

Tout as a genuine free choice
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DRAFT for the PICS project – June 10, 2003

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OF LANGUAGE
AND INFORMATION

0.1 Introduction

This chapter discusses the behaviour of the French determiner *tout*.¹ Intuitively, its main contribution to the interpretation of a sentence seems to be that of stating that any element in the denotation of the restrictor is a suitable candidate for satisfying the nucleus. A contribution typical of Free Choice Items (FCIs). FCIs signal that the choice of an element from a given reference set is unconstrained. For instance, *Pick any card!* in English and *Prends n'importe quelle carte!* in French invite the addressee to choose the card she prefers, from some contextually salient set of cards. FCIs exhibit both existential and universal interpretations. For example, *Pick any card!* entails *Pick a card!* and *Any cat hunts mice* entails *(Absolutely) every cat hunts mice*. However, it is not clear whether universal quantification is always consistent with the idea of free choice. What choice is left once a universal quantifier signals that all the elements of a given set satisfy a certain property? For instance, in the cards example, the addressee must choose one card and may not pick every card. In this paper we show that *tout* is a genuine FCI, and that so-called ‘free-choiceness’ is better conceived as a form of *Non Individuation* (Tovena 1996). Under this analysis, the distinction between existential and universal FCIs is no longer problematic, although it has certain effects. In section 0.2, we introduce the main observations concerning FCIs and in 0.3, we briefly review some recent proposals. In the last section we present our analysis of *tout*. For space reasons, we won’t discuss the case of questions and adversative verbs (see (Jayez and Tovena 2003)). We will also ignore aspects of *tout* that do not pertain to its FC profile. We refer the reader to (Kleiber and Martin 1977) and (Paillard 2000) for more complete descriptions.

0.2 The distribution of FCIs

FCIs are not felicitous in affirmative episodic sentences when the FC phrase head noun is not modified. In addition, they are often not felicitous in negative and interrogative sentences, a distribution that distinguishes them from Negative Polarity Items. Haspelmath (1997) mentions permission possibility sentences, permission imperatives, generic sentences and protases of conditional sentences (or functional equivalents) as possible contexts for FCIs. Giannakidou (1998, 2001) extends this array of possibilities for Greek FCIs. Even if we restrict ourselves to

¹We do not consider here the complex expressions *tout le* (‘the whole’) or *tous les* (‘all the’), which are semantically very different. They do not convey any idea of free-choiceness, but rather they are closer to the traditional notion of universal quantification.

the broad characterization given by Haspelmath, two problems emerge for *tout*. First, *tout* is not possible in certain imperatives when it specifies a bare noun. Second it is banned from protases of conditionals.

- (1) a. Prends *toute carte
 ‘Pick any card’
 [Intended interpretation: the cards belong to a particular pack]
 b. Si tu as *tout problème, téléphone-moi
 ‘If you have any problem, ring me up’

Analogous problems with conditional sentences are noted by Sæbø(1999, 2001) for the Norwegian/Swedish universal FCI *som helst*. *Any* FC behaves similarly, when the universal interpretation is forced on it. So, *Pick any card!* and *If you have any problem, ring me up* are very strange if *any* is roughly interpreted as *every*.² If one is to retain the view that those items are FCIs, it is safer to reduce the set of discriminating environments for the class. We will assume, as a starting point, that FCIs satisfy the following criteria.

1. They are impossible in affirmative episodic sentences, at least when the NP head noun is not modified.
2. They are possible in generic and/or imperative and/or conditional sentences.
3. They clearly implicate that there is a free choice between the members of a set of entities in two possible senses:
 - a. The addressee is free to consider any member of a given set, which entails that she may consider every member of the set,
 - b. the addressee must choose some member(s) of a given set and this choice is unconstrained.

Concerning *tout*, we note the following (im)possibilities. *Tout* is natural in generic sentences (2a), possibility/permission sentences (2b), with adversative verbs (2c), in habitual sentences (2d), and phrasal comparatives (2e). In general, *tout* is strange in other constructions, in particular in imperative sentences (1a), episodic affirmative or negative sentences (3a,b), episodic interrogative sentences (3c) and conditional sentences (1b). We will add some qualifications to this sketchy distributional picture in due time.

- (2) a. Tout chat chasse les souris
 ‘Any cat hunts mice’
 b. Ici, tout dossier peut être consulté
 ‘Here, any file may be accessed’

²This reading emerges in some contexts, for example, in a sentence like *For all we know, the dope could be in any car in the garage; so, open ?? any trunk.*

- c. Il a refusé tout compromis
'He refused any compromise'
 - d. Tout arrivant était (habituellement) interrogé
'Any newcomer was (usually) questioned'
 - e. Je préfère Jean à tout autre membre de l'équipe
'I like John better than any other member of the team'
- (3) a. Marie a lu *tout livre
'Mary read FCI book'
- b. Marie n'a pas lu *tout livre
'Mary did not read FCI book'
 - c. Est-ce que Marie a lu *tout livre?
'Did Mary read FCI book?'

0.3 Recent proposals

It is impossible to review here all the proposals concerning free-choice-ness, in particular because they often involve a discussion of polarity sensitivity and scalar phenomena (see in particular Lee & Horn 1994, Lee 1997, Tovená & Jayez 1999a). We will consider two types of contribution, those of Eisner (1994) and Dayal (1998), and of Giannakidou (1997b, 1998, 2001), which are directly relevant to the discussion of *tout*.

0.3.1 FC *Any* as a strongly modal quantifier

In the literature on *any*, there is a traditional distinction between Polarity Sensitive (PS) and FC *any*'s. The former is found in downward entailing contexts (negative and conditional sentences, typically), while the latter appears in generic sentences, imperatives and in some assertive episodic sentences where the NP head noun is suitably modified. Eisner and Dayal³ consider FC *any* as a universal quantifier whose quantification domain is the set of possible worlds or situations. For example, Eisner accounts for the oddness of (4) by pointing out that it entails that every individual in every possible world stole (a part of) the tarts in the real world. But entities from outer worlds cannot intrude into the real world as causal agents.

- (4) The tarts were stolen by *anyone

Similarly, Dayal sees *any* as a universal quantifier obeying the following constraint.

³Although the two proposals are independent, it is clear that Dayal's (1998) paper echoes many themes and suggestions of Eisner (1994).

- (5) In a sentence of the form $\phi(\textit{any N})$, *any* is a universal quantifier which creates a tripartite structure: $\forall s, x [x \text{ is a N in } s] [\phi(x) \text{ in } s]$

Again, this predicts that *any* is infelicitous in (4): according to (5), (4) means that, in every situation where there is a person, this person stole (some of) the tarts. This is absurd since there are situations where some individuals exist but where there are no tarts.

A well-known problem with *any* is that of *subtriggering*, a term coined by LeGrand (1975) to designate the fact that episodic sentences can be redeemed when the NP head noun is modified by an adjective or a postnominal modifier (a relative clause, for instance), see (6) and (7).

- (6) a. Mary read *any book
 b. Mary read any book which was on the reading list
- (7) a. *Tout étudiant a été renvoyé
 ‘Any student was excluded’
 b. Tout étudiant qui avait triché a été renvoyé
 ‘Any student who had cheated was excluded’

Eisner and Dayal account for subtriggering by assuming that the subtrigger introduces a spatio-temporal restriction which prevents the *any*-quantifier to range over the totality of possible worlds or situations. For example, in (6), Mary read the books in any situation contained in a limited situation, where the reading list exists.

There are two major problems with this approach. First, the idea that *any* quantifies over possible worlds or situations is counter-intuitive. *Pick any card!* is not interpreted as ‘Pick any card in any possible situation’. To account for such examples, Dayal assumes that, since the imperative is a permission, the addressee is entitled to pick no card at all. In this respect, the offending reading in which every possible card is picked is not satisfied. Astute as it is, this solution sounds extremely artificial. This reading simply does not exist.⁴ It is more likely that FCIs give rise to certain vagueness effects because they emphasize the unlimited character of the choice (see Dayal’s (1998) Contextual Vagueness). The second problem is that the role assigned to the subtrigger is too narrowly defined. There are cases in which the subtrigger does not bring in any spatio-temporal limitation. For instance, as noted in (Tovena & Jayez 1999a), in sentences like (8) the subtrigger does not introduce a spatio-temporal limitation since the mathematical dependence between two theorems is purely abstract.

⁴The same observation applies to the French equivalent *Prends n’importe quelle carte*, which does not necessarily refer to ‘any possible card’.

- (8) a. Marie a vérifié tout résultat dépendant du théorème de Craig
 b. Mary checked any result which depended on Craig's theorem

0.3.2 Giannakidou's approach

In (Giannakidou 1997a,b, 1998, 2001), it is proposed that FCIs are (i) nonveridical and (ii) subject to a variation requirement. By and large, an operator is nonveridical if its use in a sentence does not entail that the speaker believes the proposition to which it applies (Zwarts 1995). This definition captures cases like imperatives, which were not considered as downward entailing: in an imperative of the form $!\phi$ the speaker normally believes that ϕ is not realized. Variation means that there is a set of possible worlds in which the property described by the sentence applies to the members of the reference set individually. In the cards example, the different cards are picked in different possible continuations of the situation.

While Giannakidou's analysis is empirically more precise than many others, it also runs into problems. First, since Giannakidou claims that FCIs cannot be universal, the conditions she puts on variation do not extend to universal FCIs like *tout*. Second, nonveridicality and variation are not present in certain cases, for instance in subtriggered sentences like (9) which even lacks the iterative dimension which Giannakidou (2001) sees as a licensing condition for FCIs in subtriggered sentences. It is difficult to see in which alternative possible worlds (continuations, epistemic alternatives, etc.) we would locate the fact that every theorem of a certain type is in the book referred to. Similar remarks hold for comparatives.

- (9) Tout théorème indispensable à la maîtrise du sujet se trouve dans ce remarquable ouvrage
 'Any theorem required for mastering the topic is in this outstanding treatise'

Third, nonveridicality does not account for examples based on *spaces*, in the sense of Fauconnier (1985) or *media*, in the sense of Ross (1988). (10) is nonveridical since the speaker does not believe that a knight killed dragons. The sentence is anomalous because it refers to a particular sequence of events (the killings). The fact that it is nonveridical and that the identity of the dragons might be unknown to the speaker are irrelevant. What counts is that the sentence *mimics* reference to a non-actual world.

- (10) a. Dans cette légende, le chevalier a tué tous les / *tout dragon(s)
 b. 'In this legend, the knight killed all the / *any dragon(s)

Fourth, the link between nonveridicality, which is an epistemic notion, and reference is unclear. For instance, belief sentences such as (11a,b) are out because John’s belief targets an actual situation. However, John might ignore which books Mary read. So, it is not technically possible to derive the impossibility of such sentences from a violation of variation, as proposed by Giannakidou (2001). In believing that Mary read all the books, John does not necessarily refer to specific books. He might entertain different epistemic alternatives in which different books are read. The fact that the sentence is veridical means that in every belief-accessible world, it is true that Mary read all the books, *not* that the books are the same in every belief-world.⁵

- (11) a. Jean croit que Marie a lu *tout livre
 b. John believes that Mary read *any book

0.4 Non Individuation

In her dissertation, Tovena (1996) proposes that *any* is not possible when the truth of the sentence where it occurs depends on the identity of the individuals which constitute the reference domain (Non Individuation, NI). In this section we reformulate this idea in a more precise form, to account for the FC distribution of *tout*.

0.4.1 Descriptiveness and referentiality

To deal with examples like (10), we use the notion of *descriptiveness*, defined intuitively in Definition 1. A sentence is descriptive whenever it sounds as a description of some part of a world. Veridical sentences (in the sense of Giannakidou) are descriptive but descriptive sentences may be nonveridical and exclude FCIs all the same, cf. (10).

Definition 1 A sentence is descriptive when it refers to an actual situation/event or simulates such a reference in an imaginary world.

Providing a formal counterpart for descriptiveness is not trivial because of the general asymmetry between epistemicity and reference (see Dekker 1998). To see what is at stake, consider the *actually* operator studied by Gregory (2001) and redefined by Blackburn and Marx (2002) with the help of the ‘at’ operator @ from *hybrid logic* (Blackburn 2000). If x is the name of a possible world, g an assignment from (standard) variables to individuals and world-names to worlds, w the current world and \mathcal{M} a Kripke model, we have Definition 2.

Definition 2 $\mathcal{M}, g, w \models @_x \phi$ iff $\mathcal{M}, g, g(x) \models \phi$.

⁵The reader is referred to (Jayez & Tovena 2003) for an extensive discussion.

For simplicity, let us confuse worlds and their names (so, $g(w) = w$). Let w_0 be the actual world and *actually* correspond to $@_{w_0}$ as proposed by Blackburn and Marx. Suppose now that we code sentences like (11a,b) as in (11').⁶

(11') $B_{John}(@_{w_0}(\text{Mary read a/every book}))$

(11') is true if and only if Mary read a/every book in the actual world, which is obviously not the intuitive interpretation of (11a,b). 'John believes that ϕ ' may be true even if ϕ is actually false. Yet, to capture descriptiveness, it is necessary to instill some form of reference to the actual world into the representation. What is required is a shift from a realistic operator like $@_w$ ('it is the case at w ') to a *viewpoint* operator. Suppose we are at w and that we express that ϕ is true at every world M -accessible from w , M being a modal operator. What would make this modal situation descriptive? It is the fact that (i) ϕ is about what is the case at w and that (ii), temporally, the M -accessible worlds are anterior to or simultaneous with w . In this case, the modal structure delineates an M -situation in which it is true that ϕ at w . M is not necessarily epistemic, so the modal structure does not always describe what is already the case at w , but what is the case *if* w is compatible with the information common to all the M -accessible worlds. This accounts for examples like (12a,b). Note that (12a) is nonveridical.

- (12) a. Jean espère que Marie a consulté *tout dossier
'John hopes that Mary consulted any file'
b. Jean craint que Marie ait consulté *tout dossier
'John is afraid that Mary consulted any file'

Quite generally, if M is an attitude of type \square (BELIEF, HOPE, etc.), we note w_M^* the set of ϕ such that $M\phi$ is true at w and ϕ is about what is the case at w . So, w_M^* is the image that the M -accessible worlds give of w . Definition 3 says that a sentence is descriptive when the denotation of its restriction and scope are presented as determined in a unique world. In this case, although there can be epistemic variation, that is, the restriction and the scope can have different denotations in the different possible worlds, the sentence purports to refer to a particular situation in a particular world. For shortness, we use variable vectors: \vec{x} refers to a sequence of variables. For an n -sequence $x_1 \dots x_n$ $P(\wedge \vec{x})$ refers to $P(x_1) \& \dots \& P(x_n)$, etc.

Definition 3 A sentence whose tripartite structure involves a restriction $[R]$ and a scope $[S]$, evaluated at w with respect to a set of M -

⁶We ignore here the distinction between existential and universal FCIs because it is not relevant to the main point.

accessible worlds, is descriptive iff:

1. $@_{w_M^*} \exists \vec{x} (R(\wedge \vec{x}) \& S(\wedge \vec{x}))$, or
2. $@_{w_M^*} \exists \vec{x} (R(\wedge \vec{x}) \& \neg S(\wedge \vec{x}))$.

Descriptiveness is not sufficient since certain sentences, which are not descriptive, are nonetheless anomalous cf. (1a). This is because, although we do not refer to what is actually the case in a world, we refer to what will be necessarily the case and is already determined at speech time, namely the fact that the addressee will pick every card in the pack. So, the difference between the previous case and this one is thin. Both cases illustrate the impossibility of making reference to particular individuals. Reference can be avoided through *domain shift*, that is to say through possible variation on the restriction of the *tout* phrase (Jayez & Tovena 2003), as in (13). In such examples, the denotation of the restriction may vary from world to world. Different continuations of the current situation may host different misdemeanors.

- (13) Montre-toi extrêmement strict, punis tout délit
Be quite strict, punish any misdemeanor

In other cases where the restriction domain is rigid, *tout* may be licensed through standard variation, that is the set of individuals satisfying the restriction *and* the scope may vary, e.g. in (1b). We extend Definition 1 in a natural way by using the same localization operator @. Definition 4 says that a sentence is referential whenever it is descriptive or determines at w that certain individuals in the restriction do or do not satisfy the scope.

Definition 4 Referentiality A sentence whose tripartite structure involves a restriction $[R]$ and a scope $[S]$, evaluated at w with respect to a set of M -accessible worlds, is referential iff:

1. it is descriptive or,
- 2a. $@_w \exists \vec{x} (\forall w' (w \mathcal{R}_M w' \Rightarrow (R(\wedge \vec{x}) \& S(\wedge \vec{x}))))$, or
2. $@_w \exists \vec{x} (\forall w' (w \mathcal{R}_M w' \Rightarrow (R(\wedge \vec{x}) \& \neg S(\wedge \vec{x}))))$.

For simple examples, such as the cards example in (14), Definition 4 predicts exhaustive variation without stipulating it explicitly. The default interpretation is that the speaker must pick just one card. If no card is excluded and no card is imposed, this gives a one-card-picked-per-world interpretation.⁷ When the modality is of the \square type and the restriction R is rigid, *tout* is predicted to be anomalous as in (1a).

- (14) Prends n'importe quelle carte
'Pick any card'

⁷However, the cards of the pack exist in all the possible worlds, in contrast to Giannakidou's condition. See (Jayez & Tovena 2003) on this point.

0.4.2 NI

It is tempting to hypothesize that FCIs are incompatible with referentiality, in the sense of Definition 4. However, subtriggered examples such as (7b) cannot be explained in this way since they refer to particular individuals. Following (Jayez & Tovena 2003), we propose that FCIs obey NI, as given in Definition 5.

Definition 5 NI is the property that, in a given interpretation of a sentence S , the information concerning what makes S true or false cannot be reduced to the referential information associated with the interpretation. FCIs are not appropriate under interpretations that violate NI.

As noted by Dayal, subtriggered sentences exhibit a conceptual dependency between the restriction and the scope. This is why they cannot convey purely accidental relations, such as (15).

- (15) Par un curieux hasard, *tout garçon que Jean a croisé hier après-midi portait une chemise bleue
(‘By a strange twist of fate, any boy John passed by yesterday afternoon wore a blue shirt’)

Conceptual dependency means that two properties are related in virtue of causal or cultural rules/habits. Technically, one may ascribe to these rules an implicative form $UNx(R(x) \rightarrow S(x))$, where UN and \rightarrow are suitable universal and implicative operators (classical, modal, nonmonotonic, etc.). The information that $R(a) \& S(a)$ for any a is then derived from the referential information $R(a)$ and the non-referential information corresponding to the rule. This accounts for the fact that subtriggered sentences are not purely referential and can license FCIs. A similar analysis holds for certain comparative constructions in French, as shown in (Jayez & Tovena 2003).

0.5 Conclusion

In this chapter we have shown how to account for the free choice interpretation of the determiner *tout* and reconcile it with its nature of universal quantifier. The abstract constraint NI allows one to characterise free-choiceness as a certain relation to reference. NI does not mention well-known distinctions such as indefinite vs quantifier or existential vs universal. The fact that items like *n’importe quel* and *tout*, which are distinct along these dimensions, can be described in a unified way under NI (Jayez & Tovena 2003), suggests that such distinctions are not central for free-choiceness.

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