

# Free Relatives and Ever: Identity and Free Choice Readings

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## 0. Abstract

This paper explores three questions about the semantics of free relatives (FRs). One, do FRs have a uniform meaning? Two, related to one, what is the contribution of *ever*? And three, perhaps less discussed than the other two, what is the relation between identity and free choice (FC) readings of FRs with *ever*? It claims that FRs are always definite. *Ever* introduces a type of modality that is independent of the verbal system by enforcing universal quantification over epistemic alternatives to the world of evaluation. In so doing, it endows the FR with properties typically associated with universal quantifiers. There is no formal distinction between identity and FC readings of FRs. The crucial distinctions have to do with the interaction of uniqueness requirements typical of definites, NP-internal modality and episodic vs. non-episodic interpretations determined by tense and aspect.

## 1. Ever FRs: Definites or Universals?

### 1.1. FR's as Definites

#### 1.1.1. The Variation in Quantification

I will take as a starting point, the viewpoint of Jacobson (1995) and Dayal (1995a) that FRs are essentially definite descriptions.<sup>1</sup> The focal point of these investigations is the well-known variation between universal and definite readings of FRs. Though the availability of a particular reading may be aided by the presence or absence of *ever*, the correlation is not stable. As Jacobson points out, the paradigm in (1)-(2) might suggest an analysis of plain FRs as definites and *ever* FRs as universals, but the paradigm in (3)-(4) shows that it is just as easy to get the reverse readings:

- (1) I ordered what he ordered for dessert. (=the thing he ordered for dessert)
- (2) John will read whatever Bill assigns. (=everything/anything Bill assigns)
- (3) Do what the babysitter tells you. (=everything the babysitter tells you)
- (4) Everyone who went to whatever movie the Avon is now showing said it was boring. (=the movie the Avon is now showing)

Since it is not possible to correlate the universal/definite quantificational force with the morpheme *ever*, we need a general account of free relatives that allows for both readings. Jacobson does this by treating the free relative as a definite description denoting the unique maximal entity satisfying the description. The

analogy she draws is with the analysis of regular definite descriptions proposed by Sharvy (1980) and Link (1983). Noun phrases of the form *the N* indicate by the morphology on the common noun whether quantification is over atoms (thereby ensuring absolute uniqueness) or pluralities (thereby admitting quasi-universal force). Free relatives lacking internal heads appear ambiguous because the morphology does not reveal whether maximality operates over the domain of atoms or pluralities.

Indirect evidence for this claim comes from correlatives, structures in which the relative clause is left adjoined to the main clause (Dayal 1995a). Hindi correlatives are semantically akin to English free relatives in many respects. Most crucially, they display the same variation between definite and quasi-universal readings. Since Hindi correlatives readily allow internal heads and the verbal morphology is also transparent with respect to number marking, however, they come out as either definite or quasi-universal, not ambiguous:

- (5) jo laRkii khaRii hai vo lambii hai  
 wh girl standing be Dem tall be  
 "The girl who is standing is tall."  
 (6) jo laRkiyaaN khaRii haiN ve lambii haiN  
 wh girls standing be Dem tall be  
 "The girls who are standing are tall."

The relative clause can be treated as a generalized quantifier denoting the properties of the unique maximal individual, singular or plural, and the main clause as denoting a property. The two can combine by standard rules of quantification. This procedure for interpreting correlatives, we see, treats the relative clause as a definite description. Since correlatives are semantically close to English FRs, the treatment of the relative clause as a definite description can be seen as extending to FRs.

There is also direct evidence that English FRs are definites. Jacobson points to Carlson (1981)'s diagnostic of modification by nearly/almost to identify true universals. The examples below are not exactly Jacobson's but make the same point:

- (7) a. I did nearly/almost everything/anything you told me to do.  
 b. I did \*nearly/\*almost whatever you told me to do.

Another paradigm showing that FRs with quasi-universal force align with plural definites rather than universals was pointed out in Dayal (1995a). As (8) shows, negation may take wide scope over a universal but not over a definite or a FR:

- (8) I don't like everything/\*what/\*the things Sue ordered but I like most of them.

To sum up, while there are differences of detail between Jacobson's analysis of English FRs and my analysis of Hindi correlatives and its possible extensions to English FRs, both take the variation between definite and universal readings as

fundamental and propose that unique maximal individuals are at issue. In the case of atoms, the requirement of uniqueness can only be satisfied if a unique individual satisfies the description in relative clause. In the case of pluralities, uniqueness is satisfied by the maximal individual who meets the description. The appeal of this approach is that nothing special is needed to account for the variation beyond the role of number specification in determining the domain of quantification.

### 1.1.2. *The Role of Ever*

This approach to FRs immediately raises a question about the contribution of *ever*. This was dealt with more fully in Dayal (1995a) with respect to the contribution of the morpheme *bhii* in Hindi correlatives and I will briefly summarize the key points of my earlier analysis here. As far as I can tell, the basic ideas are compatible with the brief comments about the role of *ever* in Jacobson.

The literature generally recognizes two readings of FRs with *ever*. The first I call the identity reading, the other is known as the free choice (FC) reading. It can be shown quite easily in Hindi that the identity reading is available when *bhii* occurs in a structure that would otherwise pick out a unique referent; the FC reading is available when the tense-aspect dilutes uniqueness requirements by imposing a generic interpretation.<sup>2</sup> The English cases in (10) also show the correlation between uniqueness and the identity reading and between genericity and the FC reading:

- (9)a. jo bhii laRkii mehnat kar rahii hai vo safal hogii  
wh ever girl effort is making she successful will be  
"The girl who is making an effort will be successful."  
b. jo bhii laRkii mehnat kartii hai vo safal hotii hai  
wh ever girl effort does she successful be  
"Any girl who makes an effort succeeds"
- (10)a. Whichever movie is now playing at the Avon is making a lot of money.  
b. Whichever movie plays at the Avon makes a lot of money.

The basic insight about *bhii* I had was that it is a polarity item. Following Kadmon & Landman (1993), I argued that *bhii* in correlatives induces widening and is licensed if it results in strengthening. To see how this works, let us take the identity reading first. The version of (9a) without *bhii* would require there to be a unique individual who has the property of working hard. The addition of *bhii* signals that the identity of this individual is not known, or that the individual's identity is not relevant. While the plain correlative can be used referentially or attributively, a *bhii* correlative can only be used attributively, in the sense of Donnellan (1966). The latter applies to a wider set of individuals and constitutes a stronger statement.

Turning to FC readings, we see that though the morphology in (9b) is still singular, the tense-aspect forces a generic interpretation. Though uniqueness is not formally relinquished, its effects are diluted by the generic binding of a situation variable. That is, quantification here is over situations, each of which has a unique

individual with the property of working hard. While a corresponding statement without *bhii* would brook some exceptions, the version with *bhii* has a FC flavor because it suggests a reduced tolerance for such exceptions. Once again, *bhii* effects a widening and results in a stronger statement.

I would like to note at this point that though I still adhere to the intuitive generalizations given above, I am no longer convinced that the explanation for these facts is in terms of widening/strengthening. Considerations of space prevent me from discussing this in detail, but see Dayal (1995b) for some arguments against this general approach to polarity licensing. What is of more immediate relevance here is that in Dayal (1995a) *bhii* impacts on the statement in two different ways, even though they both fall within the umbrella of widening/strengthening. In section 2 of this paper I will argue instead that the contribution of *ever*, and by extension of *bhii*, is uniformly to indicate attributive-only readings.

## 1.2. FRs as Ambiguous

The view that FRs are definites has gained currency (Rullmann (1995) and Grosu and Landman (1995), for example). At the same time, the view of FRs as ambiguous has been revived recently by Tredinnick (1994) and Iatridou and Varlakosta (1996). They each argue that *ever* FRs must be recognized as bona fide universal quantifiers. Although this view goes back to earlier views challenged by Jacobson, some of their arguments are worth considering since they cannot, at least in an obvious way, be reconciled with a view of FRs as definites. My goal in this section is to bring out what I take to be the key challenges to the approach and evaluate them. In the next subsection I will show that these arguments cannot be handled by simply classifying *ever* FRs as universals. The needed adjustment will be shown to follow within a view of FRs as definites, once the role of *ever* as signalling their attributive-only readings is fleshed out.

Tredinnick points out that plain and *ever* FRs do not always occur in the same environments and takes this to argue that they are not of the same semantic type. I give below a few of the facts she mentions. As (11) shows, a plain FR does not license a polarity item while one with *ever* does:

- (11)a. He got into trouble for what\*(*ever*) he ever did to anyone.  
b. I will go where\*(*ever*) the hell you go.

Although Jacobson has a few examples challenging the generalization that *ever* FRs license such items, (11) does seem representative, and to the extent that such licensing can be attributed to universals, it suggests that an *ever* FR is a universal.

Another argument that Tredinnick gives is based on the following contrast:

- (12)a. When I go to the store, I mostly buy potatoes.  
b. Whenever I go to the store, I mostly buy potatoes.

(12a) can mean that on all occasions that I go to the store, most of what I buy are

potatoes or it can mean that on most occasions that I go to the store, I buy potatoes. (12b) has only the first reading. Tredinnick claims that the adverb of quantification cannot bind the variable of an ever FR because it is already bound by *ever*.

I should point out that the possibility of a reading in which the adverb seems to bind the variable of the plain FR (QVE) in (12a) is not an argument against treating it as a definite. Although Berman's (1991) discussion of QVE suggests that this may have to do with wh expressions being indefinites, the same effects are also available with definites. (13a) allows for a QVE reading but (13b) does not:

- (13)a. John usually likes the student who does best in class.
- b. John usually liked the student who did best in class.

Clearly, definiteness is not antithetical to QVE, but episodicity is. In order to account for QVE effects in regular definites, then, something like binding over situations with unique individuals would be needed and the same would apply to plain FRs. Tredinnick's data, then, does not challenge the view that plain FRs are definite. But it does raise the possibility of *ever* FRs being universals.

In addition to separating out plain and *ever* FRs, Tredinnick also focuses on the differences between the two readings of *ever* FRs. The identity reading (the *don't know* reading in her terminology) is a specific indefinite reading while the FC reading is a universal. Leaving aside for the moment the status of the FC reading of FRs, I would like to point out that it is not tenable to treat the identity reading in terms of specific indefinites. Consider the following paradigm:

- (14)a. Mary bought some thing<sub>i</sub>. [Something she bought]<sub>\*i</sub> was expensive.
- b. Mary bought some thing<sub>i</sub>. [Whatever she bought]<sub>i</sub> was expensive.

Though a specific indefinite may be like a definite with respect to uniqueness, it has different familiarity requirements (Enç 1991). It cannot take a discourse antecedent whereas a FR, under its identity reading, can easily do so. If *ever* FRs under their identity readings are definites, as (14) shows, the only challenge that remains to be addressed is whether *ever* FRs under their FC readings need to be recognized as universals. Taken at face value, the facts in (11) and (12) seem to suggest so.

Iatridou and Varlakosta (1996) start from a position similar to Tredinnick's. They add an important argument to the position that *ever* FRs are universals by drawing attention to the fact, noted in Jacobson, that plain FRs are acceptable in certain pseudocleft constructions while *ever* FRs are not:

- (15)a. What(ever) Mary bought was expensive.
- b. What(\*ever) Mary bought was Barriers.

They adopt the view in Williams (1983) and Partee (1896) that in a predicational pseudocleft, the FR is the functor while in a specificational pseudocleft it is the argument (see Higgins (1973) and, more recently, Heycock and Kroch (1996) and Sharvit (1997) for more on this distinction). The *ever* FR in (15a) is acceptable

because it is a universal quantifier of type  $\langle\langle e,t\rangle,t\rangle$  and can take as argument the VP of type  $\langle e,t\rangle$ .<sup>3</sup> Turning to the paradigm in (15b), they argue that the plain FR being of type  $e$  can serve as an argument to the VP but the *ever* FR being of type  $\langle\langle e,t\rangle,t\rangle$  cannot. As we will see in section 3, I&V's analysis of the facts cannot be maintained in this simple form. For now, though, let us simply note that the contrast in (15b) is not something that has a ready explanation in the approach to FRs as uniformly definite and needs to be taken seriously.

These approaches revive earlier view of FRs as ambiguous. Larson (1987), for example, argues that *ever* FRs with a missing preposition are acceptable because they are universal quantifiers that raise at LF and allow the reconstruction needed for interpretation. Plain FRs do not have this option because they are definites:<sup>4</sup>

(16) I will live in what\*(*ever*) towns you will live.

Finally, let me add another argument against *ever* FRs being definites. Recall the data from Dayal (1995a) with respect to negation and compare it with an *ever* FR:

(17)a. I didn't like \*what/whatever Sue ordered but I liked most of it.  
 b.  $\neg\forall x [\text{ordered}(s,x) \rightarrow \text{like}(I,x)]$

It is easy to get a reading like (17b) for the first conjunct with the *ever* FR, specially if *whatever* is stressed, thereby allowing the relevant continuation. This again suggests that *ever* FRs are universals while plain FRs are definites.

In this section we have considered some differences between plain FRs and *ever* FRs. Though the former strongly align with definites, the latter seem to behave like universals. Before probing this conclusion any further, let me emphasize a point often glossed over by the proponents of the ambiguity hypothesis. Taking plain and *ever* FRs as belonging to different types has the consequence that *ever* FRs also have to be treated as ambiguous; as definites when they have identity readings, and as universals when they have FC readings. This conclusion seems to me less than satisfactory and, as we will see, there are good reasons to reconsider it.

### 1.3. Reassessing the Problem

#### 1.3.1. FC Readings of Ever FRs and Their Definite-like Behavior

In this subsection I will argue that to ask whether an *ever* FR is a definite or a universal is to ask the wrong question. What we need to ask is why a FR which is a definite can so easily acquire the properties of a universal when the morpheme *ever* is present. Note that the claim in the literature is that an *ever* FR is a universal when it can refer to a plurality of individuals. We will see though that this is neither sufficient nor necessary for an *ever* FR to acquire properties typically associated with universal quantifiers. I will first show that FRs with FC readings are not forced to behave like universals but retain the behavior of definites. I will then show that even

those cases of *ever* FRs that are provably definite display behavior characteristic of universals. When the full evidence is considered, it becomes clear that classifying an *ever* FR as an ordinary universal simply misses the point.

Let us begin by showing that a FR with a FC reading is still a definite. A crucial distinction between *ever* FRs, even when they refer to a plurality of individuals as in their FC reading, and a regular universal quantifier with *every* is noted by Grosu and Landman (1995). (18)-(19) are fashioned after their examples:

- (18)a. Mary has read two thirds of every book in the series.
- b. Mary has read two thirds of whatever books are in the series.
- c. Mary has read two thirds of the books in this series.
- (19)a. Mary ate only a portion of every dish she was served.
- b. Mary ate only a portion of whatever dishes she was served.
- c. Mary ate only a portion of the dishes served.

(18a) says that for each book in the series Mary has read two thirds of it. Let us call this the distributed partitive reading. (18b), on the other hand, is ambiguous. In addition to the distributed partitive reading it also has what we may call a collective partitive reading such that Mary has read two thirds of the total number of the books in the series. There is no implication that Mary's reading habits are at all weird; there are books she still has to begin because she finishes a book before she starts on the next one. A regular definite behaves similarly, though the collective partitive reading may be more salient. (19) shows a similar pattern. Suppose that Mary is served three dishes, (19a) requires her to eat some part of every dish served; (19b) is compatible with her eating a part of every dish or a part of the totality of dishes served, leaving one or two dishes untouched. Again, this is akin to a regular definite.

Assuming that a partitive phrase takes an individual denoting argument in complement position, we can conclude that a generalized quantifier would be forced to QR. (18a), for example, would have an LF such as (20a), and would get a distributed partitive interpretation, as in (20b).<sup>5</sup> The definite, on the other hand, being individual denoting can be interpreted in situ as in (21a), yielding the collective partitive reading. Alternatively, it may QR as in (22a) where it could get the distributed partitive reading, under theories of distributivity, such as Link (1983):

- (20)a. [IP Mary [VP every book in this series<sub>i</sub> [VP read [NP two thirds of t<sub>i</sub>]]]]
- b.  $\forall z[[\text{book}(z) \ \& \ \text{in-this-series}(z)] \rightarrow [\text{read}(2/3 \leq z) \ (m)]]$
- (21)a. [IP Mary[VP read [NP two thirds of the books in this series]]]
- b.  $\text{read}(2/3 \leq \iota x[*\text{book}(x) \ \& \ \text{in-this-series}(x)])(m)$
- (22)a. [IP Mary [VP the books in this series<sub>i</sub> [VP read [NP two thirds of t<sub>i</sub>]]]]
- b.  ${}^D\lambda z[\text{read}(2/3 \leq z) \ (m)](\iota x[*\text{bk}(x) \ \& \ \text{in-this-series}(x)])$

The data in (18) and (19) show quite clearly, then, that *ever* FRs are definites, even when they refer to a plurality of individuals, as is the case with the FC readings here.

### 1.3.2. Definite FRs with Ever and Their Universal-like Behavior

Let us now turn to definite readings of *ever* FRs and their universal-like properties. Recall from section 1.2 that polarity licensing has been used as a diagnostic in claiming that *ever* FRs are universals. It appears though that such licensing is available even when the *ever* FR has the interpretation of a definite.

Consider examples parallel to (18)-(19) but with a polarity item inside:

- (23)a. Mary has read two thirds of whatever books were on any of her reading lists.
- b. In all her years in office Mary has approved only a fraction of whatever grants any of her students have submitted.
- c. John and Mary have used most of whatever gifts they'd got from anyone.

Now, one might think that polarity licensing would only be possible when the *ever* FR is interpreted as a universal but this is not the case. (23a) allows the collective partitive reading. It is compatible with Mary leaving some of her readings lists wholly untouched; (23b) with Mary having some students who have been totally unsuccessful with grants and (23c) with guests whose gifts are not used by John and Mary at all. Another way to test the availability of the collective reading is to check for presuppositions. (23a) does not require every reading list to have more than one item; (23b) does not require every student to have submitted more than one application and perhaps most clearly, (23c) does not require each guest to have given more than one gift. We see that polarity items are licensed by FRs with a FC reading even when they behave like definites.

The same point can be made by taking the identity reading of *ever* FRs. The examples in (24) are taken from Tredinnick and modified to show that polarity licensing is not contingent on plurality (what she calls the quantificational reading):

- (24)a. I'll go where\*(ever) the hell you're going.
- b. I'll do what\*(ever) the hell detectives do.

As we saw in section 1.2 identity readings are best analyzed as definites, rather than specific indefinites, because they can take discourse antecedents. The examples in (24) have identity readings since the most natural interpretations involve a single place that the hearer is expected to be going to, or a single routine that detectives are expected to go through. And yet, licensing of polarity items is possible.<sup>6</sup>

Along the same lines, Grosu (1996) notes that Larson's examples about missing-P constructions are equally available with identity readings of *ever* FRs:

- (25) John is now digging with whatever tool Mary was digging a moment ago.

If the solution to the missing-P FR requires QR of a universal term, the uniquely referring *ever* FR would also have to QR. Larson's account, however, rests on QR being restricted to NPs with quantificational force.



Summing up this section, the data shows that if we want to maintain the view that *ever* FRs are universals we must incorporate two properties into the definition of this universal. One, it should be possible to interpret it as the sum of the atoms in its domain and, two, we must allow singletons to constitute felicitous domains. Once we make these adjustments, however, we are in effect treating FRs as definites. The real question that emerges is not whether FRs are definites, but why it is that the presence of *ever* results in these definites acquiring properties typically associated with universals. In the next section this is the question I will try to answer.

## 2. Ever FRs as Attributive-Only Readings of Definites

### 2.1. Identity Readings

In trying to understand the contribution of *ever* to FRs, I will first develop an account of identity readings and then extend it to FC readings. This is primarily dictated by practical considerations. The definite nature of the identity reading is easier to see since tense-aspect specifications ensure an episodic interpretation. This cuts out the obfuscating effect on definiteness that the quantification needed for non-episodic interpretations has. As we will see, FC readings arise when non-episodic interpretation combines with the basic meaning of *ever* evident in identity readings.

Let us begin with an intuitive characterization of what constitutes the identity reading. A FR, under its identity reading, is a statement in which the assertion is not contingent on the particular individual picked out by the definite description. In terms of Donnellan (1966), it is an attributive, not a referential statement. The distinction can be illustrated with an imperative like *Throw out the man with the martini*. As Donnellan points out, there are situations in which a description may fail to pick out the intended individual and yet be a successful assertion about that individual, as long as some aspect of the context makes it possible for the speaker to use that description to refer to that individual. This constitutes the referential use of the definite. So someone could use the imperative to command that John be thrown out even if it turns out that he is actually drinking water. Under an attributive use, however, the command is not about any particular individual. If the description is successful the command applies to the individual who meets the description, otherwise the command is retracted. Attributive readings imply an essential connection between the description and the assertion. In referential readings the connection is tenuous.

While the referential-attributive distinction is well accepted, its status as a formal distinction has been challenged, most forcefully by Kripke (1977). The claim I am making is that the semantics of *ever* forces us to accord this distinction a bona-fide grammatical status. This is essentially the claim from Dayal (1995a) summarized briefly in section 1.1.2 but the actual analysis given below is different. As pointed out to me by Donka Farkas, a similar claim about the grammatical status of the referential-attributive distinction was made by her in relation to romance subjunctives. The analysis of attributive readings to be given here, in fact, closely

resembles her approach to the phenomenon (see Farkas (1985) and (1994); see also Giannakidou (1996)).

The basic proposal I would like to make is that a FR with *ever* has a modal dimension and is interpreted with respect to a set of alternatives to the world of evaluation. I call these worlds *i*(dentify)-alternatives because they can differ from the actual world only in the denotation of the FR. The proposal in (26) adopts a translation language that allows explicit quantification over worlds (Gallin 1975):

- (26)a.  $\text{whatever}_j$  [IP... $t_j$ ...] denotes at  $w =$   
 $\lambda Q \forall i\text{-alternatives} \in f(w)(s) [Q(i)(\iota x [P(i)(x)])]$   
 where  $P$  is the property derived by abstracting over  $x_j$  in the IP denotation.  
 b.  $f(w)(s) = \{w' : \forall p[s \text{ believes } p(w) \rightarrow p(w')]\}$   
 for a world of evaluation  $w$  and speaker  $s$ ,  $f(w)(s)$  is the set of worlds in which the speaker's beliefs about  $w$  hold.  
 c. a world  $w' \in f(w)(s)$  is an *i*-alternative iff there exists some  $w'' \in f(w)(s)$ , such that  $\iota x [P(w')(x)] \neq \iota x [P(w'')(x)]$

Let me comment briefly on the key features of this proposal. (26a) has *ever* introducing a modal dimension into the interpretation. The FR denotes the set of properties that its referent in any relevant world has. Note that this modality is not tied to tense and aspect, so that the world variable  $w$  remains free. (26b) makes explicit that the modal base represents the speaker's belief about  $w$ . Assuming that the FR is used felicitously, every world in the set will have a unique referent for the FR. This follows from the standard presupposition associated with definites.<sup>7</sup> (26c) makes explicit the notion of *i*-alternatives. It characterizes a world as an alternative iff it can be distinguished from another world solely on the basis of the denotation of the FR. Crucially, *i*-alternatives share temporal and other contextual parameters.

I will illustrate how this proposal works with concrete examples. Take (27a) which would be interpreted as in (27b). (27c) sets out the criteria for distinguishing *i*-alternatives. In contrast, the plain FR in (28a) would be interpreted as in (28b). The possible denotations for the FR here is the same set of entities that forms the basis for the *i*-alternatives in (27c), namely *ratatouille*, *lentils* and *goulash*:

- (27)a. Mary is cooking something. Whatever she is cooking uses onions.  
 b.  $\forall i\text{-alt} \in f(w)(s) [\text{uses-onions}(i)(\iota x [\text{cooking}(i)(x)(m)])]$   
 c.  $i\text{-alt}_1: \iota x [\text{cooking}(i)(x)(m)] = \text{ratatouille}$   
 $i\text{-alt}_2: \iota x [\text{cooking}(i)(x)(m)] = \text{lentils}$   
 $i\text{-alt}_3: \iota x [\text{cooking}(i)(x)(m)] = \text{goulash}$   
 (28)a. What Mary is cooking uses onions  
 b.  $\text{uses-onions}(w)(\iota x [\text{cooking}(w)(x)(m)])$

(27b) says that as far as the speaker is concerned, in all the relevant *i*-alternatives at  $w$ , the dish being cooked by Mary uses onions. Or more colloquially, the speaker intends the assertion to hold regardless of the identity of the dish. The assertoric force is therefore attributive. Property  $Q$  holds of the entity by virtue of its meeting

description P, there is an essential connection between them. (28a) also lends itself to such an interpretation. But in addition it allows for an interpretation in which the relation between P and Q is accidental. That is, the assertion can be based on beliefs about a particular entity. The description is simply an expedient way of referring to it. To see this, take three different contexts in which (27a) or (27b) could be uttered.

Suppose the speaker has no idea about what Mary is cooking but he sees her chop onions. He can utter either (27a) or (28a). Suppose, now, that the speaker can see the dish being prepared, knows all the ingredients being put in (including onions) but doesn't know the name of the dish. He can still use either sentence. But suppose, instead, that the speaker not only knows how the dish is being prepared, he also knows its name. In such a situation only (28a) is appropriate. This becomes evident if a parenthetical identifying the object is added:

- (29)a.\* Whatever Mary is cooking, namely ratatouille, uses onions.  
b. What Mary is cooking, namely ratatouille, uses onions.

The proposed difference between plain and *ever* FRs accounts for these facts. The definition of i-alternative in (26c) requires that there be at least two worlds, distinguishable on the basis of the denotation of the FR. That is, as far as the speaker is concerned, the identity of the object denoted by the FR should still be open. For if the speaker has a belief about the identity of the unique relevant individual, there cannot be two worlds in  $f(w)(s)$  that will qualify as i-alternatives. The *ever* FR will be infelicitous because quantification will be over an empty domain. There is obviously no such problem with plain FRs.

I should point out that the particular modality involved here leaves room for exceptions. For example, if the speaker believes, maybe erroneously, that Mary is a strict vegetarian who would not touch meat, worlds in which Mary cooks goulash will not be in  $f(w)(s)$ . So the speaker might assert *I will eat whatever Mary is cooking* without any intention of eating meat. The use of the *ever* FR would still be felicitous because there is a possibility of distinguishing i-alternatives on the basis of other dishes. Truth will be verified with respect to only these dishes. Obviously, the set of relevant worlds varies with speakers and therefore the felicity of an *ever* FR is not fixed for a world, but for a world and a speaker.

A consequence of this approach is that the felicitous use of an *ever* FR is predicted to be very sensitive to context. Consider, for example, appositive uses of *ever* FRs with names and demonstratives, two canonical types of referential terms:

- (30)a. Throw out that man, whoever he is.  
b. Throw out John Smith, whoever he is.  
c. Throw out that man, John Smith, whoever he is.

In (30a), an individual is identified by demonstration and the *ever* statement is acceptable because it is possible to distinguish a set of i-alternatives by varying the identity of the individual picked out. In (30b), the name John Smith is used attributively and a set of i-alternatives can be derived by assigning different

individuals as referent of the name.<sup>8</sup> (30c) is interesting. It involves a combination of demonstration and naming and, if presented out of the blue, appears unacceptable. This is presumably because there is no criteria for separating i-alternatives. As pointed out by David Beaver (p.c.), however, there are contexts where (30c) could be used felicitously. For example, the speaker seeing someone at a conference with a name tag *John Smith* but not knowing anything about this individual, might utter (30c). But note that in this context, the speaker's lack of sufficient knowledge about this individual's properties can provide the basis for individuating i-alternatives.

To sum up, though I have classified the *ever* FR as an attributive-only term, we have seen that it is compatible with referential terms as long as some possibility for varying the denotation of the FR remains. We can thus think of the contribution of *ever* as forcing some amount of attributiveness into the semantics.

## 2.2. FC Readings

In this subsection I will show that nothing more than we already have is required to account for the FC readings of *ever* FRs. In discussing FC readings there are two cases to consider. One in which genericity is at issue and another in which plurality is at play. Let us take FC readings dependent on genericity first.

The standard way of deriving the difference between episodic and non-episodic interpretations rests on whether the world variable is free, hence contextually anchored, or bound by a generic/temporal operator. Consider (31a), the generic counterpart of (27a) and compare its interpretation in (31b) with (27b). Possibly, something smaller than worlds, namely situations, is needed but I will stick to worlds for purposes of demonstration here. The contextual variable C plays the standard role of restricting quantification to relevant occasions of Mary's cooking:

- (31)a. Whatever Mary cooks uses onions.  
 b.  $\forall w[C(w)][\forall i\text{-alt} \in f(w)(s)[\text{uses-onions}(i)(\lambda x[\text{cooking}(i)(x)(m)])]]$

The logical representation captures the FC flavor. The tense-aspect requires truth to be evaluated at all contextually relevant worlds/situations in which Mary cooks something. The assertion is stronger than a regular generic because *ever* forces evaluation at i-alternatives of every world, suggesting an essential connection between the description and the property it is asserted to have.

This account of FC readings of FRs makes them similar to generic statements with regular universals while maintaining a crucial distinction between them. In the former case, the additional modality introduced by *ever* forces the assertion to extend to i-alternatives of each generically bound world. This predicts that FRs with a FC reading, but not generic universals, license counterfactual entailments:

- (32)a. Those days, Mary ate whatever Bill cooked.  
 b.  $\forall w[C(w) \& \text{th-days}(w)][\forall i\text{-alt} \in f(w)(s)[\text{eat}(i)(\lambda x[\text{cook}(i)(x)(b)])](m)]]$

- (33)a. Those days, Mary ate everything Bill cooked.  
 b.  $\forall w[C(w) \ \& \ \text{th-days}(w)] [ \forall x [\text{cook}(w)(x)(b) \rightarrow \text{eat}(w)(x)(m) ] ]$

So far we have considered cases of FRs with singular domains and shown how the attributive-only meaning of *ever* leads to identity readings with episodic tense and FC reading with non-episodic tense. Let us now turn to FRs with plural domains and episodic tense, cases I had not considered in Dayal (1995a):

- (34)a. Mary cooked several dishes yesterday. Whatever she cooked had onions.  
 b.  $\forall i\text{-alt} \in f(w)(s) [\text{have-onions}(i)(\iota x [ * \text{cook}(i)(x)(m) ] ) ]$

In this case, it is hard to unequivocally classify the reading as identity or FC. This is in keeping with the view that there is no formal dichotomy between the two.<sup>9</sup>

I have argued here that *ever* introduces a modal dimension into the interpretation of FRs by introducing a set of i-alternative worlds. A unified account of identity and FC readings was made possible by separating the quantification associated with *ever* from the one required for the episodic/non-episodic distinction.

### 3. The Facts Revisited

#### 3.1. *The Chameleon-Like Character of Ever FRs*

The goal of this section is to re-examine the differences between plain and *ever* FRs discussed in section 1.2 and 1.3 from the viewpoint of the proposal about *ever* given in section 2. As we can see, the proposal has two distinct aspects. One, the type of modality it assigns to *ever* imposes (modal) universal quantification on what is essentially a definite description. Two, the definition of i-alternative worlds is such that it resists full specification about identity. As I will show, these two aspects of the analysis provide a way of handling the data that had earlier appeared problematic.

Recall, first of all, Jacobson's observation in (7) that *ever* FRs cannot be modified by *nearly* or *almost* whereas ordinary universal quantifiers can. In the present account the FR is a definite. The quantification over i-worlds introduced by *ever* does not provide a syntactic universal determiner that could be so modified.

Consider next the facts about scope interaction with negation and the missing-P constructions. Even though we have preserved the definite character of the FR, the modality introduced requires a shift to the generalized quantifier type. It is therefore expected that *ever* FRs will be subject to QR where it may interact with negation or affect copying and reconstruction. In the case of negation, for example, the speaker can assert the existence of some i-alternatives where the plural entity Mary ordered is not liked by John. She then adds that the actual world is such an i-world:

- (35)a. John didn't like whatever Mary ordered but he liked most of it.  
 b.  $\neg \forall i\text{-alt} \in f(w)(s)[\text{like}(i)(\lambda x[\text{order}(i)(x)(m)])(j)]$

Regarding partitive readings, the account remains unchanged except that QR of *ever* FRs is forced due to type-mismatch. The collective reading will require lambda conversion into the base position, yielding (36b). For the distributed partitive reading we distribute the property over the atoms as before. (36c) says that for all *i*-alternatives, the property of being an *x* such that Mary read two thirds of it in *i*, holds of all atomic parts of the books that are in the series in *i*:

- (36)a. Mary read two thirds of whatever books are in the series.  
 b.  $\forall i\text{-alt} \in f(w)(s)[\text{read}(i)(2/3 \leq \lambda x[\text{books}(i)(x) \ \& \ \text{in-series}(i)(x)])(m)]$   
 c.  $\forall i\text{-alt} \in f(w)(s)[^P \lambda x[\text{read}(i)(2/3 \leq x)(m)](\lambda x[\text{books}(i)(x) \ \& \ \text{in-series}(i)(x)])]$

Let us turn now to Tredinnick's observation that QVE and *ever* FRs are incompatible. The example is repeated in (38a). Before discussing the reasons for this, note that her generalization is not quite correct. (37a) shows that *mostly* does yield a QVE reading when the FR is individual-denoting and (39a) shows that an adverb of quantification like *always* (or *never*) is compatible with a FR referring to occasions. The translations they would have in the present account are also given:

- (37)a. People mostly/usually honor whoever is elected.  
 b.  $\text{MOSTo}[C(o)] \forall i\text{-alt} \in f(o)(s)[\text{honor}(i)(\lambda x[\text{be-elected}(i)(x)])(\text{people})]$   
 (38)a. Whenever Mary goes to the store, she mostly buys potatoes.  
 b.  $\text{MOSTo}[C(o)] [\forall i\text{-alt} \in f(o)(s)[\text{buy}(i)(p)(m)]]$   
 (39)a. Whenever Mary goes to the store, she always buys potatoes.  
 b.  $\text{ALLo} [C(o)] [\forall i\text{-alt} \in f(o)(s)[\text{buy}(i)(p)(m)]]$   
 (40)
- |              |                           |                           |                           |
|--------------|---------------------------|---------------------------|---------------------------|
|              | a.                        | b.                        | c.                        |
| M goes to S: | $o_1 \quad o_2 \quad o_3$ | $o_1 \quad o_2 \quad o_3$ | $o_1 \quad o_2 \quad o_3$ |
| M buys P:    | T    F    F               | T    T    F               | T    T    T               |

Although the facts appear bewildering, an explanation for them is available in the present account. Let us take (37) first. Here *mostly* quantifies over contextually relevant occasions, that is, those maximal occasions with an elected officer in them. It asserts that in most such occasions the elected official is honored and, further, that this is not contingent on the identity of the individual concerned.

Turning to cases where the free relative itself denotes occasions, note that there is a complex interaction between binding of the occasion (or world) variable by the adverb and the universal quantification over *i*-alternatives imposed by *ever*. To see this, consider the scenarios in (40). In (40a) Mary buys potatoes on only one out of three occasions, in (40b) in two out of three and in (40c) in all three. Now, (38b) will be evaluated false in (40a) as well as (40b) because for each occasion, *ever* forces evaluation in all its *i*-alternatives. But the set of *i*-alternatives for any occasion is  $\{o_1, o_2, o_3\}$  and the fact that Mary doesn't buy potatoes at  $o_3$  is sufficient to make the statement false. The only scenario that is predicted to be compatible

with QVE is the third one since the requirements of the adverb and *ever* coincide. This is what (39) expresses. Note that QVE is also predicted with *never*, since it is another determiner that requires every occasion to have the same truth value.

Finally, let us consider the fact that plain FRs do not license polarity items while *ever* FRs do. The plain FR, being a definite, is not downward entailing. Thus (41a) may be true but (41b) will be undefined if Bill cooks several things, but nothing well. The evaluation of (42a) and (42b), however, is different in this context. If Bill cooks nothing well, the definite description will be undefined and there will be no *i*-alternatives to consider. Given a degenerate domain of quantification for the universal, (42b) will come out to vacuously true. In short, the modality imputed to *ever* endows the FR with properties that are crucial to polarity licensing without making it a regular universal quantifier:

- (41)a. Mary ate what Bill cooked.
- b. Mary ate what Bill cooked well.
- (42)a. Mary ate whatever Bill cooked.
- b. Mary ate whatever Bill cooked well.

### 3.2. *The Constraint Against Full Specification*

I will now turn to the fact that in the present analysis of *ever* FRs full knowledge about identity leads to degenerate domains of quantification, and show how it explains their distribution in pseudoclefts. Recall Iatridou and Varlakosta (1996)'s observation that both types of FRs are acceptable in predicational pseudoclefts (43a) but only plain FRs are acceptable in specificational pseudoclefts (43b):

- (43)a. What(ever) Mary bought was expensive.
- b. What(\*ever) Mary bought was Barriers.
- c. What(?ever) Mary bought wasn't Barriers.

I&V explain the unacceptability of the *ever* FR in (43b) on the basis of two factors. One, the *ever* FR is a universal quantifier of type  $\langle\langle e, t \rangle, t \rangle$  and two, the FR in this structure must be the argument, not the functor. Given that the VP denotes something of type  $\langle e, t \rangle$ , the two cannot combine. It remains unclear, of course, why the *ever* FR cannot QR, leaving behind a trace of the right type. Another question that remains unexplained is why the structure improves when the copular is negated, as in (43c). Such sentences are sometimes considered unacceptable or marginal in the literature but Tredinnick (1994) cites E. Prince as noting it to be acceptable. Though the status of (43c) may be controversial, the contrast with (43b) is not.

To see how these facts follow under the present account from the constraint against full specification, consider the interpretation of the plain and *ever* versions of (43b) and the *ever* version of (43c):

- (44)a.  $\lambda x[x=b](w)(\iota x[\text{buy}(w)(x)(m)])$   
 b.  $\forall i\text{-alt} \in f(w)(s)[\lambda x[x=b](i)(\iota x[\text{buy}(i)(x)(m)])]$   
 c.  $\forall i\text{-alt} \in f(w)(s)[\lambda x[x \neq b](i)(\iota x[\text{buy}(i)(x)(m)])]$

(44a), the translation of the plain version of (43b), simply identifies the thing Mary bought at  $w$  as Barriers. (44b), the translation of the *ever* version, says that this is so in all  $i$ -alternatives. We know, of course, that if the FR necessarily denotes Barriers there remains no criteria for invoking  $i$ -alternatives. Now, (44c), the *ever* version of (43c), says that in all the  $i$ -alternatives the thing Mary bought is something other than Barriers. The quantification is predicted to be felicitous because it is still possible to invoke  $i$ -alternatives. The problem here, however, is that the sentence is predicted to be fully acceptable but it is not. I assume this is for syntactic reasons that are not well-understood at this time. Let me simply point out that the contrast between the *ever* versions of (43b) and (43c) is what the present account successfully delivers and leave the explanation for the marginality of (43c) for another occasion.

Another paradigm that that is relevant in this connection is given in (45):

- (45)a. Whatever Bill cooked was what Mary ate/the thing Mary ate.  
 b.\* Everything Bill cooked was what Mary ate/the thing Mary ate.

The unacceptability of (45b) is expected under I&V's view that only referential terms can be in precopular position. They do not consider cases like (45a), however, which are fully acceptable, contrary to what they predict. Under the present approach, (45a) is not problematic. If the speaker does not know the identity of the object denoted by the post-copular definite description,  $i$ -alternatives can be invoked. The speaker simply asserts that there is a correlation between what Bill cooked and what Mary ate, whether it be pasta or rice or steak.

Finally, universals align with plain FRs, not *ever* FRs, in adjunct structures:<sup>10</sup>

- (46) \*What/\*Everything Mary bought it was not Barriers.  
 (47)a. Whatever Mary bought it was not Barriers.  
 b.  $\forall i\text{-alt} \in f(w)(s) [\exists x[x=\iota y[\text{buy}(i)(y)(m)](i)]] [\iota y[\text{buy}(i)(y)(m)] \neq b(i)]$

One way to interpret (47a) would be to treat it as a quantificational structure along the lines of correlatives. But languages like Hindi that instantiate such structures do not distinguish between plain and *ever* versions of the relative clause. Following a suggestion by Masaaki Fuji (p.c.), I will therefore treat such structures as syntactic adjuncts with a conditional meaning. However, I will try to derive that meaning on the basis of what I have proposed for *ever* FRs in the general case.

Since *ever* introduces a set of worlds into the interpretation procedure, I suggest that in addition to yielding generalized quantifier meanings it also yields conditional meanings  $\lambda p \lambda q \forall i\text{-alt} \in f(w)(s)[p(i) \rightarrow q(i)]$ , where the antecedent is trivially derived by existentially quantifying in the property of being the unique object Mary bought and the pronoun in the matrix interpreted as E-type or dynamically bound by the existential. (47a) says that every  $i$ -alt world is such that



if Mary bought a unique object in it, that object is not Barriers in that world. Note that adjunct structures are unable to redeem affirmative statements such as (43a), as predicted under the present approach. Note also that the sentences in (46), lacking the modal dimension, are not expected to have conditional meanings.

An advantage of this approach that may be worth mentioning here is that it readily extends to another well-documented fact about *ever* FRs in adjunct structures. Unlike plain FRs or regular universals, they need not be linked to arguments in the main clause:

- (48)a. Whatever Mary bought, John was happy.  
b.\* What/\*Everything Mary bought, John was happy.

Treating *ever* FRs in adjunct structures as involving quantification over worlds is not particularly radical but by relating it to their semantics in general, I have attempted a more economical explanation for distinct but obviously related phenomena.

To conclude, I have argued in this paper that plain and *ever* FRs are definites. I have also argued that there is no formal distinction between identity and FC readings of *ever* FRs. *Ever* uniformly contributes a modal dimension to the interpretation of the definite description by ensuring that it denotes a generalized quantifier that includes only those properties that are true of the bearer, regardless of identity. And I have shown how the particulars of the analysis can be used to explain facts that have been standardly taken to argue against treating *ever* FR as a definites.

## Endnotes

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1. Jacobson (1995) and Dayal (1995a) draw on earlier work. Jacobson's ideas were presented at the 1989 LSA Meeting. Mine grew out of my 1991 dissertation on Hindi wh dependencies; the (1995) article focuses on the issues relevant here.
2. In Dayal (1995a) I did not consider the contribution of *bhii* when the domain is plural and the tense non-episodic, as in (6). I discuss such cases in section 2.
3. The plain FR in (15a) is of type e but presumably can shift to  $\langle\langle et \rangle t \rangle$  or the functor-argument restriction can be relaxed in predicational pseudoclefts.
4. Larson's original example has a singular internal head, but note that the

coresponding plain FR is unacceptable with or without the preposition *\*I will live in what town you will live (in)* (P. Jacobson, p.c.). Since plural internal heads are more acceptable in plain FRs Larson's arguments could still go through. But see Grosu (1996) for arguments against Larson's account of missing-P FRs.

5. If QR to IP is licit, we would have another derivation with a semantics identical to (20b). The unambiguity of (18a) would still be derived.

6. It is hard to get a clear identity reading with items like *any*, which is important for the point I'm trying to make. Note also that although *the hell* is easily available in questions, *ever* is needed to license it in FRs.

7. Jacobson (1995) points out that it is unclear whether FRs really have existence presuppositions. In fact, it turns out that existence presuppositions for FRs with *which* are stronger than for FRs with *what*, a topic I cannot address here.

8. Recall that i-alternatives are speaker oriented and reflect the speakers (lack of) knowledge of the world, not actual different worlds. No adjustment in the theory of names as rigid designators is needed.

9. A potential problem for the present approach arises with plural domains in discourses like the following: *John cooked ratatouille and goulash. They both had onions. Therefore we can say that whatever John cooked had onions.* One might argue that since the speaker has beliefs about the identity of the dishes cooked by John, i-alternatives could not be invoked. On the other hand, it may be possible to individuate i-alternatives on the basis of parts of a plural entity.

10. These structures must be read without an intonation break between the FR and the matrix. Plain FRs are acceptable with a pause, as left dislocation structures.

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