't read even a single book.'

b. *Namaky na boky iray aza ny mpianatra.
read or book one even DET student
'The student read even a single book.'

These data indicate that although disjunction turns up in many different contexts in Malagasy, these contexts can be united under the umbrella of polarity.[8]

Finally, Ludlow (2002) explores a very different connection between polarity and disjunction. His starting point is the logical inferences associated with certain lexical elements. Based on these, he argues that the determiner *no* has features (disjunction and negation) that must be checked off by the

[7] See also Kratzer and Shimoyama (2002); *na* may in fact be what they call a "domain widener".

[8] It is well known that disjunction markers in many languages are used for yes-no questions and to create indefinites out of *wh*-phrases (Haspelmath 1997; see Borzdyko 2004 for a unified analysis of Belorussian *ci*, based on the notion of indefiniteness). Malagasy *na*, however, is not a question particle (matrix or embedded).

appropriate functional heads (Conj° and Pol°). What is striking in the context of the Malagasy data is that in order to express the equivalent of *no*, Malagasy morphosyntax has recourse to the very elements that Ludlow posits as features: disjunction *na* and negation *tsy*. Once again, Malagasy provides overt evidence in favour of features that have been posited to occur covertly in English.

6. Conclusion

Data from Malagasy FCIs and NPIs show that this language expresses in the overt syntax elements that have been posited in the semantics (e.g. disjunction + negation = 'no'). These data thus support analyses connecting disjunction to polarity. Moreover, data from Malagasy provide evidence in favour of the indefinite analysis of FCIs (Horn 2000, Giannakidou 2001): disjunctive *wh*-phrases are clearly indefinite. Thus although I have not provided an explicit syntactic or semantic analysis of FCIs and NPIs in Malagasy, I hope to have convinced the reader that these data are relevant to current issues in the analysis of polarity.

There remain, of course, many open questions. First, if we accept that FCIs and NPIs are indefinite, why are they often topicalized?

(19) a. Na saka inona na saka inona dia tsy mihaza alika.
or cat what or cat what TOP NEG hunt dog
'No cat hunts dogs.'

b. Na saka inona na saka inona dia mihaza voalavo.
or cat what or cat what TOP hunt rat
'Any cat hunts rats.'

Second, grammars and dictionaries often give examples where *na* means 'and'.

(20) Samy mamy na ny ray na ny reny.
each sweet or DET father or DET mother
'Fathers and mothers are both dear.'
[Rajemisa-Raolison 1971: 148]

In (20) the quantificational adjective *samy* 'each' could be argued to induce a conjunctive interpretation, but speakers consistently translate the following sentence with 'and' rather than 'or':

(21) Miteny frantsay na i Piera na i Paoly.
speak French or Pierre or Paul
'Pierre and Paul both speak French.'

Given that the difference between 'and' and 'or' is not always easy to elicit, this conjunctive use of *na* requires careful further research.

Finally, as pointed out to me by Jila Ghomeshi (p.c.), NPIs and FCIs in Malagasy are always "reduplicated"; they are always a binary disjunction. It may be that it is reduplication that leads to the indiscriminate choice interpretation of these elements. All of these questions indicate that NPIs and

FCIs in Malagasy provide a rich area of research that has important implications for both syntax and semantics.

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