Epistemic Determiners

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Abstract

The present paper offers a contrastive examination of French items that require some knowledge of the speaker and items that require some ignorance. We relate this difference in a systematic way to the well–known problem of 'identifiability' in epistemic logic. In addition to providing a more precise analysis, this identification-based investigation leads us to two findings. First, non-identification ('ignorance') is actually a particular manifestation of the more general phenomenon of free-choiceness, which has received much attention lately. Studying non-identification helps us to gain a better understanding of the varieties of free-choiceness. Second, identification ('knowledge') has to be distinguished from *specificity*, understood as wide scope of an existential quantifier, and to be evaluated in the perspective of a full-fledged epistemic theory including epistemic agents and descriptions. This questions the scope-based analyses of determiners like *un certain* in French and *a certain* in English and gives a central place to the phenomenon of relativity of description, whose importance is independently motivated in recent work on reference.

1 Introduction

The motivation behind this article is to gain insight into the behaviour of epistemic determiners by comparing and contrasting items that require some knowledge of the speaker and items that require some ignorance.

Determiners and pronouns sensitive to 'knowledge of the speaker' exist in different languages, as noted by Haspelmath (1997). Examples are *un* N *quelconque*, *quelque* and *un certain* N in French, *un certo* and *un* N *qualunque/qualsiasi* in Italian, *some* in English (Farkas, 2002), *irgendein* in German (Krifka, 1991; Kratzer and Shimoyama, 2002), etc. Broadly speaking, they either require the speaker not to know the identity of the referent or require her to know it. These are the items to which we refer with the general term of *epistemic determiners*. E.g. in (1a), the speaker cannot know the identity of the diplomat referred to, as

evidenced by (1b), whereas, in (1c), someone—who might be the speaker—must be able to identify the diplomat.

(1) a. Marie a rencontré un diplomate quelconque
'Mary met some diplomat or other'

b. *Marie a rencontré un diplomate quelconque, à savoir mon frère
'Mary met some diplomat or other, namely my brother'

c. Marie a rencontré un certain diplomate
'Mary met a certain diplomat'

This article focusses primarily on *un quelconque* (UQ) and *un certain* (UC), two determiners that look like the mirror image of one another to some extent. The content is organised as follows. In section 2, we provide basic data on UQ and in section 3 we start the analysis of its epistemic properties by relating them to the well–known problem of 'identifiability' in epistemic logic. We show that UQ is subject to a general requirement of non-identification. Section 4 provides a deeper analysis, in connection with the issues discussed in the recent literature on so–called *free choice* (FC) determiners (such as *any* in English). In the case of UQ, the requirement of non-identification has the effect of relativising to an epistemic agent the equivalence among members of the restriction, a feature which is the hallmark of FC items in general. This yields an epistemic free-choice type of item. The indefinite (*un* 'a') that enters the determiner overtly also affects the distribution and interpretation of the whole. Finally, section 5 concerns pragmatic aspects of the interpretation of UQ. This is for the 'ignorance' side of epistemic determiners. We then move on to the 'knowledge' side. In section 6, we provide crucial data on UC (*un certain*), and we discuss problems they raise for existing analyses, most notably those that rely on specificity. Our account in terms of identification, echoing that of section 4, is proposed in section 7. We show that, contrary to what is the case for UQ, which requires non-identification, UC requires that the referent be identified. However, this requirement is not relativised to a specific agent. Furthermore, it does not involve the strong standard notion of identification. Pragmatic aspects of the interpretation of UC are then discussed in section 8. Section 9 summarises the major findings of this article.

2 Basic data on *un quelconque*

Modern French uses the determiner UQ to express ignorance about the referent.[1] This form enters the two constructions *un* $\overline{\text{N}}$ *quelconque* and *un quelconque* $\overline{\text{N}}$. No clear and stable semantic difference between the two has appeared so far, hence we will consider the notation 'UQ' as referring to either one.

[1] As noted in Jayez and Tovena (2002), another determiner, *quelque* is very similar to UQ. However, it sounds rather formal in modern French and will not be considered in this paper.

The main observations on UQ can be divided into three blocks. First, UQ is not compatible with identification of the referent. This is why (1b) is anomalous and, more generally, why a UQ-phrase is strange whenever the sentence implies that the speaker is able to identify the referent under normal circumstances (2a). In contrast, when the speaker clearly has no idea about the referent, UQ is unproblematic (2b).

(2) a. ??Hier, j'ai rencontré un ami quelconque
'Yesterday, I met some friend or other'

b. Susanne a épousé un copain de fac quelconque, que je ne connais pas
'Susan married some university friend, whom I don't know'

This general prohibition against the identification of the referent extends to sentences with a modal/attitudinal operator. The odd examples in (2) and (3) become unproblematic if UQ is replaced by the indefinite *un* 'a', see (4).

(3) a. *Marie a probablement loué une voiture quelconque, celle que je vois là-bas
'Mary probably rented some car or other, the one I see over there'

b. *Marie a été obligée de louer une voiture quelconque, celle que je vois là-bas
'Mary had to rent some car or other, the one I see over there'

c. *J'espère que Marie a loué une voiture quelconque, celle que je vois là-bas
'I hope Mary rented some car or other, the one I see over there'

(4) a. Marie a rencontré un diplomate, à savoir mon frère
'Mary met a diplomat, namely my brother'

b. Marie a probablement loué une voiture, celle que je vois là-bas
'Mary probably rented a car, the one I see over there'

The second set of data concern downward-entailing environments. UQ may take narrow or wide scope. When it takes narrow scope, it can be paraphrased as 'absolutely no' (5a), 'any whatsoever' (5b), etc. When it has wide scope, it is subject to the prohibition against identification, see (5c) vs. (5d).

(5) a. Marie n'a pas lu un livre quelconque
'Mary read absolutely no book'

b. Est-ce que Marie a lu un livre quelconque?
'Did Mary read any book whatsoever'

c. Marie n'a pas dû rentrer un code quelconque, ce qui a bloqué le système
'There must be some code or other that Mary failed to type in, which made the system freeze'

d. *Marie n'a pas dû rentrer un code quelconque, le 1233A, ce qui a bloqué le système
'There must be some code or other, 1233A, that Mary failed to type in, which made the system freeze'

Finally, in generic sentences such as (6a), UQ is not appropriate when it occurs as restriction of the generic operator (6b), see the contrast with (6c) where UQ is in the nuclear scope. The discussion of this case is deferred to section 4.2.

(6) a. Un animal doit être soigneusement nourri
'An animal must be fed with care'

b. ??Un animal quelconque doit être soigneusement nourri
'Any animal must be fed with care'

c. Un chat doit avoir un jouet quelconque
'A cat must have some toy'

3 Epistemic properties of UQ

In this section, we examine the prohibition against identification, a feature of UQ that is absolutely general, even if it has other properties, as well. To a certain extent, this prohibition amounts to banning the *de re* interpretation with respect to the speaker, at least if the *de re* reading is equated—as usually done in formal semantics[2]—with the fact that an existential quantifier has wide scope over a modal operator. Consider (7) and its two interpretations (7a'-a"). (7a') is the traditional *de dicto* interpretation and (7a") the traditional *de re* one. When the speaker is the relevant epistemic agent, the forbidden reading is expressed in (8), which says that, for some particular individual x, the speaker believes that x is a student whom Mary hopes to have interested.

(7) Marie espère avoir intéressé un étudiant quelconque
'Mary hopes to have interested some student or other'

a'. *Mary hopes* ($\exists x$(x *is a student* & *Mary has interested* x))

a". $\exists x$(x *is a student* & *Mary hopes* (*Mary has interested* x))

(8) $\exists x$(*speaker believes* (x *is a student* & *Mary hopes* (*Mary has interested* x)))

[2]It is generally held that the connection between scope and the *de dicto*/*de re* distinction dates back to Russell (1905).

A constraint such as (9) suffices to predict the right readings of (7). Intuitively, it says that a sentence with UQ is anomalous whenever the speaker can pick a referent for UQ. We ignore non-assertive sentences for the moment. We assume that UQ contributes a variable, following standard file-card or DRT-based treatments for singular indefinites, see Farkas (2002) for an overview.

(9) Let A be an assertive sentence with a tripartite logical form [UQ(x)] [$R(x)$] [$S(x)$]. A is anomalous under an interpretation of the form $\exists x$(*speaker believes* ($R(x)$ & $S(x)$)).[3]

However, this definition of (non-)identification does not allow us to say why (10) is anomalous although the speaker might not know who is Mary's only colleague. UQ is not an isolated case in this respect. Certain free choice (FC) items exhibit the same restriction (11).

(10) *Hier, Marie a rencontré un collègue quelconque, le seul qu'elle ait
'Yesterday, Mary met some colleague or other, the only one she has'

(11) a. *Marie a pu rencontrer n'importe quel collègue, le seul qu'elle ait

b. *Mary may have met any colleague, the only one she has

(12) Hier, Marie a rencontré un collègue, le seul qu'elle ait
'Yesterday, Mary met a colleague, the only one she has'

In other words, UQ and these items seem to obey constraint (13) that spells out one condition for choice to be possible. Let us call it the *choice constraint*.

(13) The set from which individuals that satisfy the restriction must be picked cannot be a singleton.

The choice constraint does not apply to standard indefinites, as shown by (12). The similarity between (10) and (11) prompts the question of the link between UQ and FC items, which we address next.

4 UQ as a free choice item

Morphologically, *un quelconque* associates the indefinite *un* and a free choice element *quelconque* (from Latin *qualiscumque*). The latter may also combine with plural indefinites such as *des* 'some$_{plural}$', *quelques* 'a few', *plusieurs* 'several', or numerals. This type of association between an indefinite or a pronoun and an expression that conveys indetermination, indifference, unselectiveness, etc. has been observed in a number of languages. The pretheoretical intuition that unifies the various descriptions of FC items in the literature presents the members of the

[3]We defer the formulation of a more adequate constraint until section 4.2.

restriction domain as equivalent. Since equivalence does not make sense for empty or singleton domains, the origin of constraint (13) is intuitively clear. We propose to distinguish different dimensions along which this equivalence manifests itself, so that we can build a unified characterization and at the same time make room for empirical differences across and within languages. In the next subsection, we show that some FC determiners, e.g. *n'importe quel*, require the referent to be undetermined, whereas some other, e.g. *un quelconque*, require the referent to be unidentified. Furthermore, the fact that *un quelconque* is a composite expression made of an indefinite plus an FC element will be shown to have consequences for its nature and behaviour.

4.1 Irreferential and epistemic free choice determiners

Is UQ an FC item? Let us start by considering two points that go against a straightforward positive answer. First, UQ can occur in episodic sentences, see examples (1a) and (2b), but this type of environment is considered to be incompatible with FC items in much of the literature cf. Jayez and Tovena (2005a) and references therein. Second, there are FC items for which an epistemic analysis is not appropriate, see Jayez and Tovena (2005a) for evidence and discussion. So the epistemic sensitivity of UQ does not automatically secure its membership in the class of FC items. Specifically, observe the contrast between (14) and (15), concerning all non–episodic sentences. FC items such as *any* or *n'importe quel* in French are not possible in there, whereas UQ is possible because these sentences do not force identification.

(14) a. (Dans ce roman,) Marie a rencontré un diplomate quelconque
'(In this novel) Mary met some diplomat or other'

b. J'espère que Marie a rencontré un diplomate quelconque
'I hope that Mary met some diplomat or other'

(15) a. *Dans ce roman, Marie a rencontré n'importe quel diplomate

b. *In this novel Mary met any diplomat

c. *J'espère que Marie a rencontré n'importe quel diplomate

d. *I hope that Mary met any diplomat

As shown at length in Jayez and Tovena (2005a), certain FC items (*any*, *n'importe quel*, *tout*) are *irreferential*. Roughly speaking, they are infelicitous when the set of members of the restriction that satisfies the scope is referentially determined. Reference is conceived in a broad way, since it is defined with respect to the world of evaluation at which the FC item is interpreted. This world can be the actual world, as in **Marie a rencontré n'importe quel diplomate*, an imaginary world, as in (15a,b), or an attitudinal alternative, as in (15c,d), where the logical form

corresponding to 'Mary met any diplomat' is evaluated at each world compatible with the speaker's hopes in the actual world. The reader is referred to Jayez and Tovena (2005a) for details.

UQ is *not* affected by referentiality, see (14). In this respect, one might argue that it is essentially an epistemic item based on non-identification, as suggested in Jayez and Tovena (2002).

As noted above, the members of the restriction of FC items are equivalent or freely interchangeable. In particular, no member of the restriction must be determined at speech time as satisfying or not satisfying the scope, since this would set it out. This requirement has two important external manifestations that give reason to explore thoroughly the possibility that UQ is an FC item. First, such a requirement prevents the restriction from being a singleton, in which case the notion of arbitrary choice or equivalence would not make sense. This corresponds to the 'choice constraint' (13) and we have established that UQ is subject to it. Second, imposing or excluding a member of the restriction in an explicit way produces infelicitous sentences. We observe that UQ patterns like irreferential FC items in this respect too, as shown by the episodic and non-episodic examples in (16), for which we assume a context where the speaker's brother is a diplomat.

(16)
a. *Marie a rencontré un diplomate quelconque, à savoir mon frère
'Mary met some diplomat or other, namely my brother'

b. *Marie a rencontré un diplomate quelconque, qui ne peut pas être mon frère
'Mary met some diplomat or other, who cannot be my brother'

c. Va voir un diplomate quelconque
'Go and see some diplomat or other'

d. *Va voir un diplomate quelconque, à savoir mon frère
'Go and see some diplomat or other, namely my brother'

e. *Va voir un diplomate quelconque, qui ne peut pas être mon frère
'Go and see some diplomat or other, who cannot be my brother'

f. *Va voir n'importe quel diplomate, à savoir mon frère

g. *Go and see any diplomat, namely my brother

h. *Va voir n'importe quel diplomate, qui ne peut pas être mon frère

i. *Go and see any diplomat, who cannot be my brother

One can construct similar examples with possibility/permission modalities or evidentials. In view of this strong parallelism, it is reasonable to treat UQ as an FC item. The fact that, in addition, it prohibits identification suggests that it is an *epistemic* FC item.

The difference between irreferential and epistemic items has important consequences. Irreferential items demand that any member of the restriction be equal to any other with respect to their actual possibility of satisfying or not satisfying the scope. This is conducive to universal readings. For instance, (17a) entails that every card may be picked by the addressee in the different alternatives (possible continuations of the current situation). Similarly, (17b) entails that John could consult every file. Epistemic items demand that any member of the restriction be equal to any other with respect to its possibility of satisfying or not satisfying the scope *for the epistemic agent*. This is conducive to non-identification, but, crucially, does not entail that every member of the restriction satisfies the scope in the actual world or in some alternative(s). It is enough that the speaker ignores which individual satisfies or does not satisfy the scope.

(17) a. Pick any card

b. John was entitled to consult any file

(18) a. Prend une carte quelconque
'Pick some card or other'

b. Jean avait le droit de consulter un dossier quelconque
'John was entitled to consult some file or other'

In certain cases, the difference is almost imperceptible. For instance, (17a) and (18a) both convey the idea that any card can be picked by the addressee. In (18a), however, this is an inference that can be obtained with a non-FC indefinite through standard Gricean reasoning; *Pick a card* implicates that the speaker leaves open the possibility that any card be picked, since, otherwise, she should have provided a more precise indication (*Pick this card*, *Pick the king of spades*, etc.). The FC morphology of UQ adds the information that the speaker is not aware of any particular card that the addressee is likely to choose. In other cases, the difference is perceptible or quite clear. (17b) and (18b) are not synonymous. The former asserts that John was allowed to consult every file whereas the latter asserts that was allowed to consult a file that the speaker does not identify.

4.2 UQ as an indefinite FC item

As seen above, UQ does not behave exactly like other FC items with respect to the choice constraint. This strengthens one's doubts about the complete parallelism between UQ and irreferential FC items.

Suppose that a sentence hosting an FC item is evaluated at world w, two cases obtain: Either the domain restriction is determined at w, in which case the item is not appropriate if the cardinality of the domain is 0 or 1. Or the domain restriction is determined at the different alternatives that form the relevant set

of alternatives for truth-conditional interpretation,[4] in which case UQ is not appropriate if the restriction is a singleton in every alternative, unlike irreferential FC items. For instance, suppose that after a long civil war, one of the political sides decides to comply with the result of a democratic election, whatever it is. The party can felicitously declare its intentions by means of (19a), whilst (19b) would be difficult to interpret. Analogously, assuming that one wants to describe the trajectory of a deuteron after its collision with another one, (19c) is an option, whereas (19d) is again possibly odd. In both cases, the problem is that the domain of the restriction, i.e. the set of outcomes or trajectories, is a singleton in each alternative. A garden-variety indefinite like *un* shows the same restriction.[5]

(19) a. Si l'élection est démocratique, nous accepterons n'importe quel résultat
'If it is a democratic election, we will accept any outcome'

b. #Si l'élection est démocratique, nous accepterons un résultat (un résultat quelconque)
'If it is a democratic election, we will accept an outcome (some outcome or other)'

c. Après la collision avec le deutéron b, nous pourrons suivre n'importe quelle trajectoire suivie par le deutéron a
'After the collision with deuteron b, we will be able to trace any trajectory followed by deuteron a'

d. #Après la collision avec le deutéron b, nous pourrons suivre une trajectoire (une trajectoire quelconque) suivie par le deutéron a
'After the collision with deuteron b, we will be able to follow a trajectory (some trajectory or other) followed by deuteron a'

When the previous observation is put together with the contrasts in (2), and (3) vs. (4), we see that there are actually three different classes.

a. Irreferential FC items are not compatible with the information that the restriction is a singleton in the evaluation set, see (11). This is as expected since FC items require that a choice be possible.
b.UQ is not compatible with the information that the restriction is a singleton in the evaluation set, see (10). This is as expected if it is an FC item.
c. Indefinites in general may be problematic in a context where it is common knowledge that the restriction is a singleton set.[6]

[4]Concretely, these alternatives are the leaves of the modal tree growing from the current world.

[5]However, UQ strictly requires non-identification, whereas this is only the default option for standard indefinites, see (4).

[6]As noted by a reviewer, mentioning unpublished work by Farkas, indefinites may be com-

From (b) and (c), we see that there are two scenarios that may affect UQ, if it is an indefinite *and* an FC item. First the information that the restriction is a singleton can be added to the current belief set. Standard indefinites implicate that the restriction is not a singleton, but this is only a default preference[7] which can be overridden by a belief update, so standard indefinites are compatible with such an update (12). FC items are simply not compatible with a 1-element restriction set, and accordingly UQ is out in such cases, as observed for (10). Second, the information that the restriction is a singleton can already be present in the initial belief state. In that case, standard indefinites may be infelicitous, even when the restriction is evaluated at different worlds as in (19b,d).

Summing up, exploring the hypothesis that UQ is an epistemic FC determiner, we have built a case for the contribution of the indefinite component of this composite determiner. UQ inherits constraints from the classes of standard indefinites and of FC items. Specifically, (i) like standard indefinites UQ is not compatible with certain contexts in which the restriction domain is a singleton, (ii) like FC items and unlike standard indefinites it obeys the choice constraint and keeps the members of the restriction on a par through non-identification. Two more pieces of evidence for the indefinite character of UQ are that, first, unlike irreferential FC items and like indefinites it does not have a universal interpretation in comparative clauses (20). Second, unlike irreferential FC items and like indefinites it combines with negation and gives rise to the two traditional wide scope vs. narrow scope readings, as noted for (5a) above.

(20) a. Marie s'est mieux débrouillée que n'importe quelle autre fille dans sa classe
'Mary got by better than any other girl in her class'
$\Rightarrow$ 'Mary got by better than every other girl in her class'

b. Marie s'est mieux débrouillée qu'une fille (quelconque) dans sa classe
'Mary got by better than some girl or other in her class'
$\not\Rightarrow$ 'Mary got by better than every other girl in her class'

On the other hand, the observation that UQ does not enter the restriction of generic sentences goes against its characterisation as a standard indefinite, see (6), because standard indefinites generally do. However, we know that UQ signals ignorance about the referent and we observe in (21) that the generic interpretation conflicts with a mention of ignorance. This is to be expected since genericity involves reference to a class or type, for which ignorance about the referent does

patible with singleton domains. For instance, *I am going to show you a film which won the Palme d'or at Cannes in 1976* can be used in a situation where it is clear that exactly one film won the Palme d'or that year. However, it is sufficient for our purpose to observe that UQ *and* standard indefinites are anomalous in configurations such as (19).

[7] A generalized conversational implicature, in Gricean terms.

not make sense. So the anomaly of UQ in generic sentences is in fact perfectly normal.

(21) a. Un animal, je ne sais pas lequel, doit être soigneusement nourri
b. An animal, I don't know which one, must be fed with care
c. Animals, I don't know which ones, must be fed with care
[generic reading impossible]

From the foregoing discussion, we conclude that UQ is an epistemic FC indefinite. As an epistemic FC item it obeys the subset of constraints for non-referential situations given in Jayez and Tovena (2005a, def. 41, p. 36). As an indefinite it obeys prohibitions against 1-element restriction domains. These prohibitions should not be confused with the implicature of non-uniqueness for indefinites discussed in the literature e.g. Hawkins (, 1991), which concerns the intersection of the restriction and the scope, whereas we are considering only the restriction.

Before giving the details of the constraint on UQ, let us explain semi-formally what kind of free-choiceness it is intended to capture. A sentence like (22) forbids any interpretation under which a particular book must be read or cannot be read.

(22) Il est obligatoire que Jean lise un livre quelconque
'John has to read some book or other'

A DRT representation for (22) would be
K = $[x : \mathit{John}(x)\ \Box[y : \mathit{book}(y)\ \mathit{read}(x,y)]\ ]$.
If K is interpreted at $\langle w_0, f\rangle$, it is true in a model if and only if, for some $\langle w_0, f'\rangle$ such that $f'(x)$ is *John*, it is the case that for every $\langle w, f'\rangle$ accessible from $\langle w_0, f'\rangle$ there exists some f'' extending f' on y such that '$f''(y)$ is a book' and '$f'(x)$ reads $f''(y)$' are true at $\langle w, f''\rangle$. Because y is introduced by UQ, the sentence is felicitous only if there is no individual a for which the speaker believes that it is a book that Jean must read or must not read. Formally, if W is the set of worlds deontically accessible from w_0, there must not be any individual a such that the speaker believes that:

a. for every $w \in W$, there exists a function h extending f' on y such that (i) $h(y) = a$ and (ii) '$h(y)$ is a book' and '$f'(x)$ reads $h(y)$' are true at $\langle w, h\rangle$, or,
b. for every $w \in W$, there exists a y-extension function h of f' such that (i) $h(y) = a$ (ii) '$h(y)$ is a book' is true at $\langle w, h\rangle$ and (iii) '$f'(x)$ reads $h(x)$' is false at $\langle w, h\rangle$.

The mention of speaker's beliefs is not a detail. This may not be apparent from sentences like (22). Consider (23) instead. For (23) to be appropriate, it must not be the case that the speaker believes that there is a particular book that Mary thinks John must read. This prohibition affects the epistemic alternatives that the speaker attributes to Mary, not the alternatives Mary actually entertains.

(23) Marie pense qu'il est obligatoire que Jean lise un livre quelconque
'Mary thinks that John has to read some book or other'

Therefore, the constraint on UQ must take into account DRS epistemically relativized to the speaker. The easiest way to go is to require that the initial DRS K, corresponding to the sentence where UQ occurs, be transformed into a DRS that expresses the speaker's beliefs, as in (24). One must exercise a little care, however, in order to keep the presuppositions at the highest level. For instance, if we assume, as is usually done in DRT, that proper names are declared in the main DRS, the correct epistemic relativization of (23) is:[8]

$[x\ y : \mathit{Mary}(x)\ \mathit{John}(y)\ \Box_{bel,sp}[: \Box_{bel,x}[: \Box_{must,y}[z : \mathit{book}(z)\ \mathit{read}(y,z)]]]].$

(24) Let K be the DRS $[x_1 \ldots x_n : \phi_1 \ldots \phi_k]$, where the x_i are discourse referents and the ϕ_j conditions. Suppose we have arranged the discourse referents and the conditions so that the first m referents and the first p conditions must remain in the main DRS. The epistemic relativization of K to the speaker is the DRS K$'$, defined by:
K$' = [x_1 \ldots x_m : \phi_1 \ldots \phi_p\ \Box_{bel,sp}[: \phi_{p+1} \ldots \phi_k]]$.

It is beyond the scope of this paper to offer a full treatment of the presuppositions embedded under the different modalities. The reader is referred to Geurts (1999) for a detailed proposal. In addition to epistemic relativization, we have to modify the modal operators in some cases. Saying that there is no identification is not sufficient, since there are cases where the speaker identifies the individuals that possess the modal properties described by the sentence. For instance, in (25) the speaker may know which files are allowed. What is required is that she do not know at speech time which file(s) will be consulted or not consulted.

(25) a. Tu peux consulter un fichier quelconque
'You may consult any file'

b. You may consult any file

As explained in Jayez and Tovena (2005a), the restrictions on FC items must accordingly take into account *all* the accessible worlds. In practice, this is equivalent to treating every modal operator as a $\Box$-operator on the same set of accessible worlds. E.g., in (25), if $\Diamond_{perm}$ is the permission operator and $\Box_{bel}$ the belief operator[9], there are two offending configurations (*add* is the addressee):

[8]Henceforth, the notation $\Box_{M,a}$ or $\Diamond_{M,a}$ denotes the necessity (possibility) modal operator with respect to the modality M and the agent a. E.g., $\Box_{bel,sp}$ denotes the modal operator associated with the speaker's beliefs.

[9]The nature of the epistemic source is not important. The reader may prefer Kratzer–style approaches in terms of modal base–ordering source combinations (Kratzer, 1981) or probabilistic approaches (Kaufmann, 2002).

a. $\exists x(\Box_{bel,sp}(\Box_{perm,add}(\mathit{file}(x)\ \&\ \mathit{consult}(x))))$
b. $\exists x(\Box_{bel,sp}(\Box_{perm,add}(\mathit{file}(x)\ \&\ \neg\mathit{consult}(x))))$

(a) expresses the fact that there is a particular individual that the speaker believes to be a consulted file in *all* the worlds that represent what is compatible with the permissions the addressee has. Generalizing, for every epistemic relativization, we must transform the $\Diamond$ operators into their $\Box$ counterpart. Let $\mathrm{K}^{\Box}$ be the result of this transformation on a DRS K. Finally, we have to make our constraint sensitive to local DRS (and not only to the main DRS). This may raise a problem when quantification and modality are associated. Consider (26).

(26) Tous les étudiants ont été obligés de lire un livre quelconque
'Every student had to read some book or other'

Under the preferred interpretation, the speaker cannot identify any book that a student had to read. The DRS for (26) is:
$[\ :\ [x\ :\ \mathit{student}(x)] \Rightarrow \Box_{obl}[\ y\ :\ \mathit{book}(y)\ \mathit{read}(x,y)]]$.
For every value of x, say a, we require that there be no book such that the speaker believes that a had to read this book. The DRS corresponding to the UQ phrase is the deepest one. To impose the correct requirement on this DRS we have to know that it is embedded under the $\Box_{obl}$ modal operator. How can we capture this modal sensitivity for each particular DRS? We have to keep a trace of the modal path we follow when evaluating a DRS. We slightly modify standard DRT syntax and add a modal list of operators to each DRS.

(27) Each DRS is initially superscripted with an empty list and has the general form $[^{\langle\rangle}$ Discourse Referents : Conditions$]$. Let K^{L} be the result of superscripting the DRS K with L and the dot '.' be the list concatenation operator. There are four types of conditions:
– predicative conditions of the form $P(x_1 \ldots x_n)$,
– negative complex conditions of the form $\neg$K, where K is a DRS,
– modal conditions of the form $\Box_M(\mathrm{K}^{\Box_M.L})$ or $\Diamond_M(\mathrm{K}^{\Diamond_M.L})$, where K^{L} is a DRS,
– complex conditions of the form $\mathrm{K1}^{L}\ OP\ \mathrm{K2}^{L}$, where L is the superscript of the smallest DRS containing the condition.

So, for instance, $[^{L}\ \ldots\colon\ \mathrm{K}'^{L} \Rightarrow \mathrm{K}''^{L}]$, $[^{L}\ \ldots\colon\ \mathit{Most}(\mathrm{K}'^{L},\mathrm{K}''^{L})]$, etc, are well-formed DRSs. Note that if L is the modal superscript of a DRS K, K acquires a superscript of the form $\Box_{bel,sp}.L$ in the epistemic relativization of the main DRS containing K.

Now we can go back to the constraints that regulate the behaviour observed for UQ. They are provided in (28). The first ensures that UQ behaves like an indefinite. The second prevents any identification of an individual.

(28) UQ is subject to the following two constraints.
1. UQ inherits the constraints of the singular indefinite *un*.
2. Let $\mathrm{K} = [^{L}\ x :\ R(x)\ S(x)]$ be a DRS, where R and S are the restriction and scope properties and x is the variable introduced by UQ. Let K_0 be the main DRS containing K, K'_0 be the epistemic relativization of K_0 and K' the DRS corresponding to K in $\mathrm{K}'^{\Box}_0$. Let $f\backslash x$ be the restriction of f to variables different from x. If K' is evaluated at $\langle f, w\rangle$ and has the superscript $\Box_{bel,sp}.L'$, UQ is appropriate under an interpretation I only if I does not entail:
a. $\exists x(\Box_{bel,sp}.L'(f\backslash x(R)\ \&\ f\backslash x(S)))$ or,
b. $\exists x(\Box_{bel,sp}.L'(f\backslash x(R)\ \&\ \neg f\backslash x(S)))$

Let us review briefly how (28) predicts the observations made up to this point. Condition (28.1) bans cases like (19b,d), which cannot host *un* because the restriction is a singleton. Non-modal assertions violate (28.2a) whenever the referent is identified. For instance, the epistemic relativization of the DRS for (1b), 'Mary met some diplomat or other, namely my brother', is:

$$[^{\langle\rangle}\ x\ y :\ \mathit{Mary}(x)\ \mathit{brother}(y)\ \Box_{bel,sp}[^{\Box_{bel,sp}}\ z :\ \mathit{diplomat}(z)\ \mathit{met}(x,z)\ z = y]].$$

In every model where this DRS is true, there is a particular individual that the speaker believes to be a diplomat and to have met Mary. (2a) and (5d) are anomalous for the same reason. For (3a) 'Mary probably rented some car or other, the one I see over there', we have the following DRS, assuming an appropriate resolution of the demonstrative pronoun:

$$[^{\langle\rangle}\ x\ y :\ \mathit{Mary}(x)\ \mathit{over\text{-}there}(y)$$
$$\Box_{bel,sp}[^{\Box_{bel,sp}} :\ \Box_{prob,sp}[^{\Box_{bel,sp}.\Box_{prob,sp}}\ z :\ \mathit{car}(z)\ \mathit{rent}(x,z)\ z = y]]]$$

Clearly, every model that satisfies the DRS satisfies:

$$\exists z(\Box_{bel,sp}(\Box_{prob,sp}(\mathit{car}(z)\ \&\ \mathit{rent}(f(x), z)))),$$

which violates (28.2a). A similar reasoning applies to (3b,c) and to the imperative case (16d). (28.2b) bans sentences that exclude some individual(s), as seen in (16b,e). For dependent variables, the general idea is that no particular individual must be identified for any value of the quantified variable. E.g., for (26), the constraint is $\neg\exists x(\Box_{bel,sp}(\Box_{obl}(\mathit{book}(x)\ \&\ (\neg)\mathit{read}(a, x))))$, where a is any student.

As noted by our reviewers, representations that embed the restriction under the modal sequence might sound artificial. For instance, (7), 'Mary hopes to have interested some student or other', is predicted to be anomalous under interpretation (29), where m denotes Mary.

(29) $\exists x(\Box_{bel,sp}(\Box_{hope,m}(\mathit{student}(x)\ \&\ \mathit{interested}(m, x))))$

(29) suggests that Mary hopes that somebody is a student and that she interested her. A more natural interpretation is that, for somebody that Mary *believes* to be a student, she hopes to have interested her. (28) could be modified to incorporate different scope geometries, but notice that the interpretation depends on the modal operator (L'), the lexical content of R and S, and the tense, i.e. on factors that deserve a separate study. Moreover, the felicity of UQ depends only on the fact that no individual satisfies the restriction and the scope in all the worlds that can be accessed from the current world by following the $\Box$-version of the sentence modal path. The issue whether the speaker or other agents believe that a given individual satisfies the restriction is tangential and should be settled in connection with a general theory of DRSs. Since (28) is meant to express a general prohibition, which does not commit us to any particular view on these more specific problems, we will leave it as it is.

This closes our semantics analysis of UQ. For space reasons, the issue of the different perspectives that can be adopted cannot be tackled. The interested reader is referred to Jayez and Tovena (2002). We complete the discussion with a section on a more pragmatic facet of the meaning of UQ, namely its derogatory values.

5 Implicature

It is well-known that epistemic or FC determiners and pronouns can convey indifference or various derogatory values (see the remarks in Farkas (2002) for *some*, Giannakidou (2001) for *opjosdhipote*, Horn (2000) for *just any*, Jayez and Tovena (2005a) for *n'importe lequel*, Kratzer and Shimoyama (2002) for *irgendein*, von Fintel (2000) for *whatever*). Clearly, these values are connected with the fundamental semantic intuition that pervades FC items: all the members of the restriction are equivalent. A recurring question is whether such values are semantically stable or rather defeasible implicatures.

Kratzer and Shimoyama argue for instance that the equirepartition of possible values, characteristic of FC items and observed with the German determiner *irgendein*—which shares a number of properties with UQ—is in fact a conversational implicature. They follow Kadmon and Landman (1993) in assuming that *irgendein* induces widening of the domain of the restriction. E.g. *irgendein Mann* cannot denote a proper subset of $[\![man]\!]$ and must denote the set of all men. The speaker may choose to widen the restriction domain for three reasons: strengthening her claim, avoiding a false claim, or a false exhaustivity inference.

This proposal does not work for UQ. If the FC constraint in (28) were a conversational implicature, it should evaporate under appropriate updates, (see Geurts (1999); Horn (2001); Levinson (2000) for detailed discussions of the phenomenon). One might object that, as noted by Geurts (1999, 62-64), conversational implicatures cannot be cancelled 'unceremoniously'. E.g. (30a) is awkward, in contrast

to (30b). In both cases, the first sentence conversationally implicates that the speaker has no evidence that John is a diplomat. Suspending this implicature requires a retraction indicator of some kind, such as *in fact*. But this is not the case in (30c). Moreover, we surmise that the French counterpart (30d) of the German example that Kratzer and Shimoyama use to prove that the distribution requirement of *irgendein* is a conversational implicature, can be explained without resorting to cancellation. There are two modal operators in (30d), corresponding to two different modal bases. According to the first (deontic) modal base, it is obligatory for Mary to marry a diplomat, whose identity remains undetermined. According to the second (epistemic or deontic) modal base, the diplomat is identified. For the discourse to be coherent it is necessary that the two modal bases be distinct. For instance, if both are deontic they might be moral and physical respectively. Whenever they are identical the discourse may sound almost contradictory (30e).

(30) a. ??It is possible that John is a diplomat. He most certainly is a diplomat

b. It is possible that John is a diplomat. In fact, he most certainly is a diplomat

c. *Marie a rencontré un diplomate quelconque, en fait c'est mon frère
'Mary met some diplomat or other, in fact he's my brother'

d. #Marie doit épouser un diplomate quelconque. Et ça ne peut être que mon frère
'Mary must marry some diplomat or other. And he can only be my brother'

e. ??Vu sa position sociale, Marie a l'obligation d'épouser un diplomate quelconque: et elle a l'obligation d'épouser mon frère
'In view of her social status, Mary has to marry some diplomat or other: And she has to marry my brother'

More generally, it seems that the main motivation behind pragmatic approaches is the connection between FC items and FC imperatives. This connection is made explicit by Aloni and van Rooij (2004), who try to derive the distribution of FC items from Gricean principles. Their approach raises two problems, which illustrate the tension between lexical instructions and pragmatic derivations. First, to construct the derivation, they have to make certain stipulations that go far beyond simple Gricean principles. Second, and more importantly, they do not explain why such 'Gricean' implicatures are indefeasible. Kamp (1978) and Zimmermann (2000) note that sentences like (31b) suggest that the usual interpretation of FC disjunctions is an implicature.

(31) a. You may reach the island by boat or by plane
[implicates : You may reach the island by boat AND you may reach the island by plane]

b. You may reach the island by boat or by plane, but I don't remember which
[does *not* implicates : You may reach the island by boat AND you may reach the island by plane]

However, this is not true for UQ, nor for irreferential FC items (32). We conclude accordingly that the ignorance value, or, more generally, the FC value, is not an implicature. This does not mean that we rule out connections between pragmatically-driven cases and the semantics of FC items, an issue we cannot address in this paper, but see Jayez and Tovena (2005b) for more discussion.

(32) a. *Tu peux prendre une route quelconque, mais j'ai oublié laquelle
'You may take some route or other, but I forgot which'

b. *Tu peux prendre n'importe quelle route, mais j'ai oublié laquelle

c. *You may take any route, but I forgot which

UQ expresses also indifference of the speaker, like *some*, *irgendein*, *quelque* (Van de Velde, 2000), or *whatever*. The indifference value is responsible for the oddness of sentences where (28) is not overtly violated. (33) is strange because it implicates that the speaker does not care about the desk lamp she would like for her birthday.

(33) a. ??Pour mon anniversaire, je voudrais une lampe de bureau quelconque
'For my birthday, I would like some desk lamp or other'

The indifference value is not automatically triggered by UQ. Indeed, it is cancelled in the sentences in (34), for instance, where the identity of the referent *is* relevant. Accordingly, we consider the indifference value to be a conversational implicature.

(34) a. Marie a dû être mise au courant du projet par un employé quelconque, et il faudrait savoir qui
'Mary must have learnt about the project from some employee or other and we need to know who he is'

b. La victime a forcément entendu un bruit quelconque, mais je me demande bien quoi
'Surely, the victim heard some noise or other, but I really wonder what'

Finally, let us add a word on the question of the status of the 'widening' value in negative polarity environments. We noted above that sentences of type

(5a,b) have an emphatic paraphrase. This remains true when the domain of the restriction is limited (35a). We observe the same situation with typical French FC 'tags' such as *quel qu'il/qu'elle soit* 'whatever (he/it)/she is' or *que ce soit* 'whatever', which can be right-adjoined to certain types of NP in negative polarity environments[10] (35b,c).

(35) a. Marie n'a pas lu un quelconque de ces trois livres
'Mary did not read any of these three books whatsoever'

b. Marie n'a pas lu un livre quel qu'il soit (parmi ces trois livres)
'Mary did not read any book whatsoever (among these three books)'

c. Marie n'a lu aucun livre que ce soit (parmi ces trois livres)
'Mary did not read any book whatsoever (among these three books)'

This suggests that widening is a side-effect of free-choiceness. We saw that FC items indicate that the members of the restriction are all on a par with respect to the nuclear scope. This may constitute the basis of the following inference: if the speaker insists upon the interchangeability of the elements of a set X with respect to a property P, it may be because she accepts to include in the set of satisfiers of $X \cap P$ even elements of X that are only marginal candidates for satisfying P.[11] Being abductive, inferences of this sort cannot be guaranteed and one may suspect that they become generalized conversational or conventional implicatures *via* some process of (partial) grammaticalization. The various values that have been noted for FC items, such as indifference, ignorance or concession all express possible motivations of a speaker for calling attention to the interchangeability of certain elements through the use of a FC item. In the case of UQ, we assume that widening is conventionalised in negative polarity environments.

6 *Un certain*

Let us now consider an epistemic determiner for which some form of knowledge rather than ignorance seems required. *Un certain* (UC) has been claimed to be the mirror image of *quelque*, and of UQ by extension, because it demands that the referent be 'determined' (*bien déterminé*: Van de Velde (2000, 57)).

There is a widespread intuition that UC, because it involves the adjective *certain* from the latin *certus* ('fixed', 'discriminated', 'determined'), conveys at least specificity (Van de Velde, 2000). A similar intuition is found in the literature on *a certain* (AC) (Hintikka, 1986; Kratzer, 1998), but it is sometimes strengthened to incorporate identification (Farkas, 2002; Jayez and Tovena, 2002).

[10] Their distribution is limited, but we ignore the details here.

[11] This kind of abductive reasoning from meaning to its possible motivations is current in pragmatics, and it is difficult to trace down its exact origin. It has received renewed attention in the context of *relevance theory* (Sperber and Wilson, 1986) and Blutner's *bidirectional optimality theory* (van Rooy, 2003).

6.1 Basic data

We will restrict ourselves to the following three points. First, UC and AC neither entail nor exclude identification of the referent by the speaker (36).

(36) a. J'ai rencontré un certain diplomate, que je connaissais très bien
'I met a certain diplomat, whom I knew very well'

b. I met a certain diplomat, whom I knew very well

c. On m'a parlé d'un certain diplomate, mais je ne vois pas qui c'est
'I have heard of a certain diplomat, but I don't see who he is'

d. I have heard of a certain diplomat, but I don't see who he is

Second, they do not necessarily have a specific reading. E.g. (37a,b) have only specific readings, but (37c,d) may have non-specific readings and are natural under any interpretation that provides a sort of 'type' for the piece of information that each spy detains. For instance, the examples might mean that every spy who detains whatever information about a new type of ground-to-air missile must be eliminated.

(37) a. Jean veut épouser une certaine fille
'Jean wants to marry a certain girl'

b. John wants to marry a certain girl

c. Tous les espions qui sont en possession d'un certain renseignement doivent être éliminés
'Every spy who has a certain piece of information must be eliminated'

d. Every spy who has a certain piece of information must be eliminated

Should we conclude that UC and AC have no special property and are run-of-the-mill indefinites? Intuition resists this conclusion, which otherwise would leave open a major question: why is it that, in (37a,b) and many similar examples, specificity is very strongly preferred, if UC and AC are just plain indefinites?

The third point is related to identification. Although UC and AC do not require identification by the speaker, they are not felicitous in contexts where there is only identification by the speaker (38). In (38a,b), the virus is (i) a particular organism (specificity), (ii) possibly identified by the speaker (minimally as 'the virus she just found') and not identified by anybody else (since the virus is not documented). The other example is in part similar, but the accident might be identified by other witnesses on the scene.

(38) a. *Apparemment, j'ai un certain virus non-répertorié sous mon microscope

b. *It seems I got a certain non-documented virus under my microscope

c. *Il vient juste d'y avoir un certain accident au carrefour

d. *A certain accident just happened at the crossroad

Apparently, some of these data have gone unnoticed, but they are particularly relevant because they constitute stumbling blocks for available analyses of UC/AC. In the remainder, we expose these problems and then put forward a proposal that grows out of this more thorough assessment of the situation.

6.2 Two lines of analysis and their problems

Recent analyses of UC and AC can be divided into two groups, accepting some simplification: those that insist on specificity (Hintikka, 1986; Kratzer, 1998) and those that insist on identification (Farkas, 2002; Jayez and Tovena, 2002).

6.2.1 Specificity-based analyses

Elaborating on Hintikka (1986), Kratzer (1998) proposes that (i) AC has only a specific interpretation and (ii) the choice function for AC has an additional argument which allows for the relativization of choice functions to individuals. For instance, example (39) receives the representation in (39'). The value of f must be a function that picks out a date, given an individual, i.e. a value for x, and the set of dates DATE. So, it is a relativized choice function.[12]

(39) Each husband had forgotten a certain date –his wife's birthday (Hintikka's example (3))

(39') $\forall x(x \text{ is a husband} \Rightarrow x \text{ had forgotten } f(x, \text{DATE}))$

The issue is how to determine the connection between the individual and f. According to Kratzer, the value of f is contextually determined. For (39), f must pick x's wife birthday from DATE. Similarly, in a question like *Is Richard dating a certain woman?* (Kratzer's example (11)), a likely anchor (the value of x) is the speaker and the choice function 'picks out a woman that the speaker has in mind' (Kratzer, 1998, 169). Kratzer's proposal exploits the intuition that AC is inherently specific and, accordingly, has to be relativized to some epistemic agent.

Farkas (2002) and Jayez and Tovena (2002) criticise Kratzer's proposal on several counts. Farkas claims that Kratzer's analysis cannot explain the properties of AC in modal environments, for instance the fact that the 'narrow scope'

[12]The fact that a choice function is relativized simply entails that it has a general form $f(x, X)$, where x is the relativizer—an individual in the present case—and X the argument set.

(as she calls it) paraphrase of (40) is incompatible with AC. For clarity, we have listed the intuitive paraphrases provided by Farkas. We return to this example at the end of section 7.

(40) John wants to catch a certain unicorn
wide scope paraphrase: 'there is a unicorn that John wants to catch'
intermediate scope paraphrase: 'John wants to catch a unicorn (that he identifies and believes exists)'
*narrow scope paraphrase: 'John wants to catch a unicorn (that he does not identify)'

Jayez and Tovena (2002) note that Kratzer's analysis is not sufficient because it does not address the problem of identification, which is apparent in (38). Nothing prevents us from binding the variable introduced by UC/AC in such cases, too, in the way suggested by Kratzer. For instance, (38a,b) would be associated with the logical form in (41). One might then suppose that f picks out a new virus that the speaker has in mind, certainly the virus she just discovered. Yet the sentence remains strange. So, finding a plausible choice function is not enough to construct a plausible interpretation for the sentence.

(41) *righ-now-under-mic*(f(x, NON-DOCUMENTED VIRUS))

One might point out that a really important intuition can be derived from the Hintikka-Kratzer approach, namely that AC is 'specific'. What must be specific (i.e. have wide scope in the logical form) is the choice function, as illustrated in (39'). However, other data show that the case of (39) cannot be generalized. For instance, (42) is compatible with an interpretation under which different instructors assign different *types* of task to the person they have in charge. The different tasks assigned were determined in advance by the instructors and, then, identified at the moment they were chosen. Under this interpretation, there is no unique choice function that would calculate the task assigned to the person.

(42) a. Chacun avait reçu de son instructeur une certaine tâche à exécuter
'Each person had received from her instructor a certain task to carry out'

b. Each person had received from her instructor a certain task to carry out

6.2.2 Identification-based analyses

Farkas's (2002) and Jayez and Tovena's (2002) approaches depend on the notion of identifiability and identification respectively. Farkas proposes that AC introduces a non-identified but 'identifiable' referent, by which she means that the context to which the AC phrase contributes can in principle be updated until all

the available assignment functions give the same value for the variable introduced by AC.

Farkas's approach raises two problems. (i) The condition that the referent be non-identified is too strong. This condition can be interpreted in two different ways. Either the current context is the common ground[13] and (43a,b) should then be anomalous, or the current context is the speaker's belief state and (36a,b) should be anomalous.

(43) a. J'ai des problèmes avec un certain article que tu vois sur mon bureau
'I have problems with a certain paper that you can see on my desk'

b. I have problems with a certain paper that you can see on my desk

(ii) Moreover, Farkas assumes that the referent must be identifiable by means of some property in some possible evolution of the common ground projected by the speaker. This requirement is difficult to assess. On the one hand, if the speaker is mentioning a topic about which she is likely to remain incompetent, how could she acquire the knowledge necessary for identification (44a,b)? Yet her understanding is necessary for the common ground to converge towards an identification of the theorem. On the other hand, the variant in (44c,d) shows that, even when the speaker is bound to identify the referent, owing to the computer, and to disclose its identity, UC and AC are not felicitous if no other agent can identify it. Intuitively (44c,d) are odd because (i) the speaker has no idea of the solution at speech time and (ii) no other agent can identify it at speech time, as it is presented as new.[14]

(44) [contexts: for (44a) and (44b), the speaker is not going to master or even to understand string theory; for (44c) and (44d), a computer is calculating the solution of a complex (but solvable) problem]

a. Il y a un certain résultat en théorie des cordes qui montre qu'il existe une infinité d'univers
'There is a certain result of string theory which shows that there is an infinite number of universes'

b. There is a certain result of string theory which shows that there is an infinite number of universes

c. *Demain, l'ordinateur me fournira une certaine nouvelle solution que je vous communiquerai

d. *Tomorrow, the computer will provide me with a certain new solution, that I will pass on to you

[13]This is probably the correct interpretation in the context of Farkas's approach.

[14]In such examples, the identifying property may be conceived as 'the property of being the solution that the speaker will find on the next day'.

7 Analysis

The various proposals we have been reviewing contain ingredients that may help us to find out how to make more robust the solution we proposed in Jayez and Tovena (2002). Let us recall the intuitive motivation for this solution, by discussing the elementary example (1c), repeated below.

(1) c. Marie a rencontré un certain diplomate
'Mary met a certain diplomat'

There is a strong intuition that the diplomat is not just 'the diplomat that Mary met', even if this description is uniquely identifying. The diplomat in question is presented as known under another guise. This is a quite general feature: the referents UC and AC introduce are given as identified in a way that is distinct from the way in which they are described in the sentence.[15] For instance, uttering *A certain glass fell and broke* is strange unless one supposes that the glass in question is remarkable in some respect, because of its nature (it is very rare), or of an event where it played a special role, etc. This is tantamount to saying that the glass cannot been singled out by the property of being 'the glass that fell and broke'. Accordingly, the condition we associate with UC and AC is that these determiners communicate that the speaker believes that there exists an agent who identifies the referent under a description other than that provided by the sentence. The identity of the agent and the nature of identification are underspecified. First, this agent may or may not be the speaker. Second, the agent cannot be said to be necessarily known to the speaker, see (45) where the speaker may have no idea about who knows Paul.

(45) a. Hier, un certain Paul est venu me voir
b. Yesterday, a certain Paul came to see me

Third, the identification may be anterior or posterior to the time of the eventuality referred to by the sentence. E.g., the speaker of (1c) or another agent may have known the diplomat before or after Mary met her.[16] Fourth, the notion of identification has to be weakened. Farkas's and Jayez and Tovena's approaches use the standard, strong, notion of identification: an agent identifies a referent by means of a certain description Δ in an epistemic state s (a set of epistemic alternatives) if and only if there is a unique entity of the interpretation domain, say d, such that $\Delta(d)$ is true at every world of s. We saw at the end of section 6.2.1 that this is too stringent a requirement in certain cases. Generalizing, we observe that, in other cases, this condition is not necessary either. E.g., imagine that the speaker

[15] The sensitivity of identification to descriptions is by now a well-established idea, see, e.g., Aloni (2001); Dekker (1998); Gerbrandy (1998).

[16] In Jayez and Tovena (2002), we claimed that the speaker must identify the referent, a condition that is symmetrical to Farkas's and that is equally too strong, see (36c,d).

(a) of (1c) knows that the diplomat met by Mary is the very same diplomat he has been told about by another agent (b) and that b knows this diplomat only as 'the unique person who has been able to stop the recent civil war in Zizania'. If b has never seen or spoken to the diplomat in question and if we assume that speaker a has b's 'identification' in mind, why should one need strong identification? It is enough to postulate that b believes that there is a unique entity that obeys a certain description, or, in symbols, $\Box_{bel,b}[\exists!x(\mathit{diplomat}(x)\ \&\ \mathit{stopped\text{-}war}(x)]$. In the following, when we speak of 'identification' we have in mind this type of 'weak' identification.

To motivate the formal definition, let us consider briefly the three basic configurations in (46): an independent variable (a), a dependent variable (b) and a modally dependent variable (c).

(46) a. Marie a rencontré un certain diplomate
'Mary met a certain diplomat'

b. Chacun a rencontré un certain diplomate
'Each met a certain diplomat'

c. Marie croit qu'un certain diplomate l'espionne
'Mary thinks a certain diplomat is spying on her'

(46a) corresponds to the DRS [x: $\mathit{diplomat}(x)$ $\mathit{Mary\text{-}met}(x)$]. UC and AC are appropriate just in case the speaker believes that there is an agent who (weakly) identifies a diplomat that Mary met through an independent description. (46b) corresponds to K = [K1 = [x : $\mathit{person}(x)$] ⇒ K2 = [y : $\mathit{diplomat}(y)$ $\mathit{met}(x,y)$]]. If it is evaluated at $\langle f, w\rangle$, K is true if and only if for each x-extension f' of f there is a y-extension f'' of f' such that $f''(y)$ is a diplomat and $f'(x) = f''(x)$ met $f''(y)$. UC and AC are appropriate just in case the speaker believes that everyone met an independently identifiable diplomat, that is, for each y-extension f'' that satisfies K2, there is a function g'', differing from f'' at most on y, that satisfies K2 and assigns to y an independently identified individual. Why not consider directly the function f'' instead of the additional function g''? Because (46b) is compatible with an interpretation under which each person met several diplomats, who are not all independently identified. One cannot ensure in general that a function that provides a value for the diplomat will select precisely one of the independently identified diplomats. A similar analysis holds for (46c). This sentence corresponds to K = [x : $\mathit{Mary}(x)$ $\Box_{bel,x}$[y : $\mathit{diplomat}(y)$ $\mathit{spy\text{-}on}(y,x)$]]. K is true at $\langle f, w_0\rangle$ if and only if for every epistemic alternative of Mary $\langle f, w\rangle$, there is a y-extension f' of f such that $f'(y)$ is a diplomat who spies on Mary at w. UC and AC are appropriate just in case the speaker believes that a diplomat who spies on Mary is independently identified in each epistemic alternative.[17] Since $f'(y)$ is not necessarily an independently identified diplomat, we must again introduce an additional function g'.

[17]We will see below that this is actually an oversimplification.

One might object that (46c) entails the existence of a unique independently identified diplomat. However this is only a preferred interpretation, as shown by the variant in (47). (47) entails that Mary believes that the spy might be her colleague or her boss. It is even possible that the existence of an independent identification is ascribed to the speaker instead of Mary, as in (48). The speaker reports that she has a particular candidate-spy in mind whereas Mary has not.

(47) Marie croit qu'un certain diplomate l'espionne, mais elle ignore si c'est son collègue ou son chef à l'embassade
'Mary believes that a certain diplomat is spying on her, but she does not know whether it's her colleague or her boss at the embassy'

(48) Marie croit qu'un certain diplomate l'espionne. Elle n'a aucune idée de qui ça peut être, mais, tu vois à qui je pense, hein?
'Mary believes that a certain diplomat is spying on her. She has no idea who it might be, but you see who I have in mind, right?'

Summarizing, this brief intuitive review shows that the constraint on UC and AC is that, in the speaker's view, for every individual that satisfies the DRS where UC and AC occur, there is a (possibly identical) individual that (i) satisfies the DRS, too, and (ii) is independently identified.

Before constructing the final constraint, we need a definition of 'independence'. If P and P' are two (possibly complex) properties we define their independence in (49), which means that neither property entails the other one.

(49) P and P' are independent at w, in symbols $P \bowtie P'$, iff $[\![P]\!]_w \not\subseteq [\![P']\!]_w$ and $[\![P']\!]_w \not\subseteq [\![P]\!]_w$.

The formal constraint is spelled out in (50), where $f \approx_x f'$ means that f and f' differ at most on the value they assign to x.

(50) UC and AC are subject to the following constraint.
Let K $= [x : R(x)\ S(x)]$ be a DRS , where R and S are the restriction and scope properties and x is the variable introduced by UC or AC. Let K_0 be the main DRS containing K and K'_0 be the epistemic relativization of K_0. Let $f\backslash x$ be the restriction of f to variables different from x and sp be the speaker. UC and AC are appropriate under an interpretation I only if I is compatible with the following condition.
If K is evaluated at $\langle f, w\rangle$ with respect to K'_0,
$\langle_1 w \models (f(R)\ \&\ f(S))\rangle_1 \Rightarrow \langle_2 \exists f'(_3 f' \approx_x f\ \&\ w \models (f'(R)\ \&\ f'(S))$
$\&\ \ \Box_{bel,sp}(_4 \exists a \exists \Delta(\Delta \bowtie (f'\backslash x(R)\ \&\ f'\backslash x(S))$
$\&\ \Box_{bel,a}(\exists! x \Delta(x))$
$\&\ \ \exists y(\Diamond_{bel,a}(\Delta(y))\ \&\ y = f'(x))))_4)_3\rangle_2$.

The fact that K is evaluated in an epistemic relativization has the effect that the truth-conditions of the world w are ultimately dependent on the speaker, as for UQ. Paraphrasing (50) in more detail, we see that if the restriction and the scope are satisfied at $\langle f, w\rangle$:

a. there is an assignment function f' that returns a value for x satisfying the restriction and the scope.
b. The speaker believes that there is an agent a and a description Δ such that:
b1. Δ and R & S are independent.
b2. a believes that a unique entity satisfies Δ.
b3. $f'(x)$ is identical to one of the individuals that a considers as possible candidates for satisfying Δ.

Point b3 is made necessary by the weak nature of identification: since different individuals may satisfy Δ in the different epistemic alternatives of a, one can only require that $f'(y)$ be identical to *one* of them.

Let us examine two major consequences of (50). First, there is no constraint on the public or private status of identification. The condition does not determine whether identification is common ground or not, whether the speaker has any belief as to its informational fate, etc. All configurations are *a priori* possible. This tolerance provides the leeway one needs to address examples like those in (38). Consider (38a,b). Since the virus is new, the speaker is the only epistemic agent available. She identifies the virus as the one she discovered. Presumably, she entertains some representation of the virus (e.g., its shape) which she constructed in discovering it. For her to have an independent description, we should suppose that she has constructed a different representation of the virus. This is of course not impossible but very unlikely because the interval between the speech time and the discovery is extremely short. By considering a larger interval, we raise the plausibility of a different representation and the status of the sentence improves. In (51a,b), the speaker describes the virus as the non-documented virus she discovered last year. In the meantime she may have developed different trains of thought about the virus, have made extensive research, etc. In short, she probably entertains different descriptions of the virus, and this assumption is sufficient to license UC and AC.

(51) a. L'année dernière j'ai découvert un certain virus non répertorié dont je n'ai parlé à personne
'Last year I discovered a certain non-documented virus about which I didn't talk to anybody'

b. Last year I discovered a certain non-documented virus about which I didn't talk to anybody

Second, scope variations are unproblematic under the present analysis. Let us reconsider Farkas's example (40), and translate the paraphrases she proposes

into the terms of (50). Wide scope readings correspond to an identification by an agent, who may be different from the speaker. Possible paraphrases are 'The speaker knows the unicorn that John wants to catch' or 'Someone knows the unicorn that John wants to catch'. The intermediate scope corresponds to the fact that John is one of the agents who possesses an identifying description of the unicorn. The narrow scope corresponds to the absence of identification, which is predicted to exclude UC and AC.

Finally, let us recall that UC is sensitive to differences linked with the varying nature of the nouns it combines with, namely with abstract nouns such as *tristesse* 'sadness', *étonnement* 'surprise' or *temps* 'time'. We have addressed in Jayez and Tovena (2002) this important phenomenon often disregarded in the literature.

8 Pragmatic effects

We finally turn to the pragmatic effects of UC and AC. First, in most cases, the existence of a previous identification is trivial. Most entities we deal with in everyday life are identified by many agents under many perspectives. The role of UC and AC is to underscore that the speaker has a particular reason to mention the existence of a previous identification. Obvious motivations include reminding the hearer that the entity has a certain importance or salience, letting her know that the speaker has a certain degree of acquaintance with it, etc.

Second, our approach also takes into account the intuition that UC and AC may indicate a desire to 'hide' a referent by holding back its identification. This interpretation may emerge whenever the description that is supposed to identify the referent remains implicit.[18] We noted in Jayez and Tovena (2002) that the extra-identification required by UC or AC sheds light on the *arch use* mentioned by Strawson (1950), whereby a speaker does not disclose the identity of an entity while making it manifest that the entity has been identified and letting the hearer think that the speaker and/or the hearer are/is a possible identifier. In (52) A teases B by not giving the name of the caller.

(52) [Context: the person who phoned is known to A and B]
A – C'était qui, qui m'a téléphoné?
'Who called me on the telephone?'
B – Ah, Ah! Une certaine personne ...
'Ah, ah! A certain person'

Martin (2005) notes that examples like (53) are infelicitous and considers the possibility of an ignorance constraint with UC.

[18] As we saw, Farkas (2002) proposes a non-identification constraint, which is an attempt to capture the same intuition.

(53) [Context: the speaker wants to introduce a colleague of hers to the addressee]

a. ??Je te présente un certain collègue, que je connais depuis longtemps

b. ??Please, meet a certain colleague whom I have known for a long time'

We account for such examples as follows. Since the hearer meets the colleague for the first time, she cannot be the identifier. So the preferred interpretation presents the speaker as alluding to a previous identification of the colleague. However the identifying property remains implicit and it is unclear why the speaker takes the trouble to mention the existence of this property, which does not seem to play any role in the introduction rite, hence the marginal status of (53).

9 Conclusion

In this article, we have discussed a variety of epistemic determiners that exploit the possibility vs. impossibility of identifying the referent of the NP they contribute to form. Several major findings have emerged from this investigation. First, contrasting *un quelconque* with semantically cognate FC items such as *n'importe quel*, we have shown that the equivalence between members of the restriction set, which is the general characteristic of FC items, can manifest itself along different dimensions. In the case of UQ, the impossibility of referring is relativised to an agent. Second, both the indefinite and the free choice components of the complex determiner *un quelconque* are shown to contribute to its behaviour and to affect the nature of its free-choiceness. Third, contrasting the results on *un quelconque* and *un certain*, we can observe that the epistemic sensitivity of these items cannot be reduced to 'knowledge of the speaker'. In addition to the complication introduced by the possibility of taking different perspectives (Jayez and Tovena, 2002), there is the fact that *un certain* invokes a scenario structure of 'previous acquaintance' which may involve several agents and be independent from the speaker. Hence, the knowledge at hand is a weak form of identification. Fourth, the intuition that *un certain* highlights the existence of a particular identification cannot be captured by assuming a form of specificity. Specificity relies on the way of identification provided in the sentence, whereas UC and AC signal the existence of a different way. Giving up specificity opens the way to an account for the frequent use of *un certain* in combination with common nouns such as *moment*, *point*, etc., as pointed out in Jayez and Tovena (2002).

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