Modes of Non Individuation for Determiners
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1. Introduction

1.1 Recent work on Free Choice Items (FCIs) in different languages has lent support to the intuitive idea that free choiceness is incompatible with episodic assertions and in general prefers modal settings (see Tovena & Jayez 1999a,b, Jayez & Tovena 2003 for French and English, Giannakidou 1997a,b, 1998, 1999, 2001 for Greek, Lee 1997 for Korean, Sæbø 1999, 2001 for Scandinavian). The analysis of FCIs is complicated by the fact that certain items exhibit the typical distribution of this class and of Negative Polarity Items (NPIs). This is well–known for any (see Dayal 1998, Horn 2000, 2001 and Tovena 1996, 1998 for recent surveys and proposals). The existence of a parallel ‘double’ distribution for the morphologically unrelated French item le moindre (Tovena & Jayez 1999a) makes it difficult to believe that the bridge between polarity sensitivity (PS) and free choiceness (FC) is an isolated curiosity.

2. PS and FC any and le moindre

2.1 Any and le moindre are fine in typical NegPol environments: negative sentences (1), polar questions (2), restriction of universal quantifiers (3), too sentences (4), without phrases (5), negative implicatures (6) and conditionals (7).

(1) a. John did not read any book on the list
b. John n’a pas lu le moindre livre de la liste
(2) a. Did John read any book on the list?
b. Est–ce que John a lu le moindre livre de la liste?
(3) a. Every student who has any knowledge of the problem found the exam stupid
b. Tous les étudiants qui avaient la moindre connaissance du problème ont trouvé l’examen stupide
(4) a. John is too stupid to solve any problem
b. John est trop idiot pour résoudre le moindre problème
(5) a. John answered without any hesitation
b. John a répondu sans la moindre hésitation
(6) a. I doubt that John read any book on the list
b. Je doute que John ait lu le moindre livre de la liste
(7) a. If you have any problem with the computer, just tell me
b. Si tu as un problème avec l’ordinateur, tu n’as qu’à me le dire

2.2 As for typical FC environments, the situation is more complex.

a. Ability, possibility and permission sentences accept both items (8).

(8) a. John can get interested in any topic
b. John est capable de s’intéresser au moindre sujet
c. It is possible to monitor any event of the system
d. Il est possible de surveiller le moindre événement du système
e. As root, you may monitor the trace of any process
f. En tant que root, tu peux surveiller la trace du moindre processus

b. Assertive episodic sentences are incompatible with both items, unless there is some subtrigging (LeGrand 1975) effect (9).

(9) a. *John read any reference on the list
b. John read any reference that was relevant to his research topic
c. ?John a lu la moindre référence pour son thème de recherche
d. John a lu la moindre référence qui était pertinente pour son thème de recherche

c. However, le moindre is ok with certain nouns in assertive episodic sentences.

(10) a. Le policier a vérifié le moindre détail de ma déclaration
b. La police a exploré le moindre recoin de la maison
(lit. The police explored the slightest nook of the house)

Presumably, an idiomatic/constructional phenomenon since le moindre \(\rightleftharpoons\) le plus petit, le plus insignifiant, le plus mince, etc., in these cases.

d. Generic and habitual environments license both items (11).

(11) a. Any cat can learn to catch mice
b. Le moindre chat peut apprendre à attraper des souris
c. Any mistake was usually pointed out
d. La moindre erreur était habituellement relevée
e. Imperatives are not uniform licensers (12).

(12) 
- a. Pick any card
- b. Prends la moindre carte
- c. Punish any misdemeanor
- d. Punis le moindre délit

f. The same is true for phrasal comparatives (13).

(13) 
- a. John did better than any other boy in his class
- b. John a mieux réussi que le moindre autre élève de sa classe

2.3 Le moindre patterns with ‘low’ superlatives (the smallest, the least, the slightest, the most basic, the least significant, ‘the lightest’, le plus quelconque ‘the most ordinary’).

a. This behaviour is expected in PS environments, which are known to license such superlatives. This extends to FC environments.

(14) 
- a. John est capable de s’intéresser au sujet le plus insignifiant
- b. John can get interested in the most trivial topic
c. Il est possible de surveiller le plus petit événement du système
d. It is possible to monitor the slightest event of the system
e. En tant que root, tu peux surveiller la trace du processus le plus élémentaire
f. As root, you may monitor the trace of the most basic process

(15) 
- a. John read the slightest reference on the list
- b. John read the slightest reference that was relevant to his research topic
c. John a lu la plus petite référence de la liste
d. John a lu la plus petite référence qui était pertinente pour son thème de recherche

2.4 pace Horn (2000, 2001) any is not an e.o.s. indefinite (≠ le moindre, which is presumably an e.o.s. definite), for three reasons.

a. The emphatic value of any is not salient with a rigid restriction, in contrast to le moindre. Le moindre and low superlatives have an emphatic effect in negative episodic sentences and questions (see Guerzoni 2001, van Rooy 2003 for recent analyses of this type of phenomenon). (19a,b,c,d,e,f) are generally interpreted as stronger than (19g,h), which are not very different from (19i,j).

(19) 
- a. Est-ce que John a lu le moindre livre?
- b. Est-ce que John a eu la plus mince hésitation?
c. Did John read the slightest book?
d. Did John have the slightest hesitation?
e. John n’a pas lu le moindre livre de la liste
f. John did not read a single book on the list
g. Did John read any book on the list?
h. John did not read any book on the list
i. Did John read a book on the list?
j. John did not read a book on the list

b. The same contrast obtains with standard indefinites + even.²

(20) 
- a. Did John read a book on the list, even a small one?
- b. Est-ce que John a lu un livre de la liste, même un petit?
c. Did John read any book on the list?
d. Did John read a book on the list
c. Imperatives

Horn assigns the e.o.s. value to PS and FC any. Where does it surface in imperatives like Pick any card!? ‘Pick a card, even a ?? one’.

d. Rullman (1996) notes that, in contrast to even, any does not associate with focus. Le moindre patterns with any, which suggests that this test does not discriminate e.o.s. but rather concessive NPIs.

e. Conclusion

¹In French, la plus petite carte may mean ‘the card that has the lowest power’, in which case the sentence is ok.
²See (Lee & Horn 1994) for the view that any is an indefinite plus even.
Whether any was formerly an e.o.s. and no longer is, or it has been something different from the beginning, this cannot be decided unless new evidence is adduced ⇒ any hypothesis about the PS/FC articulation should be neutral in the argument.

3. From PS to FC

3.1 Any as primarily an NPI

a. Analogy with le moindre whose lexical origin suggests an NPI function.

b. Diachrony: any as an indefinite (one) + first uses in questions, negative and conditional sentences (OED 2003).

3.2 The PS/FC articulation for any and le moindre

a. Intuitively, any and le moindre entail a universal quantification but cannot be reduced to it.
   • Standard universal quantifiers (every, tous les in French): assert that every member of the restriction satisfies the scope.
   • NPIs like any and le moindre communicate (either through scalar or an indiscrimination mechanism) that the members of the restriction cannot be distinguished w.r.t. the scope.

Horn, Fauconnier and their followers (Israel) on scales: minimizers signal that a certain proposition expressed by the sentence applies to every element, including the X–est (hence the concessive value mentioned by Lee and Horn (1994) and Lee (1997)).

Indiscrimination manifests itself in FC–tags such as que ce soit.3

(21)  
  a. *John n’a pas lu quelque livre
       [intended: ‘John did not read any book’]
  b. John n’a pas lu quelque livre que ce soit
     ⇒ ‘John did not read a book, no matter which one you consider’

b. Non–PS FCIs are driven by Non Individuation (NL Jayez & Tovena 2003), i.e. the fact that the information conveyed by the sentence does not reduce to individuating information.

In the present approach, given a tripartite structure [FCI] [P] [Q], no individuation is obtained through the particular way in which P applies to different members of [Q] or situated situations where x ∈ [Q] satisfies P.

So–called Austinian propositions (Barwise & Etchemendy 1987, after Austin, 1950) = propositions that hold at particular situations ≠ Russelian propositions = non–situated propositions (mathematical truths).

Borderline cases: physical laws/constraints.

3Literally, ‘which/what it be [SUBJ]’

c. PS anylle moindre ~ FC anylle moindre = all members of [P] are members of [¬Q] or are not known to be members of [Q] (they cannot be distinguished on the basis of ¬Q in the current situation) ~ no member of [P] can be distinguished as a member of [Q] or [¬Q] in the current or a (modally) accessible situation.

d. The PS case
   • The general idea: the impossibility of distinguishing between individuals in [P] w.r.t. ¬Q is brought to the fore. Individuation occurs through eventualities, since individuals satisfy particular properties at particular spatio–temporal locations (situation semantics). Thus, individuals in [P] cannot be distinguished via events or states.
   • Events and negation. (1a,b): inside the current situation s, there is no particular spatio–temporal location at which John did not read a book on the list. It is true that John did not read a book on the list everywhere in s.
   • States and negation. John is not familiar with any of these problems: there is no particular spatio–temporal location at which John is not familiar with a problem. This is true everywhere in s.
   • Questions. (2a,b): there is no particular spatio–temporal location at which it is not true that John read a book. This is true everywhere in s.

So, ‘unifying’ question and negation cases,

A

| There is no particular event or state at which John is known to satisfy the property on which the (negation or question) operator bears |

But,

B

| We do not say that A is a licensing condition for NPIs or for PS items with a FC profile. |

In fact,

C

| We only claim that |
| (i) A is a consequence of the application of the licensing conditions for the item (e.g. the scalar implicature(s)) and |
| (ii) that this consequence is sufficiently salient and stable to provide the ground for an extension to the FC profile. |

e. The nature of the extension to FC

PS: no particular event or state inside any situation relevant for the interpretation.

FC: no particular determined event or state in any situation relevant for the interpretation.

(22) The PS ~ FC bridge is a link between the non–existence of events/states and the indetermination of events/states.
4. Implementing the bridge between PS and FC items

4.1 Eventualities and situations


a. Spatio–temporal standpoints are pairs of the form \(<\ell, t>\), where \(\ell\) is a spatial region (not necessarily connected) and \(t\) a temporal interval. We write \(<\ell, t> \subseteq <\ell', t'>\) whenever \(\ell \subseteq \ell'\) and \(t \subseteq t'\).

b. Infons: propositional objects which are spatio–temporally situated. Infons = minimal units of information (for some given grain of analysis/perception/representation).

(25) An infon is a pair \(<\phi, <\ell, t>>\) where \(\phi\) is a formula and \(<\ell, t>\) a spatio–temporal region.

(26) A situation \(s\) is a set of infons. We write \(\ell \in s\) or \(t \in s\) whenever there is an infon \(<\phi, <\ell, t>>\) in \(s\).

(27) If \(s\) is a situation, the spatio–temporal region defined by \(s, r(s)\) is the pair \(<\bigcup\{\ell : \ell \in s\}, \bigcup\{t : t \in s\}>\).

c. Individuation

Intuitively, individuation is the fact that individuals satisfy a property at some given spatio–temporal location. We define different modes of individuation, corresponding to the cases discussed in section 3.

(28) If \(\sigma\) is an infon, \(s \models \exists x \sigma(x)\) iff, for some \(a, s \models \sigma(a)\).

(29) Non–modal individuation

a. Let \(s\) be a situation and \(O\) be a propositional operator such as negation or question. \(s\) is individuating w.r.t. \(\phi\) iff:

\[s \models \exists x, \ell, t(<\phi(x), <\ell, t>)).\]

b. \(s\) is locally individuating iff

\[s \models \exists x, \ell, t, \ell', t'(<\ell, t> \subset r(s) \& <\ell', t'> \subset r(s) \& <\phi(x), <\ell, t>> \& <\phi(x), <\ell', t>> \& <O[\phi(x)], <\ell', t>>).\]

Remark: local individuation w.r.t. \(\phi\) means that \(\phi\) is satisfied at some location and not satisfied or not known to be satisfied at some other location. ‘Pieces’ of the situation are contrasted with respect to satisfaction or non–satisfaction. Which semantics is to be provided for question operators is a big issue that we do not consider here. We simply assume that \(s \models (?[\phi(x)])\) is true only if \(s \not\models \phi(x)\) and \(s \not\models \neg\phi(x)\) (partiality).
(30) **Modal operators**

\( s \models \phi \iff \text{there exists at least one } s' \text{ that } \phi \text{ accessible from } s \text{ such that } s' \models \exists \ell', t', <\phi, \ell', t'>. \square \text{ is defined analogously.} \)

(31) **Modal individuation**

\( s \text{ is a modally individuating situation w.r.t. } \phi \iff \)

\( s \models \exists x, \ell, t (\langle \Box [\phi(x)], <\ell, t, t'>) \).

4.2 Austanian applications

**a.** in PS environments, PSI such as any and le moindre trigger interpretations which entail

(i) \( s \models \exists x, \ell, t, t', \langle \ell, t, t'> \subset r(s) \land \langle \ell, t, t'> \subset r(s) \land \langle P(x) \land Q(x), <\ell, t, t'> \land <\neg[P(x) \land Q(x)], <\ell, t, t'> \rangle \),

for negation, and

(ii) \( s \models \exists x, \ell, t, t', \langle \ell, t, t'> \subset r(s) \land \langle \ell, t, t'> \subset r(s) \land \langle P(x) \land Q(x), <\ell, t, t'> \land <\neg[P(x) \land Q(x)], <\ell, t, t'> \rangle \),

for questions.

As such, they are not locally individuating w.r.t. \( \lambda x. P(x) \land Q(x) \).

**b.** FCIs

We assign to them the constraint in (32).

(32) **NI for FCIs**

A FCI is appropriate w.r.t. a tripartite structure ([FCI] [\( P \) [\( Q \)]) and an interpretation I only if:

I does not require that there be a situation \( s \) and an individual x in \( P \) s.t.

\( s \models \exists \ell, t, \langle P(x) \land Q(x), <\ell, t, t'> \rangle \) or

\( s \models \exists \ell, t, \langle P(x) \land \neg Q(x), <\ell, t, t'> \rangle \).

- For episodic sentences or questions, (32) corresponds to the fact that, whenever the interpretation is based on the current (real) situation, the FCI is out because that situation certainly makes \( P(x) \land Q(x) \) or \( P(x) \land \neg Q(x) \) true. E.g., the \( \forall - \) FCI tout is anomalous in questions like (33), which point towards the real situation, because, in that situation, any given book has been read or not read at some spatio–temporal location.

(33) *Est-ce que John a lu tout livre de la liste?*

Did John read \( \forall - \) book on the list?

- For modal sentences, the bad configurations for FCIs are those that require that, for a given \( P \)-object \( x \), there be an accessible situation in which \( x \) is \( Q \) (or \( \neg Q \)). This is typically the case when we have a \( \Box \) modality. For instance, (34a) entails that every card will be picked in every continuation (accessible situation). So, there are \( P \)-objects (the cards) that are \( Q \)-objects in every continuation. (34b) entails that the same card will be picked in every continuation.\(^4\)

(34) a. *Prends toute carte*

Pick \( \forall - \) FCI card

b. *Prends n’importe quelle carte*

[in a context where there is only one card]

4.3 FCIs in subtrigged sentences and comparatives

Being episodic (Jayez & Tovena 2003), these sentences raise a serious problem for (32). Comparatives license FCIs that have no PS profile at all, e.g. tout. So one cannot reduce them to PS environments.

**a.** Subtrigging involves a form of dependency discussed at length in (Jayez & Tovena 2003).

(35) a. *?Any student who was in the room started at the noise*

b. *?Tout étudiant qui était dans la pièce a sursauté à cause du bruit*

c. *Any student who has cheated was suspended*

d. *Tout étudiant qui avait triché a été renvoyé*

**b.** Even if the dependency is circumstantial, it involves some form of logical deduction which is not spatio–temporally situated (= Russellian).

**c.** The same holds for comparatives. In (13), there may be particular events. E.g., John may have beaten every other boy in a chess tournament, but, crucially, FCIs are out in sentences that refer directly to such events (36). What FCIs ‘see’ in comparatives is the comparison of performance measures. Although the performances may be circumstantial, the result of the comparison is not: that John was better than Terry is perhaps accidental, but that he forced him into checkmate is defined by the rules of chess (see Searle on constitutive rules) and, accordingly, is Russellian w.r.t. the rules of the game.

- \( \mu_j(\text{John’s performance}) = j, \mu_t(\text{Terry’s performance}) = t \): (a complex) event/state.
- \( j > t \) is true everywhere (a typical Quinean configuration).

**Importance of perspective:** the same fact can be seen as an event or not, as in opacity phenomena (see (Aloni 2001) for a recent survey and reanalysis)

(36) a. *John beat any other boy in the tournament*

b. *John a battu tout autre garçon lors du tournoi*

\(^4\)As explained in (Jayez & Tovena 2003), (32) brings about exhaustive variation (Giannakidou 1998, 2001) or domain shift (Jayez & Tovena 2003), depending upon the \( \exists \) or \( \forall \) logical status of the FCI under consideration.
d. We extend (32) to take such cases into account.

(37) NI for FCIs

A FCI is appropriate w.r.t. a tripartite structure ([FCI] [P] [Q]) and an interpretation I only if I does not entail an Austinian proposition (as in (32)) or implies that any such proposition can also be analyzed as Russellian.

5. Conclusion

• Importance of the mode of individuation
• Importance of the Austinian vs Russellian distinction
• Main conclusion: PS and FC are not ‘unified’ in virtue of a core meaning of the (PS/FC) items but through a common behavior, namely banning situated infs (events/states).

Giannakidou, Anastasia (1997b). Linking sensitivity to limited distribution. 11th Amsterdam Colloquium. 139–144.