

# On an ambiguity in quantified conditionals

Bart Geurts

University of Nijmegen

## Abstract

Conditional sentences with quantifying expressions are systematically ambiguous. In one reading, the *if*-clause restricts the domain of the overt quantifier; in the other, the *if*-clause restricts the domain of a covert quantifier, which defaults to epistemic necessity. Although the ambiguity follows directly from the Lewis-Kratzer line on *if*, it is not generally acknowledged, which has led to pseudo-problems and spurious arguments.

## Introduction

Ever since Lewis's 1975 paper on adverbial quantification, the interplay between conditionals and quantifying expressions has been a recurrent theme in semantic theory. For the purposes of this paper modals will count as quantifying expressions, so the following is a case in point:

- (1) a. If Beryl is smoking marihuana, we have to report her to the police.
- b. If smoking marihuana is illegal in this country, we have to report Beryl to the police.

I maintain that, on their most natural readings, the logical forms of (1a) and (1b) are rather different. Whereas in (1a) the *if*-clause restricts the domain of the modal *have*, (1b) is more like an old-fashioned conditional sentence whose consequent accommodates a modal quantifier. I also maintain that the two sentences are ambiguous: (1a) has a recessive reading on which its LF coincides with the LF that is dominant for (1b), and *vice versa*.

In the following pages I argue that the interaction between conditionals and quantifying expressions gives rise to systematic ambiguity. This claim is intended to be a general in two ways. First, it applies to all expressions that are standardly analysed as quantificational in some sense; it extends to modals and adverbials, for example. Second, I argue that the ambiguity is always there, although in the majority of cases it will not be perceived, because it is resolved one way or the other.

This paper doesn't contain much that is new. Indeed, I will do little more than rearrange some of materials furnished by other sources. Still, this is a useful exercise, I believe, because even if the ambiguity I will be stalking may have been observed before, it has by and large gone unnoticed. And if there is a systematic ambiguity, as I maintain, theories of conditionals that seem to contradict each other may in fact be complementary, and the occasional debate will prove to be futile; examples will be provided as we go along.

## What causes the ambiguity?

Why should conditionals be systematically ambiguous in the way I have indicated? The answer to this question is implicit in the Lewis-Kratzer view on the interaction between quantifiers and *if*-clauses. The notion that *if*-clauses may restrict quantifier domains is due to Lewis (1975), who uses paradigms like the following to argue the point:

(2) Beryl {always/usually/sometimes} sneezes if she is nervous.

The most natural way of construing (2) is by assuming that the adverbial quantifiers range over a domain restricted by the *if*-clause to those states of affairs in which Beryl is nervous. If this is correct, as I think it is, sentences like (2) do not contain anything like the dyadic conditional connectives found in logic. There is just a single quantifier whose domain is restricted by the *if*-clause: 'the *if* of our restrictive *if*-clauses should not be regarded as a sentential connective. It has no meaning apart from the adverb it restricts.' (Lewis 1975: 11)

Lewis goes on to suggest that the conditional corresponding to (2) may be heard as containing an inaudible adverb:

(3) Beryl sneezes if she is nervous.

This may be construed as saying that that Beryl always sneezes if she is nervous, and if it is the only difference between (2) and (3) is that the quantifier is overt in the former and covert in the latter.

While Lewis reserves his analysis for choice occurrences of *if*, Kratzer (1979, 1991) proposes to apply Lewis's treatment across the board:

The history of the conditional is the history of a syntactic mistake. There is no two-place *if...then* connective in the logical forms for natural languages. *If*-clauses are devices for restricting the domains of various operators. Whenever there is no explicit operator, we have to posit one. (Kratzer 1991: 656)

(Kratzer says that the covert operator will be epistemic necessity by default, and I will assume so too.) There are two ways of reading this. One is that an overt operator is posited only if a covert one is not present; on this interpretation, an *if*-clause always restricts an overt quantifier if there is one. On the other reading, the two strategies for interpreting *if*-clauses are independent: an *if*-clause needs to restrict some quantifier or other, and perhaps there is a preference for having it restrict an overt quantifier, but the two strategies are generally available. I suspect that Kratzer has often been read as endorsing the first alternative, but I think the second alternative is the best. If this is so, the interplay between conditionals (or rather *if*-clauses) and quantified expression will always result in ambiguity, although it need not be apparent in all cases.

Adopting the second reading, then, I assume that an *if*-clause always restricts the domain of a quantifier, which may be adverbial (*usually, always, never*), nominal (*all, some, most*), or modal (*must, can, may*). If the quantifier is overt, I will say that the *if*-clause is given an O-reading; if it is covert, we obtain a C-reading. The hypothesis I would like to explore is that there is a systematic ambiguity between C and O; that it is to say, whenever an *if*-clause co-occurs with an overt quantifier, O and C-readings are equally possible, though not perhaps equally likely.

If there is such a thing as a systematic O/C ambiguity, it is rather special. It is not a lexical ambiguity, obviously, although we will see that some quantifiers may bias the hearer towards one of the two readings. It is not a structural ambiguity, either, even if syntactic structure may help to disambiguate, as we will also see. The O/C ambiguity resembles a scope ambiguity but it is not that, either: it doesn't arise because two operators are eligible for taking wide scope. It may be objected that this speaks against the O/C ambiguity, but such an objection would be unfair. Even if the O/C ambiguity is not quite like any other kind of ambiguity, the explanation I have suggested makes it perfectly clear how it arises. That it is rare is no reason to repudiate it altogether. Furthermore, I believe that once we know what we are looking for, we will find the same sort ambiguity in other places, as well; one example will be discussed at the end of this paper.

## Adverbial quantifiers

To return to our main topic, I accept Lewis's claim that an *if*-clause can restrict the domain of an adverbial quantifier in whose scope it occurs. But 'can' does not imply 'will', as witness the following contrast:

- (4) a. Mildred always drinks beer if she is happy.  
b. Mildred always drinks milk, if her own testimony is to be trusted.

Here it is rather obvious that we have two different types of readings. The most natural interpretation of (4a) results in an O-construal, but it would be decidedly unnatural to interpret (4b) analogously. (4a) may be rephrased as: 'Every time Mildred is happy, she drinks beer.' Try the same with (4b), and the difference will become apparent. Still, with some effort, we can force a C-reading on (4a), and while an O-interpretation of (4b) borders on the perverse, I think it can be done. Which goes to show that both sentences are ambiguous in principle, even though in practice the ambiguity doesn't show.

In examples like the following, by contrast, the ambiguity is manifest:

- (5) If Beryl is in Paris, she often visits the Louvre.

This sentence may be read as saying that, on many of her is in Paris, Beryl visits the Louvre (O), or as saying that, whenever Beryl is in Paris, she visits the Louvre a lot (C). Truth-conditionally, these readings are distinct: neither entails the other. The ambiguity may be resolved in various ways, e.g. by moving the adverb to the periphery of the sentence:

- (6) a. Often if Beryl is in Paris she visits the Louvre. (O only)  
b. If Beryl is in Paris, she visits the Louvre often. (C only)

Some adverbs appear to generally allow O-readings as well as C-readings; *often* and *sometimes* are in this class. Other adverbs prefer one of the two readings. For example, *twice* clearly prefers a C-construal, and consequently dislikes being in sentence-initial position:

- (7) a. If Beryl is in Paris she'll visit the Louvre twice.  
b. If Beryl is in Paris she'll twice visit the Louvre.  
c. ?Twice if Beryl is in Paris she'll visit the Louvre.

By contrast, *usually* induces an O-bias, and dislikes being last:

- (8) a. ?If Beryl is in Paris she visits the Louvre usually.  
b. If Beryl is in Paris she usually visits the Louvre.  
c. Usually if Beryl is in Paris she visits the Louvre.

We will see shortly that nominal quantifiers diverge in similar ways.

To sum up, I have tried to show that sentences with conditionals and adverbial quantifiers are generally ambiguous between O and C-readings. I consider this part of my argument to be relatively unproblematic, because with adverbial quantifiers the O/C ambiguity is rather easy to perceive. It will become harder when we turn to other types of quantifying expressions.

## Nominal quantifiers

If *if*-clauses can restrict the domains of adverbial quantifiers, we might expect that they can similarly affect the interpretation of nominal quantifiers such as *some*, *every*, and *most*. This hypothesis is discussed at length by von Fintel and Iatridou (2002), who argue that it must be given up altogether in favour of a more conventional view.

Von Fintel and Iatridou observe that *if*-clauses tend to have ‘lawlike’ connotations, which are lacking in other devices for restricting the domain of a quantifier, such as relative clauses. One of the minimal pairs they illustrate their observation with is the following (p. 6):

- (9) a. Every book that I needed for the seminar happened to be on the table.  
b. Every book happened to be on the table if I needed it for the seminar.

Von Fintel and Iatridou point out that, unlike the (a) sentence, the (b) sentence ‘does not appear to be very felicitous since the content matter of the claim is explicitly about a lucky accident.’ (*ibid.*) I agree with this observation, but would like to make two qualifying remarks. First, I am not sure that it is correct to call the effect ‘lawlike’:

- (10) a. Some of the books I needed for the seminar happened to be on the table.  
b. Some of the books happened to be on the table if I needed them for the seminar.

These sentences differ, too, but the difference does not seem to be that one conveys a lawlike connection while the other does not. Rather, it is that, unlike (10a), (10b) suggests that the speaker intends to quantify over states of affairs, not books. (10a) would be suitable for reporting that the speaker needed some books for his seminar, went over to the table, and found them there. (10b) would not be used for describing such a situation, but might be used if, while preparing for a seminar, it happened several times that the speaker went over to table, and there found a book he was looking for. If this is right, perhaps the effect of the *if*-clause is that it invites quantification

over states of affairs rather than ordinary individuals.

My second qualifying remark is this. Von Fintel and Iatridou’s examples demonstrate that an *if*-clause in the nuclear scope of a quantified NP does not always produce the same effect as a relative clause attached to the NP. To be sure, this is problematic for the view that such an *if*-clause serves to restrict the domain of the quantifier. But in itself this observation does not contradict that view, for it might be held that in addition to restricting the domain of a quantifier, *if*-clauses have an extra feature that relative clauses lack (e.g. they have a lawlike connotation or they restrict the domain of individuals indirectly by coercing quantification over states of affairs).

However, von Fintel and Iatridou have more data, some of which show quite convincingly that the domain of a nominal quantifier isn’t always restricted by an *if*-clause in its scope:

- (11) a. Many of the students will succeed if they work hard.  
b. Many of the students who work hard will succeed.
- (12) a. Few of the problems will be solved if we don’t use a computer on them.  
b. Few of the problems that we don’t use a computer on will be solved.

As in the previous examples, the (a) and (b) sentences express different meanings, but in these cases the differences are less elusive. For (11a) is preferably construed as saying that many of the students have the property  $\lambda x(x$  will succeed provided  $x$  works hard), which is not what (11b) says, by any light. The same for (12a) and (12b), *mutatis mutandis*. Hence, the most natural readings of (11a) and (12a) are C-readings.<sup>1</sup>

As von Fintel and Iatridou observe, there is a further way in which the (a) sentences in (11) and (12) deviate from the corresponding (b) sentences: their presuppositions are different. Whereas (11b) will normally be construed as presupposing that at least some of the students will work hard, (11a) merely presupposes that there are students. Similarly, (12a) presupposes that there are problems, while (12b) presupposes something more specific, i.e. that there are problems we won’t use a computer on. On the assumption that the (a) sentences have O-readings, this is not what we should expect: if a quantifier presupposes its domain, and the domain is restricted somehow (by an *if*-clause or otherwise), the restriction should be part of the presupposition—which it isn’t, apparently.

On the strength of these and other data, von Fintel and Iatridou argue that sentences like (11a) and (12a) actually wear their logical forms on their

---

<sup>1</sup> I deliberately refrain from saying that (11a) and (12a) don’t have O-readings, not only because it has not been demonstrated, but also because I am sceptical that it can be demonstrated, considering the vagueness of *many* and *few*.

sleeves: they are built from a generalised quantifier and an old-fashioned dyadic conditional. (Actually, it turns out that the conditionals required to make the story work, though orthodox in spirit, involve some innovative footwork, but there is no need to attend to details here.) I accept all of this: the observations and the proposed analysis. It is just that neither apply across the board, for consider the following:

- (13) a. Many of the students succeeded if they worked hard.  
b. Most people change their diet if they survive a cardiac arrest.  
c. Quite a few pensioners migrate to the South if they can afford it.

In each of these cases it is at least possible to obtain an O-reading. (13b), for example, may be read as saying that most of the people who survive a cardiac arrest will change their diet. Furthermore, if this is how the sentence is construed, the content of the *if*-clause is part of the domain presupposition, so that subsequent to an utterance of (13b), a plural pronoun may be used to refer to a set of people who have survived a cardiac arrest.

It appears, therefore, that the interaction between *ifs* and nominal quantifiers produces O-readings as well as C-readings: sometimes the *if*-clause restricts the quantifier domain and sometimes it doesn't. Hence, the interpretative behaviour of nominal quantifiers is consistent with my main thesis, which is that both readings are generally available, at least in principle.

When do we get one reading, and when the other? I don't have anything like a complete answer to this question, but there are likely to be several factors involved. First, tense seems to play a role. Many of von Stechow and Iatridou's key examples are in the future tense; (11a) and (12a) are cases in point. Example (13a) shows that the C-bias can be mitigated by changing the tense to the past. Another factor is the quantifier. Quantifiers that occur naturally in generalising propositions (such as *most*, *many*, and *all*) more easily admit of O-construals than some other quantifiers do. Compare, for example, (13a) with the following variation:

- (14) At least three of the students succeeded if they worked hard.

As far as I can tell, the only way of making sense of this sentence (if sense can be made of it at all) is by way of a C-construal; the O-construal seems highly unlikely, especially in comparison with (13a). Finally, grammatical structure may bias the hearer one way or the other: whereas (13a) prefers an O-construal, changing the word order may change the preferred reading too:

- (15) If they worked hard, many of the students succeeded.

Hence, nominal quantifiers appear to vary in the same way as their adverbial cousins do.

## Modals

The idea that *if*-clauses may restrict the domains of modal expressions is due to Kratzer (1979, 1991), who gives examples like the following:

- (16) a. If an accident occurs it must be reported to the security officer on duty.  
b. If the temperature is too high, there may be a problem with the coolant.

According to Kratzer, (16a) is to be construed along the following lines: ‘Consider states of affairs in which an accident occurs and which comply with rules and regulations that apply in this plant: in all these states of affairs the accident is reported to the security officer on duty.’ This is still a bit sketchy, to be sure, but it conveys the main idea, which is that the modal quantifier ranges over a collection of states of affairs restricted by the *if*-clause. (16b) is interpreted similarly.

Now let us consider *if*, in addition to Kratzer’s O-reading, sentences like these also allow for a C-reading. I maintain that this is so, but have to concede that in cases like (16a) and (16b) it is difficult to distinguish between O and C. Before I try to explain why this should be so, however, let us first establish that in sentences of the form, ‘If  $\varphi$  then  $M\psi$ ’, the *if*-clause doesn’t always restrict the domain of the overt modal M:

- (17) If Wilbur must mow the lawn, he must mow the lawn.

Obviously, this should be a tautology on one of its readings. However, on an O-construal, (17) states that Wilbur mows the lawn in all worlds where he must mow the lawn, which is not valid if we are talking about bouletic or deontic necessity, for example. More generally, the problem is that on an O-reading we will obtain a tautology only if the accessibility relation underlying *must* is reflexive. So the most natural reading of sentences like (17) is non-O.<sup>2</sup>

While sentences like (17) are problematic for an O-analysis because they are tautological, the following type causes trouble because it is contingent:

- (18) If Wilbur mows the lawn, he must mow the lawn.

If we allow the *if*-clause in (18) to restrict the domain of *must*, the reading we obtain is, to a first approximation, the following: ‘In all worlds where Wilbur mows the lawn, he mows the lawn’. Hence, the predicted reading is

---

<sup>2</sup> Note that this argument applies more widely. It extends to sentences with adverbial quantifiers, for example.

tautologous, but the interpretation we should like to have is not.<sup>3</sup> The most likely meaning of (18) is that, if it is the case that Wilbur mows the lawn, it is because he must do so—which is a C-construal, evidently.

The foregoing observations suggest that the interplay between conditionals and modals issues in O-readings as well as C-readings. Like its siblings, this particular instance of the O/C ambiguity has not been generally acknowledged, and this failure has led to a number of arguments that, in the light of the O/C distinction, are ill-founded if not downright spurious. By way of illustration I will briefly go into Zvolenszky’s (2002) critique of Kratzer’s theory of modality.

Zvolenszky’s argument revolves around the following examples:<sup>4,5</sup>

- (19) a. If Britney Spears drinks cola in public, then she must drink Pepsi.  
 b. If Britney Spears drinks Coke in public, then she must drink Coke in public.

We are to imagine that one of the terms in Ms Spears’s advertising contract with the Pepsi company stipulates that the only brand of cola she is allowed to drink in public is Pepsi’s. So in this scenario (19a) is true and (19b) is false.

We have already seen that an O-type analysis fails to explain how sentences like (19b) can ever be false, and that a C construal is called for. If we adopt a possible-worlds analysis of conditionals this is to say, in effect, that the sentence contains two modal operators, one overt and one covert. Now Zvolenszky reasons as follows. If we are to have a uniform analysis of conditionals, we will have to accept that (19a) contains two modals just as (19b) does. So, if  $C$  is a contextually given set of worlds,  $C_{\text{cola}}$  contains all and only those worlds in  $C$  in which Ms. S. drinks cola in public, and for any world  $w$ ,  $D_w$  is the set of possible worlds that in view of Ms. S.’s legal obligations are the most desirable, as seen from  $w$ ; then: (19a) claims that Ms. S. drinks Pepsi in all  $w' \in D_w$ , for all  $w \in C_{\text{cola}}$ . Homing in on  $D_w$ , Zvolenszky argues that, for all  $w \in C_{\text{cola}}$ ,  $D_w \subseteq C_{\text{cola}}$ ; otherwise there might be worlds in  $D_w$  where Ms. S. doesn’t drink cola at all, thus falsifying the consequent of (19a), and the entire sentence. But then the same restriction must be enforced in the case of (19b), and this makes the sentence tautologous after all, because it coerces the interpretation that Ms. S. drinks Coke in all  $w' \in D_w$ , for all

---

<sup>3</sup> This type of problem is a familiar one in deontic logic. In connection with Kratzer’s theory of modality and conditionals it was first discussed by Frank (1997); see also Zvolenszky (2002).

<sup>4</sup> I am informed by my daughter (p.c.) that Britney Spears is a performer of light music who is very popular with children.

<sup>5</sup> In the following I will discuss only part of Zvolenszky’s argument, who after her exposition of the main problem goes on to criticise Frank’s (1997) solution at some length.

$w \in C_{\text{Coke}}$ , which is necessarily true if  $D_w \subseteq C_{\text{Coke}}$ , for all  $w$ . We are back to square one.

It will be clear what, in my opinion, is wrong with Zvolenszky's argument. Zvolenszky takes it for granted that (19a) and (19b) must have a uniform analysis. But we have seen enough independent evidence by now to warrant the assumption that sentences like these are generally ambiguous between O-readings and C-readings, and it so happens that (19a) strongly prefers the latter and (19b) the former. This solves the problem, as far as I can tell. (It is perhaps too soon to abandon possible worlds altogether, as Zvolenszky argues we should.)

But, the careful reader will object at this juncture, if (19a) and (19b) are both ambiguous between O and C, why is that we don't perceive an ambiguity in either case? This is a more general problem, and I will dwell on it for a while.

## An ambiguity playing possum

Even if the O/C distinction is clear enough in the abstract, it is not always easy to see that quantified conditionals are genuinely ambiguous. In most cases one of the readings is clearly dominant, while the other is hard if not impossible to obtain. There are all sorts of reasons for this, some of which we have met as we went along. We have seen, for instance, that tense, word order, and quantifier type may favour one reading at the expense of the other.

In a great many cases, the recessive reading will tend to go unnoticed because it is infelicitous in some way or other. The reading in question may be tautologous; the O-construal of (19b) is destitute of content, and this is one of the reasons why it doesn't surface (further factors conspire to promote the O-reading in this case, as we will presently see). In other cases, the recessive reading, though observable, is so bizarre that it will remain dormant under normal circumstances.

(20) Beryl always sneezes if she is nervous.

Here the O-reading is clearly dominant. It is nearly impossible to obtain the C-construal, which might be something along the following lines: 'If it turns out that Beryl is nervous, then that would be evidence for the claim that she always sneezes.' It takes a rather outlandish scenario to bring this type of reading to the fore, but it can be done.

Another reason why the O/C ambiguity may not be manifest is that occasionally the two readings coincide or at least are very similar.

(21) If Wilbur is in Germany, he must be in Germany.

I find it impossible to construe this as anything but a tautology, and if this is correct, the explanation might be that the O-construal and the C-construal are equally tautologous. Whether or not this is so will depend on the details of the semantics of epistemic *must*, as well as the exact properties of the epistemic accessibility relation. But if we adopt an off-the-shelf epistemic logic, with an accessibility relation that is introspective, the two readings of (21) are both tautologous.<sup>6</sup>

Still assuming that our epistemic logic is standard, the C-construal of (22) will render the sentence infelicitous for yet another reason:

(22) If Wilbur is in Germany, he must be in Berlin.

On its O-construal, (22) says that in all worlds in which Wilbur is in Germany, he is in Berlin; which is as it should be. On its C-construal, by contrast, (22) turns out to be equivalent to (23):

(23) Wilbur must be in Berlin.

On this interpretation, then, (22) violates Grice's maxim of order; it is unnecessarily verbose, and therefore this reading is dispreferred.

Deontic modals have two aspects. On the one hand, a deontic modal may be viewed as imposing a constraint on action (call this the moral aspect). On the other hand, it may be viewed as making claim about such constraints (call this the ontological aspect). These two aspects nearly always go together. If I tell somebody that she should drive on the right, I inform her about the existence of a norm and by doing so contribute to its observance. It is only in very special cases that the two aspects come apart, and even then they seldom come apart completely. (In the possible-worlds framework the two aspects are conflated, and the framework will have to be enriched somehow if it is to capture the distinction, but I will leave that topic for another occasion.)

---

<sup>6</sup> Informally, if the accessibility relation is introspective, you know what you know and what you don't know. Less informally, let  $D_w = \{w' : wRw'\}$  for any accessibility relation  $R$ . Then  $R$  is transitive iff  $D_{w'} \subseteq D_w$  for all  $w' \in D_w$ ;  $R$  is euclidean iff  $D_w \subseteq D_{w'}$  for all  $w' \in D_w$ ; and  $R$  is introspective iff it is transitive as well as euclidean, i.e.  $D_w = D_{w'}$  for all  $w' \in D_w$ . In epistemic logic the accessibility relation is standardly assumed to be introspective, although this is not entirely uncontroversial. It should be noted, however, that we are concerned here with rather special instances of epistemic modality: the scenario is always that of a single speaker reporting on his or her own beliefs, suppositions, and so on. And in this particular type of case, it is quite plausible that the accessibility relation is introspective.

Neither of the examples discussed in the text require full introspectivity: transitivity will do for (21), and for my remarks about (22) to hold it is sufficient that the accessibility relation is euclidean.

(24) If Wilbur mows the lawn, he must mow the lawn. (= (18))

We saw that this sentence is problematic for the view that *if*-clauses always restrict the domain of an overt quantifier, if one is available. The problem is that the predicted O-reading is tautologous, stating as it does that in all worlds in which Wilbur mows the lawn, he mows the lawn. I contend that in a sense this is correct; for if we fasten on the moral aspect of *must*, shutting out the ontological one, (24) *is* pointless, of course. Turning next to the ontological aspect, if (24) is given an O-construal, it states, in effect, that in the utterance world there is a futile norm; that is to say, a norm that doesn't constrain Wilbur's actions in any way. It is only to be expected that a cooperative hearer (and aren't we all?) will want to avoid this interpretation, and opt for a C-construal instead.

A further factor that may help to advance the C-reading of (24) is focus. The second half of the sentence can only be read with focus on *must*, and this is likely to affect hearers' preference for one reading as opposed to the other.<sup>7</sup> More generally, focusing appears to constrain the decision between O and C, though not, as far as I can see, in a direct way; it is not as if focus in this or that position always excludes one of the readings.

A final factor that may contribute to the disambiguation of quantified conditionals is a general preference for O-readings. Quantified conditionals that distinctly require C-readings are few and far between, and often somewhat peculiar; (24) is a case in point, but many of the examples we have met in the foregoing are deviant in some way or other. If this observation is correct, it is fairly clear why it should be so. If it is the case, as Kratzer says, that *if*-clauses always constrain some operator or other, it is only to be expected that an *if*-clause will want to hijack an overt operator, if one is present; for otherwise a covert operator will have to be accommodated, which is surely less economical. But as I have tried to show in the foregoing, this is just a default, for in general both options are available.

## The ambiguity occurs in other constructions, as well

It was noted above that the O/C ambiguity is somewhat special. The ambiguity arises out of the somewhat peculiar desire of *if*-clauses to restrict quantifier domains, which results in something that is similar to but not quite the same as a ambiguity of scope. So, it is not to be expected that the O/C ambiguity will be rife outside the context of quantified conditionals. It remarkable, therefore, that disjunctions show the same sort of ambiguity:

---

<sup>7</sup> I take it that this is related to what is sometimes called 'polarity focus'. See Geurts and van der Sandt (2004) for discussion.

(25) You may do this or that.

Intuitively, this sentence may be read in two rather different ways. On its first and most natural construal, the addressee is granted permission to do this or that. On this reading, the sentence seems to entail both of the following, even though the addressee is not given permission to do this and that:

- (26) a. You may do this.  
b. You may do that.

On the second construal, which may be enforced by adding, ‘I forget which’, the message is that either (26a) or (26b) is the case (so neither is entailed).

In Geurts (2003) I argued, following Zimmermann (2000), that *or* is in fact a modal connective: ‘ $\varphi$  or  $\psi$ ’ means something like ‘ $M\varphi$  and  $N\psi$ ’, where M and N are modal operators that may be overt (as in (25)) and default to epistemic possibility if no overt modal is available. On this analysis, (25) is genuinely ambiguous, and the ambiguity is the same as the one observable in quantified conditionals.

## References

- Frank, A. (1997). *Context dependence in modal constructions*. Doctoral dissertation, University of Stuttgart.
- Geurts, B. (2003). Entertaining alternatives: disjunctions as modals. Ms, University of Nijmegen.
- Geurts, B. and R. van der Sandt (2004). Interpreting focus. To appear in *Theoretical linguistics*.
- Kratzer, A. (1979). Conditional necessity and possibility. In R. Bäuerle, U. Egli, and A. von Stechow (Eds.), *Semantics from different points of view*, pp. 117–147. Berlin: Springer Verlag.
- Kratzer, A. (1991). Conditionals. In A. von Stechow and D. Wunderlich (Eds.), *Semantics: an international handbook of contemporary research*, pp. 651–656. Berlin: De Gruyter.
- Lewis, D. K. (1975). Adverbs of quantification. In E. L. Keenan (Ed.), *Formal semantics of natural language*, pp. 3–15. Cambridge University Press.
- von Fintel, K. and S. Iatridou (2002). If and when *if*-clauses can restrict quantifiers. Ms, Massachusetts Institute of Technology, Cambridge, Mass.
- Zimmermann, T. E. (2000). Free choice disjunction and epistemic possibility. *Natural language semantics* 8: 255–290.
- Zvolenszky, Z. (2002). Is a possible worlds semantics of modality possible? A problem for Kratzer’s semantics. In B. Jackson (Ed.), *Proceedings of SALT 12*, pp. 339–358.