Modalised Conditionals
—A Response to Willer—

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Abstract

A paper by Schulz (2010) describes how the suppositional view of indicative conditionals can be supplemented with a derived view of epistemic modals. In a recent criticism of this paper, Willer (2011) argues that the resulting account of conditionals and epistemic modals cannot do justice to the validity of certain inference patterns involving modalised conditionals. In the present response, I analyse Willer's argument, identify an implicit presupposition which can plausibly be denied and show that accepting it would blur the difference between plain assumptions and their epistemic necessitations.

1 Conditionals and Epistemic Modals

The debates about conditionals and epistemic modals display various structural similarities. Positions of the same type have been advanced in both domains. There are contextualist theories of indicative conditionals and corresponding theories of epistemic modals.[1] More recently, there are also relativist theories of indicative conditionals supplementing the relativist theories of epistemic modals.[2] In the debate about indicative conditionals, the suppositional view is fairly popular.[3] To a reasonably high degree, the suppositional view corresponds to expressivist theories of epistemic modals which are currently only rarely discussed in the philosophical literature.[4] In the light of the structural similarities, one may wonder whether and to what extent unified accounts of indicative conditionals and epistemic modals are possible. To draw a balanced picture, however, we should also take notice of theories of indicative conditionals which do not correspond to any theory of epistemic modals. These include non-epistemic (or objective) theories of indicative conditionals as exemplified most prominently by the material analysis of the indicative conditional.

Schulz (2010) explores the possibility that the theory of epistemic modals may be tied to the theory of indicative conditionals by a logical link between

[1] For instance, see the accounts developed by Kratzer (1977, 1979, 1981, 1986).

[2] See Weatherson (2009) and the suggestions made in the final section of MacFarlane and Kolodny (2010). For relativist theories of epistemic modals, see Egan et al. (2005) and MacFarlane (forthcoming).

[3] Cp. e.g. Barnett (2006) and Edgington (1995).

[4] Schnieder (2010) is a notable exception.

indicative conditionals and epistemic modals. There are two inference patterns which enjoy a considerable amount of intuitive plausibility. First, it seems that indicative conditionals preserve epistemic possibility:

(1) It *might* be that my favourite team lost last night's competition.

(2) *If* my team lost last night's competition, they fired the coach.

(3) Therefore, it *might* be that they fired the coach.

Formally, this inference exemplifies the pattern

$$\Diamond A, A \Rightarrow B \therefore \Diamond B,$$

where the diamond represents epistemic possibility and the double arrow stands for the indicative conditional.

Secondly, indicative conditionals seem to follow from the strict epistemic conditional. As an example, consider the following inference:

(4) *Certainly*, either the gardener or the butler did it.

(5) Therefore, if the gardener didn't do it, the butler did.

This inference may be formalised as

$$\Box(A \supset B) \therefore A \Rightarrow B,$$

where the box represents epistemic necessity and the horseshoe is the material conditional.[5]

If the modal operator is interpreted as metaphysical necessity and the conditional as a counterfactual, these two inference patterns are familiar from the debate about the relation between counterfactuals and metaphysical modality.[6] Given a fairly weak assumption about the modal logic of epistemic modals, the two inferences jointly imply the following two equivalences ('$\equiv$' is the material biconditional and '$\bot$' stands for an arbitrary contradiction):

$$\Box A \equiv \neg A \Rightarrow \bot \text{ and } \Diamond A \equiv \neg(A \Rightarrow \bot).^{7}$$

If these equivalences hold, then epistemic possibility and epistemic necessity allow for an equivalent expression in terms of indicative conditionals. A proposition would be epistemically necessary form the perspective of a given epistemic state if assuming it to be true leads one to a contradiction. Correspondingly, something would be epistemically possibility if assuming it to be true does not lead one to a contradiction.

In his paper, Schulz (2010) describes how a theory of epistemic modals can be derived from the suppositional view of indicative conditionals by employing

[5] Strictly speaking, formalising the inference as $\ulcorner \Box(A \vee B) \therefore \neg A \Rightarrow B \urcorner$ would be more adequate, but the formalisation above displays the relation to the material conditional more perspicuously.

[6] Cp. e.g. Williamson (2007: ch. 5).

[7] As possible definitions of modal operators, these equivalences were already introduced by Lewis (1973: 22) and Stalnaker (1968).

the two inference patterns above. Given any conditional '$\rightarrow$', we may call the conception expressed by the modal operators defined by $\ulcorner \Box A \equiv \neg A \rightarrow \bot \urcorner$ and $\ulcorner \Diamond A \equiv \neg(A \rightarrow \bot) \urcorner$ the *background modality* of the conditional '$\rightarrow$'. With this piece of terminology in mind, we can then say that the two equivalences between epistemic modals and indicative conditionals encode the hypothesis that epistemic modality is the background modality of indicative conditionals. Another application of this concept is the case of the counterfactual. Here the most prominent hypothesis is that metaphysical modality is the background modality of counterfactuals.

In a way, the paper by Schulz can be seen as a case study of what could be a more general research project. In principle, one can take any theory of indicative conditionals, apply the two equivalences, and see whether the resulting background modality is a plausible candidate for what is expressed by epistemic modals. Less directly, one can also start with a theory of epistemic modals and search for theories of indicative conditionals which yield the theory of epistemic modals one has started with by application of the two equivalences.

A note of caution. The hypothesis that epistemic modality is the background modality of indicative conditionals is a substantive thesis which should be treated with caution because it will be incompatible with some prominent theories of indicative conditionals. According to some theories, indicative conditionals do not have an interesting background modality or they have a background modality which is no plausible candidate for what is expressed by epistemic modals. If, for instance, the material analysis is correct, then indicative conditionals have a vacuous or trivial background modality. It is easily seen that the two equivalences would jointly yield $\ulcorner A \equiv \Box A \urcorner$ and $\ulcorner \Diamond A \equiv A \urcorner$ when applied to the material conditional. But since epistemic possibility and necessity operators are not redundant, epistemic modality cannot be the background modality of indicative conditionals if the material analysis is correct.

In a reply to Schulz, Willer (2011) aims to show that the suppositional view yields—via the two equivalences—a defective theory of epistemic modals. Since Willer assumes that the two equivalences hold, he can conclude that something must be wrong with the suppositional view of indicative conditionals. The way Willer tries to reach this conclusion is a little more roundabout than one might initially expect, though. As a matter of fact, he does not directly argue against the account of epistemic modals presented in Schulz (2010). Rather, he focusses on *modalised indicative conditionals* such as

(6) If John is not in Chicago, he *must* be in Boston.

As a first approximation, a modalised indicative conditional is simply any indicative conditional in which an epistemic modal is used. For Willer's project, indicative conditionals in which an epistemic modal governs at the level of surface grammar the consequent of the conditional (compare the example above) will be the only ones which matter. Now, Willer presents two inference patterns involving modalised indicative conditionals which he takes to be valid. Then he argues that the suppositional view combined with a derived view of epistemic modals as outlined by Schulz cannot explain the putative validity of these inferences. Unfortunately, modalised indicative conditionals are not discussed in

Schulz (2010) at all. For this reason, Willer has to make an assumption about how the view presented by Schulz should be extended to such cases. To reduce the complexity of the dialectic situation, the main focus of the present response will be on the inference patterns Willer presents involving modalised conditionals, although I will comment on how modalised conditionals are best construed on the suppositional view along the way.

2 Two Inference Patterns

Willer focusses on two informal inference patterns involving modalised indicative conditionals. The first pattern is exemplified by the following sequence:

(7) John *must* be in Chicago or in Boston.

(8) Therefore, *if* John is not in Chicago, then he *must* be in Boston.

In addition, Willer considers a second inference pattern:

(9) *If* John is not in Chicago, then he *must* be in Boston.

(10) John is not in Chicago.

(11) Therefore, John *must* be in Boston.

The two inference patterns enjoy a reasonable amount of intuitive acceptability. Based on this datum, Willer makes the slightly stronger assumption that they are indeed both valid. This stronger assumption would probably be the most straightforward explanation of why we find the present inferences intuitively acceptable, but alternative explanations which bring into play the possibility of scope confusions or pragmatic effects should not be ruled out in advance.

Now, in each case, the indicative conditional (which is the same in both inferences) contains the epistemic modal 'must'. At the level of surface grammar, the modal expression has narrow scope over the consequent of the conditional only. But it is well known that constructions of a similar type often allow for an interpretation according to which the modal expression is given wide scope over the whole conditional. So, there are at least two different ways to represent the two inferences on the level of logical form. Willer reckons with a wide scope reading in addition to the narrow scope interpretation. To get a clearer picture, let us formalise the inferences according to the two possible scope options. On the narrow scope decomposition, the two inferences have the following form:

(Narrow Scope Analysis)

(N1) $\Box(A \vee B) \therefore \neg A \Rightarrow \Box B$,

(N2) $\neg A \Rightarrow \Box B, \neg A \therefore \Box B$.

Assigning the modal wide scope would result in these two forms:

(Wide Scope Analysis)

(W1) $\Box(A \vee B) \therefore \Box(\neg A \Rightarrow B)$,
(W2) $\Box(\neg A \Rightarrow B), \neg A \therefore \Box B$.

Willer himself prefers the narrow scope interpretation because it is more faithful to the surface grammar. His own semantic proposal is designed to make both inferences valid on the narrow scope analysis. We may note already that on the narrow scope analysis, the second inference is simply an application of modus ponens.

As an aside, let me mention that there is a third syntactic option which Willer does not take into account. It may be that the modal expression gets restricted by the 'if'-clause.[8] On this analysis, a modalised conditional can be given the form

(12) [Modal : 'if'-clause] [Consequent].

Thus, the 'if'-clause is taken to restrict the epistemic modal in a way analogous to how a quantifier might be restricted by a predicative clause. The restricted epistemic modal is then taken to apply to the consequent of the conditional. Semantically, the restrictor analysis has the following effect. Suppose the modal expresses possibility, high probability or necessity and is furthermore associated with a domain of possible worlds. Now, if the restrictor analysis is applied, a modalised conditional will be true if the consequent is possible/probable/necessary with respect to the restriction of the original domain to those worlds at which the antecedent is true. On this analysis, the modal expression neither operates on the conditional as a whole as in the wide scope analysis nor does it apply only to the consequent of the conditional as in the narrow scope analysis. Rather, it gets first restricted by the 'if'-clause and is then applied to the consequent of the conditional.

The restrictor analysis of modalised conditionals squares nicely with the suppositional view of indicative conditionals. On the suppositional view, indicative conditionals are described as being used to make non-categorical assertions of the consequent relative to the supposition of the antecedent. So, indicative 'if'-clauses are taken to restrict assertions and other speech-acts to the supposition of the antecedent. If unembedded 'if'-clauses are described as restricting speech-acts, it is only a small step to take them to restrict certain operators under which they may be embedded. For this reason, the restrictor analysis can be expected to be part of the suppositional theory of modalised conditionals. (In addition, the suppositional theory may allow for strictly narrow scope readings.) For the purposes of the present discussion, we can safely set the restrictor analysis aside because Willer rests his case solely on conditionals containing the epistemic necessity operator 'must'. Yet for a necessity operator, we may assume that there is no semantic difference between the restrictor analysis and the corresponding wide scope reading. On the restrictor analysis, a modalised conditional of the form ⌜It must be that if A, B⌝ is true or acceptable just in case 'B' is true at all epistemic possibilities (associated with the modal 'must' in a given context) at which 'A' is true. The same interpretation can be reached

[8] Cp. Kratzer (1986) and Lewis (1975).

on a wide scope decomposition if it is assumed that the conditional contributes the material truth conditions within the scope of the epistemic modal. Structurally, this equivalence reflects the fact that the need for a restrictor analysis of certain quantifiers does not show up in the case of the universal quantifier but rather in the case of quantifiers like 'most'.

Back to the main track. There are various possibilities concerning the relation between a modalised conditional such as 'If John is not in Chicago, he *must* be in Boston' and the possible syntactic analyses. One possibility is that such conditionals are *ambiguous* between a narrow scope analysis and a wide scope decomposition. On the restrictor view, there is a very specific way in which conditionals with a modalised consequent can be ambiguous: the 'if'-clause may either be taken to restrict the overt modal governing the consequent of the conditional or it may be taken to restrict a covert modal supplied by context leaving the overt modal in the consequent unaffected.[9] There would then be a reading on which the modal in the consequent is restricted by the preceeding 'if'-clause similar to the wide scope reading and a reading on which it has proper narrow scope. A second option is to assume that such conditionals are *univocal* by only displaying the narrow scope structure, say. Nevertheless, the wide scope interpretation may be *pragmatically available*. For instance, the context could make it clear that the speaker wishes to communicate what would be expressed on the wide scope reading. In order to explain the intuitive acceptability of the inference patterns Willer presents, it suffices to assume that the desired interpretation is pragmatically available, for the intuitive acceptability may be due to the fact that we charitably assign to the modal expression a scope which makes the inference valid.

Now, Willer argues that the suppositional view cannot do justice to the validity of both inferences: on the wide scope analysis, it fails to validate the second inference, $\ulcorner\Box(\neg A \Rightarrow B), \neg A \therefore \Box B\urcorner$, and on the narrow scope analysis, it fails to validate the first inference, $\ulcorner\Box(A \vee B) \therefore \neg A \Rightarrow \Box B\urcorner$. Willer concludes that no matter how the suppositional view analyses modalised conditionals, it cannot do justice to the validity of both inferences. Therefore, the conjoined suppositional account of indicative conditionals and epistemic modals could not be right.

As I pointed out earlier, the account presented in Schulz (2010) does not apply to modalised conditionals. For this reason, Willer provides an argument that a plausible extension of this view will not validate both inferences. I agree with Willer on this point: a plausible extension of the suppositional view will neither validate $\ulcorner\Box(\neg A \Rightarrow B), \neg A \therefore \Box B\urcorner$ nor $\ulcorner\Box(A \vee B) \therefore \neg A \Rightarrow \Box B\urcorner$.[10]

In fact, it strikes me to be a welcome consequence that the inferences $\ulcorner\Box(\neg A \Rightarrow B), \neg A \therefore \Box B\urcorner$ and $\ulcorner\Box(A \vee B) \therefore \neg A \Rightarrow \Box B\urcorner$ do not come out as valid on an extension of the view explored by Schulz, for these inferences are excessively strong. The strength of these inferences is perhaps most easily recognised if we interpret the modal operator in terms of metaphysical necessity. On this interpretation, the two inference would stand no chance of being

[9] Cp. Geurts (2004: 8ff.).

[10] For an argument of why this will be so, see Willer (2011: 368ff.).

valid. The inference $\ulcorner\Box(\neg A \Rightarrow B), \neg A \therefore \Box B\urcorner$ would not be valid because $\ulcorner\Box(\neg A \Rightarrow B)\urcorner$ and the actual truth of $\ulcorner\neg A\urcorner$ is not sufficient for the necessity of 'B', it is only sufficient for the actual truth of 'B'. In order to conclude that 'B' is necessary, we would need the stronger premise that $\ulcorner\neg A\urcorner$ is necessary as well. A similar problem would arise for the second inference $\ulcorner\Box(A \vee B) \therefore \neg A \Rightarrow \Box B\urcorner$. What would follow is $\ulcorner\Box\neg A \Rightarrow \Box B\urcorner$, but the necessity of the disjunction does not license the inference to the necessity of one disjunct on the condition that the other disjunct happens to be false at the actual world. As a matter of fact, the present two inferences do not hold in S5 (when we substitute the material conditional for the indicative conditional), the strongest plausible candidate for the sentential logic of metaphysical modality. Given that the two inferences are this strong, we see that Willer's argument is actually an attack against a much wider class of views concerning indicative conditionals and epistemic modals. Most views in the present debate about conditionals and epistemic modals will not validate either of the present two inferences. Thus, Willer's argument is not really concerned with the suppositional view in particular but rather with a general feature of it shared by most views of conditionals and epistemic modals.

To identify a loophole in Willer's argument, let me briefly recapitulate its general structure. The argument is based on the claim that the suppositional view can neither validate the two inference patterns on a narrow scope analysis of the modalised conditional nor can it validate the two patterns on a wide scope reading. On a narrow scope decomposition, the first inference pattern is invalidated, and on a wide scope interpretation, the second inference pattern is invalidated. For this to be an argument against the suppositional view, it needs to be assumed that the two inferences must be valid either by giving the epistemic modal wide scope both in the first inference and in the second inference or by giving it narrow scope two times over. Thus, Willer implicitly presupposes the following:

> **The Uniformity Assumption.** The two inference patterns are valid under a uniform analysis of the modalised conditional occurring in them.

In other words, Willer's argument requires that the two inference patterns are valid under the same syntactic analysis of the modalised conditional involved in them. No reason for why this should be so is given.

Once this loophole in Willer's argument is recognised, the suppositional view—more generally, any view which shares the relevant logical properties with the suppositional view—has an easy way out, for it can provide a non-uniform explanation of why we tend to take the two inference patterns to be valid. Our validity intuitions may not owe themselves to a uniform analysis of the modalised conditional occurring in the two inferences, but may rather be due to two different syntactic decompositions. We find the first inference pattern acceptable because we implicitly assign the epistemic modal wide (or restricted) scope and we find the second inference pattern acceptable because we assign the epistemic modal narrow scope.[11] So, each of the two inference patterns

[11] This strikes me to be the most straightforward alternative explanation, but it is perhaps not the only possible one. For instance, it might also be the case that we take the second

has a valid interpretation. The first inference is valid under a wide scope (or restricted scope) interpretation of the modalised conditional and the second inference is valid under a narrow scope analysis of the modalised conditional. This fact is sufficient to explain the validity intuitions we may have about the two inference patterns. Recall that a non-uniform explanation of the validity intuitions does not need to presuppose that the relevant conditional 'If John is not in Chicago, he *must* be in Boston' is syntactically ambiguous. It would suffice to assume that a second syntactic reading can be made salient in certain contexts, for example by presenting an inference which requires for its validity that the modal expression is given a certain scope.

3 Blurring the Significance of Epistemic Necessity

We have seen that Willer's argument can be countered by giving a non-uniform explanation of the validity intuitions in play. Such an explanation is in this case particularly desirable because accepting a uniform explanation carries a commitment to an extremely strong combined logic of indicative conditionals and epistemic modals. In addition, it is possible to show that accepting the uniformity assumption Willer needs to make is going to blur the difference between plain truth and epistemic necessity.

To get a clear grasp of the problem, let us recall the two relevant syntactic analyses of the inference patterns under consideration. On the narrow scope analysis, the two inference patterns look like this:

(N) $\Box(A \vee B) \therefore \neg A \Rightarrow \Box B$; $\neg A \Rightarrow \Box B, \neg A \therefore \Box B$.

In contrast, the wide scope analysis results in the following two forms of inference:

(W) $\Box(A \vee B) \therefore \Box(\neg A \Rightarrow B)$; $\Box(\neg A \Rightarrow B), \neg A \therefore \Box B$.

According to the uniformity assumption, the two inferences are either both valid on the narrow scope analysis or they are both valid on the narrow scope analysis.

We may start by noticing a structural feature which is shared by the narrow scope analysis and its wide scope counterpart. According to both analyses, the conclusion of the first inference is the first assumption of the second inference. This makes it possible to chain the two inference together. In both cases, the result is the same, since the two analyses agree on how they formalise non-conditional sentences. Thus, we find the following common consequence of both analyses:

(D) $\Box(A \vee B), \neg A \therefore \Box B$.

premise in the second argument to be implicitly modalised, i.e. read 'John is not in Chicago' as 'It must be that John is not in Chicago'. Then the conditional in the second argument would be valid on a wide scope reading just like the first argument. Another possibility might be that we interpret some of the occurrences of 'must' not as an epistemic modal but rather as an inference marker. Many thanks to David Liggins and Thomas Kroedel for pointing this out to me.

This consequence can be seen as a result of the uniformity assumption, for it is independent of whether we follow the narrow scope analysis or the wide scope decomposition. The only thing which needs to be assumed is that the two inference are valid under the same syntactic analysis.

It is noteworthy that the present consequence does not contain the conditional and is concerned with epistemic necessity only. For this reason, making the two inference patterns uniformly valid cannot be achieved by a certain theory of modalised conditionals alone, but needs to be supplemented by an appropriate theory of epistemic modals. However, the constraint principle (D) imposes on the logic of epistemic modals is again very strong and not even valid in the modal system S5. Since most theories of epistemic modals underwrite a logic at most as strong as S5, most theories of epistemic modals cannot accept the uniformity assumption. This reinforces our earlier observation about the strength of the argument patterns Willer presents, yet it is an even better case, for the common consequence (D) does not contain the conditional any longer, which makes the claim independent of any worries about indicative conditionals.

That principle (D) is too strong is perhaps most easily recognised by showing that it makes a given statement and its necessitation inter-derivable. To see this, let us first substitute $\ulcorner\neg A\urcorner$ for 'B' in (D). Then we find:

(13) $\Box(A \vee \neg A), \neg A \therefore \Box\neg A.$

The first assumption in this inference can be assumed to be a theorem in a logic of epistemic modals.[12] Hence, we can further simplify and infer:

(14) $\neg A \therefore \Box\neg A.$

If we now substitute $\ulcorner\neg\neg A\urcorner$ for $\ulcorner\neg A\urcorner$ and then eliminate the double negation, we finally arrive at:

(15) $A \therefore \Box A.$

In this way, $\ulcorner\Box A\urcorner$ becomes derivable from 'A' alone. Since 'A' will, of course, be derivable from $\ulcorner\Box A\urcorner$, the two assumptions become inter-derivable.[13] This strikes me to be an undesirable consequence, for it blurs the significance of epistemic necessity. Note also that we can be justified in investing a high credence in 'A' while rejecting $\ulcorner\Box A\urcorner$. This would be very surprising if $\ulcorner\Box A\urcorner$ were an immediate logical consequence of 'A'.[14]

In the light of this trouble, I conclude that we have good reason to reject the uniformity assumption. The two inferences Willer presents should not be

[12] It is a theorem in the two different logics suggested by Schulz and Willer.

[13] As far as I can see, this is indeed the case in the semantics advocated by Willer (2011) at the end of his paper.

[14] There may be a sense in which this inference is not as bad as it looks and which may explain why someone could be tempted to take it as valid. Moving from an assertion of 'A' to an assertion of $\ulcorner\Box A\urcorner$ does not seem to be so terrible. This may be because assertion is governed by a certain epistemic norm whose satisfaction comes close to the acceptability conditions of $\ulcorner\Box A\urcorner$. Another possible sense in which moving from the premise to the conclusion would be fine is when we interpret 'must' as an inference marker expressing the validity of the inference $\ulcorner A \therefore A\urcorner$. Thanks again to David Liggins and Thomas Kroedel for discussion.

made valid on a uniform analysis of the modalised conditional involved in them. The first inference is only valid on a wide (or restricted) scope analysis and the second inference is only valid on a narrow scope analysis. Fortunately, this latter fact is sufficient to explain the validity intuitions we may have towards the argument patterns Willer presents.

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References

Barnett, D. 2006: 'Zif is If'. *Mind* 115, pp. 519–566.

Edgington, D. 1995: 'On Conditionals'. *Mind* 104, pp. 235–329.

Egan, A., J. Hawthorne and B. Weatherson 2005: 'Epistemic Modals in Context'. In Preyer, G. and G. Peter (eds.): *Contextualism in Philosophy: Knowledge, Meaning, and Truth*, Oxford: Oxford University Press, pp. 131–170.

Geurts, B. 2004: 'On an Ambiguity in Quantified Conditionals'. *MS, University of Nijmegen.*

Jackson, F. (ed.) 1991: *Conditionals.* Oxford: Clarendon Press.

Kratzer, A. 1977: 'What "Must" and "Can" Must and Can Mean'. *Linguistics and Philosophy* 1, pp. 337–355.

—— 1979: 'Conditional Necessity and Possibility'. In Bäuerle, R., U. Egli and A. von Stechow (eds.): *Semantics from different points of view*, Berlin, Heidelberg and New York: Springer, pp. 117–147.

—— 1981: 'The Notional Category of Modality'. In Eikmeyer, H. J. and H. Rieser (eds.): *Words, Worlds, and Contexts*, Berlin and New York: de Gruyter, pp. 38–74, a revised version of this paper is forthcoming in Kratzer (forthcoming: ch. 2).

—— 1986: 'Conditionals'. In Farley, A. M., P. Farley and K. E. McCollough (eds.): *Papers from the Parasession on Pragmatics and Grammatical Theory*, Chicago: Chicago Linguistics Society, pp. 115–135, reprinted in von Stechow and Wunderlich (1991: ch. 30, 651-656). A revised version of this paper is forthcoming in Kratzer (forthcoming: ch. 4).

—— forthcoming: *Modals and Conditionals Again.* Oxford: Oxford University Press.

Lewis, D. 1973: *Counterfactuals.* Oxford: Blackwell.

—— 1975: 'Adverbs of Quantification'. In Keenan, E. L. (ed.): *Formal Semantics of Natural Language*, Cambridge: Cambridge University Press, pp. 3–15.

MacFarlane, J. forthcoming: 'Epistemic Modals Are Assessment-Sensitive'. In Egan, A. and B. Weatherson (eds.): *Epistemic Modality*, Oxford University Press.

MacFarlane, J. and N. Kolodny 2010: 'Ifs and Oughts'. *Journal of Philosophy* 107, pp. 115–143.

Schnieder, B. 2010: 'Expressivism Concerning Epistemic Modals'. *The Philosophical Quarterly* 60, pp. 601–615.

Schulz, M. 2010: 'Wondering What Might Be'. *Philosophical Studies* 149, pp. 367–386.

Stalnaker, R. 1968: 'A Theory of Conditionals'. *Studies in Logical Theory* 2, pp. 98–112, reprinted in Jackson (1991: ch. 2).

von Stechow, A. and D. Wunderlich (eds.) 1991: *Handbook Semantics*. Berlin and New York: de Gruyter.

Weatherson, B. 2009: 'Conditionals and indexical relativism'. *Synthese* 166, pp. 333–357.

Willer, M. 2011: 'Realizing What Might Be'. *Philosophical Studies* 153, pp. 365–375.

Williamson, T. 2007: *The Philosophy of Philosophy*. Oxford: Blackwell.