

Free Choiceness and Non-Individuation

Jacques Jayez, ENS-LSH, Lyon
Lucia M. Tovena, Université de Lille

Final version for publication in *Linguistics and Philosophy*: December 2, 2003

(...) the tripod fell spontaneously, because, though it stood on its feet so as to serve for a seat, it did not fall so as to serve for a seat.

Aristotle, *Physics* II, 6.

Abstract

Fresh evidence from Free Choice Items (FCIs) in French question the current perception of the class. The role of some standard distinctions found in the literature is weakened or put in a new perspective. The distinction between universal and existential is no longer an intrinsic property of FCIs. Similarly, the opposition between variation-based vs intension-based analyses is relativized. We show that the regime of free choiceness can be characterized by an abstract constraint, that we call *Non-Individuation* (NI), and which can be satisfied in different ways that match current distinctions. NI says that the information conveyed by a sentence containing a FCI should not be reducible to a *referential* situation, that is a situation in which particular individuals satisfy the sentence in the current world. The widely used resource of modal variation becomes a particular scenario of free-choiceness, not its ‘essence’. In fact, we show that under certain conditions, FCIs can occur in episodic, non-modal sentences, a fact that NI can accommodate. We also discuss more fine-grained aspects of the semantics of FCIs, such as their emotional colour.

1 Introduction

In the recent literature on Free Choice Items (FCIs), it has been argued that the notions of *intensional* quantification and *variation* play a central role (see (Tovena 2001) for a recent review). Roughly speaking, a sentence of the form $\phi(\text{FCI } \bar{N})$, where FCI is a free choice determiner, signals that the property ϕ may be satisfied by any member of the class corresponding to \bar{N} . In some cases, this involves an unrestricted choice among the members of a set or collection. For instance, the sentence *You may pick any card* signals

that the addressee may pick any member of some set of cards. In other cases, the FCI corresponds to some kind of quantification, as in generic sentences like *Any cat hunts mice*.¹

There is an intuitive connection between choice/variation and universal quantification. If the addressee is free to pick any card, then *every* card is eligible. Dayal (1998), Giannakidou (1997b, 1998, 2001), Sæbø (1999, 2001) and Tovena and Jayez (1997a,b, 1999a,b) exploit to various extents the idea of variation and quantification over a set of possibilities. In spite of their differences, most of the recent proposals develop a *modal* view of FCIs, where the individuals that satisfy the sentence are picked in different possible worlds.

A more traditional question in the study of FCIs concerns the quantificational status of these items: are they existential indefinites or universal quantifiers? This question repeatedly crops up in the literature on *any* (see (Horn 2000) for a state of the art), but it is relevant to free choiceness in general: is there something, in the semantic nature of FCIs, that drives their quantificational status?

In this paper, we show (i) that the modal approach is insufficient and (ii) that FCIs have no unique quantificational profile and can be existential or universal. Specifically, we investigate the status of FC *n’importe quel* and *tout* in French.² A notable problem one faces when dealing with French data, is that *n’importe quel* and *tout* do not fit in the main conceptual partitions found in the literature. First, a modal approach runs into problems when episodic sentences such as comparatives or sentences with a modified FC phrase are taken into account. The modal schema is maintained only at the cost of very artificial assumptions. Second, the two FCIs under consideration are not both either existential or universal (*n’importe quel* is existential, *tout* is universal).

This motivates a move from the standard modal analysis to a more abstract constraint, that we call *Non-Individuation* (NI), after Tovena (1996, 1998). NI is an *informational* constraint. It does not say that the interpretation of a sentence with an FC phrase should be modal, but that the information conveyed by the sentence should not be reducible to a *referential* situation, i.e. a situation in which particular individuals in the current

¹We are grateful to Francis Corblin, Danièle Godard, Ruth Kempson, Ivan Sag, and the audience at ‘(Preferably) Non-lexical semantics 2002’ in Paris for comments, reactions and discussion, and to Ruth Huart for her careful reading of a draft version of this paper. We thank the reviewers for their criticisms, which led us to improve the content and the readability of our paper. Thanks to the editor Larry Horn for arbitrating the reviewing process and for many useful suggestions. Finally, we gratefully acknowledge partial financial support by CNRS FRE 2546.

²For simplicity, we will not dwell on the third main FCI of French, *le moindre*, analyzed in (Tovena & Jayez 1999a). *Le moindre* involves scalar phenomena which are not the focus of the present paper, otherwise its behaviour is not essentially distinct from that of the other two FCIs.

world satisfy the sentence. Note that NI does not exclude non-modal information. This is why it can accommodate episodic, non-modal sentences under certain conditions. It only requires that the non-modal information not exhaust the interpretation of the sentence. In addition to providing a unified view, NI allows us to reinterpret general principles such as *nonveridicality* or *contextual vagueness* that appear to be particular consequences of non-referentiality.

The paper is organized as follows. In section 2 we explore lines for delimiting the domain of FCIs and present the basic data for French. In section 3, we examine various problems for the semantic characterization of FCIs in terms of strong intensional quantification. In section 4, we look at variation-based approaches and show (i) that French data call for an extension of the notion of variation (cf. 4.2) and (ii) that variation cannot correctly account for certain cases (cf. 4.3). In section 5, we present our proposal. We draw one's attention to the connection between NI and the notion of reference at an intuitive level (cf. 5.1), before we get into the complexity of reference (cf. 5.2) and take this into account in offering a precise implementation of NI (cf. 5.3). In the remaining subsections, we examine different consequences of the proposal and take up points in the most recent literature on FCIs. Finally, in section 6, we turn to more fine-grained aspects of the semantics of FCIs by focusing on questions, *n'importe quel* and the problem of negative predicates.

2 Basics

2.1 The environments of FCIs

Historically, the linguistic study of FCIs has branched out from work on Negative Polarity Items (NPIs), against which it is often compared. Much of the work on Polarity Sensitivity (PS) is notoriously plagued by the lack of an independent definition of the object of study. Scholars focus on an implicitly roughly agreed core of items, considered to require some form of licensing, but diverge on a peripheral group whose identification relies more heavily on the type of analysis adopted.³

Despite this general inability to define the object of the research other than by referring to its description, there is no doubt that NPIs are strongly associated with a cross-linguistically stable class of environments. For instance, NPIs are in general felicitous in negative sentences, yes-no questions and the protasis of conditional sentences, *inter alia*. In contrast, they are infelicitous in affirmative episodic sentences, as in *Mary read *any book*, assuming that *any* is an NPI in this sentence.

³See (Tovena 1998:ch2, 2001) for extensive discussion.

The situation is less clearcut for FCIs. FCIs are not felicitous in affirmative episodic sentences when the head noun is not modified. In contrast to NPIs, they are also not felicitous in negative and interrogative sentences.⁴ Haspelmath (1997) mentions permission possibility sentences, permission imperatives, generic sentences and protases of conditional sentences (or functional equivalent) as possible contexts for FCIs. Giannakidou (1998:79) extends this array of possibilities for Greek FCIs.

If the set of suitable contexts is used to see whether a given item exemplifies the phenomenon of free choiceness, and the distribution of some items is used to shape the perception of the phenomenon, there is a risk of circularity. Therefore, the issue of what contexts should be examined is a sensitive one and the reader should bear with us a little longer, before we get to the bulk of the data.

Even if we limit ourselves to the characterization of contexts by Haspelmath, two problems emerge. Consider first the French determiner *n'importe quel* N. This determiner can be decomposed into an N-word *ne*, which still carries the negative force in formal idioms like *je ne sais* ('I do not know'), the third singular form of the verb *importer*, which means 'to have some import', 'to be relevant to', 'to matter', and the wh-operator *quel*, which means 'which'. The cluster *n'importe quel* can be paraphrased accurately enough by 'it does not matter which'. Under this paraphrase, the free choice value emerges immediately. The determiner signals that the precise identity of an element in a set of N-objects has no special relevance.

As for its distribution, *n'importe quel* N is not felicitous in an assertive episodic sentence, cf. (1a), it is felicitous in generic sentences, cf. (1b), and in imperatives, cf. (1c).⁵

- (1) a. Marie a lu *n'importe quel livre
Mary read any book
b. N'importe quel étudiant sait ça
Any student knows that
c. Prends n'importe quelle carte
Pick any card

However, *n'importe quel* N is not always good in conditional sentences, as shown by (2).

- (2) Si tu as ??n'importe quelle théorie sur cette question, essaie d'
If you have any theory on this question, try to
écrire un article
write a paper

⁴We disregard denials and confirmation requests, which have a special status.

⁵In the examples, we will translate *n'importe quel* and *tout* by *any* wherever possible. Traditional restrictions apply.

Second, let us consider FCI *tout*. Its main contribution to the interpretation of a sentence is to signal that the choice of an element from a given set is unconstrained. We note that it is natural in generic sentences, cf. (3a), possibility/permission sentences, cf. (3b), with negative predicates, cf. (3c) and phrasal comparatives, cf. (3d).

- (3) a. Tout chat chasse les souris
Any cat hunts mice
b. Ici, tout dossier peut être consulté
Here, any file may be accessed
c. Il a refusé tout compromis
He refused any compromise
d. Je préfère Jean à tout autre membre de l'équipe
I like John better than any other member of the team

However, *tout* is not possible in certain imperatives, cf. (4a), in protases, cf. (4b), or in restrictions of universal quantifiers, cf. (4c).

- (4) a. Prends *toute carte
Pick FCI card [from a given pack]
b. Si tu as *tout problème, téléphone-moi
If you have FCI problem, ring me up
c. Tous les clients qui avaient *tout problème avec le
All the customers who had FCI problem with the
nouveau système ont été aidés
new OS got some help

Therefore, there appear to be discrepancies in what could count as suitable hosting contexts or as candidates to the status of FCI. As a matter of fact, it will turn out that the unacceptability of examples such as (2) has limited import for the distribution of FCIs. As we will show in section 6.2, the oddness of (2) is due to the special semantic value of *n'importe quel*, not to a radical incompatibility with conditional constructions. On the contrary, the case of *tout* will have important consequences on the characterization of the phenomenon of free choiceness. The case of French is not unique. Analogous problems with the Norwegian/Swedish FCI *som helst* are reported by Sæbø (1999, 2001).

In view of these observations, it is safer to reduce the set of discriminating environments for FCIs. We will assume, as a starting point, that FCIs satisfy the following criteria.

1. They are not natural in affirmative episodic sentences, at least when the head noun is not modified.
2. They are possible in generic and/or imperative and/or conditional sentences.

But these contexts can host many different sorts of items. Thus, something

must be added on the specific contribution made by FCIs. A formal characterization of this contribution is provided later in the paper. At this stage, where we are dealing with pretheoretical intuitions, something as general as the following will do.

3. FCIs clearly implicate that the referent of the phrase can be freely chosen between the members of a set of entities.

2.2 French data

This section provides the basic data for French. We parallel the presentation in (Giannakidou 1998, 2001), which is a detailed empirical investigation of FCIs in Modern Greek. The following table shows the distribution indicated in Giannakidou (1998:75, 2001:677) for the Greek item *opjosdhipote* and the corresponding possibilities for *n'importe quel* N⁶ and *tout* in French. The environments may be not totally explicit, but the examples in table II show which kind of environment motivates the acceptability judgment. E.g. the environment 9 (*believe* type verbs) follows the syntactic pattern '*x* believes that S[past indicative]'. Table I does not take into account the derogatory value of *n'importe quel*, which has points in common with the *indiscriminative* value of *just any* (Horn 2000). For instance, *Marie a raconté n'importe quoi* 'Mary talked nonsense' is perfect. *N'importe quel* does not behave like a FCI in such cases. So we will ignore this use in general (see section 6.2 for a brief comment). Another notable omission concerns the role of intonation, which would deserve a study of its own.

TABLE I

	Greek FCIs	<i>N'importe quel</i>	<i>Tout</i>
1. Episodic assertions	*	*	*
2. Episodic negations	*	*	*
3. 'Episodic' questions	*	*	*
4. Conditionals	ok	ok	*
5. Restrictions of universals	ok	ok	*
6. Future	ok	ok	#
7. Possibility/permission verbs	ok	ok	#
8. <i>Insist</i> type	ok	ok	#
9. <i>Believe</i> type	*	*	*
10. Stative verbs	ok	*	*
11. Factive verbs	*	*	*
12. Imperatives	ok	ok	#
13. Generics	ok	ok	ok
14. Habituals	ok	ok	ok

⁶In some examples, we make use of the NPs *n'importe qui* and *n'importe quoi*, analogous to *anybody* and *anything*.

15. Phrasal comparatives	ok	ok	ok
16. <i>Perhaps</i> sent.	ok	*	*
17. Negative predicates	ok	*	ok
18. <i>Before</i> -clauses		??/*	*
19. <i>Too</i> -clauses		??/*	*
20. <i>Without</i> -clauses		??/*	*

Before giving some examples, let us note two points. First, the environments (18)–(20) were given as possible in (Giannakidou 1998). Since they are not mentioned in (Giannakidou 2001), we will not take them into consideration for Greek. Second, in some cases, *tout* has a variable behaviour. As shown by the examples below, *tout* is out in these cases if the restriction domain is a determined set of objects, as in the cards example (4a).

TABLE II

	Example
1. Episodic assertion	<i>Hier Marie a apprécié *n'importe quel / *tout livre</i>
	Yesterday Mary liked FCI book
2. Episodic negation	<i>Marie n'a pas lu *n'importe quel / *tout livre</i>
	Mary did not read FCI book
3. Polar questions	<i>Est-ce que Marie a lu *n'importe quel / *tout livre?</i>
	Did Mary read FCI book?
3'. <i>Wh</i> -questions	<i>Qui a lu *n'importe quel / *tout livre?</i>
	Who read FCI of these books / FCI book?
4. Conditionals	<i>Si tu reçois n'importe quelle / *toute aide, dis-le moi</i>
	If you get FCI help, tell me
5. Restrictions of universals	<i>Tous les clients qui avaient n'importe quel / *tout problème avec le nouveau système ont été aidés</i>
	All the customers who had FCI problem with the new OS got help
5'. Restrictions of universals	<i>Tous les élèves qui étaient assis à *n'importe quelle / *toute table se levèrent</i>
	All the students who were sitting at FCI desk stood up
6. Future	<i>Ce soir, je lirai n'importe quel journal / *tout journal pour me détendre</i>
	Tonight, I will read FCI newspaper to relax
6'. Future	<i>Demain, nous exploiterons n'importe quelle / toute occasion</i>
	Tomorrow, we will take advantage of FCI opportunity
7. Possibility/permission verbs	<i>Tu peux choisir n'importe quel /tout livre de moins de trois cents pages</i>
	You may/can choose FCI book of less than three hundred pages
8. <i>Insist</i> type	<i>Marie a insisté pour qu'on aille voir n'importe quel / *tout film parce qu'elle avait besoin de se détendre</i>
	Mary insisted that we watch FCI movie because she needed to relax
8'. <i>Insist</i> type	<i>Marie a insisté pour qu'on exploite n'importe quelle / toute occasion</i>
	Mary insisted that we take advantage of FCI opportunity
9. <i>believe</i> type	<i>Je crois que Marie a apprécié *n'importe quel / *tout livre</i>
	I believe that Mary liked FCI book
10. Stative verbs	<i>Marie connaît *n'importe qui / *toute personne dans le département</i>
	Mary knows FCI / FCI person in the department
11. Factive verbs	<i>Je sais que Marie a apprécié *n'importe quel / *tout livre</i>
	I know that Mary liked FCI book

12. Imperatives	<i>Prends n'importe quelle carte / * toute carte</i>
	Pick FCI card
12'. Imperatives	<i>Punis n'importe quel / tout délit</i>
	Punish FCI misdemeanor
13. Generics	<i>N'importe quel / tout étudiant de premier année sait ça</i>
	FCI freshman knows that
14. Habituals	<i>A l'époque, n'importe quelle / toute commande était habituellement traitée en moins de 48 heures</i>
	At that time, FCI order was usually processed in less than 48 hours
15. Phrasal comparatives	<i>Marie a mieux réussi que n'importe quelle / toute autre élève de sa classe</i>
	Mary performed better than FCI other girl in her class
16. <i>Perhaps</i> type sent.	<i>Peut-être que Marie a apprécié * n'importe quel / * tout livre</i>
	Maybe Mary liked FCI book
17. Negative predicates	<i>Il a refusé ?? n'importe quel / tout compromis</i>
	He refused FCI compromise
18. <i>Before</i> -clauses	<i>Il a pris sa décision avant de consulter * n'importe quel / * tout collègue</i>
	He took his decision before consulting FCI colleague
19. <i>Too</i> -clauses	<i>Il est trop malade pour voir * n'importe quel / * tout collègue</i>
	He is too sick to see FCI
20. <i>Without</i> -clauses	<i>Il a rejeté le rapport sans lire * n'importe quelle / * toute ligne</i>
	He rejected the report without reading FCI line

The behaviour of *tout*, which does not pattern like *opjosdhipote* nor *n'importe quel*, makes up the most obvious difference between Greek and French. As shown in section 4.2, *tout* is important because it is a clear example of a universal FCI. But before we come to that, we look at proposals made in the literature.

3 Intensional quantification

3.1 The modal force of *any*

In two recent related proposals (Eisner 1994 and Dayal 1998), we find the idea that the behaviour of FC *any* is explained by its intrinsic *modal force*.

Eisner (1994) proposes that *any* is a universal quantifier at root in both its PS and FC uses. In contrast with *every*, its domain of quantification is the set of possible individuals across the different possible worlds. This property creates problems when we try to ‘hybridize’ worlds. For example,

Eisner accounts for the oddness of (5) by arguing 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.

(5) The tarts were stolen by *anyone

It is easy to rephrase Eisner’s proposal in a modal framework. Let W be a set of possible worlds. A tripartite structure $ANY P Q$ has the following satisfaction conditions, where $w \models \phi$ denotes the fact that ϕ is true at w .

(6) $w \models ANY P Q$ in W iff $\forall x, w'(w' \models P(x) \Rightarrow w \models Q(x))$

Let w_0 be the real world, it is true at w_0 that the tarts were stolen by anyone iff every individual who is a person in some world stole the tarts at w_0 . And this certainly entails many absurdities, like the Fairy Queen or Sherlock Holmes stealing the tarts.

Note that Eisner assumes that *any* encompasses the whole set of worlds, not just the whole set of individuals. An obvious alternative would be to say that (5) is strange because it entails that everyone *in the real world* stole the tarts. We will come back to this problem shortly when we examine Dayal’s approach. For the moment, let us simply point out two further aspects of Eisner’s analysis.

First, *any* is predicted to fit nicely in downward entailing contexts because they do not entail the existence of any event leading to a hybrid quantification. For instance, *Every child who stole any tart was punished* is not anomalous because it does not entail that there is a child who stole a tart. Therefore, if t is a tart in some exotic non-real world and c a child in the real world, the sentence does not entail that c stole t . Second, Eisner’s proposal addresses the well-known problem of the scope of *any*. Usually, universal quantifiers do not acquire inverse scope over negation. For instance *Mary did not read every book* only means that Mary did not read all the books from some given set. If *any* is a universal quantifier, how is it that it can outscope negation? Eisner argues that the particular scopal behaviour of *any* must be assumed anyway in order to get the correct scope in non downward entailing contexts.⁷ For instance in (7), the correct reading is (7’), not (7’').

(7) There could be anything at the bottom of this rabbit hole
 (7’) : it is possible that $\forall x$ (x is at the bottom of the hole)
 (7’’) : $\forall x$ (x could be at the bottom of the hole)

While Dayal shares with Eisner the idea that *any* quantifies over abstract

⁷Specifically, Eisner proposes that *any* gets wide scope immediately over its licenser. The same account has been proposed by Horn (1972: § 3.1).

entities, not just over individuals, she offers a different perspective in at least three respects. First, she focuses on FC *any* and considers PS *any* only very briefly. Second, in her analysis, *any* quantifies over situations, not worlds. More precisely, *any* is a universal quantifier obeying the following constraint.

- (8) In a sentence of form $\phi(\text{any } N)$, *any* is a universal quantifier which creates a tripartite structure:
 $\forall s, x [x \text{ is a } N \text{ in } s] [\phi(x) \text{ in } s]$, where x varies over individuals and s over situations.

Third, to account for the anaphoric behaviour of *any*, Dayal introduces a notion of *contextual vagueness*, which is absent from Eisner's treatment. We leave aside this aspect for the moment and come back to it in section 5.8. Constraint (8) has two main consequences.

First, episodic affirmative sentences without modification of the N are correctly predicted to be anomalous. A sentence like (5) has the underlying logical form (5')

- (5') $\forall s, x [x \text{ is a person in } s] [x \text{ stole (some of) the tarts in } s]$

This entails that in every situation where there was a person, this person stole (some of) the tarts. This is obviously absurd since there are situations where there is a person but no tarts. Note that, since quantification is over situations (not worlds) and the family of situations is not defined, one can imagine that it contains all the situations of the actual world, without any reference to other worlds, in contrast with Eisner.

Second, the approach is intended to cope with what is called the *subtriggering* effect, after LeGrand (1975). In essence, *any* phrases are redeemed by certain adjectives or postnominal modifiers, called *subtriggers*. Dayal attributes the effect of those modifiers to the fact that they restrict the class of relevant situations by confining them to some temporal interval. For instance, (9) has the logical form in (9').

- (9) Mary read any book which was on the reading list
 (9') $\forall s, x [x \text{ is a book in } s \ \& \ \exists s' (s < s' \ \& \ x \text{ is a book on the reading list in } s')] [\exists s'' (s < s'' \ \& \ \text{Mary reads } x \text{ in } s'')]$

(9') says that for every situation s where there is a book *and* which is a subsituation of a situation where the book is on the reading list, Mary reads the book in some extension of s . If we interpret the property of being on the reading list as holding at some limited temporal interval (there is a particular list in a particular context), s is also temporally limited, since it is a subsituation of s' . Let b be a book existing at s^* and $s^* \not< s'$, then it is possible that Mary did not read b . So, the sentence does not refer to all

the books in the actual world (or in any possible world).⁸ Another property of subtriggering is the impossibility of having a merely accidental connection between the properties of the modifier and the main predication.

- (10) Mary read *any book on her desk

Dayal sees non-accidentality as a direct result of the modal quantification introduced by *any*. Quantification over possible individuals is incompatible with a kind of connection which holds only of particular individuals. A similar analysis of non-accidentality was independently proposed by Tovena and Jayez (1999b) for French *tout*.

Summarizing, in Eisner's and Dayal's frameworks, the distribution of FC *any* is explained by its modal force. It is because *any* alludes to an unlimited set of objects (counterparts across worlds or situations) that it is sometimes not felicitous in sentences which purport to describe a real situation, where the set of objects is (normally) limited, at least temporally.

There are two main problems for theories which, like Eisner's and Dayal's, assign to *any* a quantificational modal force. Recall that those approaches have to *weaken* the modal force of *any* to make it acceptable in non-modal sentences.

First, this characterization runs counter to intuition in certain cases where the modal force is not perceived. Consider *Pick any card* again, in its invitation/permission interpretation. If this sentence refers to a particular pack of cards, there is no particular feeling of modal force. Intuitively, the sentence does not mean something like 'Pick any card in the world' or 'Pick any card in any possible world/situation where there is some card(s) available'. The same is true for the French FCI *n'importe quel*. The sentence *Prends n'importe quelle carte*, which qualifies as an accurate translation of *Pick any card*, has no special modal force. The same observation holds for *may*-sentences like *You may pick any card* or its French counterpart *Tu peux prendre n'importe quelle carte*.

To save Dayal's proposal, there are at least two possibilities. One might argue that the modal force 'disappears' in the interpretation process which makes *any* acceptable. Whether this hypothesis is plausible or not, it does not follow from Eisner's or Dayal's accounts, based on the possibility for the addressee of picking no card at all. In Dayal's representation, *Pick any card* is (11).

- (11) $\forall s, x [x \text{ is a card in } s] [\text{the addressee may pick } x \text{ in } s]$

This is of course absurd if the addressee is supposed to follow this invitation in every situation. But, if she declines it and takes no cards, there is no longer any implausible trans-world or trans-situational picking of cards.

⁸This analysis is clearly reminiscent of Eisner's remark that subtriggered clauses 'have tighter restrictive clauses that only real entities can satisfy' (Eisner 1994:99).

The point we are making is that the sentence is *not* intuitively equivalent to *Pick any card in any situation where you can find some*. However, under the reading expressed by (11), it should be.

One might also argue that Dayal actually uses a contextual restrictor which provides the necessary limitations. So *Pick any card* would have the logical form in (12).

$$(12) \quad \forall s, x [x \text{ is a card in } s \ \& \ C(s)] \text{ [the addressee may pick } x \text{ in } s]$$

The contextual restrictor C might select situations that correspond to the current possibilities, thus avoiding the modal overflow. Unfortunately, this move would allow one to rescue most anomalous sentences with *any*. For instance, *Yesterday, John talked to *any woman* (Dayal’s example 42a) would be predicted to be possible because all possible *contextually* appropriate situations extend into a yesterday-situation, which is certainly the case if the contextual restriction selects the temporal interval corresponding to yesterday.⁹

The second problem concerns the role of the modifier in subtriggering. Eisner and Dayal assume that the modifier introduces a situational limitation, which keeps the modal quantification of *any* within certain spatio-temporal boundaries. We saw this mechanism at work in the case of (9) and (9’). In Dayal’s representation, we have the general form (13). ϕ is the property corresponding to the head noun, ψ the property denoted by the subtrigger (postnominal modifier, relative clause, etc.) and χ the property denoted by the rest of the sentence (subject NP + V in simple cases).

$$(13) \quad \forall s, x [\phi(x, s) \ \& \ \exists s'(s < s' \ \& \ \psi(x, s'))] [\exists s''(s < s'' \ \& \ \chi(x, s''))]$$

In itself, (13) does not necessarily spare us a strong modal quantification over all possible situations. Suppose that ψ is a persistent property with respect to ϕ , i.e. that we have $\forall s, s', x((\phi(x, s) \ \& \ s \leq s') \Rightarrow \psi(x, s'))$ or $\forall s, s', x((\phi(x, s) \ \& \ s \leq s') \Rightarrow \neg\psi(x, s'))$. Tovena and Jayez (1999a) mention example (14) as a possible illustration of this case.

$$(14) \quad \text{Mary checked any result which depended on Craig’s theorem}$$

Suppose that Mary must perform a systematic mathematical checking test for a research project in a situation s and let T be a theorem in s . Let us call any situation where T exists a T -situation. Then T depends on Craig’s theorem in every T -situation or in no T -situation at all because the fact that a given mathematical result depends or not on a given theorem is not time-dependent.¹⁰ Clearly, if T depends on Craig’s theorem, Mary checked

⁹Sæbø (2001, 3.1) also argues that Dayal’s approach to *any* is too strong because it entails, in particular, a duplication of modal operators.

¹⁰This dependency is not an event or a state, as evidenced by standard tests on eventhood and stativity: **that the last result depends on Craig’s theorem happened/occurred*

it. Consider now another situation where a certain theorem T' is proven and depends on Craig’s theorem. We cannot prevent Mary from checking it since, as T' depends on Craig’s theorem in every T' -situation, the restriction in (13) is satisfied. Therefore, Mary checked any result which depended on Craig’s theorem in every situation where this result exists, even those where, absurdly, Mary is not present at all. Note that here we are just applying the sort of mechanism invoked by Dayal for explaining the incompatibility of *any* with assertive episodic sentences without subtriggering. To find a way out, one could try to interpret the word *result* in a circumstantial manner. If a result is a sort of event, Mary has to perform the checking test only in those circumstances where the event occurs, which avoids us a strong modal quantification. However, this reading is by no means necessary for (14), which remains perfectly standard when *result* is replaced by *theorem* or *property*, which do not convey any special eventhood.

3.2 FCIs as quantifying over modal contexts

Sæbø (2001) proposes that Scandinavian FCIs need modal operators, to quantify into intensional contexts. This explains the affinity of FCIs and overt or covert modal operators. This also explains why certain interpretations are not available. Consider the Swedish counterpart of (15), analyzed in (Sæbø 2001, 3.3).

$$(15) \quad \text{You may sing any song (in the songbook)}$$

The correct interpretation is that, for every song in the songbook, you may sing it, not that you may sing all the songs in the songbook. Technically, the asymmetry of the two interpretations is obtained by postulating that the FC part (*som helst*) of the Swedish FCI *vilk-N som helst* imposes a type shift $t \Rightarrow (s \rightarrow t)$ to the formula representing the lower S constituent in Heim and Kratzer’s (1998) Quantifier Raising (QR) rule. The *wh*-part (*vilk*) stands for the quantifier which is adjoined to the intermediate S by QR. The correct representation of (15) is then (15’), where x is the trace associated with the quantifier movement and the FC-operator *som helst* imposes the type shift on the formula ‘you sing x ’. The modal operator ‘may’, of type $((s \rightarrow t) \rightarrow t)$ can then consume an argument of type $s \rightarrow t$, returning a value of type t which, since the index w is of type e , will enter the constitution of an appropriate argument of type $e \rightarrow t$ for the quantifier \forall . In contrast, the construct (15’’) does not reduce since the modal cannot consume the argument whose type has been shifted by the FC-operator and the quantifier ends up with an argument of type $e \rightarrow ((s \rightarrow t) \rightarrow t)$.

*yesterday, *the dependency of the last result on Craig’s theorem lasted two months*. In view of these tests, the property of depending on Craig’s theorem is a fact without any companion event. See (Jayez & Godard 1999) for a recent discussion of such matters.

- (15') [S [DP \forall song] x [S may [FC *som helst*] [S you sing x]]]
 (15'') [S may [S [DP \forall song] x [S [FC *som helst*] [S you sing x]]]]

Although Sæbø criticizes Dayal (1998), the spirit of his solution is not that different, since the FCI is assigned a modal import of its own. This raises problems with obligation modals. For instance a sentence like *Tu dois prendre *toute carte* (*You must pick *any card*) is wrongly predicted to be unproblematic, since it may have a structure like (15'). A similar problem exists for imperatives, e.g. (4a). This is no surprise: Tovená and Jayez (1997a,b, 1999a,b) and Giannakidou (1997a,b, 1998, 2001) argue that such cases involve additional factors (for instance nonveridicality and blocking of variation) and that their modal character is not enough to license FCIs. Moreover, it is not clear how Sæbø's approach accounts for the episodic flavour of subtriggered and comparative sentences, if they are to be 'modalized' in one way or another. The discussion in section 5 shows that the problem of free-choiceness cannot be solved in terms of modal operators. Rather, the compatibility of FCIs with modal operators is a *consequence* of their semantic profile.

4 Variation-based approaches

Variation-based analyses have been proposed by Tovená & Jayez (1997a,b, 1999a,b) for *any*, *le moindre* and *tout* and by Giannakidou (1997a,b, 1998, 2001) for Greek FCIs and *any*. Variation is not a novel concept in itself. For instance, Lewis (1968, 1986) defended the view that similar descriptions can apply to different individuals in different worlds. Lewis dubs them *counterparts*. In the cards example (1c), the cards that are picked would be counterparts of each other.

While the detailed proposals for variation in (Jacobson 1995), (Dayal 1997), (Giannakidou 1997a,b, 1998, 2001), and (Tovená & Jayez 1997a,b, 1999a,b) differ to some extent, we can assume that the main idea behind them is the same. It is expressed in (16).

(16) Intuitive version of variation

A FC phrase of the form FCI N is felicitous only when the sentence where it occurs can be true *and* refer to different N-individuals in different worlds.

Both Giannakidou's and Tovená & Jayez's styles of approach acknowledge the fundamental role of variation for certain uses, e.g. episodic affirmative sentences or imperatives. They differ on three main points. First, Tovená and Jayez do not use the notion of nonveridicality that Giannakidou sees as a necessary licensing condition for FCIs. Second, Tovená and Jayez acknowledge the existence of universal FCIs (*tout*) and account for their properties,

while this case is ruled out by Giannakidou. Third, while the different versions proposed by Giannakidou are couched in terms of variation over a set of worlds (intensional variation), Tovená and Jayez try to reduce variation to more abstract notions (arbitrariness or conceptual dependency).

Admittedly, neither proposal is entirely satisfactory, because they both prove too strong. Pure variation does not account for the case of subtriggered assertive sentences (*Mary read any book which was on the reading list*) or phrasal comparatives (*At the last college race, Mary ran faster than any other girl*). Such sentences sound episodic and are reduced to variation-based structures at the cost of very artificial assumptions. Conversely, imperatives like *Pick any card* are reduced to conceptual dependency-based structures only through unnatural moves. In fact, instead of opposing one approach to the other or merely juxtaposing them in order to cover the data, in this paper we show that they dovetail when one adopts a broader perspective.

Since, in developing our proposal, we reconsider in detail all these notions in the sections where they are relevant, we will not provide here a general presentation of these two approaches. Rather, we just give the tenets of Giannakidou's proposal and then look at the idea of variation with respect to the FC universal quantifier *tout* and to contexts such as subtriggered sentences and phrasal comparatives.

4.1 Nonveridicality

Zwarts (1995) has used the notion of nonveridicality to characterize the distribution of PS and FC *any*. Giannakidou (1997a,b, 1998, 1999, 2001) has extended the idea to PS items in general and uses it for existential FCIs together with a variation requirement. We briefly recall the main distinctions she proposes.

Concerning Greek expressions¹¹ like *kanenas* or *pote*, which she analyses as NPIs¹², she notes that they are licensed by nonveridical contexts, when non-stressed.

Let $ATT_a p$ stand for the fact that an agent *a* entertains a certain propositional attitude ATT (belief, desire, etc.) with respect to a proposition *p*. Let *s* be the *information state* of the agent, where an information state is a set of worlds compatible with what the agent believes (Stalnaker 1978, Veltman 1996).

¹¹When they bear an emphatic accent, *kanenas* or *pote* must be in the scope of an antivertical operator. We ignore the case of emphatic items in this paper since nothing essential hinges on the distinction.

¹²Borrowing the term *affective* from Klima (1964), Giannakidou calls *Affective Polarity Items* the items which are sensitive to nonveridical contexts. APIs form a broader class than NPI since negative contexts are a proper subclass of nonveridical contexts. To avoid the multiplication of labels, however, we retain the traditional name NPI.

(17) **Veridicality**

ATT_a is veridical with respect to an information state s iff, for every proposition ϕ , $ATT_a \phi$ entails that ϕ holds in every world of s .

In Veltman’s terms, a proposition which holds in every world of an information state s is *accepted* in s . So, attitudes are veridical when the proposition on which they bear must be accepted in the information state. Nonveridicality (NV) is the opposite property. *Antiveridicality* is a stronger property: an attitude is antiveridical with respect to s and p iff it forces the negation of p to be accepted in every world of s . Nonveridical contexts in Greek include, for instance, sentential negation, some modal verbs (corresponding to *should*, *can*, *may* in particular), imperatives, superlatives, future and many others.

It should be emphasized that, in condition (17), the information state s is *not* necessarily the set of accessible worlds which enter the evaluation of the modal operator ATT . This is why, for example, the Greek verb for *want* can be considered as nonveridical. If a wants ϕ , ϕ might be true in any world $WANT$ -accessible from the current world (for a), without being true in every epistemic alternative of a to the current world.

As for FCIs, Giannakidou claims that they must be in the scope of a nonveridical operator (see for instance definition (60) of (Giannakidou 2001)). In this respect, they resemble NPIs. Next, they are said to have pluralized interpretations. The variation-based constraint attached to them is claimed to entail an *anti-episodicity* principle. FCIs are banned from sentences whose logical representation involves existential closure of an event variable (e.g. Giannakidou 1998:83–84). This move is used to explain why FCIs are not to be found in negative and interrogative sentences. These two types of sentences have logical forms $\neg\exists e\phi$ and $?\exists e\phi$. Giannakidou argues that such forms in a sense make reference to particular events. What is presumably meant is that, in (18), any event of Mary eating an apple would be an event of eating some particular apple. But she offers no formal counterpart for this claim. Moreover, the intuition itself is not so clear. First, there are episodic sentences hosting FCIs such as subtriggered or comparative ones that can be embedded under the interrogative operator *est-ce que* (‘is it the case that’), cf. (19).

- (18) Est-ce que Marie a mangé *n’importe quelle / *toute pomme?
Did Mary eat FCI apple?
- (19) a. Est-ce que tout étudiant qui a triché a été renvoyé?
Was any student who cheated excluded?
b. Est-ce que Marie a mieux réussi que n’importe quelle / toute autre fille dans sa classe?
Did Mary perform better than any other girl in her class?

Second, we have a similar problem with certain modal possibility operators. Consider (20).

- (20) Marie a pénétré dans la salle, alors elle peut avoir lu n’importe quel dossier compromettant
Mary entered the room, so she may have read any sensitive file

In this case too, any event of Mary reading a file would be an event of reading some particular file. Yet the sentence is perfect. For some, this may be taken care of in terms of the episodic vs non-episodic character of the *proposition* in the scope of the main operator. However, first, this concept is not entirely clear. A proposition is not episodic or non-episodic in itself but only with respect to an operator or sequence of operators (including temporal ones). Second, and most importantly, this would rule out (20). The operator in this case is modal possibility and it is applied to the proposition that Mary read a file, which is neither more nor less episodic than the proposition that Mary ate an apple in (18). Since episodic assertions and negations can be treated *via* variation, the status of anti-episodicity, as it is defined, remains unclear.

4.2 *Tout*, variation and domain shift

Tout is a genuine FCI according to the criteria mentioned at the end of section 2.1, as it is acceptable in generic sentences, unacceptable in episodic assertions without modification of the head noun, and it implicates that there is a free choice between individuals or sets of individuals. For instance, *Tout fichier peut être consulté* is quite similar to *Any file may/can be consulted*. It entails that any file from a given set may or can be consulted. On the other hand, *tout* is a universal quantifier. Tovenà and Jayez (1999b) have shown that the latter property is responsible for the fact that it has a more restricted distribution than indefinite FCIs (like *n’importe quel* and *le moindre*).

Specifically, *tout* may be unacceptable in imperatives, conditionals and restrictions of universal quantifiers where *n’importe quel* is acceptable, as shown in (4), repeated below.

- (4) a. Prends *toute carte
Pick FCI card
b. Si tu as *tout problème, téléphone-moi
If you have FCI problem, ring me up
c. Tous les clients qui avaient *tout problème avec le nouveau système ont été aidés
All the customers who had FCI problem with the new OS got some help

Example (4a) clearly violates the intuitive version of variation provided in (16), since the addressee is asked to pick all the cards. Thus, in every possible continuation of the actual world satisfying the imperative, every card will be taken and there is no variation. For (4b,c), we observe that *tout*, being a universal quantifier, is unable to take wide scope,¹³ which produces a logical form as in (21), where x ranges over problems. There is no variation in this case either, since, in every world under consideration, the addressee in (4b) or the relevant customer in (4c), encounters every problem.

$$(21) \quad (\forall x(P(a, x) \Rightarrow P'(a)))$$

However, we have shown in (Tovena & Jayez 1999b) that *tout* can be rescued by *domain shift*. When the domain of the FCI phrase is not rigid, *tout* is acceptable, as in (22), because the different continuations of the current situation may shift between different sets of misdemeanors.

$$(22) \quad \text{Punis tout délit} \\ \text{Punish any misdemeanor}$$

Domain shift shares with variation the fact that it involves several worlds, but it differs in that there is no choice of individual on a world-by-world basis. With *Pick any card*, different cards can be picked in different worlds, with *Punis tout délit*, every misdemeanor must be punished and the choice concerns the domain of misdemeanors.¹⁴ This motivates the construction of a more abstract notion that covers variation and domain shift, as done in section 5.3.

Tout also provides clear empirical evidence against Giannakidou's (2001) claim that all FCIs are indefinites. We will see later that *n'importe quel* is existential. The conclusion to be drawn is that free-choiceness is independent of the existential versus universal character of the FCIs and that a robust theory has to provide for both cases, which coexist in a language like French.

4.3 Does variation vary enough?¹⁵

The main problem with variation is that it does not tell us the whole story on FCIs. It works well for modal operators, but it is not clear how it might

¹³Corblin (1997) notes that in French, like in many other languages, quantifiers and indefinites differ in their respective scope freedom.

¹⁴As noted in (Tovena & Jayez 1999b), *tout* is not always felicitous in object position. However the data suggest that this is not a reflection of its semantics but rather an additional sensitivity to information structure. Compare *Ce programme peut retrouver ?/? tout fichier* ('This program can retrieve FCI file') and *Ce programme peut retrouver tout fichier en moins d'une seconde* ('This program can retrieve FCI file in less than one second'), which differ only in the presence of an adjunct. We will ignore the problem in this paper, because it is tangential to our main goals.

¹⁵We borrow David Beaver's title (*When variables don't vary enough*, SALT IV, 1994).

account for the possibility of subtrigged sentences or phrasal comparatives such as those in (23b,c).

- (23) a. *Tout étudiant a été renvoyé
FCI student was excluded
b. Tout étudiant qui a triché a été renvoyé
Any student who cheated was excluded
c. Marie a mieux réussi que n'importe quelle / toute autre fille de sa classe
Mary performed better than any other girl in her class

These sentences constitute a problem. Intuitively, they sound episodic. Clearly they do not describe properties of classes, typical individuals, etc. So they are not generic in any reasonable sense. They do not describe frequent events, so they are not habitual either. One might side with Giannakidou in assuming that subtrigged sentences have a conditional iterative structure. (23b) would then have a structure like (23b') (see Giannakidou 2001:721).

$$(23b') \quad \forall w, x((x \text{ is a student in } w \ \& \ x \text{ cheated}) \Rightarrow x \text{ was excluded})$$

However, this move raises two questions. First, what do the w indices mean in this case? They cannot mean alternative possible worlds since we are in the actual world and the sentence describes what happened in this world. Quer (1998) and Giannakidou (2001) suggest that they represent situations under an iterative interpretation ('each time a student cheated, he/she was excluded'). It turns out that iterativity is neither necessary nor sufficient. Consider (24). It is difficult to see what iterativity could be conveyed by (24a). So, subtrigging does not require iterativity. Concerning (24b), although it has a conditional iterative structure, the sentence is not very natural. In general, having a conditional iterative structure improves the examples with *tout* but is not sufficient to make them quite natural.

- (24) a. 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
b. *Toute critique qui a été faite à l'orateur a été mal vue par le public
Any objection which was raised against the speaker was ill perceived by the audience

A similar remark applies to Quer's proposal that subtrigging crucially involves attributivity à la Donellan. In section 5.5 we make clear that in French, subtrigging signals a conceptual *dependency*, that is a strong conceptual connection between the properties denoted by the restriction and the scope, hence attributivity is entailed by subtrigging. However, attribu-

tivity is not sufficient to license FCIs, even when iterativity also obtains. For instance, in (25), although the identity of the persons who used the printer is unknown and irrelevant, the sentence is anomalous because no conceptual dependency clearly emerges.

- (25) Pendant toute la matinée, *toute personne qui s'est servi de la photocopieuse, quelle qu'elle soit, a oublié de rentrer son code
The whole morning, FCI person who used the photocopy machine, whoever she was, forgot to enter her code

This shows that postulating a conditional structure behind subtriggered sentences is not sufficient in itself.¹⁶ At least in certain languages, this structure has to express a non-accidental dependency between properties, as argued by Dayal (1998) for *any*. Admittedly, the data are unstable because they are extremely sensitive to interpretive performance and context. For instance, Horn (2001 and p.c.) mentions the following examples as problematic for the prohibition against accidentality. In fact, (26a,b) introduce modal/intensional operators which might play a role in licensing *any*. For instance (26b) might be interpreted as 'I'll eat any food you *will* cook for me'. However, (26a) is not necessarily interpreted in this way and (26c) does not contain any modal operator. It is possible that the *will/promise* operator favours a dependency-based reading, as in (27a). For (26c), it is possible that an habitual reading contributes to make the sentence more natural; but the improvement remains limited in French (27b) and the non-habitual (27b) is out. Another similar French example is (27c), where the completely random character of the fact prevents any non-accidental interpretation and makes the sentence practically absurd.

- (26) a. I will/promise to read any book which happens to be on my desk.
b. I'll eat any food you happen to/decide to cook for me.
c. By a strange twist of fate, any boy John was attracted to at the party last night happened to be straight
- (27) a. C'est promis, tout livre qui se trouve sur mon bureau sera lu [intended: I promised to review several books, which happen to be on my desk, and I did not even start the work]
b. Par un curieux hasard, ^{???}tout garçon sur lequel Jean tombait hier soit était hétéro
c. Par un curieux hasard, *tout garçon que Jean a rencontré hier soir était hétéro
d. Par un curieux hasard, *tout garçon que Jean a croisé hier

¹⁶A reviewer points out that the idea of a conditional structure was put forth by LeGrand (1975). The point is that there may be several types of conditional structures. We come back to this issue in section 5.5.

après-midi portait une chemise bleue
By a strange twist of fate, any boy John passed by yesterday afternoon wore a blue shirt

In view of these observations, it is safer to assume that *tout* is stricter than *any* on the matter of non-accidentality. For *any*, the main question is whether non-iterative clearly accidental examples are natural.¹⁷

The second question concerns phrasal comparatives. In this case too, it seems that we have a perfectly episodic assertion. What might provide variation?¹⁸ It is important to notice that French FCIs are not licensed by just any comparative structure. Such sentences sound natural when they are interpreted as expressing a quality which explains the superiority of the individual denoted by the subject NP in the comparative sentence.

Four factors play a role in determining the acceptability of such sentences.

- i. the topic denotes the individual(s) who/which is (are) compared to the other individuals the FCI phrase is about. For instance, in (23c), Mary is the topic, so the speaker asserts something about Mary. In contrast, in (28a), the topic is the set of girls in Mary's class.
- ii. The sentence does not refer to a list of distinct events. For instance, (28b) cannot mean that Mary beat every other girl in a chess tournament or, more generally, in a one to one confrontation. In an appropriate context, it could entail such an interpretation, but, it primarily means that the overall performance of Mary was superior to that of all her classmates. So the event-list reading can only be derivative. In our opinion, this explains why sentences like *Mary read *any book* cannot be processed the way phrasal comparatives are. These sentences refer to a specific set of events, while phrasal comparatives are about an intrinsic level of performance, whose manifestations are the detailed comparisons (with the other individuals).
- iii. The sentence must be compatible with an emphatic interpretation. This excludes sentences indicating that the difference is only minor, cf. (28c).

¹⁷Space precludes a comparison with *wh-ever* words and *qu-*words in the perspective of subtriggering, see (Gawron 2001) and (Vlachou 2003).

¹⁸Giannakidou's (1997b, 1998) solution boils down to indexing worlds/alternatives by degrees or individual-degree pairs. For instance, in (23c), the different alternatives correspond to the various degrees of performance of Mary's classmates. For one thing, this sounds artificial. In an anomalous sentence like (i), one could also assume the existence of hidden individual-degree pairs (the different girls liked the different books in different ways).

(i) Les filles ont aimé *n'importe quel livre de la liste à des degrés divers

The girls liked any book of the list to various degrees

For another, resorting to a difference in (non)veridicality would raise other problems, as we will demonstrate in section 5.7. Moreover, Giannakidou's solution does not treat the French data discussed in the text.

– iv. Sentences that express purely external relations¹⁹ such as *to be on the right/left of* or *to V later than* are not natural, see (28d,e).

- (28) a. *N'importe quelle / *toute autre fille dans sa classe a
 FCI other girl in her class has
 moins bien réussi que Marie
 less well done than Mary
- b. Marie a battu #n'importe quelle / #toute autre fille dans sa
 Mary beat FCI other girl in her
 classe
 class
- c. Marie a légèrement mieux réussi que
 Mary did slightly better than
 ??n'importe quelle / ??toute autre fille dans sa classe
 FCI other girl in her class
- d. Marie a eu la chance d'être plus près de la sortie que
 Mary was lucky to be nearer to the exit than
 ??n'importe quelle / ??toute autre fille parce qu' elle
 FCI other girl because she
 a pu s'échapper rapidement
 managed to escape quickly
- e. Marie est arrivée plus tard que ??n'importe quelle / ??toute
 Mary arrived later than FCI
 autre fille parce qu' elle avait raté son bus
 other girl because she had missed her bus

These observations jointly tell us that French FCIs occur in emphatic comparisons where the quality of an individual or a group is semantically foregrounded, and the various possible comparisons *follow* from it. For instance, (23c) implies that Mary would have outperformed any other girl, no matter who they were, in any 'comparable' situation, that is to say in any situation where she had the same superiority. This accounts for the fact that comparatives must be about the entity that exhibits the special property, and do not just describe particular events or external relations.²⁰

We do not pretend that these properties are compositional, i.e. that they can be derived in a principled way from the semantic and information structure of comparatives and subtriggered sentences and from the semantics of FCIs. It is perfectly possible that they are *constructional*, in the sense of

¹⁹Following Armstrong (1997:chapter 6), we call a relation purely external whenever it is independent of the individual properties of its terms. Spatial or temporal relations are a typical example.

²⁰The fact, noted by an anonymous reviewer, that the Spanish counterpart of (28a) is fine, shows that the present analysis cannot be generalized hastily, or, reversing the perspective, that data on FCIs in other languages should not be superimposed on French.

Goldberg (1995), that is, consist of a conventionalized cluster of morpho-syntactic, semantic and pragmatic constraints. A hallmark of constructions in languages is that they exploit semantic and conceptual analogy to various degrees.²¹ Different constructions in different languages may be partially grounded in similar motivations, or abstract constraints, which are realized in different ways. To illustrate this possibility, consider the observation by Quer (1998:217) that genuine relative subtriggers require the subjunctive in Catalan, in contrast with what he calls habitual subtriggers. This observation is not replicated in French where the subjunctive is impossible as in (29) (cf. (23b)).

- (29) Tout étudiant qui *ait / *eût
 FCI student who have-SUBJ-PAST1 / have-SUBJ-PAST2
 triché a été renvoyé
 cheated was excluded

This difference cannot be ignored but does not necessarily mean that the regimes of free choiceness are entirely distinct. One can follow Quer and assume that subjunctive, in this case, points to a set of worlds different from the actual one, where the individuals that satisfy the sentence can be picked. In other words, subjunctive creates a modal structure, an option which is not available in French, whence the episodic character of the example in (29). Conceptual dependency and mood shift can be viewed as two possible solutions to the same problem: avoid referentiality. The reasons why a particular solution has been grammaticalized deserve of course a separate study, since diachronic and cross-linguistic investigations are required. However, the crucial point is that both solutions represent a possible strategy for solving a common problem and are, in this respect, kindred.

5 Non-Individuation

This section contains the core of our analysis. The notion of Non-Individuation (NI), that we use to characterize French FCIs, is presented in an intuitive version in section 5.1 before we go into the formal details in sections 5.2 and 5.3.

5.1 The idea behind NI

The idea that FCIs are 'indifferent' to the exact identity of their referents seems to be a mere reflection of their semantics. *Any, opjoshipote* or *n'importe quel* can be paraphrased in many contexts by 'a/some \bar{N} , any

²¹See (Croft 2001), (Michaelis & Ruppenhofer 2001) for recent discussions of this point.

\bar{N} .²² Whether this intuition makes sense for *tout*, however, is much less straightforward.

Roughly speaking, French FCIs in general are anomalous when (i) the speaker describes what happens or happened in some world or (ii) the modal structure associated with the interpretation of the sentence singles out certain individuals in a way that ‘resembles’ this reference pattern. Given a restriction P and a scope Q , *referential* individuation consists in selecting an individual or a set of individuals through the kind of property that would be used, in a unique world, to describe such an individual or such a set with respect to P and Q . Given that P is the restriction, we have to consider only P -objects.²³

If there is only one world (e.g. the actual world), this world determines which P -objects are Q -objects and which P -objects are not. Thus, it describes certain individuals in terms of their P -ness and Q -ness. Typically, this is what happens with episodic assertions, where FCIs are notoriously bad.

If a modal operator creates several worlds that are all possible continuations of the current world, there is no reference *stricto sensu*. However, there can be an individuation pattern similar to the referential one, namely when an individual, say c , is a Q -object (or a $\neg Q$ -object) in every set of worlds where the restriction P has the same denotation and c is a P -object. In this case, c is described in terms of P -ness and Q -ness.

How does this connect with the cases of subtrigging and comparative clauses? Clearly, in such cases, the real world satisfies certain propositions involving particular individuals, for instance, in (23c) repeated below, the propositions that Mary performed better than $g_1, g_2, \dots, g_n, g_1 \dots g_n$ being the girls in Mary’s class. However, these propositions do not determine the fact that Mary was intrinsically or momentarily superior to the other girls. That is, there is an extra piece of information, which is conventionally associated with this kind of sentence and which cannot be reduced to the enumeration of individual comparisons of the form ‘Mary performed better than g_i ’.

- (23) c. Marie a mieux réussi que n’importe quelle / toute autre fille de sa classe
Mary did better than any other girl in her class

Therefore, in order to give a unified analysis of French FCIs, we are going to formulate NI in terms of informational dependency, and not just of reference. In this perspective, a sentence cannot host FCIs if the infor-

²²To our knowledge, Davison (1980) was the first to hint at some form of non-identification in her analysis of *any*.

²³In other words, we assume that FCIs, like most determiners, are conservative. FC determiners use their normal resources to comply with NI and there is no need to stipulate something particular.

mation it conveys can be reduced to an enumeration of propositions that refer to particular individuals. Subtrigged and comparative sentences do refer to particular individuals, but they imply the existence of a conceptual dependency that goes beyond the enumeration of particular cases.

Consider once more the clausal comparative in (23c). On the one hand, the real world satisfies the finite conjunction $\phi = (\text{Mary performed better than } g_1 \& \dots \& \text{Mary performed better than } g_n)$. On the other hand, the sentence favours interpretations such as ‘Mary was well ahead of the other competitors’ or ‘Mary was in (exceptionally) good shape at that moment’, etc., in short, interpretations of the form $\psi = \forall x((x \text{ is a girl in Mary’s class} \& x \neq \text{Mary}) \Rightarrow S(\text{Mary}, x))$, where S notes any predicate expressing the superiority of Mary. Whenever the two predicates ‘perform better than’ and S are different, the information expressed by ϕ does not allow one to prove ψ . So the sentence conveys information (ψ) that is not reducible to the enumeration of individual comparisons (ϕ).

This suggests that NI should be conceived as a general requirement saying that referential information should either be absent or not sufficient to characterize the meaning conveyed by the sentence.

5.2 Sharpening the definition of referentiality

In order to define NI, we first have to make clear what we understand by ‘reference’ and ‘referential’. As emphasized in (Giannakidou 1998, 2001), veridical operators are incompatible with FCIs, as illustrated in (30).

- (30) Jean croit que le technicien a trouvé ??n’importe quel bidouillage pour contourner le pare-feu
John thinks that the technician found some way or another to hack through the firewall

However, unexpectedly, some French nonveridical operators too are incompatible with FCIs.

- (31) a. Jean espère que le technicien a trouvé ??n’importe quel bidouillage pour contourner le pare-feu
John hopes that the technician found some way or another to hack through the firewall
b. Jean espère que le technicien trouvera n’importe quel bidouillage pour contourner le pare-feu
John hopes that the technician will find some way or another to hack through the firewall

In (31a), *espérer* is nonveridical since John does not necessarily believe that the technician actually found a way to bypass the firewall. Yet the sentence is clumsy. Actually, many expressions that mention *spaces*, in the sense of

Fauconnier (1985) or *media*, in the sense of Ross (1988) behave like *espérer*.

- (32) a. Dans ce film, Marie est persécutée par *n'importe quel maniaque, qu'on ne voit jamais
In this film, Mary is persecuted by FCI lunatic, whom we never see
- b. Dans cette théorie / hypothèse, la particule a émis *n'importe quel photon
In this theory / hypothesis, the particle emitted FCI photon
- c. Dans cette légende, le chevalier a tué *n'importe quel dragon
In this legend, the knight killed FCI dragon

As Ross (1988) points out, *media* are objects that have content. He notes that they are strikingly similar to epistemic and affective attitudes. In this perspective, one might say that an accessibility relation is referential whenever it points to the actual content of a medium.

Examples of this type are referential and cannot host FCIs. FCIs are not compatible with referential relations because such relations imply that some particular individuals satisfy or do not satisfy the restriction of the sentence. This remains true even if there is a radical epistemic indetermination, as in (32a). Although dreams and hopes differ as to their veridicality, they are both *media*.²⁴ *Media* can be veridical or not. For instance, *dream* is veridical because, in general, the dreamer believes that the events that take place in her dream are real. *Media* involving films and stories are nonveridical when they are understood as fictional.

At first sight, the property of non-referentiality we are after is an extension of nonveridicality, as we take into account what the speaker believes about a given set of worlds and not only what she believes about something. In fact, the situation is more complex. Consider Giannakidou's (2001) explanation for the oddity of (33).²⁵

- (33) Ariane regrette d'avoir vu *n'importe quel ami à elle
Ariane regrets that she saw any friend of hers

Giannakidou argues that the FCI will receive the same values in all alternatives of the epistemic model of the speaker, which blocks variation. Why should it be so? A speaker can perfectly well utter (33) and not have the slightest idea about who are Ariane's friends and whom she saw among them. For instance, the speaker might have learned that Ariane regrets that she saw some friend of hers from a reliable source, who did not communicate the name of the person. As a consequence, the speaker may entertain

²⁴Ross notes the strong similarity between *I dreamt that* and *In my dream*. One might also pair *I hope that* with *In the world of my hopes*.

²⁵We adapt the original Greek example since nothing essential hinges on the difference between the two languages here.

several different epistemic alternatives where the identity of the friend(s) in question is different.

Objecting to our point one could suggest that we should rather look at the epistemic model of Ariane, who is supposed to know who she saw. However, this suggested solution is not general. Consider (34). It is perfectly possible that neither Ariane nor the speaker know who criticized Ariane.

- (34) Ariane believes that *anybody criticized her

Technically, following Giannakidou's (2001) definition (127), (34) asserts (34'). If w is the actual world, variation is indeed impossible and the derivation offered in (156) on page 715 is correct.

- (34') believes(Ariane) [person(w, x);criticized(w, x ,Ariane)]

However, whenever there is a set of worlds compatible with what the speaker believes about Ariane, the derivation is not correct. More precisely, let W be the set of epistemic alternatives; in standard modal logic, (34) would be true if and only if the proposition that x criticized Ariane is true at every world of W representing also a possible past for the actual world. In other words, we have (34''), where w is the actual world.

- (34'') $\forall w'((wR_{Bel_{Ariane}}w' \ \& \ wR_Pw') \Rightarrow w' \models x \text{ criticize Ariane})$

How could we logically derive from this information the proposition that there is a unique event of being criticized? Should we 'freeze' the past world, that is, should we require that there be only one R_P -accessible world? Technically, it is feasible, but (i) it is not standard practice in modal logic and (ii) above all, it is counterintuitive, because one would thereby predict that a sentence like (34) *entails* that Ariane (or the speaker) knows who criticized Ariane. Moreover, enforcing epistemic variation does not improve the sentence (*Ariane believes that *anybody, whoever it was, criticized her*). This indicates that there is a gap between epistemic nonveridicality and reference.

To take quite a different example, if we say 'Mary failed her exam', we probably refer to a unique event in most cases, but our epistemic alternatives may nonetheless be compatible with several events of the same type. There is an apparent paradox here. If we believe that Mary failed her exam, don't we also believe that this event is unique? Not exactly. If we believe that Mary failed her exam, we also believe that this event is unique *in the actual world*, not in our epistemic model. What we need at this stage is an appropriate notion of modal *location*, to express the fact that propositions are true *at* certain worlds.

It should be clear by now that we are exploring a different solution from Giannakidou. Yet, since we agree with her that variation is somehow 'impossible' in episodic veridical examples, we have to move from epistemicity

to referentiality to provide a formal rendition of the intuitive notion of location. In a sense, NI is the concrete manifestation of such a move. It is well-known that FCIs are not redeemed by ignorance (epistemic indetermination), in contrast to determiners or pronouns sensitive to ‘knowledge of the speaker’ (Happell 1997).²⁶ Although the difference is empirically clear, it is theoretically unclear. Why is epistemic variation an implausible scenario with FCIs? Assume that *n’importe quel* signals that any individual of a given set can be considered. Then, one might simply imagine that, in the current situation, any choice is as plausible as any other, resulting in epistemic indetermination. E.g. *Mary read *any book* would be licensed if the speaker, ignorant of which book Mary read, considers all the books of some given set as equally plausible. Clearly, nobody would propose such a theory of FCIs and the use of the epistemic terminology is misleading.

Thus, ignorance about the content of a medium is not a licensing condition. But when possible continuations or possible past sources of a medium are considered, the referential effect disappears and FCIs are licensed. For instance, in (35) the speaker does not refer to ‘actual’ events that took place in the medium and the sentences are acceptable.

- (35) a. Dans ce film, l’intrigue est cousue de fil blanc, Marie va probablement être persécutée au téléphone par n’importe quel maniaque glauque, qu’on ne verra jamais
In this film, the plot is hackneyed, Mary is probably going to be persecuted on the phone by FCI creepy lunatic, whom we’ll never see
- b. Dans cette théorie / hypothèse, la particule a pu émettre n’importe quel photon
In this theory / hypothesis, the particle may have emitted any photon
- c. Dans cette légende, le chevalier est capable de tuer n’importe quel dragon
In this legend, the knight is able to kill any dragon

Let us call a sentence *descriptive* whenever it purports to refer to actualities in some world. Summing up, we have considered three problematic cases. The space/media case is descriptive and nonveridical (32). Belief sentences are non-descriptive and veridical (30,34). Other sentences (with *espérer*, ‘hope’, 31) are non-descriptive and nonveridical. What do they have in common? To answer this question, we have to take into account the general asymmetry between epistemicity and reference (see Dekker 1998).

Descriptive sentences imply that particular individuals satisfy the proposition they express in some particular world. For instance, (32a) asserts that,

²⁶See (Jayez & Tovena 2002) for an analysis of the difference between *un quelconque* and *n’importe quel* along these lines.

in the world of the film, Mary is persecuted by a particular lunatic. In this respect, such sentences refer to particular individuals, a fact that is not compatible with NI. Conversely, non-descriptive sentences imply that particular individuals satisfy the propositional content in the ‘image’²⁷ of the actual world they convey, not in the world itself. For instance, (31a) indicates that, if we see the current world through John’s hopes, the technician found some particular solution. In this case too, the sentence refers to particular individuals. To capture this similarity in a more precise way, we take advantage of the recent discussion of the ‘at’ operator @ of *hybrid logic* (Blackburn 2000) as a reference operator (Gregory 2001, Blackburn & Marx 2002). The formula @_wφ (which reads as ‘at *w*, φ’) is true at a world if and only if φ is true at *w*. @ is non-local, since the proposition that φ is true at *w* is true or false ‘everywhere’ (at every world). Formally, 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 (36).

$$(36) \quad \mathcal{M}, g, w \models @_x \phi \text{ iff } \mathcal{M}, g, g(x) \models \phi.$$

For simplicity, we identify worlds and their names (so, $g(w) = w$). A descriptive sentence like (32a) can be analyzed as (32a’). (32a’) makes clear that there is a particular individual that satisfies the property of being a lunatic and persecuting Mary. Note that the *identity* of this individual may be unknown. Mental spaces and media are generally assumed to be *partial* information states. (32a) could be uttered by a script writer who has not yet worked out the character of the maniac. The sentence would be strange, unless it is interpreted as targeting different future states of the script. This shows that implying the existence of particular individuals at some information point is not compatible with French FCIs.

$$(32a') \quad @_{\text{this film}} \exists x (x \text{ is a lunatic} \ \& \ x \text{ persecutes Mary})$$

Turning to the non-descriptive case, we need to instill into the representation some form of reference to the current world *w*. Every form □φ constructs an image of *w* whenever φ is about *what is the case at w*. E.g., hoping that φ is true at *w* constructs an image of *w* in which φ is true. The set of propositions of this kind represents the *image* of *w* constructed by the HOPE attitude. More generally, the notion of reference usually makes sense in two cases. Either we refer to a unique individual in different worlds (trans-world identity, rigidity, etc.) or we refer to an individual in a particular world. In the latter case, we might not know the identity of the individual. What matters is that the world we consider determines the existence of the individual. □-attitudes give a coherent picture of the current world, in

²⁷We will provide a precise definition of *image* shortly.

contrast with \diamond -attitudes, which admit contradictory information about the same world. French FCIs detect this kind of reference and this is independent from epistemic variation. 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 . This notion extends readily to the general case where we have a sequence of modal operators. We call an expression *non-modal* when it contains no occurrence of a modal operator.

- (37) Let \mathcal{M} be a sequence of attitudes of type \square . The \mathcal{M} -image of w , in symbols $w_{\mathcal{M}}^*$, is $\{\phi : @_w \mathcal{M}\phi \ \& \ \phi \text{ is non-modal and is about what is the case at } w\}$

The non-descriptive cases at hand share the property of referring to particular individuals in $w_{\mathcal{M}}^*$. They have the general form in (38).

- (38) $@_{w_{\mathcal{M}}^*} \exists x(\phi(x))$, where the attitudes in \mathcal{M} are of type \square (BELIEF, HOPE, etc.).

So far, we have covered descriptive and non-descriptive cases. This does not tell us the whole story, however. We noted that, for examples like (4a) (*Prends *toute carte*), the fact that we know in advance which set of cards will be picked in the different continuations rules out the sentence. Although we do not refer to what is actually the case in the current world, in (4a) we refer to a particular set of cards as satisfiers of the proposition. The sentence entails that at speech time every card from a given set must be picked. So, the difference between the non-descriptive case and this one is extremely thin.

Let us turn to a cross examination of referentiality with respect to variation. We saw that referential information is the type of information found in *one* world. Given a tripartite structure [QUANT] [P] [Q], the information pertaining to this structure and available at w would be the set of individuals that satisfy P and Q or P and not- Q . This is the standard complete information which determines, for each individual, the properties it satisfies or the relations it enters. The fact that no FCI is compatible with referential information in this sense explains why episodic assertions cannot host FCIs in general.

What about the case where there is more than one world, as in modal sentences expressing invitations, permissions, obligations, etc.? Take example (1c) ('Pick any card'). Couldn't one object that the speaker who alludes to a particular pack of cards *refers* to it? Why isn't this sentence anomalous? A theory which takes variation as a crucial basic notion would insist that variation is possible in this case and that the acceptability of (1c) proves the primacy of variation over referentiality, since the sentence is somewhat referential. However, there are two reasons to adopt the reverse perspective, that is, to ground variation on (anti-)referentiality.

First, we have to make sure that variation is not simply epistemic, since, as we saw above, epistemic variation is not sufficient to license FCIs. This can be done by giving reference priority over variation, for instance by indicating that the identity of the world in which individuals are referred to takes priority over the speaker's ignorance as to the exact identity of the individuals in such a world. Second, and more importantly, there is a natural order of operation. We acknowledge that variation can be read off the lexical semantics of certain items like *n'importe quel* (lit. 'it does not matter which'). Giannakidou (2001) shows that this is also the case for the Greek *opjosdhipote*. However, this is not always the case and in particular it is impossible for *tout*. Being a universal quantifier, *tout* does not hint at any selection of individuals one by one, nor does it have a FC 'tag', like *qu-ce soit* in French or *-pote* in Greek. Yet it is subject to variation under the form of domain shift. If variation is a reflection of the lexical semantics of FCIs, the behaviour of *tout* is rather mysterious, whereas it makes sense if variation is itself a reflection of anti-referentiality and we say that in general FCIs tend to be anti-referential.

Taking stock once more, the strategy we develop consists in constructing a notion of referentiality that accounts for the kind of variation requirement we observe. In general, FCIs are not compatible with referential information. But there is an additional twist. When discussing comparative clauses in section 4.3, we showed that referential interpretations are compatible with FCIs. Therefore, the constraint that we will propose (cf. (48) in section 5.3) must include anti-referentiality as a special case and leave room for some form of referentiality at some stage without becoming contradictory. To this aim, we will check referentiality on an abstract structure. We need to present some more considerations before we can finally provide our definition of referentiality of an interpretation.

Referentiality obtains *at* a given world. We normally refer to individuals that exist in some particular world or are visible from this world. There are probably different ways of referring, but most of them reduce to a form of 'aboutness'. To refer to an object in w is to say something about this object. In this sense, modal sentences such as *Pick any card* are referential if the cards the sentence is about exist in the current world. However, the *truth* of the sentence depends on whether a card will be picked in some continuation, and this is not determined in the current world. We will see in section 5.3 that NI requires that the truth of a sentence should not depend only on information pertaining to particular individuals in a particular world. Concretely, given a sentence S , its truth should not require *only* that we choose or exclude a particular (set of) individual(s). NI would be violated in the cards example if, in the current world, we knew in advance which cards are to be picked or which cards are not to be picked.

If we know in advance, at some world w , which individuals must satisfy P and Q or $\neg Q$, we have a referential situation. This is why FCIs demand

domain shift or variation. Domain shift prevents the denotation of P from being fixed. Variation has the same effect on the denotation of Q . Gianakidou (1997b, 1998, 2001) proposes that FCIs are based on *exhaustive* variation. In the present approach, exhaustiveness is a direct consequence of NI. If individuals are excluded from the range of possible satisfiers, they are thereby individuated. Once the denotation of the restriction P is fixed,²⁸ all the members of this denotation are on a par. FCIs cannot be used to describe situations in which some individuals that satisfy the restriction in the current world are in principle unable to satisfy the scope, because this would amount to distinguishing them from the rest of the individuals in the restriction. In other terms, domain shift and exhaustive variation are two ways of satisfying NI, by making sure that no individual is highlighted. The third way, illustrated by comparatives and subtrigging is to make the truth of the sentence depend on non-individuating information.

We come back to non-individuating information in section 5.5. Our present task is to define referentiality of an interpretation in a way that captures the similarity between descriptiveness and (variation + exhaustiveness). In what follows, the expression ‘modal formula’ denotes any formula which contains at least one modal operator. A modal formula evaluated at w and involving the modal operators $M_1 \dots M_n$ in that order gives rise to a rooted Directed Acyclic Graph (DAG) in which the root is w and the branches are all the maximal sequences of worlds $\langle w, w_1, \dots, w_n \rangle$ such that $w \mathcal{R}_{M_1} w_1 \mathcal{R}_{M_2} \dots \mathcal{R}_{M_n} w_n$. We need the auxiliary definition (39).

(39) Let ϕ be a modal formula evaluated at w . Let W be the set of leaves of its associated DAG, $\text{DAG}(\phi)$. The *basis* of ϕ in $\text{DAG}(\phi)$ is the union of the minimal sets $W' \subseteq W$ such that ϕ is true at w against W' .

(39) has been devised with \diamond operators in mind. When $\diamond\phi$ is true at w we are interested only in the worlds \diamond -accessible from w where ϕ is true because these are the worlds that make $\diamond\phi$ true. With \square operators, we are interested in all the accessible worlds since they jointly determine the truth of $\square\phi$. This extends to sequences of operators. For instance with a $\diamond\diamond\phi$ expression, we are interested only in those worlds w'' such that $w \mathcal{R}_{\diamond} w' \mathcal{R}_{\diamond} w''$ for some w' and ϕ is true at w'' . The fact that useless worlds are not ‘seen’ in the evaluation of a sentence containing a FCI is apparent from examples like (40). It is quite possible that there is no file that is consulted or not consulted in all the worlds. As the sentence is compatible with worlds where no file is consulted, these worlds are not in the basis, cf. (39). Instead, every world that enters the basis is a world where all the files on the shelves are consulted. As a result, *tout* is out.

²⁸The restriction can be rigid, as in the cards example, or not. In the latter case, it ranges over all the individuals in the relevant accessible worlds.

(40) Il est possible qu’il consulte *tout fichier (sur les étagères)
It is possible that he consults any file (on the shelves)

(41) defines referentiality as the fact that a modal structure determines which individuals satisfy necessarily P and Q or P and not Q in the basis of some formula. For simplicity, we abbreviate $w \mathcal{R}_{M_1} w_1 \dots \mathcal{R}_{M_n} w_n$ as $w M_1 \dots M_n w_n$, and 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. Similarly, $\vec{x} \in E$ means $x_1 \in E \& \dots \& x_n \in E$.

(41) Referentiality of an interpretation

Let S be a sentence and $\text{LF}(S)$ its tripartite logical form = $\mathcal{M}_1([\text{QUANT}][P] \mathcal{M}_2[Q])$, where P is the (non-modal) restriction, Q the (non-modal) scope, \mathcal{M}_1 and \mathcal{M}_2 (possibly null) sequences of modal operators. Let its associated DAG, $\text{DAG}(\text{LF}(S))$, represent an interpretation of S . Let $\text{DAG}^\circ(\text{LF}(S))$ denote the DAG obtained by suppressing from $\text{DAG}(\text{LF}(S))$ every branch whose terminal node is not in the basis. Let P° be the set of individuals which satisfy the restriction P in at least one world of the basis. Let w be the root of $\text{DAG}(\text{LF}(S))$ and $\text{DAG}^\circ(\text{LF}(S))$.

$\text{DAG}(\text{LF}(S))$ is referential iff one of the following constraints obtain in $\text{DAG}^\circ(\text{LF}(S))$:

- 1a. $\@_w \star_{\mathcal{M}_1 \mathcal{M}_2} \exists \vec{x} (P(\wedge\vec{x}) \& Q(\wedge\vec{x}))$, or
- 1b. $\@_w \star_{\mathcal{M}_1 \mathcal{M}_2} \exists \vec{x} (P(\wedge\vec{x}) \& \neg Q(\wedge\vec{x}))$, or
- 2a. $\@_w \exists \vec{x} (\vec{x} \in P^\circ \& \forall w' (w M_1 M_2 w' \Rightarrow \@_{w'} (P(\wedge\vec{x}) \& Q(\wedge\vec{x})))$, or
- 2b. $\@_w \exists \vec{x} (\vec{x} \in P^\circ \& \forall w' (w M_1 M_2 w' \Rightarrow \@_{w'} (P(\wedge\vec{x}) \& \neg Q(\wedge\vec{x})))$.

We assume that, if \mathcal{M} is the empty sequence, the only world accessible to w is w itself. Therefore, for episodic assertions, since \mathcal{M}_1 and \mathcal{M}_2 are empty sequences, we have the simple form $\@_w \exists \vec{x} (P(\wedge\vec{x}) \& Q(\wedge\vec{x}))$. This form is referential in the sense of (41). At this stage, NI is taken to mean that FCIs are not compatible with referential interpretations. The slogan ‘a FCI cannot be descriptive nor specific’ provides an intuitive (but sloppier) rendering of the combination of (41) and (42).

(42) NI (provisional version, anti-referentiality)

If a FCI occurs in a sentence S , the interpretation of S cannot be referential in the sense of definition (41).

There are three important points to make. First, conditions (41) and (42) entail variation. Consider the cards example in (1c) and let C be the set of cards in the pack. The restriction is rigid, so we have the same P -set (C) at every world in W . If card c is picked at w' , it cannot be picked everywhere in W , because this would satisfy (41.2a) and violate (42). But c has to be picked somewhere, otherwise (41.2b) would be satisfied. Since *n’importe*

quel is in the singular form, there is a preference for considering only one object in the restriction,²⁹ i.e. a card in each continuation. The net result is that different cards from *C* can be picked in different continuations.

- (1) c. Prends n'importe quelle carte
d. Pick any card

How does the present notion of variation compare with Giannakidou's (1997b, 1998, 2001) notion? A clear difference is that Giannakidou's condition on the denotation of a FC phrase (see for instance (Giannakidou 2001: 706, def. 127a)) requires a pairwise variation on *P*'s extension in the different worlds of *W*. This entails that we have a different card in each world, ruling out the case where the pack of cards remains invariant across worlds, although, intuitively, this is the most straightforward interpretation. One might argue that, by considering situations, i.e. informational units, rather than worlds, one may retain the 'one card per situation' constraint. However, if *Pick any card* is said at the beginning of a card trick, it is rather counter-intuitive to separate the card from the pack, because, in general, a trick of cards involves the whole distribution of the cards in the pack. We do not pick this or that card in isolation but a particular card from a specific pack. Next, even if we consider an obvious patch, such as to say that pairwise variation bears on the restriction *and* the scope, the notions remain different. According to the modified version just suggested, the interpretation of the sentence is that, for any two distinct worlds, a different card is picked. This is too strong. All we have to guarantee is that every card is picked at some world. We should not exclude the case where the same card is picked in different worlds. An example like *Any student can answer the question* does not imply that the student who answers the question is different in each world, because the same student might provide various answers.

Second, condition (41.2b), which corresponds to exhaustiveness, entails the possibility of a universal reading, even with existential FCIs. This applies in particular to simple assertive sentences. (41.2a) cannot be satisfied since particular individuals satisfy *P* and *Q* in the current world. However (41.2b) can be satisfied if the FCI is interpreted universally. If we assume that as many constraints as possible are satisfied, this accounts directly for the fact that comparatives like (23c) have a universal reading and that, in spoken French, sentences like (43) may have a universal interpretation (see section 5.6, point 5).³⁰

- (43) Il a lu n'importe quel livre au programme
He read FCI book on the reading list
[may mean 'He read every book on the reading list']

²⁹Were *n'importe quel* to be in the plural, we would have to consider subsets of the restriction.

³⁰The *equative* interpretation of the sentence is discussed in section 6.2.

The third, last important point to note is that domain shift replaces variation when it is not possible to distinguish individuals or subsets within the restriction domain. It is worth emphasizing that domain shift is not restricted to *tout*. In fact, as a direct consequence of the anti-reference of FCIs, it may also apply to *n'importe quel*. When there is only one *P*-object per world, as in (44), then domain shift is the only strategy.

- (44) Ils nous feront une seule proposition, mais, dans l'état où nous sommes, nous accepterons n'importe quelle proposition de leur part parce que nous n'avons pas les moyens de négocier
They will make only one proposal, but, in our present state, we will accept any proposal from them because we are in no position to negotiate

The logical structure behind (44) is as follows. In every continuation, there is a (unique) proposal and it will be accepted, so we have $\Box_F(\exists!x(x \text{ is a proposal} \ \& \ x \text{ is accepted}))$, where \Box_F is an appropriate future operator. What is required is that there is no proposal shared by all the worlds in *W* (this would violate (41.2a)). Again, this does *not* entail that all the proposals in the different continuations should be different. We can perfectly imagine that the opponents have only two proposals, and the following sentence is not contradictory or clumsy.

- (45) Ils ne peuvent nous faire que l'une de ces deux propositions, et nous accepterons n'importe quelle proposition de leur part parce que nous n'avons pas les moyens de négocier
Their proposal can only be one of these two, and we will accept any proposal from them because we are in no position to negotiate

In this situation, one can imagine several different continuations in which the proposal is the same (while the 'rest' of the world is different).

5.3 Implementing NI

Intuitively, NI covers the cases where the information conveyed by a sentence containing a FCI is not reducible to a referential situation. However, its final formulation has also to take into account the two cases that are not amenable to anti-referentiality (see section 4.3), i.e. comparatives and subtrigging.

NI captures the property in virtue of which referential knowledge cannot specify completely the logical information conveyed by the sentence containing a FCI. NI obtains in two cases: (i) either there is no referential knowledge proper (no individuation determined in the current world) or (ii) there is some extra information that is not reducible to referential knowledge. Case (i) corresponds to the possible existence in the future of mutually incompatible worlds. Case (ii) corresponds to the fact that a sentence hints at

some proof-theoretic dependency, which evades any purely referential characterization. In the case of subtrigging, the episodic assertion depends on a (possibly contextual) rule that does not mention particular individuals. For instance, in (23b), the fact that every cheater was punished is presented as the consequence of a general rule such as ‘if x is a student and cheats, he/she is excluded’. Similarly, for the comparative (23c), the fact that Mary outperformed the other girls is presented as the consequence of a general rule such as ‘if x is superior to y at least to a degree d , x does better than y ’. These rules can be relativized to a given context, enriched with deontic operators, etc. The crucial point is that they constitute a necessary premise in a proof of the conclusion, i.e. of the set of individual facts, as shown in the general pattern (46).³¹

$$(46) \quad \frac{\forall x(P_1(x) \Rightarrow P_2(x)) \text{ (rule)} \\ P_1(a_1) \& \dots \& P_1(a_n) \text{ (facts)}}{P_2(a_1) \& \dots \& P_2(a_n) \text{ (facts)}}$$

To keep the formulation of the dependency simple, we express it within classical logic. (47) says that a formula ψ depends on a formula ϕ if (i) there is a proof of ψ using ϕ as a hypothesis and (ii) suppressing ϕ from the set of hypotheses makes it impossible to prove ψ using only the other hypotheses. So, ϕ is a necessary condition for ψ in the context of a particular proof or set of proofs.

(47) We say that ψ depends on ϕ_i iff there is a proof $\phi_1 \dots \phi_i \dots \phi_n \vdash \psi$ of ψ from ϕ_1, \dots, ϕ_n such that $\phi_1 \dots \phi_{i-1} \phi_{i+1} \dots \phi_n \not\vdash \psi$.

(48) **NI** (final version)
If a FCI occurs in a sentence S, either the interpretation of S is non-referential, in the sense of definition (41), or it conventionally implicates that LF(S) depends on some formula that does not mention particular individuals.

In sum, NI says that a FCI is licensed in a sentence S if S (i) is non-referential or (ii) communicates something that cannot be reduced to referential information. NI has three main consequences, that we explore in turn, before discussing nonveridicality in section 5.7 and Contextual Vagueness in section 5.8.

5.4 Variation and domain shift

Let us first consider the different possibilities that pertain only to referentiality, ignoring for the moment comparatives and subtrigged sentences. For

³¹In section 5.5, we consider this issue in a more general perspective.

simplicity, we leave aside the fine grained differences between modalities in general and distinguish only necessity (\Box) and possibility (\Diamond) modalities.

1. S has the logical form $\Box \exists x(P(x) \& Q(x))$. There are two subcases.
a. The set of P -objects is invariant across all \Box -accessible worlds. Unless there is only one x that P 's, various P -objects can satisfy Q in the worlds of W . This is the case of sentences of the type *Pick any card*. For assertion, the current world is the only \Box -accessible world. Note that negative episodic sentences fall in the same category. If Mary did not read a book b , there is a particular P -object which is also not a Q -object, namely b . For belief and similar modalities, NI blocks the sentences through (41.1) (which concerns the image of the current world).
b. The set of P -objects is not invariant across the \Box -accessible worlds, as in (49).

(49) a. Nous prendrons prétexte de n'importe quel incident de frontière pour déclencher la guerre
We will use any border skirmish as a pretext to start the war
b. Nous devons punir n'importe quel délit
We must punish any misdemeanor

For (49a), if there are several border skirmishes every day, the different continuations may contain different sets of skirmishes. So domain shift is possible. The same applies for (49b).

2. S has the logical form $\Box \forall x(P(x) \Rightarrow Q(x))$. There are two subcases.
a. The set of P -objects is invariant across all \Box -accessible worlds. Then, the FCI is out since, if C is the set of P -objects, S is true if and only if $P(c) \& Q(c)$ is true for every $c \in C$ in every world of W . A typical example is (4a) *Prends *toute carte*.
b. The set of P -objects can vary. Then, the FCI is not excluded since it is possible that P is not rigid over W . In such cases, illustrated by (22) above, *tout* is licensed (see Tovena & Jayez 1997b, 1999a and Dayal 1998 for similar observations on *any*).

Generic sentences raise a particular problem, since there is no consensus as to their logical form (see Asher and Morreau 1995, Eckardt 1999, Cohen 1999, Greenberg 2002 for some recent proposals). If we assume that generic sentences have an implicative form in the scope of some variant of a \Box -operator, they are licensed by either domain shift or conceptual dependency or by both. For instance, in (50), there is a conceptual dependency between the properties of being an integer and that of being odd or even.

(50) Tout entier est pair ou impair
Any integer is odd or even

Note that it is difficult to conceive such sentences as nonveridical. In contrast with other types of generics, there is no exception to the law expressed by

the generic sentence in (50).

Habitual sentences license FCIs through domain shift. In (51), TV programs and passports may vary from situation to situation.

- (51) a. Pour s’endormir Marie avait l’habitude de regarder n’importe quelle émission de télé débile
To get to sleep, Mary used to watch any stupid TV program
b. Habituellement, tout passeport était soigneusement contrôlé
Usually, any passport was carefully inspected

3. S has the logical form $\diamond\exists x(P(x) \& Q(x))$. It is possible that the worlds of W do not share any set of P -and- Q objects. Typical examples are permission and possibility sentences with *n’importe quel*. An interesting case was provided by sentences like (20), repeated below.

- (20) Marie a pénétré dans la salle, alors elle peut avoir lu n’importe quel dossier compromettant
Mary entered the room, so she may have read any sensitive file

Examples of this type are two-sided. They are not descriptive since they do not purport to describe what happened in the reference world, which is the actual world in this case. Variation is possible, since no particular file is singled out. But, in a sense, if the event of Mary reading a folder took place, it took place in the actual world and is accordingly episodic. We might say that this event is potentially episodic. However, it seems that a question like *Est-ce que Marie a lu *n’importe quel dossier compromettant?* (‘Did Mary read FCI sensitive file?’) also involves a potentially episodic event and should license FCIs, but it doesn’t. For simplicity, we ignore the problem for the moment, and postpone an account for this puzzling difference to section 6.1.

4. S has the logical form $\diamond\forall x(P(x) \Rightarrow Q(x))$. Unless P admits of different extensions in the \diamond -accessible worlds of W , (41.2a) is violated. Note that this is due to the fact that, in definition (39), we kept only the minimal sets of worlds where the sentence is true, thus getting rid of the worlds where $\neg Q$ is true for some P -object. This explains the contrast between (52a), where, like in (22), the set of misdemeanors is not rigid, and (52b) = (40), where the set of files is assumed to be rigid.

- (52) a. Il est possible qu’il punisse tout délit
It is possible that he punishes any misdemeanor
b. Il est possible qu’il consulte *tout fichier (sur les étagères)
It is possible that he consults any file (on the shelves)

Note that, when the universal quantifier acquires scope over the modality, we have the form $\forall x(P(x) \Rightarrow \diamond Q(x))$, which is innocuous. For instance, (53) is possible because different files may be retrieved in different worlds.

- (53) Cette procédure peut retrouver tout fichier sur le disque en moins de deux secondes
This procedure may retrieve any file on the disk in less than two seconds

5.5 Proof-theoretic dependency

Suppose now that S has the form $\text{ASSERT}(\forall x(P(x) \Rightarrow Q(x)))$, thereby violating (41.1). Nonetheless, it may be the case that the information conveyed by S is not reducible to a set of individual propositions. Thus, although the sentence violates referentiality, it can still comply with NI. Two subcases should be considered.

1. If S is a comparative in a suitable form, it conveys two pieces of information: (i) that every P -object is also a Q -object and (ii) that (i) obtains in virtue of a certain stable or temporary property of the individuals. If C is the set of P & Q -objects, (i) entails referring to C , whereas this is not the case for (ii) which says something independent. Note that we do not have to make the wording of (ii) more precise. For instance, we are not committed to say that, in (23c), Mary is more intelligent, slept better, etc. than the other girls. What counts is that the episodic/rigid information is presented as the *consequence* of some information of type (ii), which is crucial albeit vague because it sets up a proof-theoretic dependency that goes beyond purely factual information.

2. Subtrigging obtains.³² Then, the objects that satisfy Q do so in virtue of their satisfying P . This type of information cannot be reduced to an enumeration of P & Q -objects. Again, conceptual dependency is not reducible to factual information. This accounts directly for the clumsiness of examples where the link between P and Q is purely accidental, cf. (27c).

In both cases, we may say that the evaluation world contains a set of propositions, say Γ , such that the individual conjunctions $P(c) \& Q(c)$ are derivable from Γ .³³ This derivation must be ‘content-based’, as, for instance, in relevance logics (Anderson & Belnap 1975, Anderson et al. 1992) or analytic implication (Tzouvaras 1996). This means that it must be based on the definitions of the predicates and not purely on the truth-value of the formulas.

It is important to notice that proof-theoretic dependency is *not* a way to reintroduce modality into our approach. According to much of the previous literature (Dayal, Eisner, Sæbø, Giannakidou), FCIs are intensional. We agree that the FC morphology can call intensionality to mind (Giannakidou 2001:703), but we think that intensionality is only derivative. More precisely, if intensionality is understood as the fact that certain semantic contents receive different truth-values or interpretations in different worlds,

³²For reasons explained in section 6.2, *n’importe quel* tends to avoid subtrigging.

³³By NI, Γ should be different from the set of individual conjunctions.

French FCIs are not intensional because they do not require different worlds in every case. They exploit the existence of worlds when the modality creates them. However, in comparative and subtrigged sentences, they are not associated with variation or domain shift over a set of worlds. This fact is not entirely surprising. French FCIs, like most FCIs presumably, are anti-referential. Therefore, they are clumsy whenever the modal configuration selects individuals in a fixed restriction domain. But they are also governed by NI, which says that the referential configuration must not stand by itself. The backbone of NI is individuation, that is the fact that a proposition is true *in virtue* of being verified by certain individuals. Non-individuation obtains in two cases. First, when the proposition is not verified by certain individuals but corresponds to a (possibly infinite) disjunction of atomic propositions, i.e. the intensional case. Second, when the proposition is referential but is not true in virtue of this.

As evidenced by the introductory quotation from Aristotle, the problem of conceptual dependency is not new. In various contributions, Fine (1985, 1988, 1995, 2000) has investigated the notions of conceptual dependency and arbitrariness. In (Fine 2000), he has devised a rich semantics for judgments of the form ‘ ϕ is true in virtue of the nature of the objects that have the property P ’. It is difficult to apply Fine’s recent framework to FCIs because of its objectual nature (see Tovena & Jayez 1999b for a discussion). However, it is clear that the leading intuition remains that of arbitrariness (Fine 1985).³⁴ We say, for instance, that ANY integer is odd or even to stress the fact that the choice of a particular integer is not relevant. However, if, in a particular situation, we have a particular integer, we have referential *arbitrariness*. E.g., when we say *The integer I wrote on this sheet is odd or even*, we are talking about a particular integer (referentiality), but it is in virtue of being an integer, not of being this or that particular integer, that the number on the sheet is odd or even (conceptual dependency).

French FCIs do not systematically exclude sentences about particular individuals. They rule out the possibility that the truth of such sentences is based only on reference to these individuals. To see the difference in more concrete terms, consider (23c) once more.

- (23) c. Marie a mieux réussi que n’importe quelle / toute autre fille de sa classe
 Mary performed better than any other girl in her class

Imagine that we have the following interpretation: the difference between x and y is greater than d and positive, i.e. in x ’s favour, therefore x performs better than y .³⁵ Suppose that $g_1 \dots g_n$ are the girls in Mary’s class. We

³⁴Kempson (1985) was the first to emphasize the connection between the semantics of *any* and Fine’s conception of arbitrariness.

³⁵As to the exact nature of the difference and the performance, we let the reader supply

have:

$$\begin{aligned} \forall x, y (dif(x, y) > d \Rightarrow x \text{ performs better than } y) \\ dif(\text{Mary}, g_1) > d, \dots, dif(\text{Mary}, g_n) > d \\ \vdash \end{aligned}$$

Mary performs better than g_1 & \dots & Mary performs better than g_n

The derivation mixes individual facts ($dif(\text{Mary}, g_i) > d$) and a universal rule. The truth of the conclusion depends on the facts *via* the rule, thus it partly is a reflection of the rule. Technically, the rule is *effectively* (Anderson & Belnap 1975) used in the proof of the final conclusion and is therefore *relevant* to this conclusion. However, there is no linguistic indication of a modal structure; (23c) does not have to be evidential, for instance, and can be interpreted as a *bona fide* assertion. It just implies that there is some proof-theoretic dependency behind the assertion. Admittedly, one might provide a modal semantics for this implicature (following for instance (Fine 1988)). But, first, the modal construction would be extremely different from what is observed in variation or domain shift³⁶ and, second, it would not apply to the assertion itself and would not make the sentence ‘modal’ in any reasonable sense.

As argued at the beginning of this section, conceptual dependency is crucial in the treatment of subtrigged sentences. We close the section with some more remarks on the subject which are intended to dispose of putative analogies between the meaning we assign to subtrigged sentences and Donellan’s attributive meaning of definite descriptions (Donellan 1966, 1968, 1978, Kripke 1977).³⁷ The two differ on at least two crucial points. First, attributive definite descriptions are used whenever the speaker is ignorant of the individual identity of the referent. Certain uses of (*who/what*)*ever* force the attributive reading, e.g. (54).

- (54) a. Whoever he is, the speaker is very eloquent
 b. John is speaking and, *whoever he is, the speaker is very eloquent

However, subtrigged sentences are perfectly compatible with referential, non-attributive readings, as shown by (55a). In (55a), the speaker mentions a property (having cheated) that, in the situation, characterizes a particular

her own favourite dimensions of evaluation.

³⁶Essentially, this would be a counterfactual construction based on invariance of rules over a varying domain of individuals, i.e. if the individuals in the domain (not just in the restriction) had been different, the rule would nonetheless have applied to them. This technique is markedly different from simple domain shift.

³⁷As mentioned in section 4.3, Quer (1998) claims that subtrigging involves attributivity. Similarly, Giannakidou (1998) proposes to consider Greek FCIs as attributive determiners and mentions Donellan’s work, but she does not state clearly whether she assumes that they coincide strictly with attributive items in Donellan’s sense.

set of individuals, i.e. the cheaters as known by the speaker. So the use of *any* cannot be attributive, at least in Donellan’s sense. *Whoever* is possible, as noted by an anonymous reviewer, but (*who/what*)*ever* is possible in referential situations whenever it signals that the speaker is uncertain about what other description could be applied to the individual that is identified (55b). So, there is no intrinsic connection between attributivity and FCIs. What the possibility of *whoever* suggests in (55a) is that the link between having cheated and being excluded is independent of other, irrelevant, descriptions that might be applied to the individuals in question. In other terms, it emphasizes the dependency between two properties and downplays other properties, which do not enter the dependency.

- (55) a. I knew perfectly well who the cheaters were and I knew they were the sons and daughters of VIPs. But we had to be fair and square: any student who had cheated was excluded (, whoever he or she was). Period.
- b. Whoever he is, the man with the blue shirt is extremely clever [intended: I don’t know what other description suits the man with the blue shirt, but, anyway, he is very clever]

Second, while FCIs in subtriggered sentences signal dependencies between properties, this is not necessarily the case with attributive descriptions. For example, in (56a), there is no clear dependency between the properties of being the culprit and having drunk tea.³⁸

- (56) a. The culprit, whoever he is, drank tea
- b. The culprit, whoever he is, must be punished

In this case, the difference between attributive descriptions and FCIs corresponds to Fine’s (1995, 2000) distinction between *rigid* and *non-rigid* dependencies. Rigid dependencies are reflected as set-theoretic inclusions in a set-theoretical language. For instance, in (56a), the intended meaning is that the person who is the culprit drank tea, hence, to borrow Fine’s idiom, it is in virtue of being the unique member of a certain set, which happens to be identified as the set of culprits, that one drank tea, not in virtue of the property of being the culprit, which is only used to get hold of the set. The property of being the culprit has no special effect on tea drinking. It only allows one to select the right set (and the right person as the unique member of this set). In contrast, in (56b), it is in virtue of being the culprit that one has to be punished, and not in virtue of being a specific individual who, in addition, happens to be the culprit. We have seen that NI exploits a dependency between properties, or, in Fine’s termi-

³⁸The dependency, if any, holds between the attribution of the first property and the attribution of the second. If one thinks that *x* is the culprit one must think that *x* drank tea.

nology, a non-rigid dependency. This is why, as observed by Dayal (1995, 1998), subtriggered sentences tend to be anomalous or obscure when the preferred interpretation is based on a rigid (accidental) dependency, by which the truth of the sentence depends on the identity of the individuals referred to. In this respect, it is not sufficient to have a conditional reading. This reading must also free us from any reference to particular individuals. E.g., *Jean a pris *tout objet qui était sur la table* (‘John picked *any object which was on the table’) is not felicitous, because it is difficult to imagine that one should pick objects on a table in virtue of general causal or cultural laws.

It should be clear by now that the data about French cannot be accounted for by postulating an indifferentiated conditional structure, without invoking a form of conceptual dependency.

5.6 The universal flavour of FCIs

In this section, we are going to consider what follows from NI when we look at it from the standpoint of the quantificational profile of FCIs. There is no doubt that *tout* is a universal quantifier (see Kleiber & Martin 1977, Paillard 2001, Tovena & Jayez 1999b for convergent descriptions on this point). In contrast, *n’importe quel* seems to be existential, for instance in imperatives and conditionals. Paillard (1997) tacitly assumes that the *n’importe* XP forms are existential, a view that seems to fit the pretheoretical intuition of native speakers, who paraphrase *n’importe quel* N by *un* N, *peu importe lequel* ‘a N, it does not matter which’.

Admittedly, there are reasons to question the indefinite character of *n’importe quel*. First, its intuitive interpretation in generic sentences is universal. But this is not very telling, since generics admit indefinites (*Un chat chasse les souris* ‘A cat hunts mice’). Dayal (1998) and Sæbø (2001) argue that *any* is a universal quantifier because it must scope over *usually*-type adverbs. For instance, (57a) has only a stage-level reading, under which every lion is majestic in most circumstances. However, (57b,c) admit a different scoping, as made clear by the possible paraphrase ‘in normal circumstances, any lion is able to run one kilometer, but, on this planet (that is, in exceptional circumstances), this is not the case’. Given the fact that indefinites can take wide or narrow scope, and that we have no independent evidence that *any* and *n’importe quel* must take wide scope, Dayal’s observation is not conclusive.

- (57) a. Any lion is usually majestic
- b. Any lion is normally able to run one kilometer, but, on this planet, they don’t move very easily
- c. N’importe quel lion est normalement capable de courir un kilomètre, mais, sur cette planète, ils ne bougent pas très facilement

Second, like FC *any*, *n’importe quel* can be modified by *presque* ‘almost’

and *pratiquement* ‘practically’. This modification is usually the mark of universal quantifiers (see Dayal, 1998 for an argument in this sense). However, Giannakidou (2001) and Horn (2000, 2001) collect arguments to show that this test, and others, are unconvincing. On the whole, we think that their observations cast a serious doubt on the intrinsically universal character of FC *any* and similar FCIs.

Assuming that *n’importe quel* is an existential indefinite, how is it that it sounds ‘universal’ in many contexts? First, like indefinites, *n’importe quel* may enter conditional structures that produce a universal reading. Suppose that, as proposed by Horn, *any* is an indefinite. Paralleling the standard DRT-based account of sentences like *If a farmer owns a donkey, he beats it*, one might say that the logical interpretation constraint on (58a,b) is as in (58c).

- (58) a. Si tu as n’importe quel problème_i avec l’ordinateur, signale-le_i à l’ingénieur
 b. If you have any problem_i with the computer, point it_i out to the engineer
 c. For every assignment function g , if g satisfies ‘ x is a problem you have with the computer’, then g satisfies ‘point out x to the engineer’.

By basic model theory, (58c) entails the following formula: $\forall x((x \text{ is a problem you have with the computer}) \Rightarrow (\text{point out } x \text{ to the engineer}))$.

Second, in approaches such as NI or (Giannakidou 2001), every P -object is eligible as a Q -object, so there is a (modal) implicit universal quantification. More precisely, every P -object must also be a Q -object at some world in the basis of the modal structure. This may create an illusion of universality. Let us show more precisely how this comes about in the NI framework.

If we leave aside the case of subtriggering, we observe that the universal quantifier interpretation is possible only in environments where the FCI, viewed as a ‘universal quantifier’, can have wide scope. The crucial test in this respect is the replacement of the FCI by *every* or *tous les*. Whenever those quantifiers can have wide scope in an environment E where *any* (resp. *n’importe quel*) is possible, the FCI can ‘be’ a universal quantifier in E and be modified by *almost/practically* (resp. *presque/pratiquement*). Conversely, in environments where *every* or *tous les* cannot have wide scope, for instance in conditionals and restrictions of a universal quantifier, the FCI cannot ‘be’ a universal quantifier (the modification by *almost/practically* or *presque/pratiquement* is out). In such cases, the universal quantifier interpretation would conflict with the requirement of NI. For instance, consider (59).

- (59) a. Si Jean a (*presque / *pratiquement) n’importe quel problème,

il appellera Marie

- b. If John has (*almost / *practically) any problem, he will call Mary

In these sentences *tous les* and *every* could not have wide scope. If the FCI is viewed as a universal quantifier, then (59a,b) mean that John will call Mary if he has every problem. There are two possibilities. Either ‘every problem’ quantifies over the (relevant) problems in the world or it quantifies over a contextually salient set of problems. In both cases, NI is violated because the set of problems that John encounters remains invariant across possible *if*-worlds (i.e. the epistemic alternatives to the current world where ‘John has every problem’ is true). Thus, the universal quantifier interpretation of *any* and *n’importe quel* does not surface in cases where it would conflict with NI.

The universal reading emerges when the interpretation of the sentence has a form $\forall x\phi$ where Q , i.e. the portion of ϕ which corresponds to the scope in our formulas, is in the scope of the sentence modality (\diamond or \square). In certain cases, this interpretation is a direct consequence of constraint (41). In others, it results from integrating the adverb *presque* or *pratiquement* in the interpretation. Let us consider various cases for illustration.

1. Possibility/permission sentences with a rigid restriction P have a form $\diamond(\exists x(P(x) \ \& \ Q(x)))$ and entail $\forall x(P(x) \Rightarrow \diamond Q(x))$. If c satisfies P , it cannot satisfy $\neg Q$ in all the worlds of the basis W . There is a $w' \in W$ such that $Q(c)$ is true at w' . In a sentence like (60), we understand that any file may be consulted, so *n’importe quel* acquires semantically wide scope as a universal quantifier and can be modified by *pratiquement*.

- (60) Tu peux consulter presque / pratiquement n’importe quel dossier
 You may consult almost / practically any file

2. A similar observation applies for sentences where the restriction is not rigid, as in (61). Suppose that m is a misdemeanor at $w' \in W$, m cannot remain unpunished in all the worlds of W . There must be some $w'' \in W$ such that m is a misdemeanor and is punished at w'' . In other words, the initial formula $\diamond(\exists x(P(x) \ \& \ Q(x)))$ entails $\forall x(\diamond P(x) \Rightarrow \diamond(P(x) \ \& \ Q(x)))$.

- (61) Tu as tous les pouvoirs, donc tu peux punir presque / pratiquement n’importe quel délit
 You have full powers, so you may punish almost / practically any misdemeanor

3. Things are slightly more complex for \square modalities. When the restriction is rigid, the sentence does not entail a universally quantified proposition because this would violate (41).

- (62) Prens *presque / *pratiquement n'importe quelle carte
Pick almost / practically any card

The sentence does not entail that $\forall x((x \text{ is a card}) \Rightarrow \Box(x \text{ is picked}))$ since a given card is not necessarily picked in every possible world. Note that domain shift is not an option because the set of cards is rigid. The adverbial modification is not possible because, although the sentence entails that $\forall x((x \text{ is a card}) \Rightarrow \Diamond(x \text{ is picked}))$, the sentence modality is \Box and not \Diamond .

4. When the restriction is not rigid, as in (63), the adverbial modification forces an interpretation of the form $\forall x(\Box(x \text{ is a misdemeanor}) \Rightarrow x \text{ is punished})$. This interpretation can be reconciled with constraint (41) by assuming domain shift, i.e. by positing the existence of different sets of misdemeanors.

- (63) a. Montre-toi très rigoureux. Punis pratiquement n'importe quel délit³⁹
Be quite strict. Punish practically any misdemeanor

5. Comparatives favour the universal interpretation (64). Generally speaking, assertions can get this interpretation even if they are anomalous in written French, cf. (43).

- (64) a. Marie a mieux réussi que pratiquement / presque n'importe quelle autre fille
b. Mary did better than practically / almost any other girl

- (43) Il a lu n'importe quel livre au programme
He read FCI book on the reading list
[may mean 'He read every book on the reading list']

This suggests that NI should be viewed as a set of constraints with different mutually comparable possible satisfactions, a conception familiar from Optimality Theory (see Prince & Smolensky 1993, 1997). Since we want exhaustiveness—which corresponds to the universal flavour of FCIs—to be satisfied in all cases, i.e. (41.1b) and (41.2b), we factor it out and combine the remaining two constraints of variation and proof-theoretic dependency into a single disjunctive constraint. This gives the set {Exhaustiveness, Variation \vee Dependency}. Sentences that obey NI satisfy both constraints. So, they satisfy Exhaustiveness in all cases. When an episodic assertion like (43) violates NI, it violates Variation \vee Dependency but can satisfy

³⁹The modification by *almost* or *presque* sounds less natural. This is probably because these adverbs suppose a certain precision in the approximation. While *practically/pratiquement* GQ ϕ , where GQ is a generalized quantifier, signals that GQ ϕ holds with, *possibly*, a very limited quantity of exceptions, *almost/presque* imposes the existence of a very limited quantity of exceptions. So a sentence like *Punish almost any misdemeanor* would be equivalent to requiring that the addressee leave unpunished some misdemeanors, resulting in a hardly natural request.

Exhaustiveness (unless the context says otherwise), so this is the least of-fending reading available. The status of Exhaustiveness might come from the fact that, context aside, it is always possible to construct an exhaustive interpretation with episodic assertions, whereas such assertions intrinsically violate Variation.

Summing up, on the one hand, the possibility of a universal reading of FCIs does not follow necessarily from the profile of the item as a universal quantifier. On the other hand, this reading results from precise conditions that we spelt out in detail.

Next, one could ask how does this section contribute to the ongoing debate on the universal versus existential nature of *any*. We have shown that *some* FCIs (French *n'importe quel*) are most probably existential. Therefore, we have provided independent evidence for the possibility of existential FCIs. In addition, we have shown that *some* FCIs (French *tout*) are universal, thus providing independent evidence for universal FCIs too. As to the specific nature of *any*, although we agree with Sæbø's (2001:2.2.1) criticism against Kadmon and Landman's (1993) existential analysis of *any*, we must note two things. First, his argument is actually directed against the particular combination of constraints posited by Kadmon and Landman (*any* as an indefinite + widening + strengthening). In this respect, one cannot say that it shows that *any* cannot be existential. Second, Sæbø does not suggest any reason why the modification by *almost* or *practically* is not natural. Therefore, his reassessment of the existential hypothesis is in part inconclusive. Finally, we note that remarks similar to ours are likely to apply to *any* in some of its FC uses, but that this is not incompatible with the view that, in other uses, *any* may have acquired a universal quantifier 'built in' value. For instance, it is an open question whether *any* is still existential after negative predicates (*John excluded any compromise*). It is interesting to note, in this respect, that *n'importe quel* is anomalous in such a context, cf. *Jean a refusé ?? n'importe quel compromis* ('John refused any compromise'). Since we do not associate free-choiceness with strong categorial distinctions, but rather with a general semantic profile, categorial variation for the same item is compatible with our approach.⁴⁰

5.7 French FCIs and nonveridicality

In this section, we argue against using nonveridicality (NV) as a licensing condition for French FCIs. Its relevance for NPIs is not under scrutiny.

NV raises problems for certain cases that are based on a conditional structure. Let us first consider a standard conditional in order to deter-

⁴⁰The Spanish counterpart of the problematic sentence, *Juan rechazó cualquier compromiso*, is fine. We thank an anonymous reviewer for this observation. The Italian counterpart is also acceptable *Gianni ha respinto qualsiasi proposta* ('John refused any proposal').

mine which kind of interaction between NV and conditionality is relevant. A generic sentence like (65) has a structure of the form (65'), where '→' expresses an appropriate generic dependency (based on normalcy, frequency, etc.).

(65) Tout chat chasse les souris
Any cat hunts mice

(65') $\forall w, x((x \text{ is a cat in } w) \rightarrow (x \text{ hunts mice in } w))$

This logical form is compatible with the two following setups.

A. There are certain worlds in the epistemic model of the speaker where there are no cats or, at least, no normal cats.

B. There are certain (possibly abnormal or exceptional) worlds where at least one (normal) cat does not hunt mice.

In view of her definition of variation (Giannakidou 2001: 707, def. 127), Giannakidou presumably leaves room for these two possibilities.

With this in mind, let us now consider cases of subtriggering and phrasal comparatives. We already dealt with them in section 5.5, but here we want to look at them from the perspective of NV.

- (23) a. *Tout étudiant a été renvoyé
FCI student was excluded
b. Tout étudiant qui a triché a été renvoyé
FCI student who cheated was excluded
c. Marie a mieux réussi que n'importe quelle / toute autre fille de sa classe
Mary performed better than any other girl in her class

A speaker who utters (23b) sincerely is convinced that every student who cheated was excluded. The FCI certainly adds something, but cannot modify the veridical status of the sentence. Recall that veridicality is defined with respect to the epistemic model of the speaker. Here, in every world compatible with what the speaker knows, there are cheaters and they were punished. So the sentence is veridical. The same remark applies for (23c). In the case of generics, one might argue that some worlds contain no (normal) cat. This assumption would be relevant to the truth-conditions of the generic operator, but *not* to the epistemic model. If an epistemic model is the set of alternatives compatible with what the speaker believes, a speaker who utters (65) certainly believes that (normal) cats exist. They are not just 'possible' entities. Hence, in every world compatible with what she believes there are (normal) cats, and, of course, she also believes that there are cheaters and classmates, with respect to (23b,c). The traditional observation that NPs are not asserted but presupposed is not relevant here, because it is the *epistemic* status of presuppositions that is in question, not their illocutionary status. By asserting sincerely that any cat hunts mice,

a speaker normally communicates that she takes the existence of (normal) cats for granted (Stalnaker 1973). So her epistemic model must make room for (normal) cats. It is hard to see how this rather truistic remark would not apply to comparatives and subtriggered sentences. Since, in contrast with generics, they describe what really happened (not what happens in 'normal' circumstances), the conclusion that they are veridical follows straightforwardly.

Should we use situations instead of worlds? Under this perspective, it is true that cats do not hunt mice in every situation, that cats do not exist in every situation, that students who cheated were not excluded in every situation, that students who cheated do not exist in every situation, etc. This is perfect for conditional structures, but disastrous in general because it empties the notion of NV of any substantial content. A sentence like *Mary read *any book* would be nonveridical since there are situations where Mary did not read a book. One might entertain this counterintuitive possibility for FCIs, because the variation criterion would block the sentence anyway, but this is not an option for NPIs. If it is true that many NPIs are licensed by NV, then making most or all the sentences nonveridical wreaks havoc in the NPIs characterisation. Moreover, one is no longer able to offer a reasonable definition of belief operators in a situation-based modal framework.

The present discussion extends in particular to Dayal's (1995) criterion of *Non-Existence*.⁴¹ Non-Existence says that a phrase of the form *any N* is licit only if it does not entail the existence of \bar{N} -objects. However, no sentence with *any* strictly entails the existence of \bar{N} -objects, because we can always postulate a conditional structure (for instance $\forall x(x \text{ is a book} \Rightarrow \text{Mary read } x)$ for *Mary read *any book*). Therefore, we have to consider what is assumed by the speaker (rather than entailed by the sentence), and this takes us back to a notion like NV.

We conclude that, in spite of its interest for polarity sensitivity, NV raises serious problems and anyway is not appropriate for French FCIs.

5.8 Dayal's Contextual Vagueness

In her (1995) and (1998) papers, Dayal proposed for *any* the notion of *Contextual Vagueness* (CV): an *any*-phrase must not refer to a contextually salient set of individuals. Dayal (1998) mentions examples such as (66).⁴²

- (66) *Susan bought any book she had been looking for at Borders. And what's more, they were rather cheap

We can construct similar examples for French.

⁴¹In her (1998) paper, Dayal abandons the idea but notes that, although Non-Existence has been attacked, no decisive argument has emerged.

⁴²To avoid being sidetracked, we changed the first verb in Dayal's original example so that we get subtriggering.

- (67) Tout étudiant qui avait triché a été renvoyé. *Ils ont
 FCI-sg student who had cheated was excluded. They have
 tous moins de 25 ans
 each less than 25 years
 Any student who had cheated was dismissed. All of them are under
 25

One might argue that such examples are odd because the FC phrase is in the singular while the subject pronoun is in the plural.⁴³ However, one can construct examples without any singular/plural mismatch, where the anomaly is even more striking.

- (68) a. Tout étudiant qui avait triché (*c'est-à-dire Jean, Marie et
 Louis) a été renvoyé
 b. Any student who had cheated (*i.e. John, Mary and Louis) was
 excluded

Dayal explains examples of type (66) by appealing to Kamp and Reyle's (1993) conception of plural discourse anaphora. In essence, the individuals that a plural anaphoric pronoun like *they* collects together must belong to a specifiable set.

Although we agree with Dayal that *any* externally obeys some vagueness constraint, we contend that this is the reflection of a deeper constraint. Recall that an essential aspect of the treatment of FCIs is the contrast between subtriggered and non-subtriggered sentences. How does this contrast interact with CV? Dayal (1998:459) accounts for subtriggering as follows.

- (69) *Any* A Op(B) is felicitous iff $A \cap B$ is not contextually salient in any relevant world, where Op may be \diamond , \square , IMP, MUST, or null.

So, in (9), repeated below, books on the reading list should not be contextually salient. This constraint is similar to the one we had proposed in (Tovena & Jayez, 1997b:298), which requires that there be no way to prove that $A \cap B$ has a fixed reference across relevant possible worlds. Both definitions focus on subtriggering but ignore the case of comparatives where the same observations hold, cf. (70).

- (9) Mary read any book which was on the reading list
 (70) a. Marie a mieux réussi que n'importe quelle/toute autre fille de
 sa classe, *c'est-à-dire Manon, Louise et Simone
 b. Mary did better than any other girl in her class, *i.e. Manon,
 Louise, and Simone

⁴³For instance, not every speaker finds the *chaque* (*each*) version of (67) natural, cf. (i) below. Yet, *chaque* and *each* are not FCIs.

(i) Chaque étudiant qui avait triché a été renvoyé. #Ils ont tous moins de 25 ans

We have observed in section 5.5 that subtriggered and comparative episodic sentences assert that individuals in the current world satisfy the entailment, but also draw one's attention to the fact that the identity of these individuals is irrelevant, since what counts is some dependency between properties. It is discursively very strange to list up those individuals whose identity is presented as irrelevant. We get the same sort of effect in (71). In such sentences, the speaker knows the identity of the individuals involved in the predication. By using *quels que* or *whoever*, she indicates that their identity is irrelevant, whence the tension with the explicit mention of their names.

- (71) Je connais les coupables. De toute façon, quels qu'ils soient
 I know the culprits. Anyway, whoever they are
 (*ce sont Jean et Marie), ils seront punis
 (*they are John and Mary), they will be punished

As noted by Dayal herself for analogous examples, the anaphoric pronoun in (67) presupposes that a specific set is salient. So, if the anomaly of this discourse is not caused by the number mismatch, it certainly comes from a tension between referring to a specific set and stressing that the truth of the sentence depends in part on a general rule, over and above the identity of the members of the set. In this perspective, CV is a particular manifestation of NI.

6 Zooming in

This section is devoted to the study of some fine-grained aspects of the semantics of FCIs. We start with the issue of the incompatibility of FCIs with questions, tackled in section 6.1. Next, we discuss the equative value of *n'importe quel*, in section 6.2. Finally, we address the problem of the patchy compatibility of French FCIs with negative predicates in section 6.3.

6.1 The issue of questions

The incompatibility of FCIs with questions is a complex problem which has not yet received a satisfactory answer. As it appears from the data presented in section 2.2, French FCIs are not always possible in this type of context; see also (72).

- (72) a. Est-ce que Marie a lu *n'importe quel / *tout livre?
 Did Mary read FCI book?
 b. Qui a lu *n'importe quel / *tout livre?
 Who read FCI book?

Questions are neither referential in the sense of definition (41.1) nor veridical in the sense of Giannakidou. Questions with *tout* violate constraint (41.2)

but questions with *n'importe quel* do not, because different books may have been read in different worlds. So their inability to host FCIs of the latter type is puzzling. However, the additional piece of data provided in (73) may shed light on this puzzle. In (73) we see a gradation in acceptability, from bad to perfect.

- (73) a. Est-ce que vous avez touché à *n'importe quel médicament?
Did you touch FCI medicine?
b. Est-ce que vous avez touché à ?/??n'importe quel médicament dans la boîte?
Did you touch FCI medicine in the box?
c. Est-ce que vous avez touché à n'importe lequel de ces médicaments?
Did you touch any one of these medicines?

In order to understand what is going on in (73), one must pay attention to the fact that *n'importe lequel* is an anaphoric pronoun that presupposes the existence of a discursively or contextually salient domain set for the restriction. In this respect, it works like *lequel* as opposed to *quel*. B's reply in (74b) presupposes that a certain set of men is accessible, something that is not necessarily the case in (74a).

- (74) a. A – J'ai vu un homme
I saw a man
B – Quel homme?
Which man?
b. A – J'ai vu un homme
I saw a man
B – Lequel?
Which one?

N'importe lequel behaves like *n'importe quel* in many respects. It is out in episodic assertive and negative sentences, and more generally under referential interpretations. It is also banned from generic sentences because of its anaphoricity. It is possible in imperatives, conditionals, possibility and permission sentences. Crucially, it is subject to constraint (41). For instance, *Prends n'importe laquelle de ces cartes* 'Pick any one of these cards' requires that different cards may be picked in different continuations. So, why is *n'importe lequel* acceptable in questions, cf. (73c)?

A possible explanation is that questions cannot introduce the modal structure needed for variation. Therefore, if this structure is not independently provided, there may be a tension with FCIs. When the sentence under the question operator satisfies NI, the tension is resolved. When the sentence violates NI, *n'importe quel* is out, but *n'importe lequel* is not, thanks to the *lequel* component, which signals that (i) there is an accessible restriction domain and (ii) the speaker considers the different possible choices within this

domain. Therefore, a modal structure of possible choices for the speaker is lexically presupposed. For instance, in (74b), B presupposes that there are several possible choices within a particular set of men. In contrast, in (74a), there is no such presupposition. The speaker does not necessarily have a set of possible choices in mind. Note that, when the existence of choices is inferred, as in (73b), rather than lexically presupposed, as in (73c), the sentence degrades slightly but is less awkward than in the case where no choice awareness is ascribed to the speaker, cf. (73a).

If we are on the right track, the incompatibility of questions with FCIs can be accounted for without invoking anti-episodicity or a similar notion. More generally, the discussion of referentiality, NI, nonveridicality and questions show that, in the case of French FCIs, there is no empirical trace of anti-episodicity.

6.2 The equative value of *n'importe quel*

In addition to being an existential indefinite, *n'importe quel* conveys a particular semantic value, which explains the oddity of examples such as (2), repeated below.

- (2) Si tu as ??n'importe quelle théorie sur cette question, essaie d'écrire un article
If you have FCI theory on this question, try to write a paper

Roughly speaking, the sentence suggests that the addressee had no criterion of choice for the theory, an aspect which does not square well with our usual idea of a theory. Such observations can be accounted for by adapting Kadmon and Landman's (1993) *widening* hypothesis. According to them, the phrase *any* N signals that any member of a set of N-objects may be taken into consideration, including members which are atypical with respect to the N property (widening). Lee and Horn (1994) go in the same direction when they propose that *any* signals that even the least appropriate members of a set may be taken into consideration. Similarly, *n'importe quel* has an *equative* value, that we characterize in the rest of this section.

The widening value is conducive to what Horn (2000) calls the *indiscriminative* value of *just any*, a value which is also exhibited by *n'importe quel* in certain environments where it functions semantically like an adjective (75a). More generally, the indiscriminative use of *n'importe quel* amounts to signalling that, although an agent had, in principle, the opportunity of making a choice, she did not exploit it and acted in a completely random way. This use often implies a negative judgment (75b).

- (75) a. Ce n'est pas n'importe quelle théorie
It is not just any theory
b. Arrête de me raconter n'importe quoi

Stop telling FCI-pronoun
‘Stop bullshitting me’

Francis Corblin (p.c.) points out that *n’importe quel* is sometimes compatible with episodic assertions and behaves in such cases like an existential quantifier. (76a) means that Mary answered at random, (76b) that she did not really select what she ate and (76c) that she picked a stick without choosing it. We claim that this use is distinct from the FC use we have been considering throughout.

- (76) a. Marie a vraiment répondu n’importe quoi
Mary answered (lit.) just anything
b. Marie a encore mangé n’importe quoi
Mary ate (lit.) just anything again
c. Marie a pris n’importe quel baton qui se trouvait là et elle a tué le serpent
Mary picked (lit.) just any stick which was around and killed the snake

When the indiscriminative dimension is absent, as in the case of an uncontrollable event, *n’importe quel* is not possible in episodic assertions but, crucially, is possible in modal contexts or in comparatives (77). If the impossibility of *n’importe quel* in (77a) was due to the irrelevance of choice for accidents, we would observe the same effect in (77b,c). What happens in fact is that (77a) is bad because the irrelevance of choice is incompatible with the indiscriminative value and that this value is the only one compatible with referential uses. So, we conclude that the referential uses of *n’importe quel* are limited to the indiscriminative value. We now return to the analysis of the particular value of *n’importe quel* in its FCI use, which turns out to be more abstract than the indiscriminative one.

- (77) a. Marie a eu *n’importe quel accident
Mary had any accident
b. Marie pourrait avoir n’importe quel accident
Mary might have any accident
c. Cet accident a fait plus de morts que n’importe quel autre
This accident caused more deaths than any other

In general *any* and *n’importe quel* are strange whenever the context imposes some selection, which excludes possible reference to peripheral members. Horn (2000) discusses the difference between *any*, *just any* and the use of *any* that Jennings (1994) calls *supplementary* (*I need somebody, anybody, to lift the crate*). We will not go into a detailed comparison between *any* and *n’importe quel* but two things should be noted. First, like *any*, *n’importe quel* may conflict with modal necessity expressions.

- (78) Tu dois voir ??n’importe quel docteur
You must see ??any doctor

Literally, these sentences say that, given any accessible world *w*, the doctor whom the addressee sees in *w* is atypical (*any*) or is chosen for no particular reason (*n’importe quel*). In other words, the sentences express an obligation to see an atypical or nondescript doctor. It is difficult to imagine a context in which such an obligation would make sense. In contrast, with possibility/permission expression (*pouvoir* and *may* sentences), this effect does not obtain, since the sentences simply signal that the addressee does not need to see a typical or salient doctor.

Second, supplementary *any* is paralleled by a supplementary *n’importe quel*.

- (79) Tu dois voir un docteur, n’importe quel docteur
You must see a doctor, any doctor

We conjecture that the semantic value of *n’importe quel* is not quite the same in the supplementary use as in the non-supplementary one. Roughly speaking, supplementary *n’importe quel* signals that the speaker has no personal preference as to the identity of the individual denoted by the indefinite NP. For instance, (79) means that the addressee must see a doctor but the speaker has no special reason to recommend this or that doctor. Accordingly, there is no longer a tension between the noun type or the modality and the FCI. The speaker may perfectly well signal that she has no preference and leave open the possibility for the addressee to ground her choice in appropriate reasons. This predicts that the supplementary version of (2) is fine, which it is, as shown in (80).

- (80) Si tu as une théorie sur cette question, n’importe laquelle, essaie d’écrire un article
If you have a theory on this problem, any one, try to write a paper

The parallel between *any* and *n’importe quel* is not perfect, however. Compare the acceptable English form *Now, if you have any question, etc.* and the awkward French corresponding *Maintenant, si vous avez ??n’importe quelle question, etc.* In fact, *n’importe quel* signals that it is not necessary to make a principled or reasonable choice. The French sentence sounds like an invitation to ask a question (possibly) at random, which is pragmatically strange. In sum, while *any* allows a free choice, *n’importe quel* is, in a sense, even more radical and allows in certain cases a random choice. To distinguish this value from the indiscriminative one, we identify this facet of meaning as the *equative* value of *n’importe quel*. Whereas the indiscriminative use implies that an existing possibility of choosing was not exploited, the equative value implies simply that there was no real choice, whatever

the reasons for that may be.

- (81) **Equative value of *n'importe quel*** A tripartite structure [*N'importe quel*] [*P*][*Q*] conveys the conventional implicature that the individual that makes the structure true has not been chosen in any principled way by the agent, patient or theme of the corresponding sentence.

In situations where the FCI specifies a noun denoting an event which is beyond one's control, the difference tends to disappear. See, for instance, *If you have any problem, let me know* and its acceptable French counterpart *Si tu as n'importe quel problème, dis-le moi*. In contrast, example (2) is strange because it suggests that there is no criterion of choice for the theory. When a non-equative reading is forced into the sentence, as done in (82) by adding the adverb *soigneusement* (carefully), *n'importe quel* is odd.⁴⁴

- (82) Si tu choisiss soigneusement ?? n'importe quelle stratégie d'
 If you choose carefully FCI strategy of
 investissement, tu n' auras pas de problème
 investment, you NE will have no problem
 If you carefully choose FCI investment strategy, you won't have any
 problem

Let us note that the indiscriminative value of *n'importe quel* and *just any* finds partial motivation under the hypothesis that these items are existential and signal that every possible individual is admissible as a satisfier of the $P(x) \& Q(x)$ conjunction. When the sentence in which *n'importe quel* or *just any* occur is episodic, the only way to have various possible worlds is to consider epistemic alternatives. Signalling that every possible individual is an admissible satisfier in at least one epistemic alternative can imply that the described event does not allow one to make a reasonable guess as to the identity of the satisfier(s). This is the case, in particular, whenever the choice of the satisfier(s) was random or unmotivated. Of course, when they are used indiscriminatively in episodic sentences, *n'importe quel* and *just any* do not behave as FCIs since, as such, they would violate NI. The fact that there are epistemic alternatives does not prevent the sentence from being referentially rigid.

Finally, the presence of an equative value has two important consequences on the behaviour of *n'importe quel*. First, it may rule out the

⁴⁴The reader is referred to (Reed 2000) for more details about the correspondence between *any* and French FCIs and NPIs, and to (Farkas 2002, Jayez & Tovena 2002, von Stechow 2000) for insights and proposals about the affective indiscriminative or equative values of various pronouns and determiners. Another path to explore is the possible relation between indiscriminative and equative values on one side and modal bases in the sense of Kratzer (1981) on the other. Implying that there is no principled choice may be viewed as the absence of a modal base for ordering the different possible worlds. We won't discuss this point here, however.

possibility of subtriggering for *n'importe quel*, in contrast to *any* and *tout*, that do not share this value. Since *n'importe quel* signals that the choice of an individual can be random, there may be a conflict with the dependency-based reading of subtriggering, which indicates that certain individuals are selected in virtue of the fact that they satisfy a given property. Subtriggering cannot accommodate random choices, as blind selection is simply not compatible with the idea of an essential dependency. However, subtriggering is possible when it expresses a systematic repetition that is independent of any rational choice, cf. (83).

- (83) Marie a eu n'importe quel accident qu'on puisse avoir
 Mary had any accident one may possibly have

The second consequence concerns the incompatibility of *n'importe quel* with negative predicates, whose interaction with French FCIs is studied in the next section.

6.3 Negative predicates

As it appears from the tables of data presented in section 2.2, French FCIs do not have an even distribution with respect to negative predicates. Let us start by the case of *tout*.

Tovena and Jayez (1999b) address the problem of the compatibility of *tout* with negative predicates, such as *refuser* 'refuse' or *exclure* 'exclude'. The starting point is the observation in (Tovena 1996, 1998) that *any* is licensed by negative predicates when the sentence does not describe particular events but rather a general attitude. For instance *John refused any compromise* does not mean that John refused all the compromises which were offered but rather that his attitude implied that he refused any *possible* compromise (including possibly those which were offered).⁴⁵

As shown in (Tovena & Jayez 1999b) for *tout*, negative predicates deny the existence of any event associated with their NP complement. The way in which events are associated with NPs varies according to the semantic class of the NP and to the information attached to the head noun (see Pustejovsky 1995 on this point). For instance, *John refused three apples* is most naturally interpreted as 'there are three apples such that John refused that there be an event of taking / eating / etc., them'. The predicates 'take', 'eat', etc. can be added to the semantic representation because they are associated with the noun *apple*. When the head noun denotes an event, we do not

⁴⁵Whence the failure of d-linking with FC phrases as in *Arthur tried to gauge the speed at which they were traveling, but the blackness outside was absolute and he was denied any reference points*, where it is implausible to consider that the space contains a fixed set of points that is being referred to, as noted in Tovena (1996, 1998). A similar impossibility is observed with respect to overt discourse anaphora, see *John refused any compromises. Yet, *they, were rather reasonable*.

need to interpolate a particular predicate. For instance *John refused three compromises* means ‘there are three compromises such that John refused that there be an event which realizes them’.

Note, however, that this interpretation is only possible for certain kinds of nouns. Entities of type object (vs event) or event-denoting nouns which do not easily refer to potential events with a sentence in the past are not appropriate with all or some negative predicates.⁴⁶ Moreover, the semantic description of the verb–noun combination for negative predicates is a complex problem, beyond the scope of the present paper (see (Tovena & Jayez 1999b) for details). The fact that negative predicates may enter non-referential interpretations is in agreement with the proposals by Zimmerman (1992) and Krifka (1995) that these verbs are ‘intensional’, that is, they do not take individuals but properties or quantifiers as objects.

Finally, we record difficulties in applying to French Hoeksema and Klein’s (1995) claim that the English verb *to lack* licenses PS *any* rather than FC *any*. The debate has to be understood in its historical setting. Progovac (1988) and Laka (1990) had claimed that negative predicates could license NPIs only in clausal complements and that occurrences of *any* in NP complements had to be interpreted as FCIs, which for them corresponded to a wide scope universal quantifier. This claim was disproved by Tovena (1993) who showed that both readings are possible in NP complements.⁴⁷ The PS reading is more likely to emerge with mass and event nouns, whereas the FC reading is favoured with countable nouns. Against this backdrop, Hoeksema and Klein argue that the distribution of *any*’s Dutch cognate *einig*, which has an existential and a PS reading but no FC reading, should be taken to provide evidence for a PS interpretation of all the occurrences of *any* in NP complements. It is difficult to adopt this view for French because the counterpart of *to lack*, *manquer de*, is compatible with *tout* which is certainly not an NPI, cf. (84a). Furthermore, genuine NPIs like PS *le moindre* and *quelque N que ce soit* are not felicitous with *manquer de*, cf. (84b,c).

- (84) a. Les réfugiés manquent de toute nourriture
The refugees lack any food
b. Les réfugiés manquent ?? du moindre médicament
The refugees lack any medicine
c. Les réfugiés manquent de ?? quelque médicament que ce soit
The refugees lack any medicine

Last, note that Hoeksema and Klein’s line of reasoning would make sense only if the verbs under examination overtly resisted taking non-PS com-

⁴⁶For instance, *Il a refusé ?? tout gâteau* (‘He refused FCI cake’) is odd and *Il a rejeté ?? tout commentaire* (‘He rejected FCI comment’) is less natural than *Il s’est abstenu de tout commentaire* (‘He refrained from making any comment’).

⁴⁷Horn and Lee (1995) also criticised Progovac’s claim on *any* in NP complements and offered specific counterarguments.

plements, otherwise they should explain the origin of the preference. But the two possibilities are open, as proven by *Some houses still lack basic amenities such as bathrooms*, given that bare nouns are not NPIs.

As for the distribution of *n’importe quel*, the situation is more homogeneous. In contrast with *tout*, *n’importe quel* is simply not compatible with negative predicates.

- (85) a. Jean a refusé *n’importe quel compromis
John refused any compromise
b. Jean s’est abstenu de *n’importe quelle remarque
John refrained from making any remark
c. Les réfugiés manquent de *n’importe quelle nourriture
The refugees lack any food

Since negative predicates entail the non-existence of objects or events of the type described by the complement, the choice dimension is absent. On the contrary, this dimension is crucially involved in the equative value of *n’importe quel*. Therefore, the sentences in (85) sound paradoxical because they imply that the subject refrained from making any choice among the elements of an empty set.

7 Conclusion

This paper has contributed to a clearer and more comprehensive understanding of the meaning of free-choiceness in general and provided explicit specific constraints to capture its implementation in French.

It has been shown that FCIs in French cannot be described by resorting simply to the standard distinctions found in the literature, in particular the universal vs existential distinction and the variation-based vs intension-based distinction. In fact, evidence from French supports the observations that (i) the existential or universal status is not an intrinsic property of FCIs and (ii) variation and intensional interpretation are two ways in which the abstract constraint of *Non-Individuation* (NI) can be satisfied. NI says that the information conveyed by a sentence containing a FCI should not be reducible to a *referential* situation, that is a situation in which particular individuals in the current world satisfy the sentence. Modal variation is then put into a new perspective: it is a particular scenario of free-choiceness, not its ‘essence’. Under certain conditions, FCIs can occur in episodic, non-modal, sentences, a fact that NI can accommodate.

This research led us to question the role of nonveridicality and to show that (i) it does not apply to French and (ii) it cannot spare us an analysis of reference proper, as opposed to epistemicity. It also indicates that, in spite of a strong and dominant impression, variation cannot always be read off the lexical structure of a FCI. *N’importe quel* calls to mind the idea of

choices that are equally plausible, but *tout* does not.

A welcome consequence of our analysis is that one can now make sense of the fact that free choiceness is a phenomenon that concerns determiners, something that is obscured by adopting some external licensing condition. Free choiceness is a form of irrelevance, and determiners use their normal resources to go about it, namely constraints on their restriction and on the intersection between restriction and scope, as expected under conservativity. Hence, the constraints of variation and domain-shift.

Finally, let us note that, in many languages, FC and PS items are not entirely separated, because some determiners are ambiguous or bivalent (*any*, *le moindre*, the Korean items discussed by Lee (1996, 1997)), or because some FCIs have a sensitivity to polarity (Greek FCIs) or some NPIs come with a FC flavour (e.g. French (*quelque N / qui / quoi*) *que ce soit* and *un quelconque N*).⁴⁸ A consequence of showing that nonveridicality is not appropriate for French FCIs is that the question of the relation between polarity sensitivity and free-choiceness is still open, and surely deserves more detailed study.

Authors' affiliations

Jacques Jayez	and	Lucia M. Tovena
ENS-LSH		Université de Lille III
15, Parvis René Descartes		UFR Angellier
BP 7000		BP 149
F-69342 Lyon CEDEX		F-59653 Villeneuve d'Ascq
Jacques.Jayez@ens-lsh.fr		tovena@univ-lille3.fr

⁴⁸In addition, the concessive value of certain FCIs has to be taken into account when we turn to polarity, see (Bertocchi 2001) and (Maraldi 2001) for Latin, (Lee 1997) for Korean, (Lee & Horn 1994) for *any*, (Tovena & Jayez 1999a) for *le moindre*.

References

- Anderson, Alan Ross & Belnap Jr., Nuel D. (1975). *Entailment. The Logic of Relevance and Necessity. Vol. I*. Princeton: Princeton University Press.
- Anderson, Alan Ross, Belnap Jr., Nuel D. & Dunn, J. Michael (1992). *Entailment. The Logic of Relevance and Necessity. Vol. II*. Princeton: Princeton University Press.
- Armstrong, D.M. (1997). *A World of States of Affairs*. Cambridge: Cambridge University Press.
- Asher, Nicholas & Morreau, Michael (1995). What some generic sentences mean. In Carlson G.N. & F.J. Pelletier (eds), *The Generic Book*, Chicago: Chicago University Press, 300–338.
- Bertocchi, Alessandra (2001). Scalarity and concession: the case of *quamvis*. Ms. University of Bologna.
- Blackburn, Patrick (2000). Representation, reasoning and relational structures: A hybrid logic manifesto. *Journal of the IGPL* 8, 339–365.
- Blackburn, Patrick & Marx, Maartens (2002). Remarks on Gregory's "actually" operator. *Journal of Philosophical Logic* 31, 281–288.
- Cohen, Ariel (1999). *Thing Generic! The Meaning and Use of generic Sentences*. Stanford: CSLI.
- Corblin, Francis (1997). Les indéfinis: variables et quantificateurs. *Langue Française* 116, 8–32.
- Croft, William (2001). *Radical Construction Grammar. Syntactic Theory in Typological Perspective*. Oxford: Oxford University Press.
- Davison, Alice (1980). *Any* as universal or existential? In van der Auwera, J. (ed.), *The Semantics of Determiners*, London: Croom Helm, 11–40.
- Dayal, Veneeta (1995). Licensing *any* in non-negative/non-modal contexts. *Proceedings of SALT V*, 72–93.
- Dayal, Veneeta (1997). Free relatives and *ever*: Identity and free choice readings. *Proceedings of SALT VII* 99–116.
- Dayal, Veneeta 1998. ANY as inherently modal. *Linguistics and Philosophy* 21, 433–476.
- Dekker, Paul (1998). Speaker's reference, description and information structure. *Journal of Semantics* 15, 305–334.
- Donellan, Keith S. (1966). Reference and definite descriptions. *The Philosophical Review* 75, 281–304.
- Donellan, Keith S. (1968). Putting Humpty Dumpty together again, *The Philosophical Review* 77, 203–215.
- Donellan, Keith S. (1978). Speaker reference, descriptions, and anaphora. In Cole, P. (ed.), *Syntax and Semantics*, Vol. 9, New-York: Academic Press.
- Eckardt, Regine (1999). Normal objects, normal worlds and the meaning of generic sentences. *Journal of Semantics* 16, 237–278.

- Eisner, Jason (1994). ‘ \forall ’-less in wonderland? Revisiting *any*. *Proceedings of ESCOL’94*, 92–103.
- Farkas, Donka F. (2002). Varieties of indefinites. To appear in *Proceedings of SALT XII*.
- Fauconnier, Gilles (1978). Implication reversal in a natural language. In F. Guenther, F. & Schmidt, S.J. (eds), *Formal Semantics and Pragmatics for Natural Language*, Dordrecht: Reidel, 289–301.
- Fauconnier, Gilles (1985). *Mental Spaces. Aspects of Meaning Construction in Natural Language*. Cambridge (UK): Cambridge University Press.
- Fine, Kit (1985). *Reasoning with Arbitrary Objects*. Oxford: Basil Blackwell.
- Fine, Kit (1988). Semantics for quantified relevance logics. *Journal of Philosophical Logic* 17, 27–59.
- Fine, Kit (1995). The logic of essence. *The Journal of Philosophical Logic* 24, 241–273.
- Fine, Kit (2000). Semantics for the logic of essence. *The Journal of Philosophical Logic* 29, 543–584.
- von Stechow, Kai (2000). *Whatever*. *Proceedings of SALT X*, 27–39.
- Gawron, Jean Mark (2001). Universal concessive conditionals and alternative NPs in English. In Condoravdi, C. & G. Renardel de Lavalette (eds), *Logical Perspectives on Language and Information*, Stanford: CSLI, 73–105.
- Giannakidou, Anastasia (1997a). *The Landscape of Polarity Items*. Doctoral dissertation, University of Groningen.
- Giannakidou, Anastasia (1997b). Linking sensitivity to limited distribution. *Proceedings of the 11th Amsterdam Colloquium*, 139–144.
- Giannakidou, Anastasia (1998). *Polarity Sensitivity as (Non) Veridical Dependency*. Amsterdam: John Benjamins.
- Giannakidou, Anastasia (1999). Affective dependencies. *Linguistics and Philosophy* 22, 367–421.
- Giannakidou, Anastasia (2001). The meaning of free choice. *Linguistics and Philosophy* 24, 659–735.
- Goldberg, Adele E. (1995). *Constructions. A Construction Grammar Approach to Arguments Structure*. Chicago: The University of Chicago Press.
- Greenberg, Yael (2002). *Manifestations of Genericity*. Ph.D. dissertation, Bar-Ilan University.
- Gregory, Dominic (2001). Completeness and decidability results for some modal propositional logics containing the “actually” operator. *Journal of Philosophical Logic* 30, 57–78.
- Haspelmath, Martin (1997). *Indefinite Pronouns*. Oxford: Clarendon Press.
- Heim, Irene & Kratzer, Angelika (1998). *Semantics in Generative Grammar*. Oxford: Blackwell.
- Hoeksema, Jack & Klein, Henny (1995). Negative predicates and their ar-

- guments. *Linguistic Analysis* 25, 146–180.
- Horn, Laurence R. (1972). On the semantic properties of logical operators in English. Ph.D. dissertation, University of California Los Angeles.
- Horn, Laurence R. (2000). Pick a theory, not just *any* theory. In Horn, L. R. & Y. Kato (eds), *Negation and Polarity. Syntactic and Semantic Perspectives*, Oxford: Oxford University Press, 147–192.
- Horn, Laurence R. (2001). *Any* and *(-)ever*: Free choice and free relatives. *IATL* 15 (Proceedings of the 15th Annual Conference of the Israeli Association for Theoretical Linguistics), 71–111.
- Horn, Laurence & Young-Suk Lee (1995). Progovac on polarity. *Journal of Linguistics* 31, 401–424.
- Israel, Michael (1996). Polarity sensitivity as lexical semantics. *Linguistics and Philosophy* 19, 619–666.
- Jacobson, Pauline (1995). On the quantificational force of English free relatives. In E. Bach, E. Jelinek, A. Kratzer & B. Partee (eds), *Quantification in Natural Language*, Dordrecht: Kluwer Academic Publishers, 451–486.
- Jayez, Jacques & Godard, Danièle (1999). True to fact(s). *Proceedings of the 12th Amsterdam Colloquium*, 151–156.
- Jayez, Jacques & Tovena, Lucia M. (2002). Determiners and (un)certainity. To appear in *Proceedings of SALT XII*.
- Jennings, R.E. (1994). *The Genealogy of Disjunction*. New York: Oxford University Press.
- Kadmon, Nirit & Landman, Fred (1993). *Any*. *Linguistics and Philosophy* 16, 353–422.
- Kamp, Hans & Reyle, Uwe (1993). *From Discourse to Logic*. Dordrecht: Kluwer.
- Kempson, Ruth (1985). More on *any*: Reply to Ladusaw. *NELS* 15, 234–255.
- Kleiber, Georges & Martin, Robert (1977). La quantification universelle en français. *Semantikos* 2, 19–36.
- Klima, Edward S. (1964). Negation in English. In Fodor, J. & J. Katz (eds), *The Structure of Language*, Englewood Cliffs: Prentice Hall, 246–323.
- Kratzer, Angelika (1981). The notional category of modality. In Eikmeyer, H.J. & H. Rieser (eds), *Words, Worlds and Contexts*, Berlin: de Gruyter, 38–74.
- Krifka, Manfred (1995). The semantics and pragmatics of polarity items. *Linguistic Analysis* 25, 209–257.
- Kripke, Saul (1977). Speaker’s reference and semantic reference. In French, P. A., Uehling, T. E. & H.K. Wettstein, *Contemporary Perspectives in the Philosophy of Language*, Minneapolis: University of Minnesota Press, 6–27.
- Laka Mugarza, I. (1990). *Negation in Syntax: On the Nature of Functional*

- Categories and Projections*. Ph.D. dissertation, Massachusetts Institute of Technology.
- Lee, Chungmin (1996). Negative polarity items in English and Korean. *Language Sciences* 18, 505–523.
- Lee, Chungmin (1997). Negative polarity and free choice: where do they come from? *Proceedings of the 11th Amsterdam Colloquium*, 217–222.
- Lee, Young-Suk & Horn, Laurence R. (1994). *Any as Indefinite plus Even*. Ms., Yale University.
- LeGrand, Jean Ehrenkranz (1975). *Or and Any: The Semantics and Syntax of Two Logical Operators*. Ph.D. dissertation, University of Chicago.
- Lewis, David K. (1968). Counterpart theory and quantified modal logic. *The Journal of Philosophy* 65, 113–126.
- Lewis, David K. (1986). *On the Plurality of Worlds*. Oxford: Basil Blackwell.
- Maraldi, Mirka (2001) Free-choice quantification and concession in Latin. Ms. University of Bologna.
- Michaelis, Laura A. & Ruppenhofer, Josef (2001). *Beyond Alternations. A Constructional Model of the German Applicative Pattern*. Stanford: CSLI Publications.
- Paillard, Denis (1997). *N'importe qui, n'importe quoi, n'importe quel* N. *Langue Française* 116, 100–114.
- Paillard, Denis (2001). *Tout* N en français versus *Vsjakijn* N en russe. In Blanco, X., Buvet P.-A. & Z. Gavriilidou (eds), *Détermination et formalisation, Linguisticae Investigationes Supplementa series*, 273–290.
- Prince, Alan and Smolensky, Paul (1993). Optimality theory: constraint interaction in generative grammar. Ms., Rutgers University.
- Prince, Alan & Smolensky, Paul (1997). Optimality: from neural networks to universal grammar. *Science* 275, 1604–1610.
- Progovac, L. (1988). *A Binding Approach to Polarity Sensitivity*. Ph.D. dissertation, University of Southern California.
- Pustejovsky, James (1995). *The Generative Lexicon*. Cambridge: MIT Press.
- Quer, Josep (1998). *Mood at the Interface*. Ph.D. dissertation, University of Utrecht, The Hague: Holland Academic Graphics.
- Reed, Paul (2000). *Any* and its French equivalents. *French Language Studies* 10, 101–116.
- Ross, Jeff (1988). *The Semantics of Media*. Dordrecht: Kluwer Academic Publishers.
- Sæbø, Kjell J. (1999). Free choice items in Scandinavian. NORDSEM Research Report, University of Oslo.
- Sæbø, Kjell J. (2001). The semantics of Scandinavian free choice items. *Linguistics and Philosophy* 24, 737–787.
- Stalnaker, Robert (1973). Pragmatic presuppositions. In Munitz, M. &

- P. Unger (eds), *Semantics and Philosophy*, New-York: New York University Press, 197–214.
- Stalnaker, Robert C. (1978). Assertion. In Cole, P. (ed.), *Syntax and Semantics*, Vol. 9, New-York: Academic Press, 315–332.
- Tovena, L. M. (1993). Exploring an algebraic semantic analysis of negative polarity. Ph.D. summer project, University of Edinburgh.
- Tovena, Lucia M. (1996). *Studies on Polarity Sensitivity*. Ph.D. dissertation, University of Edinburgh.
- Tovena, Lucia M. (1998). *The Fine Structure of Polarity Sensitivity*. New York: Garland.
- Tovena, Lucia M. (2001). The phenomenon of polarity sensitivity: questions and answers. *Lingua e stile* 36, 131–167.
- Tovena, Lucia M. & Jayez, Jacques (1997a). The modal arbitrariness of *any*. Ms., University of Geneva and EHESS, Paris.
- Tovena, Lucia M. & Jayez, Jacques (1997b). *Any* as a Finian quantifier. *Proceedings of the 11th Amsterdam Colloquium*, 295–300.
- Tovena, Lucia M. & Jayez, Jacques (1999a). *Any*: from scalarity to arbitrariness. In Corblin, F., Dobrovie-Sorin, C. & J.M. Marandin (eds), *Empirical Issues in Formal Syntax and Semantics 2*, The Hague: Thesus, 39–57.
- Tovena, Lucia M. & Jayez, Jacques (1999b). Déterminants et irréférence. L'exemple de *tout*. In Moeschler, J. & M.-J. Béguelin (eds.), *Référence temporelle et nominale*, Berne: Peter Lang, 235–268.
- Tzouvaras, Athanassios (1996). Aspects of analytic deduction. *Journal of Philosophical Logic* 25, 581–596.
- Veltman, Frank (1996). Defaults in update semantics. *Journal of Philosophical Logic* 25, 221–261.
- Vlachou, Evangelia (2003). Le puzzle des indéfinis en *qu-*. To appear in Corblin, F. & L. Kupferman (eds), *Indéfinis et prédication*, Paris: PUF.
- Zimmerman, Thomas E. (1992). On the proper treatment of opacity in certain verbs. *Natural Language Semantics* 1, 149–179.
- Zwarts, Frantz (1995). Nonveridical contexts. *Linguistic Analysis* 25, 286–312.