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Any: from scalarity to arbitrariness

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In general, it is impossible to achieve complete logical parity between individuals and arbitrary objects; the difference in their logical, or rather meta-logical behaviour, must show up somewhere.
Fine (1985, p. 12)

Abstract In spite of the existence of a vast literature on *any*, no clear consensus has finally emerged as to its semantic nature and behaviour. We argue here that the deep unity of *any* is to be found in the link that this item sets up between scalarity and *arbitrariness* in the sense of Fine (1985). The traditional distinction between *any* as a free choice (FC) or as a polarity sensitive (PS) element is put in a radically new perspective: *any* is analysed as scalar at root, along the lines of Lee & Horn (1994), but it emerges either as FC or PS depending on which type of link between scalarity and arbitrariness on events is constructed. So, the 'two' *any* appear as two different but related strategies towards the same problem, instead of two parallel and accidentally similar behaviours.

1 Introduction

Two behaviours of *any* have been mentioned and studied in the literature. The so-called free choice (FC) *any* is a sort of *quodlibetic* operator (Horn 1996), often represented by a universal quantifier. The polarity sensitive (PS) *any* is a sort of indefinite and is often represented by an existential quantifier. However, independently from these distinctions, there is also the persistent feeling that a common core meaning underlies the distribution of the item. Whether PS and FC *any* are two separate elements or two readings of a single item is a matter of much debate. No clear consensus has emerged so far from the literature as to its semantic nature and behaviour. We propose that (i) *any* is scalar and concessive, as in (Lee

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& Horn 1994), (ii) it is neither an indefinite nor a quantifier but a more abstract item which signals that some property holds of the endpoint of some appropriate scale, which is interpreted (iii) in connection with arbitrariness, in the sense of Fine (1985), that is, as an object which possesses all and only the properties characteristic of a class. We first point out some problems with recent approaches on *any* (section 2). Next, we draw the scalar profile of *any* (section 3.1) and relate it to arbitrariness (section 3.2). Finally (section 3.3), we show the difference and articulation between PS and FC *any*.

2 Recent approaches

Kadmon & Landman (1993) propose that *any* is an indefinite that must satisfy two semantico-pragmatic constraints termed *widening* and *strengthening*. Widening is the property according to which, in a sentence of for $\phi(\text{any } N)$, ϕ is asserted to hold of absolutely every individual of the N class, not only of the most typical ones. For instance, the generic sentence in (1a) is analysed as equivalent to (1b) plus instructions on how to extend the domain of owls in the interpretation, because widening forces one to consider just any owl, not only the most normal, typical, etc. Strengthening is the requirement that the *any* statement $\phi(\text{any } N)$ entails the statement $\phi(a \text{ } N)$. Since *any* is assumed to be an indefinite, strengthening, in non-generic sentences, amounts to say that, if ϕ holds of some N -individual i , which may be typical or not, ϕ holds also of some typical individual. (2) is ruled out by the condition of strengthening because the *any* N statement, meaning *Mary read a possibly atypical book*, does not entail the corresponding statement *Mary read a typical book*.

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- (1) a. Any owl hunts mice
- b. An owl hunts mice
- (2) Mary read ??any book
- (3) a. Mary read any book which was on the reading list
- b. Mary read any book ??which happened to be on her desk.

There are several problems with this description of *any*. We will mention only three. First, the reading of *any* in (3) is clearly the FC one since, as noted by Dayal (1995), it is possible to insert *almost* or *practically* in it (*Mary read practically any book which...*). These adverbs are considered universal quantifier modifiers, and their acceptability in this context does not square well with a characterisation of *any* as an indefinite. Second, it is unexpected that non -accidental¹ modification definitel improves this type of example as in (3a). Finally, note that the difference between *must*-obligations (4) and imperatives (5) is not explained. (4) can be ruled out for failing to satisfy strengthening, since the obligation to read a standard or non standard book does not entail the obligation to read a standard book. However, the same line of analysis applies also to (5), which would be incorrectly ruled out. This problem is general to approaches characterising *any* as a polarity sensitive item (PSI), whose behaviour must be ultimately explained by some form of unidirectional scalar entailment (Krifka 1995, Israel 1996).²

- (4) Mary must read ??any book
- (5) Read any book (Pick any card, any apple, any cake, ...)

¹ The modification of a noun is *accidental* whenever it refers to a contingent property of the entities which make up the denotation of the noun.

² Dayal (1998) offers a detailed criticism of Kadmon and Landman's proposal.

Other recent proposals by Zwarts (1995), Dayal (1995) and Giannakidou (1997) focus on notions such as veridicality or existentiality without taking a firm stand on the nature of *any*. They assume that *any* marks a lack of commitment with respect to the existence of individuals in its domain. Hence, it is semantically licensed precisely in those contexts where one needs not suppose that the domain of the N -predicate is non-empty.³ In Dayal's analysis, the distribution of *any* in non intensional contexts is regulated by two constraints. First, Non-Existence says that an occurrence of $[\text{NP any } \beta]$ in a statement ϕ is licit iff it does not entail $\exists\beta \phi$. Second, Contextual Vagueness says that uses of *any* which satisfy Non-Existence, must also not give rise to an interpretation in which the speaker knows the individuals who/which constitute the set referred to by *any* β . The difference between (2) and (3a) is explained by postulating that, in extensional contexts, universal quantifiers bearing on an unmodified noun N entail existence of individuals of the N category, while this entailment is not in force with some types of N modification (e.g. relative clauses).

Although the veridicality-based type of approach seems natural for questions and downward monotone contexts (including negation), we showed (Tovena & Jayez 1997a,b) that it runs into problems in some cases. It leads to cases of overlicensing (6), i.e. *any* is wrongly predicted to be possible and indiscriminate (7), i.e. observations support two competing hypotheses.

(6) (A psychologist instructing a subject):

That is the room, plastic shapes are scattered on the floor. A given shape may or may not be there. Once you've entered the room, you must pick up

³ Carlson (1981) makes a similar proposal and says that *any* is antilicensed in a sentence that entails the material existence of the referent of an NP.

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quickly every/??any square and then push the green button. If there is no square, push the red button.

- (7) In that period any foreigner was considered as responsible for the war, ?? but there were no foreigners.

If the discourse (6) has any coherence, the clumsiness of *any* vs *every* is problematic. The existence of squares on the floor is suspended. Yet, *any* is not felicitous. Also, one cannot discriminate between non-existence and non-individuation when interpreting (7) as ranging over a set of situations. The sentence could be possible because the existence of foreigners is not entailed in every situation or because their identity varies across situations. (7) shows only that we cannot deny the existence of foreigners *per se*. In addition, the status of imperatives in contrast with that of obligations is not very clear.

A possible answer is that non-veridicality is lexical in nature. So, it may not be detected by tests on entailments or presuppositions. For instance, in (6), the existence of squares is lexically supported, even if discourse suspends it. Dayal (1995) borrows from von Stechow (1994) the idea that structures of form $Q_{\forall}N^0$, where Q_{\forall} is a universal quantifier (*every, each, any* in English) and N^0 an unmodified noun, convey an existential entailment in non-generic sentences. This would account for (6). *Any square* forces the existence of squares, which conflicts with the preceding discourse as well as with the requirement of non-veridicality.

However, two problems remain. First, one has to explain why the generic sentence (7) seems to entail the existence of foreigners, since existential entailment is assigned to the form $Q_{\forall}N^0$ in *non-generic* sentences. Second, the contrast $Q_{\forall}N^0$ vs $Q_{\forall}N$ is not that robust. In (6), *every* is possible. Yet, it should sound strange since (i) (6) conveys an existential entailment and (ii) this entailment is inconsistent with the

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existence suspension created by the discourse. We conclude that non-veridicality is not supported by sufficiently clear empirical evidence.⁴

In the next section, we take a different perspective on *any*. We adopt the proposal that *any* is scalar and claim that, in addition, it is sensitive to *arbitrariness*, in the sense of Fine (1985). This allows us to connect PS and FC *any* in a more principled way.

3 Scales, information and arbitrariness

In this section, we expound some basic ideas of the information-based analysis of scalar phenomena and introduce gradually the highly abstract notion of (scalar) arbitrariness behind PS and FC *any*. Let us explain intuitively the connection between scalarity and arbitrariness on the FC example (3a). *Mary read any book which was on the reading list* can be interpreted as saying that Mary read *even* the book(s) that she was *not* expected to read, because they are dull, too difficult, partly irrelevant, etc. This is the scalar flavour of *any* advocated in various works. Since Mary read books which, in a sense, she should not have read, given their particular properties, this might be so because she selected and read books just in virtue of their being on the reading list, without considering further properties (their interest, easiness, etc.). In other terms, Mary can read an *arbitrary* book, provided it shows up on the reading list. In such cases, the scalar reading denotes a situation which is a consequence of the fact that books are read in virtue of being on the reading list and might be quite arbitrary otherwise. In section 3.1, we briefly describe the scalar aspects of *any*. We introduce arbitrariness and relate it to scalarity in section 3.2.

⁴ Dayal (1998) gives up non-veridicality because she finds it a *slippery* notion (her terms). Problematic as

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Finally, in 3.3, we address the FC/PS distinction and extend our proposal to various types of *any* sentences.

3.1 Scalar value of *any*

It has been proposed in recent work that *any* is a sort of scalar concessive item with an intuitive meaning akin to *even (so)*, (Lee & Horn 1994, C. Lee 1996, 1997). The general idea is that a sentence with *any* asserts that even some object which was expected (not) to exhibit a certain property or (not) to participate in a certain event *does not (does)* exhibit that property or *does not (does)* participate in that event. So, (3a) means that Mary read even a book on the reading list that was the least likely to be read. An entailment reversal procedure (Fauconnier 1978) then generates a plausible interpretation under which Mary read all the books. Similarly, for *Mary did not read any book* (8c), even a book that was the most likely to be read was not read by Mary. Again, by virtue of scalar entailment, Mary did not read a book. Following the argumentation of Dayal (1995, 1998), we reject the idea that FC *any* is an indefinite. Yet, we keep the idea that it is scalar/concessive. The effect of *any* is to signal that even the object which is the most likely to satisfy (not satisfy) ϕ does not satisfy (satisfies) ϕ , with the usual consequences of entailment reversal.⁵

Independent evidence for this hypothesis comes from the parallelism between *any* and the French *le moindre* (lit. *the least*), which has both PS and FC readings, as shown in (8).⁶

it is, we show in section 3.2 that this notion captures something of the semantic core of *any*.

⁵ This is in agreement with the general information-based view of polarity developed in particular in (Krifka 1995) and (Israel 1996). For space reasons, we will not elaborate on this point here.

⁶ We ignore here the fact that *le moindre* requires that its complement N be naturally conceived as unimportant or low-degree on some scale. So, in (8a), *la moindre référence* can only denote the least significant, interesting, etc., reference. It may not denote the most difficult one. This disparaging character of *le moindre* explains why our reviewers expressed doubt on the existence of FC *le moindre*: it turns out that they considered examples for which no disparaging interpretation is natural. Examples like *le moindre*

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- (8) a. Marie est très compétente. Elle connaît la moindre référence sur
Mary is very competent she knows the least reference on
la question
the topic
- b. Marie est très compétente. Elle connaît ??la moindre référence
Mary is very competent she knows the least reference
- c. Mary did not read any book
- d. Marie n'a pas lu le moindre livre
Mary did not read the least book

It is unlikely that the correspondence between *any* and *le moindre* is a mere twist of fate, especially since they also share the phenomenon of *subtriggering*.⁷ However, the present analysis of *any* in terms of scalarity does not explain the subtriggering, nor the fact that accidental predication on *any* phrases is infelicitous (see the contrast (3a)-(3b)). In the next section, we turn to the Finian notion of *arbitrariness* as the missing link between the scalar concessive and modal sides of *any*.

3.2 *Fine's arbitrariness*⁸

If Mary read any book on the reading list, she read all the books on it. This is FC *any*. Also, she read even the book one would not have expected her

portier est bavard (lit. The least doorman is talkative) are strange, because being talkative is not an ability but rather a failing. So, the sentence says something like *Even the less able doorman is talkative*. In contrast, *le moindre étudiant sait cela* (lit. The least student knows that) is perfect because it means *Even the slowest/laziest/most ill-informed student knows that*. *Any*, in contrast, seems to be quite neutral as regards its N complement.

⁷ We borrow this convenient term from the literature on *any*. It refers to the fact that an otherwise unacceptable *any* phrase becomes natural when the head noun is modified, generally by a relative clause or a postnominal modifier (adjective or prepositional adjunct). In addition to the similarity between *any* and *le moindre*, there is a parallel similarity involving subtriggering between *any* and *tout* (Tovena & Jayez 1997c).

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to read. This is concessive scalar *any*. The two are sensitive to individuals, they are *about* individuals from the reading list. Consider the scalar concessive sense. Let *b* be the least-likely -to-be-read-by-Mary book. Reading *b* goes against all odds. Still, *b* is read. Why? Under a (plausible) interpretation, just because it is a book on the reading list. *b* is read because it has all the properties of a book on the list and only because of them since, when it comes to its other properties (e.g. intrinsic interest or clarity), it might *not* be read. This implies that Mary would read everything which has all and only the properties of being a book on the reading list. Such a thing is no longer an individual but a generic or arbitrary object in Fine's (1985, 1988) sense. Roughly speaking, an object is arbitrary with respect to a set *P* of properties (*P*-arbitrary) if it has all and only the properties in *P*. In the more current type lingo, if σ is a type, *x* is arbitrary with respect to σ (σ -arbitrary) whenever σ is the most specific type which classifies/describes *x* in a perfect classification system, where every subset of properties of an individual can be reflected in some type. This suggests the following criterion for FC *any*.

- (9) **FC *any* criterion** In a sentence $\phi(\textit{any N})$, the FC reading is felicitous only under an interpretation where the truth of $\phi(\textit{any N})$ appears as a consequence of the fact that the property ϕ holds of the arbitrary object of type N.

As such, this criterion is able to block examples like (3b), because an accidental predication is not compatible with a rule. If ϕ is an accidental property of every N-individual in a relevant domain, it is certainly *not* the case that ϕ holds for N-individuals in virtue of their being N-things. What

⁸ Kempson (1985) was the first to stress the interest of Fine's theory of arbitrary objects for *any*. In particular, she detected the importance of the notion of *dependency* (see below). Unfortunately, her proposal did not attract the attention it deserved.

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the sentence says is that ϕ holds for a set of individuals, and that, accidentally, the *happen* to correspond to the set of N-individuals in the domain. It is not natural to assume that Mary read books on her desk *because* they were on her desk, but rather because they were interesting, assigned for a course, etc. However, some contexts might perhaps prime this interpretation. Suppose that Mary (rather stupidly) bets that she will read every book on her desk. Isn't the property of being on Mary's desk an essential trigger of the reading in this case? Unexpectedly, the answer is *no*, even in this case. Mary is bound to read every book on her desk because she bet that she would do so, not because the books are on her desk. The fact that the books are on the desk does not *motivate* the fact that they form the target of the bet. In other terms, the property of being on the desk remains accidental with respect to that of constituting the target of the bet.

3.2 Contextual Vagueness, variation and arbitrariness

Dayal (1995, 1998) observed that FC *any* is not natural when the *any* N form refers to a contextually salient set of individuals. So, *any* requires that *any* N be *contextually vague* (CV criterion). Similarly, Tovena & Jayez (1997a,b,c) propose that *any* is licensed only under possible *variation* on the domain of individuals.⁹ This seems to be a straightforward consequence of the criterion (9). When a special set of individuals is mentioned, accidentality can creep in much more easily than if the identity of the set remains indeterminate.

⁹ Technically, although they use different logical idioms, (Dayal 1998) and (Tovena & Jayez 1997b,c) seem to be essentially similar.

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Yet, subtriggering remains to be explained. Dayal (1998) proposes that the relevant constructions allude to a sort of temporal spread which restricts the domain of individual-situation pairs an *any* sentence is about. An assertive episodic sentence of for $\phi(\text{any } N)$ corresponds to the logical form (10).

$$(10) \quad \textbf{Logical form for episodic statements } \phi(\text{any } N)^{10}$$
$$\forall s, x \text{ [N}(x) \text{ in } s] \text{ [}\exists s' (s' \text{ extends } s \wedge \text{loc}(s') \wedge \phi(x) \text{ in } s') \text{]}$$

(10) says that for every situation s and individual x , if x is a N -thing in s , then there is some localised situation s' such that it contains more information than s (*extends* s) and that ϕ holds of x in s' . The *loc* predicate indicates that the situation occupies a determinate spatio-temporal location. On this account, (2) is strange because the sentence says something like *In every possible situation where there is a book, Mary read it*.¹¹ This is not plausible since there are many situations in which there is a book Mary did not read, for instance all the situations before Mary's birth or after Mary's death. In contrast, a sentence like *Mary read any book she found* does not offend plausibility, because it says that every situation where Mary finds a book can be extended to a situation where she reads it. The contrast between the two logical forms is the following.

$$(11) \text{ a. } \textit{Mary read any book}$$
$$\forall s, x \text{ [book}(x) \text{ in } s] \text{ [}\exists s' (\text{loc}(s') \wedge s' \text{ extends } s \wedge \text{Mary read } x \text{ in } s') \text{]}$$
$$\text{ b. } \textit{Mary read any book she found}$$
$$\forall s, x \text{ [book}(x) \text{ in } s \wedge \exists s' (\text{loc}(s') \wedge s' \text{ extends } s \wedge \text{Mary found } x \text{ in } s') \text{]}$$
$$\text{ [}\exists s'' (\text{loc}(s'') \wedge s'' \text{ extends } s \wedge \text{Mary read } x \text{ in } s'') \text{]}$$

¹⁰ We drop Dayal's typicality restriction on situations for it does not play any substantial role in the present discussion.

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It is unclear how this proposal works for examples like (12)

- (12) Mary considered any result which depends on Craig's theorem
 $\forall s, x$ [result(x) in $s \wedge \exists s'$ (s' extends $s \wedge x$ depends on C.T. in s')]
[$\exists s''$ (loc(s'') $\wedge s''$ extends $s \wedge$ Mary considered x in s')]

Let r be a certain mathematical result which actually depends on Craig's theorem. The problem is that such a dependence holds in every situation, under the commonsense interpretation of mathematical truths as non-episodic. So, no loc predicate applies to the situation s' in which r depends on Craig's theorem. Then, the logical form in (12) is as offending as that in (11a), since it predicts that Mary considers every result depending on Craig's theorem in every possible situation where there is such a result.

This problem¹² stems from the assumption in (10) that $\phi(\text{any } N)$ is an assertion about every possible situation. (9) is more circumspect in this respect. It says simply that the universal judgement appears as a consequence of a stronger judgement based over arbitrary objects. Consider (2) (*Mary read ??any book*) again. What is wrong with this sentence is that it does not assert the existence of any link between properties. Admittedly, it is *compatible* with a dependence-based reading. For instance, it might be interpreted as implying that Mary read all the books, rather than the papers, because there is some link between the property of being a book and other parameters of the situation. But this is not what the sentence *says*. In contrast, generic sentences involve constraints between properties, and, in a sense, they are about such

¹¹ Eisner (1994) proposed a similar idea. However, we will not compare the two solutions here.

¹² In addition to the problem of persistent properties, there is the fact that interpreting *You may pick any flower* as meaning *You may pick every possible flower* is perhaps not consistent with our intuitions. A similar problem arises with imperatives.

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constraints. In *channel theory* (Barwise & Seligman 1997, Cavedon & Glasbey 1995), generic sentences can be analysed as involving dependencies between different aspects or parts of individuals. For example, (1) (*Any owl hunts mice*) corresponds to a regularity which associates the zoological category of an animal (e.g. *owl*) to its predator behaviour (e.g. *hunts mice*). The perspective under which such associations hold is called the *core* (of a *channel*). A core is essentially a set of typed connections. In (1), the core contains connections of form owl_i a constraint, it obeys the constraint. Otherwise it is an *exception* to the constraint. For example, if owl_i is an owl of type *owl* but its predator behaviour $predator_behaviour_j$ is not of type *hunts mice*, the connection owl_i rable. For instance, it could concern only one particular individual, a set of individuals, individuals in such or such situation, etc. In this respect, the analysis of generic sentences extends to episodic ones if they make manifest some regularity.

The crucial point is that subtriggers force a dependence-based reading when they do not denote an accidental condition. A sentence like (3a) means that, *if* a book was on the reading list, Mary read it.¹³ A sentence like (3b) asserts that Mary read a set of books which were on her desk. A sentence like (2) asserts that Mary read all the books, but does not establish any connection between the category of books and the fact of being read. There is no informational core which predicts that there is a link between some categories. We are free to interpret the sentence as describing a situation where such a link holds, but the sentence itself does not describe the situation *as* a situation of this kind. We conclude that

¹³ The idea that relative clauses are analogous to *if*-sentences has been exploited in (von Stechow 1994). More generally, we see subtriggers as introducing restrictions of a conditional nature. This is in agreement with the observations of Dayal (1998), but does not commit us to any particular view on the temporal nature of these restrictions.

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Dayal's (1998) hypothesis must be modified. We want to keep the idea that subtriggers function as restrictions, but we do not retain the view that *any* quantifies directly over possible individuals in all cases. Rather, the licensing condition for FC *any* in generic or episodic positive statements is that the sentence expresses a dependency. Dependencies can hold for every possible individual of some type, but they also hold in restricted settings. For instance, the natural interpretation of a sentence like (3a) is that, in every possible situation which is sufficiently similar to the situation described by the sentence, Mary would have read every book on the reading list. On one side, the sentence does not say simply that Mary read all the books on the list, since it also asserts that there is a dependency. On the other side, this dependency is not absolute, but relative to those aspects which determine which dependencies are supported by the situation, that is, formally, to the core of the channel which is used to describe the dependency system.

There are several ways to reflect the relativization to situations in the language of situation semantics. One of the most simple ways is to use constraints of the form:

$$\lambda x. s \text{ supports information } A(x) \rightarrow \lambda x. s \text{ supports information } B(x)$$

For (3a), A and B must contain at least the information corresponding to the property of being a book on the reading list and being read by Mar respectively. s is the reference situation. The constraint associates object types relativized to the reference situation s . We call such a constraint an *A-B relativized dependency*.¹⁴ We now reformulate the criterion (9) for generic and episodic positive statements.

¹⁴ There is much more to be said on relativized dependencies, for instance on alternative formulations in terms of situation types or proposition types (rather than object types). We chose the object type approach for simplicity. Note that the distinction between arbitrariness and accidentality is mirrored by the difference between constraints and connections. Every information in A and B is a part of the dependency. In contrast, an information which is supported by s but which is not declared in the dependency is

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- (13) **FC *any* criterion.** In a generic/episodic positive statement $\phi(\textit{any N})$, the FC reading is felicitous only when the sentence expresses a ϕ -N relativized dependency.

Since constraints admit exceptions, a classical model of arbitrariness like the one in (Fine 1985) or a strong notion of dependency (Fine 1988) cannot be maintained. However, we will not discuss here the possible treatments of exceptions (see (Cavedon 1995)) .

This proposal allows us to explain the appeal of non-veridicality. If non-modal positive statements with *any* assert essentially dependencies of form *if X then Y*, their non-veridical nature is predicted by the possibility of X being false. So, non-veridicality is not incorrect but rather too weak.

We have not yet considered the relation between PS and FC *any*. This is the aim of the next section.

3.3 The PS/FC distinction reshaped

PS *any* raises two difficulties. First, subtriggering is not necessary, cf. (8c). Second, accidental interpretations are found in negative contexts.

- (14) Mary did not touch any object on her desk

To explain the possibility of (14), one is tempted to give to Mary's behaviour a dispositional colour. However, (14) is not necessarily generic or habitual. We could insist that (14) describes a disposition of Mary. Not only did Mary not touch any object on her desk, but she *avoided* or was

considered as accidental. Suppose all books on the reading list in *s* have a red cover. If *A* contains only *being a book on the reading list* but not *having a red cover*, the latter property remains accidental, although it holds of every relevant book in the reference situation. Finally, note that, for generic sentences,

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unable to do so. In this respect, Mary wouldn't have touched any object on her desk no matter which precise objects were to be found there. Unfortunately, a similar solution applies to (2). If Mary read every book, maybe she did so in virtue of her nature. Maybe she would have read every book in *any* conceivable situation. But things do not work this way. We cannot create an acceptable reading for (2) by invoking a disposition of Mary.¹⁵ A second proposal for (14) consists of stripping the event of an individual substance, because (14) mentions *negative* events, which are not considered as genuine events in some traditions.¹⁶ On this type of account, (14) would not qualify as a *descriptive* sentence, since it does not allude to a determinate set of particular negative events. However, it is not clear how we would explain examples such as (15) in this perspective.

- (15) The department made three different offers to Mary, but she did not accept any of them

Since the department issued a limited number of particular offers, Mary's behaviour created a limited number of particular events of refusal. Yet, *any* is appropriate. *Le moindre* has a similar distribution, cf. (16)-(17).¹⁷

- (16) Marie n'a pas touché le moindre objet sur son bureau
 Mary didn't touch the least object on her desk
- (17) Marie n'a pas accepté la moindre offre du département
 Mary didn't accept the least offer from the department

the relativization to *s* can be dropped if genericity is considered as a quantification over all possible situations.

¹⁵ So, we abandon the view proposed in (Tovena & Jayez 1997a) that *any* is basically dispositional in negative sentences.

¹⁶ There is ample variation on this and related topics, see Amsili & Le Draoulec 1995 for a recent review.

¹⁷ However, *le moindre* and *any* have different distributions with respect to adversative verbs. *Refuser* (to reject) does not accept object NPs of for *le moindre* N, see *Marie a refusé ??la moindre offre du département*, in contrast with *He refused any sympathy* (Tovena 1996).

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Recall from section 3.1 that the basic value of *any* is concessive. This characterisation was motivated by the desire to cast a bridge between PS and FC *any* and by the parallelism with *le moindre*. The concessive behaviour was modelled by appealing to possible choices on individuals ranked on various scales. Some of the FC examples were explained deriving an arbitrariness requirement from the concessive basic value. This derivation does not work with the examples of PS *any* just reviewed. Note that the link between concession and arbitrariness was based on individuals. Thus, (3a) was interpreted as saying that Mary read even the least 'readable' book in the domain of books on the reading list, which implied that Mary read books of this type in general. The option we will take now is slightly different: it consists of putting arbitrariness on *events*. Negative sentences like (8c,d) exclude all events of a certain type. For instance, (8c) excludes all events of Mary reading a book in a given domain. Suppose you want to prove (8c) for a finite domain of books. You have to enumerate books and check, for each book *b*, that Mary did not read it. But how can you *check* it in a strong sense? The fact that Mary did *not* read the book is not a visible fact of nature. You cannot watch Mary 'not reading a book' (?). For all you know, Mary might have read *b* before your checking. Unless you spy or debrief Mary, in general you are not in a position to prove that she didn't do something. More importantly, even if you can prove it, this 'proof' may not consist in a finite enumeration of events. On a given temporal interval, there are in general infinitely many possible events of reading the book *b* which are excluded by a judgement like *Mary didn't read b*. Let $[t_1, t_2]$ be the interval and suppose that time is dense and $t_1 \neq t_2$. Then, *Mary didn't read b* entails that Mary didn't read *b* during any $[t_i, t_j] \subseteq [t_1, t_2]$ whose duration is sufficient to allow Mary to read the book. If the duration of $[t_1, t_2]$ is superior to the minimum duration

Any: from scalarity to arbitrariness

necessary for Mary to read the book, there are infinitely many such $[t_i, t_j]$ in virtue of the density of time. This extends easily to cases where we consider only partial readings of a book.¹⁸

How does this compare with the channel theoretic approach of subtrigging in section 3.2? In a channel core, connections associate individuals and/or parts of or perspectives on an individual. They also associate types. It is this second mode of association which pertains to *any*, *le moindre* and *tout*. If we assume that accidental readings are possible in negative contexts, we cannot attribute the felicity of *any* or *le moindre* in those contexts to a type association, since type association is intended to reflect essential predication. So, in (14), we have no constraint of for *object on Mary's desk* finite number of potential events. So the situation described by (14) is of the following type (18b).

- (18) a. *Mary did not touch any object on her desk* is true in s
b. s is of type: $\neg\exists e$ (e is an event of Mary touching an object on her desk)

The arbitrary flavour of (18b) and its similarity with constraints on types comes from the following parallelism, exemplified on (3a) and (14).

— (3a) : consider the events of reading the n books on the reading list in the reference situation. They form a set $\{e_1 \dots e_n\}$. One may not prove the existence of a non accidental constraint *being a book on the r.l.*

— (14): consider a finite set of negative events of not touching the n objects on Mary's desk in the reference situation. They form a set $\{e_1 \dots e_n\}$. One may not prove that the reference situation is of the type (18b) from the set $\{e_1 \dots e_n\}$, because, although this type might be accidental (=

¹⁸ Example (15) if of the same kind. The number of refusals is limited, but the number of non-acceptances is infinite.

Any: from scalarity to arbitrariness

might not involve any constraint), it characterises a type of event, not particular events.

The two cases are parallel in that the type of the situation, as described by the sentence, is not reducible to a finite conjunction of individual subtypes. In situation semantics, individual types can be approximated as individual *propositions*, that is, closed predicative structures asserted or denied of some spatio-temporal location in some situation s . E.g. the information that Mary read the book b at place l and time t in s is a proposition of form [s supports $\langle\langle$ read, Mary, b , l , t , 1 $\rangle\rangle$], where 1 is the assertion polarity. The proposition [s supports $\langle\langle$ read, Mary, b , l , t , 0 $\rangle\rangle$] is the corresponding proposition with a negation polarity. Constraints or types of form $\neg\exists e \phi$ have an arbitrary flavour in a given situation whenever, in that situation, they are not equivalent to a boolean combination of individual propositions, for some polarity. In its strong form, arbitrariness corresponds to a notion of provability and dependency (Meyer Viol 1995). In a weaker, and more general, form, it corresponds to the *irrelevance* of individual choices with respect to a judgement. An object is arbitrary, in the sense of Fine, when it can be replaced by any object with the same properties. More generally, an information I (e.g. an individual proposition) is arbitrary with respect to an information J if J entails I and any individual variant of I . We are now in a position to extend the criterion (13) to PS *any*.

- (19) **Non Individuation or Weak arbitrariness** *Any* is licensed in episodic or generic statements only when the statement describes a situation type which is not equivalent to a boolean combination of individual propositions, for some polarity.

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As indicated, we consider here only certain categories of sentences. Lack of space precludes a discussion of modal (*must* and *may*) sentences, downward monotone contexts other than negations, questions, and imperatives. Suffice it to say that these cases are accommodated by extending the criterion (19) to presuppositions of sentences. So the central idea remains essentially the same.

4 Conclusion

Any has a scalar concessive use. It points at the strongest position in a scale of implicatures independently from the direction in which they run. It also has a modal use. It shuns descriptive sentences and is not subtriggered by accidental property predication. The Finian notion of arbitrariness captures the link between them and opens the way to a general characterisation of FC *any* in terms of dependency. Finally, by putting non-individuation on events we regain unity of treatment for PS and FC *any*. Since dependency and non-individuation appear as weaker forms of the strong logical notion of arbitrariness, we conclude that the latter is the key notion in the analysis of *any* and *le moindre*.

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