It is raining (somewhere)

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1. The unavailability of 'indefinite' readings for implicit arguments

1.1 Meteorological predicates : the standard view

The received view about meteorological predicates like 'rain' is that they comport an argument slot for a location which can be filled either explicitly by means of an adverbial phrase, as in (1), or implicitly by a contextually determined location, as in (2). This means that a location has to be contextually provided when none is explicitly mentioned.

(1) It's raining here/in Paris.
(2) It's raining.

More precisely, the standard view assumes that 'rain', in the absence of an explicit location, demands that the context provide a *specific* location. The possibility that the simple sentence 'it rains' might express a *location-indefinite* content is considered as ruled out. This introduces an interesting asymmetry between the implicit and the explicit ; for, on the side of the explicit, we find *two* sorts of cases : the 'definite' or 'singular' cases in which a particular location is mentioned, as in (1), and the 'indefinite' or 'general' cases in which there is quantification over locations, as in (3a) and (3b) :

[1] I am indebted to Luisa Marti, Paul Elbourne, and the participants in my graduate seminar at Harvard University (fall 2004), especially Pranav Anand, for discussions that led to this paper. Thanks are also due to Philippe Schlenker and, again, Paul Elbourne for comments on a first draft.

(3a) It's raining somewhere

(3b) It's raining in all major cities

There are different ways of implementing the standard view. Some theorists hold that in logical form 'rain' is associated with a covert pronominal element — a location variable — which can either be saturated by means of an overt locative phrase, or be left unsaturated (in which case the free variable receives a specific value from the extralinguistic context). One may also treat 'rain' as a predicate exhibiting *variable polyadicity* : when the location is explicit, as in (1), the predicate takes a location argument ; but when it is left implicit, as in (2), the location is part of the *context* (rather than part of the content) and 'rain' functions as an indexical : it expresses a definite content only with respect to a context centered on a particular location. (This, in effect, amounts to treating 'rain' as a *part-time indexical,* in the terminology of Recanati 2001).

If, like Stanley (2000), we take 'rain' to be associated with a covert pronominal element in logical form, we will not be surprised by the asymmetry I mentioned above. For pronouns do have the property that, when unbound, they must be contextually assigned a specific value : 'He is tall' can never mean that some male or other is tall. The view that 'rain' is a part-time indexical also predicts the asymmetry ; for indexicals do require that the context provide a specific value for the contextual parameter on which their semantic value depends.

1.2 Overt binding of implicit arguments

The asymmetry between the explicit and the implicit when it comes to the availability of indefinite readings is a very general phenomenon. If I say that the stool is on the left of the table, I do not explicitly mention the perspective (as I would if I said 'the stool is on the left of the table from my perspective'), but a perspective has to be contextually provided. What has to be provided is a *definite* perspective : my utterance cannot mean that the stool is on the left of the table from some perspective or other. Yet if we make the perspective explicit, we can introduce this 'indefinite' reading : nothing prevents me from saying 'the stool is on the left of the table from some perspective or other'.

In a justly famous paper, Barbara Partee argued that implicit variables, like explicit variables, *can* be bound and do not need to be assigned specific values (Partee 1989). Does this contradict my claim regarding the unavailability of indefinite readings for implicit

arguments ? I do not think so. Partee was concerned with cases like (4)-(6), in which the expression carrying the implicit argument occurs in a quantified context.

(4) For many arab countries, America is the enemy [of those countries]
(5) Wherever I go, it rains [there]
(6) Whenever a secretary made a mistake the others did not notice [the mistake]

In those cases, the binder is explicit, even if the bindee is an implicit argument. The implicit argument is *overtly* quantified over. But my claim regarding the unavailability of indefinite readings concerns arguments that are 'implicit' in the (strong) sense that they are *neither overtly mentioned nor overtly quantified over*. In (1) the location argument is overtly mentioned (by means of the phrase 'here/in Paris'). In (3) and (5) the location argument is overtly quantified over (by means of the phrases 'somewhere', 'in all major cities' and 'wherever I go'). In (2), however, the location argument which the context provides is neither overtly mentioned, nor overtly quantified over. According to the standard view, no indefinite reading is possible for the implicit location argument in (2).

In the second part of this article I will argue that the standard view is actually mistaken, and that an indefinite reading *is* available for (2). But I maintain that implicit arguments, when they exist, cannot be given indefinite readings. (What I will deny, therefore, is that 'rain' carries an implicit location argument.) Thus consider the expression 'home'. When the person whose home is in question is not explicitly specified, it is contextually provided qua implicit argument. Thus 'John went home' can mean that John went to John's home or that he went to the speaker's or to the hearer's home, depending on the context. It is also possible for the implicit argument to be overtly bound, as in 'Everybody went home' : that means that for all *x*, *x* went to *x*'s home. What is not possible is to use 'John went home' to mean that he went to *someone or other's home*.

1.3 Two types of implicit argument ?

According to Fillmore (1969, 1986), there are two sorts of implicit arguments, and the feature I have mentioned (the unavailability of indefinite readings) characterizes only one of them : the 'definite' implicit arguments. The other category is that of 'indefinite' implicit arguments. Intransitive 'eat' is a case in point : it carries an indefinite implicit argument. Thus 'John eats' means that he eats *something or other*.

Fillmore construes the two categories as mutually exclusive, but there are implicit arguments that allow for both possibilities. Relational nouns such as 'mother', 'father' and 'husband', in the absence of an explicit complement, can be understood either way. In (7) the implicit argument of 'mother' is definite, while in (8) it is indefinite.

(7) When the kids started crying, the mothers stood up.
(8) The toystore was full of parents in search of gifts. The mothers were especially interested in educational games.

Similarly, even though 'local' is often (indeed, always) treated as requiring a specific implicit argument, as in (9), it also accepts indefinite readings, as in (10) and (11) :[2]

(9) I spent the summer vacation in Nice and I enjoyed reading the local newspaper everyday.
(10) Mary collects local newspapers.
(11) These ladies are local housewives who want to cheat [from the Internet]

I do not intend to deny the facts on which Fillmore's distinction is based : there are indeed two types of case, as he points out. But I use 'implicit argument' in such a way that only one of the two types deserves that name. My reason for so doing is that, whenever an alleged implicit argument can be understood indefinitely, an alternative analysis is available, which dispenses with implicit arguments altogether. Thus intransitive 'eat' arguably denotes a property, which we can define by existentially quantifying one argument of the two-place relation denoted by transitive 'eat'. That is, in effect, what Quine's Der operator does (Quine 1960: 229-231) : applied to any n-place predicate, it yields a n^{-1}-place predicate by existentially quantifying the last argument-role of the original predicate, according to the following schema:

(Der P) $x_1 \ldots x_{n-1}$ iff there is something x_n such that $Px_1 \ldots x_n$

[2] I owe this observation to Orin Percus, who gave an example like (10) in a discussion during the 2004 Milan Meeting on covert variables. Note that 'nearby', in contrast to 'local', can only take definite implicit arguments.

If '*P*' is a two-place predicate, like transitive 'eat', then 'Der *P*' will be a genuine one-place predicate, denoting a property rather than a relation. On this view, intransitive 'eat' does *not* denote a relation between the eater and an 'implicit argument' (the food). Similarly, in this framework, 'mother' will be construed as a polysemous predicate, denoting *either* a two-place relation (whose second argument can be explicit or implicit) *or* a property that can be defined by applying Quine's Der operator to the homophonic two-place predicate. No implicit argument is involved on the 'property' reading.

2. Implicit arguments vs free enrichment

2.1. The weatherman example

As I have said, I think an indefinite interpretation *is* available for a simple meteorological sentence like (2), an interpretation which makes it equivalent to 'it's raining somewhere'. In Recanati 2002 I gave the following example :

> I can imagine a situation in which rain has become extremely rare and important, and rain detectors have been disposed all over the territory (whatever the territory — possibly the whole Earth). In the imagined scenario, each detector triggers an alarm bell in the Monitoring Room when it detects rain. There is a single bell; the location of the triggering detector is indicated by a light on a board in the Monitoring Room. After weeks of total drought, the bell eventually rings in the Monitoring Room. Hearing it, the weatherman on duty in the adjacent room shouts: 'It's raining!' His utterance is true, iff it is raining (at the time of utterance) in some place or other. (Recanati 2002 : 317)

I take this example to cast doubt on the standard view, according to which 'rain' carries an argument slot for a location. On the basis of that type of counterexample, I have put forward an alternative proposal regarding 'rain' and other meteorological predicates. The proposal has two sides :

• On the semantic side, 'rain' is treated as a zero-place predicate (just as intransitive 'eat' is a one-place predicate and transitive 'eat' a two-place predicate). No location argument is involved in the argument structure of the predicate.

• On the pragmatic side, a process of free enrichment (often) takes place, in virtue of which the meaning of an utterance involving the 'rain' predicate is made contextually more specific than the semantic content determined by the literal meaning of the sentence. More precisely, through that process of free enrichment the meaning of the utterance is made location-specific, even though the sentence itself involves no (explicit or implicit) reference to a place.

The hallmark of the pragmatic process of free enrichment is that it is *optional* : it may or may not take place, depending on the context. In contrast, the contextual provision of an implicit argument is a *mandatory* process, since it is required in virtue of the semantics of some expression in the sentence. I therefore take the weatherman example to show that the location of 'rain', when it is contextually specified, is not a genuine implicit argument because, if it were, it would have to be provided in every context, including the context of the weatherman example (where no location is actually specified). I conclude that the location of rain, when contextually specified, is specified through a process of pragmatic enrichment ; *a process that may take place in connection with any event predicate whatsoever*, and which casts no distinctive light on the semantics of meteorological predicates as opposed to other event predicates.

2.2 Events and places

According to my proposal, the sentence 'it is raining' means something very simple and very close to the surface : that a rain event is taking place, or (equivalently) that there is rain.[3] No place is mentioned by the sentence as the place where that event occurs. Of course there must *be* such a place : an event can only occur at a particular place (and a particular time). This is a metaphysical fact about events, which holds whether the event is a raining event or a dancing event or a kissing event. Those event-types differ in many respects, and one of these differences is reflected in the difference between the argument structures of the corresponding predicates : 'rain' is a zero-place predicate, 'dance' is a one-place predicate, and 'kiss' is a two-place predicate. The argument structure of a predicate is a distinctive set of argument-roles. The place and time of the described event do not count as argument-roles in the relevant sense, hence they are not part of the argument structure, because they do not differentiate

[3] In this paper I deliberately ignore the semantic contribution of the progressive present tense.

events from one another ; rather, they are *general* characteristics of events.[4] Every event takes place somewhere : that is the reason why we can infer 'Mary danced somewhere' from 'Mary danced', even though 'Mary danced' says nothing about places.[5]

In some cases the location of the event is contextually understood. That is so whenever the location of the event is relevant to the conversational purposes at hand. Thus if we are talking about the ball that is to take place tomorrow, and someone tells me 'Mary will certainly dance tomorrow', I naturally understand what is said to be that Mary will dance tomorrow *at the ball*. But this is pragmatic enrichment : there is no explicit reference to the ball, and the literal semantic content of the sentence can be represented (in event-semantical terms) as something like :

$\exists e \exists t$ dance(e) & agent(e, Mary) & time(e, t) & posterior_to(t, t*) & tomorrow(t)

where 't*' is the time of utterance. The pragmatic enrichment resulting from the tacit reference to a place (viz. the place of the ball) can be represented as the contextual provision of an extra conjunct *Location(e, the_ball)*. This is similar to the enrichment of 'She took out her key and opened the door' into 'She took out her key and opened the door *with the key*'. Or we may think of the pragmatic enrichment at work in the 'dance' case in terms of a contextual restriction on the domain of the event quantifier : '(Among the events that will take place at the ball) there is a dancing event whose agent is Mary etc.' Be that as it may, there is a difference between the literal semantic content of the sentence, which does not involve any reference to a place, and the contextual meaning of the utterance, which does involve such tacit reference.[6]

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[4] I am indebted to Dick Carter for emphasizing this distinction.

[5] As Strawson writes, « our grasp of the fact that these quantifiers [e.g. 'somewhere'] can be added to (…) simple ascriptions of human actions without modification of truth-value rests on nothing more recondite than our grasp of the general concept of action » (Strawson 1997 : 75).

[6] Many theorists believe that quantifier phrases carry a domain variable. It that is so, then treating the tacit reference to a location as an instance of contextual domain restriction would not be a treatment in terms of enrichment, and it would affect the semantic content of the sentence (with respect to context). I will come back to this issue in the conclusion. Meanwhile, I assume the enrichment account.

2.3 Interpreting the weatherman example

Even though the reference to the ball in the above example is linguistically unarticulated, it affects the intuitive truth-conditional content of the utterance. That is why I talk of 'pragmatic enrichment' rather than of 'conversational implicature', since the notion of implicature is often taken in a narrow sense which entails truth-conditional irrelevance. Yet pragmatic enrichment has something important in common with conversational implicature : in both cases the aspects of meaning that result from the pragmatic process are optional. Nothing in the sentence itself — nothing *linguistic* — requires the pragmatic enrichment to take place ; hence it may or may not take place, depending on the context. In this respect pragmatic enrichment differs from indexical resolution and from the assignment of values to free variables/pronominal elements. When a value is contextually assigned to an indexical or a free variable in logical form, the contextual process of value assignment *is* triggered by something linguistic. Since it originates in some property of the expression type, the pragmatic process in question *must* take place, that is, it takes place in *every* context in which the sentence is felicitously uttered. This provides us with a test for deciding whether a contextually provided element of utterance meaning results from pragmatic enrichment, or whether it results from 'saturation', i.e. from a mandatory process of contextual assignment.

In the case of 'rain', we find that the contextual specification of the place of rain results from free enrichment, rather than from saturation (as the standard view has it), because it is not mandatory. In the weatherman example, no place of rain is specified. This shows that meteorological predicates do not carry an argument slot for a location, contrary to the standard view. They no more carry an argument slot for a location than other event predicates (e.g. 'dance') do. In all cases, a process of free enrichment may take place, in virtue of which the speaker tacitly refers to a particular place as the place of the described event, but this process is entirely pragmatic and is therefore irrelevant to the semantics of the event predicate.

I take the weatherman example to refute the standard view. Since I published it, however, attempts have been made to account for it without departing from the latter. In the third part of the paper I will introduce alternative explanations of the weatherman example, and in the fourth part I will expose their shortcomings.

3. Reinterpreting the weatherman example

I can think of two ways of reinterpreting the weatherman example so as to avoid my conclusion that the location of rain is not linguistically represented in sentences like (2). According to the first reinterpretation, the weatherman example is compatible with the claim that 'rain' is associated with a free location variable (or is a part-time indexical whose content depends upon a contextually provided location) because, appearances notwisthstanding, a specific location *is* contextually provided even in that example. The second reinterpretation concedes that the location of rain is not specified in the weatherman example, but rejects the conclusion that it is not linguistically represented. Rather, it holds that there is implicit existential quantification of the location variable.

3.1 Rain on Earth

The first re-interpretation has been put forward by Luisa Marti (forthcoming) and, independently, by Paul Elbourne (p.c.).[7] They argue that, in the weatherman example, the location variable is assigned *the whole territory* as contextual value. 'It's raining' therefore means something like 'it's raining on Earth'.[8]

Whoever puts forward such a proposal must explain why we get an *existential* reading : 'it rains (somewhere) on Earth'. Normally, when we say e.g. 'It's raining in Paris', we mean something nearly universal : that it rains *over* Paris (i.e. at most sub-locations in the Paris area). But clearly, in the weatherman example, the sentence 'it's raining' does not mean that it's raining over the Earth (i.e., nearly everywhere). The weatherman's utterance only means that it's raining *somewhere*.

It is not hard to find an explanation for this fact, however. One may argue that the universal reading, though widespread and possibly standard, is not linguistically mandated but

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[7] In contrast to Marti, Elbourne does not actually hold the view, but merely puts it forward for consideration.

[8] Stephen Neale (forthcoming) advocates a similar view, but, like Perry, he refrains from positing an 'argument place' or a free variable in logical form and commits himself only to the existence of an 'argument role' in the lexical semantics of 'rain' and other meteorological predicates.

itself results from a pragmatic process — a pragmatic process that does not take place, for principled reasons, in the weatherman example. The explanation proceeds roughly as follows.

1. The sentence 'it rains at *l*' is literally true if and only if it rains at *some* sub-location *l'* of *l*.
2. In many cases, it is relevant to mention rain in connection with a specific place *l* only if the sub-locations of *l* where rain actually occurs are *representative* of *l*.
3. If it rains over *l*, then rain occurs at most sub-locations of *l*, and this is sufficient to guarantee representativity.
4. The hearer assumes (and is expected to assume) that the utterance is relevant, hence in many cases he or she will be led to assume that it rains over *l*.
5. In some cases, however, one of the following conditions may be satisfied : it is relevant to mention rain in connection with some location *l* even if the sub-locations of *l* where rain actually occurs are not representative of *l*, or the sub-locations in question are representative of *l* even if it does not rain over *l*. If either of these conditions is satisfied it will be relevant to mention rain in connection with place *l* even though it does not rain over *l*. For example, if I am told that 'it rains frogs in Boston', I do not (necessarily) conclude that it rains frogs in most spots of the Boston area.[9] It is relevant enough to know that in *some* spot in the Boston area, it rains frogs. (It's even relevant to know that somewhere it rains frogs — whether in Boston or anywhere else.)[10]
6. In the weatherman example, arguably, one of the defeating conditions is satisfied, just as in the raining frog example. For that reason, the pragmatic step from existential to universal is not taken.

According to the proposed explanation, the existential (nonspecific) reading of the weatherman example is compatible with the fact that a specific location is contextually provided ; for the specific location in question — the Earth — is the place of rain only in the sense that it includes (as a sub-location) the place of rain. It turns out that there are two senses

[9] I owe the 'raining frog' example to Dan Sperber. The same example has independently come up in discussions between Pranav Anand, Eric Swanson and Sarah Moss at MIT.

[10] Which of the two defeating conditions obtains in such a case is an issue I will not go into here.

for the phrase ‘the place of rain’ : in the narrow sense, the place of rain is the place which the rain actually fills ; in the broad sense, the place of rain can be any place that includes the narrow-place-of-rain as a sub-location. If it rains in some place (in the narrow sense) then (in the broad sense) it rains in any place including it. If it rains in Mexico city (or in some suburb of Mexico city), then it rains on Earth. The weaterman example is nonspecific (existential) with respect to the narrow place of rain, but it nevertheless contextually specifies the place of rain in the broad sense.

On this view the lexical entry for the verb ‘rain’ is something like

$\lambda e.\ \lambda l\ .$ Rain (e) & Location (e, l)

and the location relation itself is understood in the broad sense and analysed as follows :

(e) (l) [Location (e, l) iff $\exists\ l'$ (Narrow_location (e, l') & $l' < l$)]

where ‘<’ is the sub-location relation. In the weatherman example, the variable ‘*l’* is assigned the Earth as value, and the event variable is existentially quantified, so that we get the expected reading :

$\exists\ e$ [Rain (e) & Location (e, the Earth)]

that is,

$\exists\ e\ \exists\ l'$ [Rain (e) & Narrow_location (e, l') & $l' <$ the Earth]

3.2 Optional variables

The second reinterpretation appeals to the fact that, as the Partee examples show, an implicit variable can be quantified. Since that is so, why not say that the implicit location variable is existentially quantified in the weatherman example, thus giving rise to the indefinite reading ? Why not analyse ‘it’s raining’, in that example, as ‘there is a location *l* such that it’s raining at *l*’ ? Or, equivalently, why not say that the argument-slot for a location is filled by means of a covert indefinite (‘somewhere’)?

The reason I have offered for resisting this sort of analysis is that *overt* variables (e.g. pronouns) cannot be covertly bound. Thus, as I pointed out, 'he is tall' cannot mean that someone or other is tall. Why should covert variables behave differently from overt variables ?

After presenting this argument in 'Unarticulated Constituents', I anticipated a possible response. There are, one might argue, two sorts of variables : those which (like pronouns) must be contextually assigned a value when unbound, and those which, when unbound, can *either* be contextually assigned a value *or* undergo existential closure. The variables which need not be assigned a specific value but may be existentially quantified I dubbed 'optional variables'. To account for the weatherman example, then, one only has to claim that the location variable belongs to the 'optional' category.

This response will be convincing only if the category of optional variables is independently needed, that is, only if we can find clear instances of the category. It is tempting to argue at this point that relational nouns like 'mother' precisely carry such an optional variable ; a variable which, as examples (7) and (8) demonstrate, can be either covertly quantified or assigned a definite value. Yet we cannot so argue without begging the question, for what is at stake is the correct analysis of sentences in which a putative implicit argument is understood as existentially quantified. To justify the analysis in terms of optional variables *both* of examples like (7)-(8) *and* of the weatherman example, we must find instances of optional variables among the overt variable-like elements.

The only candidate I can think of here is tense. According to Partee (1973), there is a striking parallel between tenses and pronouns, a parallel that justifies treating tenses as variables. Like pronouns, tenses have deictic, anaphoric and bound uses. In Partee's famous example, 'I did not turn off the stove', the past tense is understood deictically : the speaker refers to a specific time in the past. As Partee writes,

> When uttered, for instance, halfway down the turnpike, such a sentence clearly does not mean either that there exists some time in the past at which I did not turn off the stove or that there exists no time in the past at which I turned off the stove. The sentence clearly refers to a particular time. (Partee 2004 : 51)

Partee provides other examples in which tenses are used anaphorically or as bound variables. But what she fails to notice in her paper is that tenses have a reading which pronouns do *not* have.

The extra reading I have in mind is the very reading which Partee says is unlikely in the context she describes. In a different context, presumably, the past tense sentence 'I did not turn off the stove' *could* be given an 'indefinite' or 'existential' interpretation, rather than a deictic interpretation. If we change the example, the availability of that type of reading will be obvious. If, in a discussion about travels, the speaker says 'I went to China', she presumably means that, at some time in the past, she went there. This shows that temporal variables may not only be assigned specific values, as in Partee's example, but may also undergo existential closure. Once again, that reading is not available with pronouns : 'He is bald' cannot mean that some male or other is bald.[11] Because of that extra reading, if tenses are to be treated as variables (as Partee suggests), the variables in question must be different from pronominal variables : they must be *optional* variables. An optional variable, when unbound, may be contextually assigned a specific value *or* undergo existential closure.

We can, however, reject Partee's entire approach and maintain that tensed sentences — or at least, the sentences in the simple past she uses as examples[12] — *quantify over times,* even on the alleged deictic reading. The deictic reading arguably results from restricting the domain of quantification in a manner that mimics singular reference. Thus 'I didn't turn off the stove' means that, in the set of past events immediately following my last use of the stove, there is no turning off of the stove by me. In this way we account for the coexistence of existential and of (alleged) deictic uses *without* having to posit optional variables.

Which theory are we to choose ? Everything being equal, we should prefer the most parsimonious theory, that is, the theory that does *not* posit optional variables (in addition to standard pronominal elements). But everything may not be equal. The analysis of tense is a complex affair, and Partee's approach is generally considered as quite successful ; it may be, therefore, that we shall have to swallow optional variables in the package. If so — if optional variables are independently needed to account for tense — then we may feel free to use them to account for the weatherman example.

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[11] Partee (2004 : 52) mentions the existence of what she calls a 'nonspecific' deictic use of tenses, as in 'John went to a private school', and she claims that pronouns too have such a use ('they haven't installed my telephone yet'). So she might be tempted to deny the asymmetry that I am pointing out — she might argue that the alleged existential readings of the simple past tense are all nonspecific deictic uses.

[12] This qualification is needed in view of the fact that, as Schlenker pointed out to me, French 'imparfait' does not accept existential readings.

If we take this line, the lexical entry for ‘rain’ will be, again,

$\lambda e.\ \lambda l$. Rain (e) & Location (e, l)

but this time the location relation will be understood in the standard, narrow sense. On this theory, what happens in the weatherman example is that the location variable l is existentially quantified, like the event variable, instead of being assigned a contextual value :

$\exists\ e\ \exists\ l$ [Rain (e) & Location (e, l)]

3.3 Summing up

Three theories are in competition to account for the weatherman example. (A fourth one will be introduced in the next section.) According to the first theory, meteorological predicates do not carry an argument slot for a location (except in the general sense in which every event predicate carries such a slot) ; it follows that meteorological sentences like ‘it is raining’ need not be understood as location-specific. The semantic content of (2) is simply

$\exists\ e$ Rain (e)

On this view the possibility of an indefinite reading of (2), as in the weatherman example, is entirely expected. (2) says that a rain event is taking place, and a rain event, like any event, is bound to take place somewhere. Hence ‘it’s raining’ is equivalent to ‘it’s raining somewhere’, just as ‘Mary is dancing’ is equivalent to ‘Mary is dancing somewhere’.

Both the second and the third theory maintain that meteorological predicates like ‘rain’ carry an argument slot for a location :

- According to the second theory, which is an instance of the standard view, the slot must be contextually filled with a specific location ; and a specific location is indeed provided in the weatherman example, namely the Earth. The existential force of the weatherman example is accounted for by interpreting the location relation in the broad sense.

- According to the third theory, the argument slot need not be filled with a specific location ; it may be bound by a covert existential quantifier, and that is what happens in the weatherman example.

How are we to adjudicate between the three theories ? In the next section, I will argue that both the second and the third theory face serious problems. The third theory predicts a certain reading which, as a matter of fact, does not exist, or is hard to get ; while the second theory weakens the notion of location to the point where it can no longer do the job it was intended to do.

4. Who is right ?

4.1 Against the third theory

Consider the sentence :

(12) It is not raining

Can we run (a variant of) the weatherman example with that sentence, so as to get the following reading : *in some place or other, it's not raining* ? Let us try, by adjusting the original scenario :

> Imagine a situation in which the absence of rain has become extremely rare and important (it rains almost everywhere and everytime). All over the territory detectors have been disposed, which trigger an alarm bell in the Monitoring Room when they detect the absence of rain. There is a single bell ; the location of the triggering detector is indicated by a light on a board in the Monitoring Room. After weeks of flood, the bell eventually rings in the Monitoring Room. Hearing it, the weatherman on duty in the adjacent room shouts : 'It's not raining !'

Can we say that the weatherman's utterance is true iff, in some place or other, it is not raining (at the time of utterance) ? I find it rather hard to understand the utterance that way, despite the context. The weatherman ought to say something like 'the rain has stopped' : this *could* be understood as meaning that the rain has stopped somewhere. But it is very hard to assign to

'it's not raining' the (wide scope) indefinite reading — much harder than it is to understand the positive sentence indefinitely, as in the original weatherman example.

The unavailability of the wide-scope indefinite reading of (12), in contrast to the availability of the indefinite reading in the original weatherman example, must be accounted for. I will argue that the asymmetry is unexpected on the third theory, while it is expected on both the first and the second theory. [13]

According to the first theory, 'it's raining' simply says that a raining event it taking place, and 'it's not raining' says that it is not the case that a raining event is taking place. In both cases the literal meaning of the sentence can be enriched through some kind of tacit reference to a place ; thus both 'it's raining' and 'it's not raining' can be understood as saying that it is raining (or not) in Berlin, if Berlin is the contextually understood location. But the indefinite reading of the original weatherman sentence does not result from such a process of enrichment, on the first theory : the indefinite reading is what we get when we *don't* enrich the meaning of sentence but take it at face value (i.e. as meaning that there is a raining event, period). If we similarly take statement (12) at face value, it says that there is no rain (i.e. there is no rain *anywhere*). It does not mean that there is no rain somewhere.

According to the second theory, the Earth is contextually assigned to the location variable in the weatherman example. Presumably, this also happens in the negative variant of the example ; (12) is therefore analysed as saying that on Earth, it is not raining. Is this the unavailable reading, and is the second theory guilty of predicting that reading? No. According to the second theory, the Earth is not understood as the narrow place of rain (the location filled by rain) in the weatherman example, but as the broad location, where the broad location is defined as a location that contains the narrow place of rain. In the broad sense, to say that it rains at a given place *l* is to say that there is a sub-location *l'* of *l* which is filled by rain ; and to say that it does not rain (at *l*) is to say that there is no sub-location *l'* of *l* which is filled by rain. Sentence (12), in the negative variant of the weatherman example, is therefore analysed as saying that on Earth, it is not raining, in the sense that *there is no raining spot* (i.e. it's not raining anywhere). To assign the Earth to the covert location variable in sentence (12) therefore results in a reading quite different from the unavailable reading *Somewhere on Earth, it's not raining*. Being built into the lexical entry for 'rain', the existential quantifier

[13] I am indebted to Pranav Anand for suggesting that way of testing the theories, and to Paul Elbourne for pointing out that the second theory passes the test, contrary to what I initially thought.

over narrow locations takes narrow scope, whereas it takes wide scope on the unavailable reading.

In contrast, the third theory predicts that that the indefinite reading of (12) must be available. According to that theory, 'rain' carries a location variable, which is optional and can be bound by a covert existential quantifier. That is what happens in the weatherman example. In the negative variant of the example, therefore, the existential quantifier is expected to interact with negation, in such a way that two readings ought to be generated, depending on the scope of negation : the sentence will say either that at some location *l*, there is no rain, or that it is not the case that, at some location *l*, there is rain. The first reading is not actually available, and that argues against the third theory, unless it can provide a reason why that reading should be ruled out. (See §4.3 for more on this issue.)

4.2 Against the second theory

Like the first theory, the second theory has no problem with the negative version of the weathmerman example. What makes it possible to account for the unavailability of the wide scope existential reading, on the second theory, is the fact that the location relation is construed in the broad sense.

The problem with the second theory is that it cannot both have its cake and eat it : the idea that 'rain' involves an argument slot for a location no longer permits one to distinguish meteorological predicates from other event predicates, when the notion of location is interpreted in the broad sense.

According to the standard view, which the second theory is meant to protect, meteorological predicates carry an argument slot for a location, as part of their lexical semantics, rather than simply in virtue of the general fact that events take place somewhere. A contrast is thus drawn between meteorological predicates, like 'rain', and other event predicates, like 'dance' (Taylor 2001 : 53-4). Even though 'dance' is an event predicate and an event is bound to happen at some location, 'dance' does not carry an argument slot for a location ; 'rain' does. If we elaborate the standard view in the manner of the second theory, however, the contrast between 'rain' and 'dance' vanishes. For nothing prevents us from analysing 'dance' the way we have analysed 'rain', i.e. as involving a covert reference to some location, possibly the Earth, understood as the broad location of the dancing event. To say that Mary danced, on that analysis, is to say that there is (on Earth) some sub-location *l'* where she danced. This captures the standard, indefinite reading of 'dance'. In other words,

that defense of the standard view weakens it so much that the original intuition is lost. The original intuition was that ‘rain’ sentences involve some form of reference to some specific location of rain, in the narrow sense of ‘location’. By conceding that this need not be the case, one accepts my point that the contrast between ‘rain’ and ‘dance’ is ill founded, or at least exaggerated.

4.3 Against the fourth theory

In ‘Compositionality’, Partee notes that indefinite implicit arguments, if treated as existentially quantified variables, are such that the existential quantifier can only take narrow scope relative to any other scope-bearing element in the sentence (Partee 2004 : 168-9). This supports my claim that no existential quantifier is actually involved : if there were a quantifier, then presumably its interaction with other scope-bearing elements would generate scope ambiguities. However, there is an alternative to positing an existential quantifier in that sort of case, while maintaining that something like existential quantification takes place. Instead of saying that the location variable is bound by a covert existential quantifier, in the weatherman example, we can say that the argument slot for a location is filled by means of a covert *indefinite pronoun*. An indefinite pronoun, like French ‘on’, is characterized by the fact that it can only take narrow scope. (Thus ‘On ne sonne pas à la porte’ can only mean that it is not the case that someone is ringing at the door, on the indefinite use of ‘on’. It cannot mean that there is someone who is not ringing at the door.) If we take this line, we account for the fact that, in the negative variant of the weatherman example, the negation can only take wide scope. Let us call this view the fourth theory, for clarity’s sake, even though it’s actually a variant of the third theory.

Against the fourth theory, I advance a methodological principle : for obvious reasons of parsimony, *one should never posit covert syntactic elements that do no semantic work, unless there are independent syntactic grounds for positing them*. Something like this principle was invoked by Irene Heim in a lecture at Ecole normale supérieure (Paris, January 2005), in connection with Chierchia’s well-known analysis of sentences like ‘John wants to be elected’. In Chierchia’s framework, a covert pronominal element is posited as subject for ‘to be elected’, but it does no semantic work since ‘to be elected’ is said to contribute a property rather than a complete proposition. However, as Heim pointed out, there are independent syntactic grounds for positing the covert subject in this type of case.

In the 'rain' case, I claim, the alleged indefinite pronoun does no semantic work. The sheer existence of a raining event already entails the existence of a location where that event takes place ; hence the addition of an indefinite pronoun standing for a location contributes nothing.[14] One should therefore refrain from positing such a covert pronoun, unless there are independent syntactic reasons for so doing.

5. Conclusion

According to my analysis, meteorological predicates do not carry an argument slot for a location ; or rather, they no more carry such an argument slot than other event predicates do. We may, if we wish, say that *every* event predicate carries such an argument slot ; but then we have to acknowledge the fact that it is not mandatory to fill that slot by specifying the location of the event. Either way, the standard view regarding meteorological predicates must be given up : it is not true that a location has to be contextually provided when none is explicitly mentioned by a meteorological sentence. 'Rain' is just like 'dance' in this respect. The only difference between meteorological predicates and other event predicates is pragmatic : the location of the event is often relevant when the event being described is a meteorological event, hence it is quite typical to find tacit reference to a place in meteorological utterances — more typical than for other event predicates.[15]

I have not said much about the pragmatic process at issue when the location of the event is tacitly referred to. I said that the pragmatic process in question is an instance of free enrichment. What characterizes free enrichment is that it is optional : in contrast to 'saturation' (the contextual assignment of values to indexicals and free variables), free enrichment may or may not take place, depending on the context. That is the reason why I treat the specification of a location as an instance of enrichment : for a place may or may not be contextually specified, depending on the context. That is the lesson of the weatherman example.

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[14] In contrast, the indefinite pronoun 'on' in 'On sonne' adds something to what is expressed by the impersonal forms 'il sonne' or 'ça sonne' ('it's ringing'), namely the implication that the ringing event has a human or human-like agent.

[15] In using this difference to argue for the standard view, Corazza (2004 : 77-78) fails to maintain the distinction between semantics and pragmatics.

There is a complication, however. As I pointed out, the tacit reference to a place may be construed as an instance of contextual domain restriction. 'It's raining' literally says that there is a raining event, but may be contextually understood as saying that there is such an event *among the events that take place at a certain location*. The reference to a place is thus construed as a by-product of the contextual restriction of the event quantifier. Now quantifier domain restriction itself can be understood in two ways (Recanati 2004 : 87-88, 125). On one analysis, it is a matter of free enrichment. We (optionally) make the meaning of the sentence more specific by restricting the domain of quantification, on pragmatic grounds. On this view, argued for by Kent Bach (2000), the literal reading of a quantificational sentence is the unrestricted reading. But contextual domain restriction may also be treated as an instance of saturation : many semanticists hold that quantifier phrases are associated with domain variables which must be contextually assigned values. On this view the alleged unrestricted reading results from assigning the maximal domain to the domain variable (empty restriction). Thus it is possible to hold that the tacit reference to a place which we find in typical meteorological utterances results from the contextual assignment of value to a variable in logical form, namely the domain variable which the event quantifier carries. This seems to contradict my analysis, which stresses the optional character of place-specification and the absence of variable in logical form.

I want to remain agnostic about the two issues I have just raised :

- whether the contextual specification of a place is best construed as the tacit provision of an extra conjunct in the scope of the event quantifier, or as a by-product of the process of contextually restricting the domain of quantification ;
- whether contextual domain restriction itself is best construed as an instance of free enrichment or as an instance of saturation.

But even if we take the tacit reference to a place to be a by-product of contextual domain restriction, and simultaneously construe contextual domain restriction as an instance of saturation, the main points of my paper are not affected. That is so for two reasons. First, the (possibly empty) restriction of the domain of the event quantifier has to take place in *all* cases, whether the predicate at issue is a meteorological predicate or any event predicate. Second, the variable to which a value must be contextually assigned is not a location variable, but a domain variable. Only in certain cases, determined on pragmatic grounds, will the contextual restriction of the event quantifier take the form of the contextual specification of a

place. It is therefore possible to maintain that meteorological predicates do not carry an argument slot for a location, or no more carry such an argument slot than other event predicates do. Whenever there is tacit reference to a location, it takes place for pragmatic reasons and casts no light on the semantics of meteorological predicates.[16]

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[16] One may argue that we need a location variable anyway, to account for the cases in which the implicit location is overtly bound, as in (5). This is, in effect, the 'binding argument' put forward by Jason Stanley to dismiss the enrichment account (Stanley 2000 : 409-29). For a refutation of Stanley's argument, see Recanati (2002 : 323-30, 2004 : 109-114).

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