<u>Modalizing: A Function-Driven Approach</u>

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Abstract

This thesis is about modals: words like 'possible' and 'necessary', 'must' and 'can'. More specifically, it is about their roles in our lives. *More specifically still*, I want to approach, via the issue of modal function, the relationship between what I call *ordinary* and *philosophical* modalizing: the modalizing that we learn in the wild, and the modalizing that we learn in the philosophy classroom. What are the commonalities between these activities? What are their differences?

In order to focus and dramatize the issue, I begin by introducing a figure whom I call the *Ascetic Modalizer*. The Ascetic Modalizer insists against there being theoretically significant continuities between the modals that we ordinarily use to talk about powers and dispositions, and the modals that some philosophers have called *absolute*. After arguing that modal semantics, metaphysics, and epistemology may prove too slow a route towards progress in this debate, I suggest that we approach the matter via the neglected topic of modal function.

To get clear on modal function, however, one must first get clear on conditionals. I therefore argue for some novel assertability conditions for subjunctive conditionals, which are informed by the functions of *these* important constructions. In the process, I shed some light on the differences between kinds of supposition. This discussion of conditionals and suppositions then allows me to draw together two different research programmes in the theory of modal function.

With those resources in hand, I investigate the roles of some ordinary and philosophical modals in our practical and theoretical deliberations. I argue that in so far as *those* functions are concerned, the Ascetic Modalizer may be right to be sceptical of modal unification. Finally, I show how the preceding discussion intersects with two ancient ideas about modality: that deductive validity requires necessary truth-preservation, and that necessity implies actuality.

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INTRODUCTION

This thesis is about *modalizing*, which I understand to be the deployment of *modals*. Modals are words like 'possible' and 'impossible' and 'necessary', which conventionally connote possibility and impossibility and necessity. Possibility and impossibility and necessity are kinds of *modality*, and so modality is the subject matter of modalizing.

I draw the distinction between *ordinary* and *philosophical* modalizing. Ordinary modalizing is the sort of modalizing that we inherit from everyday life. Philosophical modalizing is the sort of modalizing that we indulge in when we do philosophy. This thesis will be concerned with a few different kinds of ordinary and philosophical modalizing, and with the similarities and differences that exist between them. What is the relationship between ordinary and philosophical modalizing? When we scratch below the morphological similarities – below the fact that 'necessary' can receive ordinary and philosophical interpretations – what deep continuities exist between these different areas of discourse?

I will not be approaching these matters via the theory of meaning. That is partly because I do not know what it is that the theory of meaning *ought to be*. In particular, I do not know how it is that the theory of meaning ought to relate to the ordinary notion of meaning. On the one hand, we have the likes of Wolfgang Schwarz (2018, p.2), who writes that:

> it is doubtful that anything of theoretical or practical importance hangs on what our words mean, in the ordinary sense of 'mean'. Indeed, it is doubtful that there even is a sufficiently precise and unequivocal ordinary sense of 'meaning' that could be made a useful subject of inquiry. Even if there were, it is hard to see why a whole academic discipline should be devoted to studying that topic. The central terms of semantics – 'meaning', 'reference', 'semantic value', etc. – are better understood as theoretical terms, more like 'gene' in biology or 'rest mass' in physics than 'right' and 'wrong' in ethics. Ordinary judgements about meaning are relevant because they point towards the phenomena that semantic theories are supposed to capture, not because they constitute the subject matter of semantics.

On the other, we have Jerrold Katz's (1982, p.174) later writings:

> On my conception of the subject, semantics is the study of meaning. This may seem an odd characterization—like a historian saying that history is a study of the past. But the conception of semantics as the study of meaning is far from an uninformative truism. In fact, the conception expresses a quite controversial view of semantics which is, moreover, unique among approaches to the subject in the philosophy of language, linguistics, and logic, in taking senses or meanings, *as they present themselves in our ordinary linguistic experience,* to be the proper objects of study in semantics.

Unlike Schwarz, I do not think that the ordinary notion of meaning is unimportant. After all, this is the notion of meaning that we appeal to whenever we are concerned with the accuracy of translation, and I doubt that the more technical notions of "meaning" could do this job as well. Unlike Katz, however, I am not convinced that *meanings qua objects* present themselves in our ordinary linguistic experience *at all*. Quite where to go from here is a difficult question that must presently be postponed. But then how to investigate modalizing?

When compared to the theory of meaning, the theory of *function* has received comparatively little attention in contemporary philosophical circles. As it applies to the production of linguistic expressions, the theory of function is about what our various linguistic practises are *for*: what needs or desires they are supposed to meet. It is with an eye for such matters that I propose to inquire into ordinary and philosophical modalizing. What are the functions of assertions that have modals embedded within them? What *roles* or *purposes* do they serve in our theoretical and practical lives? In what ways might we be worse off if we did not have this vocabulary? These are the sorts of questions that will drive this thesis.

Some writers have expressed scepticism about the very idea that different regions of discourse could have interesting functions. Herman Cappelen (2018, p.187), for example, worries that linguistic expressions could not have anything more than what John Divers (2010, p.198) has called *bluntly cognitive* functions: the function of 'water' is to refer to water; the function of 'x is water' is to describe something as being water. Here is Cappelen (2018, p.187):

> However—and this is the key point —beyond these disquotationally specified functions, there's variability. We can use 'freedom' in speech acts that have as their aim to undermine freedom or promote it or discuss it or disparage or make fun of it or ... There's no limit to what we can go on to do with this term. These activities will vary wildly between contexts and over time. If the goal is to find functions that are more substantive and informative than the disquotationally specified functions, then it will be unsuccessful. For example, one of the things we can do with noun words for numbers is simplify our statements of laws, but communities can have a practice of using words like 'one' and 'two' just as we do (to denote one and two), without using them for that purpose.

The problem seems to be that word usage is so varied that nothing more than the bluntly cognitive response is available to us. But I am not so sure that this is correct. To see this, consider the following functional proposal: 'water' functions to help us coordinate useful behaviours with respect to water. The idea is *prima facie* compelling, and at least has the potential to be illuminating. Thus, some examples of useful water-related behaviours include drinking water when

one is thirsty, and avoiding water when the hippos are bathing. I take it that there is a perfectly good sense in which coordinating *those* kinds of behaviour might be what 'water' is for.

If this sort of picture is to become a respectable theory, then much work will have to be done: for example, on explicating the notion of useful behaviour. Some may express scepticism on that score, although that shall not concern us here. I think that the above considerations have bought us enough time to embark upon the functional project. But now a different worry presents itself. In the case of 'water', we have a reasonably good idea of what useful water-related behaviour looks like, because we have some idea of what water *is*. We know that it is the sort of thing that we have to drink, and the sort of thing that sometimes contains beasts best avoided. This is what explains why it is useful to drink water when thirsty, or to avoid water when it contains hippos. But it isn't always the case that we have a solid grasp on the subject-matter of some area of discourse. What to do if we do not?

Modality is a puzzling subject matter. Indeed, a popular metaphysics of modality simply cannot account for the function of modalizing: a point, due to Simon Blackburn (1984, pp.214-216), which we will soon have occasion to revisit. This is the *possible worlds* approach, which understands the subject matter of modalizing to *be* what goes on across possible worlds. But would we gain instant clarity about the modal domain, if we were to renounce these entities? An alternative modal metaphysics, endorsed by Barbara Vetter (2015) amongst others, says that the actual world is replete with objects that have brute modal properties. This neo-Aristotelian position is partly motivated by the *prima facie* dispositional character of the posits of best science: talk of magnetic attraction and solubility, for example, seem to connote modality. But if such talk is an ineliminable aspect of best science, then any scientifically respectable account of modalizing will have to *use* modal language. The neo-Aristotelian position therefore boasts a more handsome explanatory profile than the possible worlds account.

However, it does not thereby provide a perspicuous conception of *modality*. To see why not, consider David Lewis (1994) on chance, or objective probability. Lewis has argued that whatever chance is, it must be the sort of thing that can constrain rational credence, or subjective probability. For example, if a rational agent knows that the chance of the coin's landing heads is 0.5, then their credence in the coin's landing heads should be 0.5. But Lewis did not wish to posit any brute chances in the world, for these are incompatible with his Humean repudiation of modal properties. This combination of views makes for some uneasy theorising, and Lewis knows this. Should we not therefore forgo Humeanism, and admit brute chanciness into our picture of the actual world? Lewis' (1994, p. 484) response is memorable:

> Be my guest—posit all the primitive unHumean whatnots you like. [...] But play fair in naming your whatnots. Don't call any alleged feature of reality "chance" unless you've already shown that you have something, knowledge of which could constrain rational credence

I think that the primitivist about ordinary modality is in much the same boat. Modality, like objective probability, may be essential to the statement of best science. If so, then a scientifically respectable account of modalizing must modalize, just like a scientifically respectable account of objective probabilizing must objectively probabilize. But positing brute objective probabilities doesn't appear to explain how it is that objective probability could constrain rational credence: and, similarly, positing brute modalities doesn't appear to explain how it is that modality could constrain rational deliberation (as I will later argue it does).

How do these brief reflections bare on this project? Well, it seems to me that there is a reasonably strong case for the indispensability of modalizing in best scientific theory. For this reason, I will not attempt to avoid modalizing, when accounting for the function of modalizing. But it also seems to me that we do not have a very solid grasp on what modality itself might be. For this reason, I do not think it helpful to theorise about the function of modalizing as we might theorise about the function of 'water': that is, by asking ourselves what sorts of behaviours are usefully coordinated with respect to the subject matter of the area of discourse.

The stance that I adopt throughout this project is a little like that of Blackburn's (1984, pp.145-217) quasi-realist. Thus, like the quasi-realist, I do not think that every area of discourse is best approached by reflecting upon the subject-matter that it might be presumed to have. But unlike the quasi-realist, I do not aspire – in the present case at least – to begin my theorising *as though* I were an anti-realist about the subject matter. When I theorise about ordinary modalizing, I will use modals to elucidate their function. It seems doubtful to me that this could really be squared with a quasi-realist starting point.

Because I will not attempt an *analysis* of modals or modality, there is no room for the objection that the explanatory appeal to modality is problematically circular. This point has been made by Divers (2010, pp.194-196). Perhaps, however, there is a way of re-telling this story without appealing to modal properties. That question must also be postponed, as an answer could only come with some heavy-duty metaphysics and philosophy of science. Until then, we must simply deal with the fact that we will be appealing to properties which we do not understand very well.

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With all that said, what, exactly, do I hope to accomplish in this project? My principle aim is to shed light on the relationship between ordinary and philosophical modalizing. I want to do so via the theory of modal function, an interesting and important topic, though one that has not been discussed enough. Some, however, might think that this enterprise is entirely unnecessary. Don't we already have a solid grasp on the relationship between ordinary and philosophical modalizing? It is the burden of Chapter 1 to argue that this cannot be assumed: that there is plenty of scope for disagreement about the extent to which the ordinary and philosophical cases form something like a "natural kind".

In order to dramatize the issue, I introduce the figure of the Ascetic Modalizer, who does not think that she ought to recognise philosophical "modalizing" *as* modalizing – philosophical "modality" *as* modality. The import of this figure stems from her uncompromising stance, which forces us to look for maximally convincing reasons for modal unification, and to counter those reasons that are *prima facie* against it. I begin this thesis by showing that some important positions in the semantics, metaphysics, and epistemology of modality do not offer any easy answers here. My suggestion is therefore that we approach the relationship between ordinary and philosophical modalizing via the theory of function. How much functional continuity is there between the everyday and rarefied cases? And to what extent do their functional profiles vindicate the Ascetic Modalizer's no-thrills approach to modalizing? Those are the questions that I hope to treat in this thesis.

With our agenda in place, I turn in Chapter 2 to the interconnected topics of *conditionals* and *suppositions*. I begin by arguing that there are good reasons for countenancing *three* species of conditionals: *indicatives*, *weak subjunctives*, and *strong subjunctives* (or *counterfactuals*). I defend a fairly intuitive – though somewhat controversial – account of the sorts of roles that these conditionals can play. I then use these functional distributions to develop an account of the subjunctive mood. The idea is that all conditionals have assertability conditions that involve suppositions, with different "kinds" of supposition simply corresponding to the different *constraints* on supposition that different conditionals encode.

In Chapter 3, I aim to build on these results, putting into contact two important approaches to the theory of modal function. The *first* focuses on the roles of ordinary modals in determining what gets practically and theoretically deliberated. The *second* focuses on the roles of philosophical modals in determining what we can rely on when developing suppositions. I suggest that we investigate the roles that certain ordinary and philosophical modals have in determining what gets *supposed, and* in determining what is relied upon within the scope of suppositions, where the suppositions in question are directed towards the goals of practical and theoretical deliberation.

Although this is most certainly *not* presumed to exhaust the space of possible modal functions, it promises to be the most straightforward way of developing, in tandem, the two approaches to modal function.

I turn to that task in Chapter 4. In order to structure inquiry, I propose that we focus on the question of how, exactly, assertions of necessity and impossibility differ, in the advertised deliberative roles, from *mere* assertion and denial. I then identify some important deliberative roles for two species of ordinary modals, but struggle to find any for an important class of philosophical modals. I conclude by discussing the implications of these results for the Ascetic Modalizer's position, arguing that although the issue remains far from clear-cut, she does succeed in putting her interlocutor on the back foot.

Finally, in Chapter 5, I develop these themes a little further, aiming to shed light on two ancient ideas about modality. The *first* is that a species of necessity is crucial to our circumscribing, and perhaps even to our describing, deductive validity. The *second* is that the necessary always obtains, and the actual is always possible. About this first idea, I argue that the Ascetic Modalizer can, without begging any questions against her interlocutor, and without compromising her outlook, accept a great deal of what has been said about the necessity that supposedly pertains to deductive validity. About this second idea, I argue that it sits somewhat uneasily with the deliberative functions of the ordinary modals surveyed in Chapter 4, though not (necessarily) in a way that is pernicious. In so doing, I hope to further display the philosophical importance of our Ascetic Modalizer's function-driven outlook.

CHAPTER 1
MODALIZING, ORDINARY AND PHILOSOPHICAL

In our pre-philosophical days, words like 'possible' and 'necessary' received two broad kinds of interpretation. The first, *subjective*, which has to do with our cognitive access to the facts. The second, *objective*, which makes no essential reference to this cognitive access. But philosophy soon instructs us to augment our modal lexicon in certain ways: for example, to deploy notions such as those of the *a priori*, or of the *absolutely necessary*. What ties these different practises together? What tells them apart? I want to make some progress towards an answer to this question, taking the relationship between ordinary and absolute objective modalizing as my stalking horse. And I want to approach the issue via the theory of function.

In Section 1, I introduce our talk of ordinary subjective and objective modality, as well as our talk of *a priority* and absolute modality. In order to focus the discussion, I then state what I take to be the received view of the relationship between ordinary and absolute objective modalizing: that they form a theoretically significant kind, whose modals are commensurable in modal strength, where modal strength is intimately linked to *counterfactual invariance*. In Section 2, I turn to the work of Lewis (1986) and Robert Stalnaker (1984). I ask whether their possible worlds picture of modality and counterfactuality is strong enough to vindicate the received view, which it entails. I then draw on Lewis and Stalnaker's work to formulate an argument, one which does not go via possible worlds. In both cases, however, I find that there is ample room to resist the received view. Then, in Section 3, I introduce the figure of the *Ascetic Modalizer*, who strips her objective modalizing right down to what she perceives to be its barest essentials: a single concept of ordinary objective modality. I argue that it is profitable to read Dorothy Edgington (2004) as an Ascetic Modalizer. Finally, in Section 4, I suggest that the issue of the relationship between ordinary and philosophical modalizing, and hence the matter of the received view, is perhaps best approached via the theory of modal function.

1.1 Modal Unification?

1.1.1   Ordinary Subjective Modals

Some ordinary modal assertions appear to be sensitive to subjects' cognitive states. Accordingly, we will call them *subjective* modal assertions. Many ordinary English words can be used to make these assertions, like 'might', 'may', 'cannot', 'must', 'possible', 'impossible' and 'necessary'. We are all familiar with doing so. Right now, I don't know whether or not it will rain tonight. But I certainly think that it *might*.

It is widely thought that a least one interesting subclass of subjective modals have meanings which can only be specified with reference to what a person knows. These subjective modals often go by the name 'epistemic'. But if the evidence calls for it, we can imagine a theory which distinguishes between different kinds of subjective modals, ranging from those which refer to knowledge, all the way down to false and unjustified belief.[1]

It is always possible to "de-modalize" a modal sentence, by removing the modal expression and re-structuring for grammaticality. We can de-modalize 'the president might have COVID-19' by dropping the 'might' and making minimal adjustments to the resultant sentence so that it sounds right: 'the president has COVID-19'. We can call any sentence that can be obtained via de-modalization the *prejacent* or *complement* of the modal sentence. And with that terminology in place, we can now say that attitudinal modal assertions are (somehow) related to subjects' cognitive access to the truth-value of their prejacents, in the sense that their truth or assertibility conditions are sensitive to these facts about cognitive access. This looks like a distinguishing mark of subjective modalizing.

For ease of discussion, I will sometimes regiment the language of subjective possibility a little. It is helpful to approach this regimentation by first considering the syntactical *de re* / *de dicto* distinction, as understood by W. V. Quine (1953, pp.158-159). Let us say that '*M*' stands for some modal expression. With respect to '*M*', syntactically *de dicto* modalizing occurs if '*M*' is an expression of the object language that behaves as a sentential operator, one which takes closed, statement-expressing sentences as its objects: '*M(Fa)*'. By contrast, syntactically *de re* modalizing occurs if '*M*'

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[1] Since knowledge is factive, then a subjective necessity modal that is analysed in terms of what someone knows – for instance, as stating that *P* is subjectively necessary for *s* IFF *P* is obtains in every possible world that is compatible with what *s* knows – will also be factive, or *alethic*: if it is necessary that *P*, then *P*. For now, we will bracket the issue of alethicity, noting only that I will assume that ordinary objective modals and absolute modals, to be introduced below, are alethic in the above sense. I make no assumptions either way about subjective modals, a matter to which we will return in Chapter 5.

is an object-language expression that operates on any predicate, '*Fx*', in such a way as to produce a novel predicate: '*MFx*'. Thus, subjective modals can be syntactically *de re* or *de dicto*:

(1)   The president might have COVID-19.

(2)   It is possible that the president has COVID-19.

There are no doubt subtle and important differences between these forms. Throughout this thesis, however, I will represent the meanings of all subjective modals with bold, upper-case sentential operators: '**POS**$_s$' for 'subjectively possible', '**IMP**$_s$' for 'subjectively impossible', and '**NEC**$_s$' for 'subjectively necessary'. Thus, I would represent the (unanalysed) meanings of (1) and (2) like so: <**POS**$_s$the president has COVID-19>.[2] The subscript indicates that the modality is subjective.

1.1.2   *Ordinary Objective Modals*

But other ordinary modal assertions do not boast the above relation to subjects' mental states: they are non-subjective, or *objective*. Many words can be used to make these assertions, like 'can', 'could', 'cannot', 'must', 'possible', 'impossible' and 'necessary'. Just as with subjective modalizing, we are all familiar with doing so. Right now, I very much doubt that it will rain tomorrow. But I certainly think that it *can*.

Like their subjective counterparts, ordinary objective modals can be syntactically *de re* or *de dicto*:

(3)   I can pour salt in water.

(4)   It is possible for me to pour salt in the water.

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[2] I am working with a minimalist conception of propositions, which I take to be: (i) true or false *simpliciter*; (ii) the meanings – in the ordinary sense of 'meaning' – of declarative sentences; (iii) the objects of propositional attitudes; (iv) the objects of illocutionary acts; (v) the objects of dis/agreement. This conception is almost identical to the Simplicity view of Herman Cappelen and John Hawthorne (2009, p.1), but it is *minimal* in a sense made familiar by Crispin Wright's (1992, pp.33-36) minimalism about truth: I am only concerned, in the first instance, with platitudes. Moreover, when I describe propositions as above, I do so in the hope that one might acquiesce in this useful idiom *without* incurring a commitment to propositions *qua* objects. I treat propositions, then, as many treat the language of possible worlds: as what is (perhaps) nothing more than a convenient *façons de parler*. My primary intention is to expedite, without attracting any undue metaphysical commitments, the deployment of various, entirely platitudinous ways of describing language, meaning and mind.

Again, however, I will formalise the discourse with sentential operators: 'it is necessary that' ('**NEC**$_o$'), 'it is possible that' ('**POS**$_o$'), 'it is impossible that' ('**IMP**$_o$'), 'it is non-necessary that' ('**NON**$_o$'), 'it is contingent that' ('**CON**$_o$'). Thus, I would represent the (unanalysed) meanings of (3) and (4) like so: <**POS**$_o$I pour salt in the water>.[3]

What is there to the ordinary idea of an objective modality? When Nelson Goodman (1955, p.40) introduced dispositions, he wrote the following: 'Besides the observable properties it exhibits and the actual processes it undergoes, a thing is full of threats and promises.' This metaphor applies equally to *ordinary* objective modality, to which dispositions and abilities are intimately linked. I am able to pour salt in water, and the salt is disposed to be dissolved by water; and from 'I am able to pour salt in water' and 'the salt is disposed to be dissolved by water' follow claims whose meanings are naturally expressed with the use of 'possible': 'it is possible for me to pour salt in water' and 'it is possible for the salt to be dissolved by water', respectively. If 'possible' is so-used, it connotes the idea of an objective possibility.

Ability and disposition imply ordinary objective possibility. Similarly, ordinary objective impossibility implies inability and non-dispositionality: if it is not possible for me to pour the salt, then I do not have this ability; and if it is not possible for the salt to be dissolved by water, then it has not the disposition to be so dissolved. Ordinary objective modality is necessary but not sufficient for both ability and disposition. This modal notion is conceptually closest to our judgments that some object has powers or potentialities of some sort.

1.1.3 The Absolute Case

In *Naming and Necessity*, Saul Kripke (1980) is supposed to have wedged apart two notions that had long been considered co-extensive: the *a priori* and the *metaphysically necessary*. Roughly speaking, *a priori* truths are propositions which we can become justified in believing merely by our entertaining or understanding them: paradigmatic cases include <2+2=4> and <blue is a colour>. The metaphysically necessary is somewhat harder to define, although if Kripke is correct, paradigmatic metaphysical necessities include not only *a priori* truths like <2+2=4> and <blue is a colour>, but also *a posteriori* truths like <water is H_2O> and <Socrates is human>.

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[3] Taking **NEC**$_o$ as primitive, we can "define" the other objective operators thus: **IMP**$_o$$P$ IFF **NEC**$_o$¬P; **POS**$_o$$P$ IFF ¬**NEC**$_o$¬P; **NON**$_o$$P$ IFF ¬**NEC**$_o$$P$; **CON**$_o$$P$ IFF ¬**NEC**$_o$¬P & ¬**NEC**$_o$$P$. It follows form the above definitions that **POS**$_o$ P IFF ¬**IMP**$_o$ P. Notice, therefore, an interesting contrast with the subjective case. It sounds plain terrible to say that the president *might* have COVID-19 *and* that he *must /can't* have it. This suggests the following equivalence: **POS**$_s$$P$ IFF ¬**IMP**$_s$$P$ and ¬**NEC**$_s$$P$. So, when 'possible' receives an objective reading, it corresponds to the objectively non-impossible, whereas when it receives a subjective reading, it corresponds to the subjectively non-impossible *and* non-necessary.

Just like ordinary subjective modals, the notion of *a priority* has something to do with the cognitive access that we have to certain facts. And just like ordinary objective modals, the notion of metaphysical modality is not supposed to be tied down to our cognitive access to the facts. But beyond these rather superficial similarities, what connects the ordinary subjective case to the *a priori*, and the ordinary objective case to the metaphysically modal? I want to focus my investigation on relationships of the latter sort: those that exist between the objective modalizing that occurs in the wild, and the objective modalizing that we learn in the philosophy classroom. In particular, I want to focus on the relationship between ordinary objective modalizing and *absolute* objective modalizing.[4]

Aside from the prefix, surface grammar does not distinguish these modals from their ordinary counterparts. Absolute modals – or *A-modals* for short – can be syntactically *de re* or *de dicto*:

(5)   It is absolutely necessary that 2+2=4.

(6)   2+2 is absolutely necessarily equal to 4.

There may be important differences between syntactically *de dicto* and *de re* A-modalizing but, as before, I will often regiment this discourse with sentential operators: 'it is A-necessary that' ('**A-NEC**$_o$'), 'it is A-possible that' ('**A-POS**$_o$'), 'it is A-impossible that' ('**A-IMP**$_o$'), 'it is A-non-necessary that' ('**A-NON**$_o$'), 'it is A-contingent that' ('**A-CON**$_o$'). Thus, I would represent the (unanalysed) meanings of (5) and (6) like so: $<$**A-NEC**$_o$ 2+2=4$>$. Here, the subscript indicates objectivity, and the underlining indicates that we are dealing with a philosophical modal.

Absolute modalizing is closely tied to *counterfactual thinking*. We all think that many propositions are *actually* true: $<$some people do philosophy$>$, $<$the earth is round$>$, $<$two plus two is four$>$. Intuitively, however, not every proposition that is actually true *had to have been* true. For instance, although $<$some people do philosophy$>$ is actually true, it would have been false if (say) no life had evolved on earth at all. Thus, some propositions which are actually true would

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[4] We should note that, as Justin Clarke-Doane (2019, no pagination) points out, the philosophical literature is replete with statements to the effect that metaphysical necessity *just is* absolute, or strongest, objective necessity. Indeed, Kripke (1980, p.99) calls metaphysical necessity 'necessity in the highest degree'. But even if this equivalence is faulty, it seems fair to suggest that metaphysical necessity is a *kind* of absolute necessity. So, by investigating the relationship between ordinary and absolute objective modalizing, we are *ipso facto* investigating the relationship between ordinary and metaphysical objective modalizing.

I will also eventually have something to say about the relationship between *a priority* and ordinary subjective modalizing, in Chapter 5. This will occur in the context of a discussion about another extraordinary species of modalizing: *broadly logical modalizing*. But we proceed in a far more manageable way by initially focusing our inquiry on ordinary and absolute objective modalizing. (I will often refer to the former simply as 'objective' modalizing, and to the latter simply as 'absolute' modalizing).

have been false, if certain things had been different. But many of us *also* think that some propositions could not have failed to be true, no matter what had been the case. For example, many of us think that, no matter what might have happened, <2+2=4> would always have been true. Philosophers call these things A-necessary.[5]

The A-necessary is supposed to correlate with an *unrestrictedly invariant counterfactual status*.[6] We can remain neutral about the precise nature of this basic and entrenched idea: about whether it concerns the logic of A-necessity, the content of the concept of <A-necessity>, the meaning of 'A-necessary', the metaphysics of A-necessity, or our epistemic access to facts of A-necessity. Let us nonetheless dignify it with a name:

> *Unrestricted Invariance* – Q is absolutely necessary **IFF** Q is unrestrictedly counterfactually invariant.

Throughout this thesis, I will sometimes paraphrase *Unrestricted Invariance* with the following biconditional: Q is A-necessary **IFF** $\forall P (P \:\square\!\!\rightarrow Q)$. It is worth noting, however, that this introduces quantification over states of affairs, which could make some theorists uncomfortable. These theorists will stress that this is not unnecessary, if our goal is to capture the connection between A-necessity and unrestricted counterfactual invariance. Perhaps that is true. Nevertheless, the language of quantification is helpful in this respect, even if it is ultimately dispensable.[7]

1.1.4   Three Credos

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[5] Counterfactual and indicative conditionals are treated in detail in Chapter 2. For the time being, let us simply define *counterfactuals* as those conditionals which are of a kind with the following: 'If Oswald hadn't shot Kennedy, (then) someone else would have.' Likewise, let us simply define *indicatives* as those conditionals that are of a kind with the following: 'If Oswald didn't shoot Kennedy, (then) someone else did'. I will represent the 'will' indicative conditional with the plain arrow, and the 'would' counterfactual conditional with the box-arrow: '$P \rightarrow Q$' and '$P \:\square\!\!\rightarrow Q$', respectively.

[6] There are several ways of expressing this central precept. Echoing Divers (2018, p.17) we might put the thought thus: Q is A-necessary IFF Q would have obtained no matter what had been the case. Or, with Timothy Williamson (2007, p.159), we might put the matter like so: Q is A-necessary IFF whatever were the case, it would still be the case that Q. Or, with Lewis (1973, p.23) in mind: Q is A-necessary IFF it would be the case, no matter what, that Q.

[7] Taking **A-NEC$_O$** as primitive, we can "define" the other A- modal operators, in the following way: **A-IMP$_O Q$** IFF **A-NEC$_O \neg Q$**; **A-POS$_O Q$** IFF ¬**A-NEC$_O \neg Q$**; **A-NON$_O Q$** IFF ¬**A-NEC$_O Q$**; **A-CON$_O Q$** IFF ¬**A-NEC$_O \neg Q$** & ¬**A-NEC$_O Q$**. Given *Unrestricted Invariance*, this gets us the follow equivalences: **A-IMP$_O$** Q IFF $\forall P (P \:\square\!\!\rightarrow \neg Q)$; **A-POS$_O$** Q IFF $\exists P \neg(P \:\square\!\!\rightarrow \neg Q)$; **A-NON$_O$** Q IFF $\exists P \neg(P \:\square\!\!\rightarrow Q)$; **A-CON$_O$** Q IFF $((\exists P \neg(P \:\square\!\!\rightarrow Q))$ & $(\exists S \neg(S \:\square\!\!\rightarrow \neg Q)))$. Notice how the existential quantifier runs rampant throughout: *that* is why some might have been concerned about the above rendition of Unrestricted Invariance. But I trust that their fears have been temporally assuaged.

I have just outlined two species of objective modalizing. The first is an everyday sort of modalizing, which is closely related to the ideas of disposition and of ability, to notions of power. The second is philosophical, although it is closely related to counterfactual thinking, which we are all familiar with. We are inquiring into their interrelationships: into what connects the two species of modalizing together. And we are doing so with the intention of illuminating the relationship between ordinary and philosophical modalizing more broadly. To focus our discussion, I now want to codify what is, I think, a popular view of this connection.

We can begin by bringing to the fore what is often merely presupposed: that the morphological similarities between ordinary and philosophical modals *are* suggestive of theoretically significant similarities. When we are studying A-modalizing, we are not supposed to be dealing with (something like) a *metaphorical extension* of ordinary modalizing. No. In one way or another, the activities or semantics or subject-matters of ordinary objective modalizing and A-modalizing are supposed to form (something like) a "natural kind". Here is one way of expressing that idea:

> *Credo in Rarefication* – There are objective modalities beyond those countenanced
> by our ordinary objective modal concepts; these ordinary objective modal concepts
> do not exhaust the space of objective modal concepts.[8]

A-necessity is also supposed to be the *strongest* form of objective necessity: for any objective modality, X, and for any P, if P is A-necessary, then P is X-necessary. Conversely, A-possibility is supposed to be the *weakest* form of objective possibility: for any objective modality, X, and for any P, if P is X-possible, then P is A-possible. And all that implies the following:

> *Credo in Commensurability* – Objective modalizing admits of different modal notions
> that are commensurable in strength.

It would then follow that A-necessity is stronger than ordinary objective necessity, and A-possibility weaker than ordinary objective possibility. Moreover, *Unrestricted Invariance* can add substance to these claims about comparative modal strength. For upon noticing that objective modals can vary in strength, then since the strongest objective necessity is *unrestrictedly*

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[8] *Non-normative* modalities, that is. Clearly, there are normative modalities, such as those expressed by *deontic modals*: modals which are in some way sensitive to the good, the bad, the ugly. They will be touched upon in Chapter 3; until then, 'modality' is elliptical for 'non-normative modality'.

counterfactually invariant, one might suggest that the weaker necessities are *restrictedly* counterfactually invariant. Thus, perhaps the strength of the objective necessity of Q is measurable by Q's degree of counterfactual invariance:

> *Credo in Invariance* – (A) For any objective necessity, X, if Q is X-necessary, then for all P that meets some condition X, $(P \:\square\!\!\rightarrow Q)$; and (B) for any condition, X, if $(P \:\square\!\!\rightarrow Q)$ for all P that meets X, then Q is objectively X-necessary.

Notice that for any conditions X and Y, we can ask whether the set of P that meets Y is a proper subset of the set of P that meets X. We can therefore ask about whether $(\forall P(X) (P \:\square\!\!\rightarrow Q))$ implies $(\forall P(Y) (P \:\square\!\!\rightarrow Q))$, but not *vice vera*. So, we can ask about whether X-necessity is stronger than Y-necessity.

At this stage, something must be said about what it is for a state of affairs to 'meet' some condition X. Consider, for example, nomological necessity. Remaining agonistic about whether the *Credo in Invariance* expresses a logical, semantico-conceptual, epistemological, or metaphysical connection between modality and counterfactuality, it is reasonably clear that, in the case of *nomological* necessity, if a state of affairs meets the relevant condition X, then that state of affairs must be related, in some way or other, to the laws of nature. But when it comes to our describing this relation, various difficulties begin to emerge.

A natural thought is that Q is nomologically necessary **IFF** for all P that is *consistent* with the laws of nature, $(P \:\square\!\!\rightarrow Q)$ – where representational contents, or contentful things, are consistent when neither entails the negation of the other. But this cannot be quite right. As indicated, consistency is a relationship that holds between *representations*, and not between states of affairs and laws of nature. And this means that the natural thought must, instead, be rendered in the following sort of way: Q is nomologically necessary **IFF** for all P whose *representations* are consistent with the *representation* of the laws of nature, $(P \:\square\!\!\rightarrow Q)$.

Now some may object to any such "account" of nomological modality. Why not simply say that Q is nomologically possible when its representation is consistent with the representation of the laws of nature? And why not define nomological necessity accordingly? But this response may be misguided, for at least two reasons. Firstly, one might endorse the *Credo in Invariance* as a logical principle, and not as an analysis or "account". But secondly, and perhaps more importantly, this proposed simple "account" would make nomological modality a *wholly semantic* phenomenon. Intuitively, however, this seems mistaken: when we speak of what must and may happen, according to the laws of nature, we seem to direct our thoughts towards non-semantic facts.

It is true, of course, that the above credo-friendly biconditional – Q is nomologically necessary **IFF** for all P whose representations are consistent with the representation of the laws of nature, $(P \, \square\!\!\rightarrow Q)$ – *appeals* to representations. In this biconditional, the phrase 'P whose representations are consistent with the representation of the laws of nature' is a schematised version of the following modified noun: 'states of affairs whose representations are consistent with the representation of the laws of nature'. And that noun acts to modify – in this case, to restrict – the natural language quantifier 'all'.[9] And on the typical treatment of restricted universal quantification, the right-hand side of the biconditional is therefore rendered as follows: For all x (x is a state of affairs whose representation is consistent with the representation of the laws of nature > ($x \, \square\!\!\rightarrow Q$)).[10] This means that the phrase 'is a state of affairs whose representation is consistent with the representation of the laws of nature' behaves *predicatively*. So-understood, the biconditional, when advanced as an analysis, therefore partially characterises nomological necessity in representational terms.

But note the following. *Firstly*, this characterisation is only partial: there is still room for the intuitive thought that something non-representational characterises this modality. And *secondly*, sophisticated and well-motivated alternatives to the usual treatment of restricted quantification are available. One particularly interesting proposal has been developed in great detail by Hanoch Ben-Yami.[11] On Ben-Yami's account – and simplifying somewhat – the modified noun 'states of affairs whose representations are consistent with the representation of the laws of nature' would work as a device of plural reference, and the quantifier 'all' specifies that *all* those referents are predicated by '($x \, \square\!\!\rightarrow Q$)'. The modified noun therefore works *referentially*, not predicatively. And this may complicate the thought that our biconditional, when advanced as an analysis, partially *characterises* nomological necessity in representational terms. For what matters is simply that *those* states of affairs are all such that, had they obtained, Q would also have obtained. That we refer to those states of affairs by relating them to their representations may now be seen as a fact about *us*.[12]

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[9] The biconditional, fully stated, therefore reads in something like the following manner: Q is nomologically necessary **IFF** all states of affairs whose representations are consistent with the representation of the laws of nature are such that, had they obtained, Q would still have obtained. But that is rather cumbersome, hence the schematisation.

[10] Here '>' stands in for a conditional construction of some variety.

[11] For instance, in Ben-Yami (2004, 2009, 2014).

[12] Indeed, perhaps the only reason that we call these modalities 'nomological' at all is that, when it comes to the states of affairs that partly constitute the phenomenon itself, our epistemic access goes via the laws of nature and their representations. What is essential to the phenomenon of nomological necessity, however, is simply that it is all *those* states of affairs, rather than all *these* other ones, which work as the counterfactual antecedents. But this more radical suggestion needn't be automatically endorsed. Perhaps there is a way of specifying the relevant states of affairs *without* appealing to representations, and whilst making the relationship to laws of nature explicit (which is not to say that I can think of a way of doing so).

Much more could be said about all this. But despite all these complications, it nonetheless seems correct to credit the *Credo in Invariance* as playing an important role in much contemporary modal theorising. And if any position about the relationship between ordinary and absolute objective modalizing deserves to be called the "received view", it is surely well approximated by the credos above: a theoretically significant continuum ties these species of modalizing together, activities whose concepts are commensurable in modal strength, where modal strength is measured by a proposition's distribution across counterfactual space. This elegant picture unifies ordinary and philosophical modals, and it weds them – logically, semantico-conceptually, metaphysically, or epistemologically – to counterfactual conditionals.

But what *motivates* this unified image? What reasons are there for thinking that *any* of these credos are true? If an alien anthropologist were to observe our ordinary and philosophical modalizing, would they agree with the received view? And if they gave us a voice in their inquiry, what could be said in its favour? What could be said against it?

1.2   For Unification: Lewis and Stalnaker

1.2.1   *Possible Worlds*

Two philosophical giants, Lewis (1986) and Stalnaker (1984), have argued that modals and counterfactuals have truth conditions which concern what goes on across possible worlds. And although they disagree about what these worlds are, and about the semantics of counterfactuals, their possible worlds accounts both imply the unifying credos.

On the possible worlds framework, modal declaratives have truth-conditions that quantify over possible worlds. Necessity claims are interpreted as *universally* quantifying over possible worlds, and possibility claims are interpreted as *existentially* quantifying over possible worlds. Absolute necessity and possibility is interpreted as quantification over *all* possible worlds: **A-NEC$_o$$Q$ IFF** Q obtains across all possible worlds, and **A-POS$_o$$Q$ IFF** there is some world in which Q obtains. Restricted necessities and possibilities are interpreted as quantifications over restricted domains of possible worlds. These restrictions, which can be explicitly or contextually determined, are what account for the differences between different species of modals.

For instance, Q might be said to be subjectively possible for s **IFF** there is a world which is consistent with what s knows in which Q. Likewise, Q might be said to be *nomologically* possible **IFF** there is a world which is governed by our laws of nature in which Q. But why stop there? Any

condition that we can think of could be used to restrict the domain of quantification, allowing for a truly mind-boggling array of possibilities and necessities. As Lewis (1986, p.8) puts it:

> Sometimes one hears a short list of the restricted modalities: nomological, historical, epistemic, deontic, maybe one or two more. And sometimes one is expected to take a position, once and for all, about what is and isn't possible *de re* for an individual. I would suggest instead that the restricting of the modalities [...] like the restricting of quantifiers generally, is a very fluid sort of affair: inconstant, somewhat indeterminate, and subject to instant change in contextual pressure.

The possible worlds account generates commitment to the credos in *Rarefication* and *Commensurability*: for ordinary modalizing surely does not countenance *every* species of modality so-defined; and so-defined, the strength of the necessity of P would be measurable by the extent to which P obtains across possible worlds.

Lewis and Stalnaker also accept the *Credo in Invariance*. The connection between modals and counterfactuals is secured via a semantics for counterfactuals that quantifies over possible worlds. Very roughly, for Lewis (1973), $<P \:\square\!\!\rightarrow Q>$ is true **IFF** every P world that is most similar to the actual world is also a Q world. Lewis therefore analyses $<Q$ is A-necessary IFF $\forall P (P \:\square\!\!\rightarrow Q)>$ as $<Q$ obtains at all possible worlds **IFF** for all P, every P world that is most similar to the actual world is also a Q world>. For Stalnaker (1968), and again very roughly, $<P \:\square\!\!\rightarrow Q>$ is true **IFF** either no world is a P world, or the most similar P world to the actual world is also a Q world. Stalnaker therefore analyses $<Q$ is A-necessary **IFF** $\forall P (P \:\square\!\!\rightarrow Q)>$ as $<Q$ obtains at all possible worlds **IFF** for all P, either no world is a P world, or the most similar P world to the actual world is also a Q world>.

The Lewis-Stalnaker view supports the credos. But what supports the Lewis-Stalnaker view? In a sense, the best argument for this position is the hardest to assess. This is an argument from theoretical utility, which states that we should accept this position because its theoretical virtues outweigh its explanatory costs. Given the sheer volume of work that has been done about both the pros and cons of the possible worlds picture, a full-scale analysis of this argument is far beyond the scope of this thesis. I will instead provide two *prima facie* reasons for scepticism.

In the first instance, modal semantics has recently become rather diverse, if not splintered. Consider, for instance, debates about the adequacy of the possible worlds approaches to deontic modals, which can be found in Nate Charlow and Matthew Chrisman's (2016) edited volume on deontic modality. Consider also the powerful case that Emanuel Viebahn & Barbara Vetter (2016) have made for modal *polysemy*: the claim that ordinary modals are ambiguous between closely

related, but wholly different, subjective, objective and deontic meanings. All this work suggests some theoretical difficulties for the received view.

But here is another reason for scepticism, one that brings us closer to this thesis' focus on the *activity* of modal judgment. Divers (2002) has argued that *if* a possible worlds modal realism is correct, then it is Lewis' (1986) genuine modal realism. On this view, possible worlds are spatiotemporally isolated *concreta*. But this makes them causally inert, which means that they cannot enter into accounts and explanations of modal function. It was Simon Blackburn (1984, p.214) who first made this point about Lewis' modal realism:

> We certainly do not explain [our modalizing] by thinking that we are made sensitive to possibilities because of some quasi-sensory capacity which responds to the presence or absence of possible worlds. [...] If the possible worlds, like the moral properties, represent a new realm of fact, why should we be interested in it? Talking of possibilities would be as optional to us, interested in the actual world, as talk of neighbouring countries or different times would be to us, if we are interested in the here and now. But it is not. We want to know whether to *allow* possibilities or *insist upon* necessities because we want to know how to conduct our thinking about the actual world.

Lewis' *concreta* are utterly intangible to us. Suppose that there is a tiger behind the bush. Then why should it matter to us whether this was necessary, as opposed to merely contingent? There must be some point to our making such distinctions, or else modalizing wouldn't be so widespread and entrenched. But concrete possible worlds cannot help us here, and this is a point against theories that evoke such **possibillia.**

Indeed, *no* causally inert phenomena can figure in a functional account of *any* concept or linguistic practise. Edward Craig (1990, pp.89-90), whist arguing for a function-driven genealogy of knowledge-ascriptions, writes the following:

> We are attempting a 'state of nature' explanation of a number of facts of conceptual or linguistic practice. Such explanations work by identifying certain human needs and arguing that the practices are a necessary (or at the least a highly appropriate) response to them [...] This sets limits to what a 'state of nature' explanation can be good for. The less visible the practical significance, for us, of forming a certain conception or operating a certain linguistic usage, the weaker the explanation. [...] And if the visible practical significance sinks to zero, *as one might think it had when we form the conception of a state of affairs which we are totally incapable of detecting*, the force of a 'state of nature' explanation will sink to zero too, unless it takes the liberty of helping itself to additional explanatory principles. [Emphasis my own.]

When we focus on why it is that modals *matter* to us, the Lewis-Stalnaker picture loses a good deal of its charm. Of course, one could try to *supplement* the account in some way, and argue that, in the modal domain, the semantics and metaphysics come apart from the theory of function. But then

we are owed an explanation as to *why* this pattern is found in modals but not, for instance, in our knowledge-ascriptions. Thus, it was certainly Craig's (1990, pp.1-3) *aspiration* that his functional account would shed some light on the murky matter of the analysis of knowledge:

> We take some prima facie plausible hypothesis about what the concept of knowledge does for us, what its role in our life might be, and then ask what a concept having that role would be like, what conditions would govern its application. [...]should our intuitions [about the concept's extension] prove indeterminate or elastic, this type of investigation might reveal constructive ways of stretching them, and the rationale behind the stretch. With luck it might also reveal the sources of the indeterminacy or elasticity which dogged the attempts to [analyse the concept].

So, there are reasons to be unhappy with the possible worlds view, *especially* if one is preoccupied with the place of modalizing in our lives. And although they are not *decisive* objections to the Lewis-Stalnaker picture, it would be nice for there to be a more direct route to the credos.

1.2.2   A Direct Argument

Possible world's aside, we can find in Lewis's work some motivation for the *Credo in Commensurability*. Moreover, we can find in Stalnaker's work a logical principle which, given the Lewisian considerations, could make someone warm to the *Credo in Invariance*. Their writings therefore suggest an argument for the unifying credos which, though consonant with the possible worlds picture, bypasses it entirely.

We begin with Lewis (1976, p.150), marshalling support for the *Credo in Commensurability*:

> To say that something can happen means that its happening is compossible with certain facts. *Which* facts? That is determined [...] by context. An ape can't speak a human language—say, Finnish—but I can. Facts about the anatomy and operation of the ape's larynx and nervous system are not compossible with his speaking Finnish. The corresponding facts about my larynx and nervous system are compossible with my speaking Finnish. But don't take me along to Helsinki as your interpreter: I can't speak Finnish. My speaking Finnish is compossible with the facts considered so far, but not with further facts about my lack of training. What I can do, relative to one set of facts, I cannot do, relative to another, more inclusive, set. Whenever the context leaves it open which facts are to count as relevant, it is possible to equivocate about whether I can speak Finnish. It is likewise possible to equivocate about whether it is possible for me to speak Finnish, or whether I am able to, or whether I have the ability or capacity or power or potentiality to.

Facts are compossible if their co-obtaining is objectively possible. On Lewis' account, it is objectively possible for Lewis to speak Finnish because it is objectively possible for the facts of his anatomy and his speaking Finnish to co-obtain. But it is also objectively impossible for Lewis

to speak Finnish, because it isn't objectively possible for the facts of his lack of training and his speaking Finnish to co-obtain. Thus, the possibility for some s to F is a relative matter. Relative to one set of facts, X, it is possible for s to F. Relative to a different set of facts, Y, it is impossible for s to F. But then since we can ask whether Y is a proper subset of X, we can ask whether the species of possibility that is sanctioned by X is stronger than the species of possibility that is sanctioned by Y.

Lewis's defence of the *Credo in Commensurability* is the first of three positions which would jointly support the *Credo in Invariance* if they were true. The second is that a *conditional analysis* of objective possibility is true. We may take this position to be equivalent to the following: Q is objectively possible **IFF** $\exists P(X) (P \,\square\!\!\rightarrow Q)$. This position is suggested by two considerations. The first is that conditional analyses of *dispositions* and *abilities* have been quite popular. Indeed, Lewis (1997) defends a conditional analysis of the former (although he is sceptical about a successful conditional analysis of the latter (2020)). The second is that that there is an intimate relationship between dispositions and ordinary objective possibility. Thus, someone who is tempted by a conditional analysis of dispositions or abilities may also be tempted by a conditional analysis of ordinary objective possibility.

It is Stalnaker (1968, pp. 106-107) who supplies us with the third and final position, which is the following equivalence: $\neg(P \,\square\!\!\rightarrow Q)$ **IFF** $(P \,\square\!\!\rightarrow \neg Q)$. When this equivalence is wedded to *Double Negation Introduction* and *Double Negation Elimination*, it follows that $(P \,\square\!\!\rightarrow Q)$ **IFF** $\neg(P \,\square\!\!\rightarrow \neg Q)$. This equivalence is natural, though controversial. Ignoring that for now, let us instead formulate a Lewis-Stalnaker argument for the *Credo in Invariance*.

We begin with the Lewisian view that ordinary objective modalizing already countenances at least two different species of objective possibility, X-possibility and Y-possibility. Given a conditional analysis of ordinary objective possibility, it follows that ordinary modalizing countenances a concept of objective possibility which satisfies (i) Q is X-possible **IFF** $\exists P(X) (P \,\square\!\!\rightarrow Q)$, and a concept of objective possibility which satisfies (ii) Q is Y-possible **IFF** $\exists P(Y) (P \,\square\!\!\rightarrow Q)$. But then given the Stalnaker equivalence, *Double Negation Introduction*, and *Double Negation Elimination*, it follows that ordinary modalizing allows at least this much: that (i) Q is X-possible **IFF** $\exists P(X) \neg(P \,\square\!\!\rightarrow \neg Q)$, and that (ii) Q is Y-possible **IFF** $\exists P(Y) \neg(P \,\square\!\!\rightarrow \neg Q)$.

Now suppose that Bill is an ordinary objective modalizer who accepts the above. Someone suggests to Bill that, for some condition, Z, Q is Z-possible **IFF** $\exists P(Z) \neg(P \,\square\!\!\rightarrow \neg Q)$. For Bill to deny that this biconditional circumscribes a *real* objective possibility concept, Bill would presumably have to show there is something special about conditions X and Y. But this special

quality cannot simply be that Bill does not presently recognise *Z*-possibility *as* an objective possibility. Bill can easily imagine an agent, Anne, whom only countenances *X*-possibility. From Bill's perspective, Anne is mistakenly disallowing condition *Y* from restrict the modally relevant domain of quantification. But then perhaps Bill is making the same mistake with respect to condition *Z*. And then unless there is something special about *Z* in this respect, the same thought could occur to Bill about any condition whatever. This is the line of thought which moves Bill towards the *Credo in Invariance*. Absent a good reason for thinking that *X* and *Y* are special, Bill's rejection of that credo seems unmotivated.

1.2.3   Is the Argument Sound?

The above argument supports the *Credo in Invariance*. But should it be accepted? I think that each of its key premises can be resisted.

  Lewis' Contextualism. Although Lewis intended his observations to cover ascriptions of ability, capacity, power, and ordinary objective possibility, it is important to notice that Lewis focuses on the word 'can'. We might therefore suspect that even if 'can' statements are relativized to different facts, this does not hold of every modal expression in the vicinity. A picture of exactly this sort has been defended by Vetter (2015, pp.217-224), who holds that whilst 'can' is a context-sensitive expression, the modal facts which are determined by 'can' in a context are not themselves relativized. For Vetter, '*x* can *F*' is true in a context IFF *x* has a potentiality to *F* which is relevant in that context. But equally for Vetter, *x*'s potentiality to *F* is non-relativized: something either has the potentiality to *F* at some time, or it does not.

  Moreover – and irrespective of whether our focus is exclusively on 'can' – Lewis's putative data can be resisted. Is there really a sense in which Lewis can speak Finnish, but an ape cannot? I myself believe that neither Lewis nor the ape can do so. However, whilst I believe that it is objectively possible that Lewis will be able to speak Finnish at some point, I do not think this about the ape. So, by deploying the natural, operable, and important distinction between having a potentiality to *F*, and having a potentiality to have a potentiality to *F*, we can recover the modal contrast that exists between would-be Finnish speakers.

  Of course, it need not be denied that there are many contexts in which we happily gloss over this distinction. In situations where Lewis' speaking Finnish doesn't matter to us, we might say that Lewis can do what the ape cannot. But if we are looking for an interpreter, the distinction between the possible and the merely possibly possible matters: we insist that Lewis cannot speak

Finnish. Thus, where Lewis saw context-sensitive truth, we see loose talk in some places, and accurate talk in others.

Conditional Analyses. It is barely worth noting that conditional analyses of abilities and dispositions are controversial. The case against conditional analyses of dispositions has been persuasively made by Vetter (2015, p.33-61) and E. J. Lowe (2011). The case against conditional analyses of abilities goes back at least to J. L. Austin (1956). But perhaps it *is* worth noting that even if one were to accept these analyses, support for conditional analyses of ordinary objective possibility is not immediate. After all, there are important differences between these concepts, which someone may wish to articulate with the suggestion that objective possibilities are *not* apt for conditional analysis.

Stalnaker's Equivalence. Stalnaker endorses a controversial equivalence: $\neg(P \:\square\!\!\rightarrow Q)$ **IFF** $(P \:\square\!\!\rightarrow \neg(Q)$. Lewis (1973, pp.80-83) does not. This is partly because Lewis defines the 'might' counterfactual as the dual of the corresponding 'would' counterfactual: $(Q \:\diamond\!\!\rightarrow P)$ **IFF** $\neg(Q \:\square\!\!\rightarrow \neg P)$. However, Stalnaker (1984, pp.142-146) understands the 'might' counterfactual as a subjective possibility modal that has the corresponding 'would' within its scope: $(Q \:\diamond\!\!\rightarrow P)$ **IFF** $\textbf{POS}_S(Q \:\square\!\!\rightarrow P)$. But even if Lewis is wrong about 'might' counterfactuals, should Stalnaker be allowing that $\neg(P \:\square\!\!\rightarrow Q)$ **IFF** $(P \:\square\!\!\rightarrow \neg(Q)$? Timothy Williamson (1988) has argued *no*, on the grounds that this equivalence commits us to strange principles. J. R. G. Williams (2010) has argued *yes*, on the grounds that the equivalence allows us to explain the behaviour of counterfactuals under the scope of quantifiers. But Williams does not directly address Williamsons' arguments, and Williamson's arguments do not speak to Williams' concerns. And yet something has to give.

Without entering into the subtleties of each position, I will present one reason for siding with Williamson. Duality aside, we can analyse 'might' counterfactuals in two ways. The first takes the 'might' to scope over the *consequent* of the corresponding 'would' conditional: $(Q \:\square\!\!\rightarrow \textbf{POS}_S P)$. The second takes the 'might' to scope over the *entire* corresponding 'would' conditional: $\textbf{POS}_S(Q \:\square\!\!\rightarrow P)$. Stalnaker accepts the latter treatment. But if it could be shown that Stalnaker's analysis of the 'might' counterfactual is false, then not every sentential operator, $\boldsymbol{O}$, is such that $\boldsymbol{O}(P \:\square\!\!\rightarrow Q)$ **IFF** $(P \:\square\!\!\rightarrow \boldsymbol{O}Q)$. Thus, there would be logical precedent to Williamson's concerns about Stalnaker's equivalence.

There are grounds for thinking that Stalnaker's analysis of the 'might' counterfactual is false. Consider the following counterfactual: 'If there had been nothing but a gold or silver sphere, it *might* have been gold'. That seems correct. However, consider: 'It is subjectively possible that, if there had been nothing but a gold or silver sphere, it would have been gold'. That just seems

wrong, because we appear to know with certainty that this particular 'would' counterfactual is false. This tells us that either Lewis' duality analysis of 'might' counterfactuals is correct, or that 'might' counterfactuals are equivalent to the corresponding 'would' counterfactuals, but with a subjective modal scoping over their consequents.[13]

With all that being said, what should our alien anthropologist think? Should they accept the unifying credos? No doubt many good moves could be made in response to the above arguments. But some may at this point protest: Mightn't the difficulties that we have encountered so far suggest a weakness in the unifying credos? Mightn't we have been led astray by the suggestion of modal unification? I will now introduce a figure who stands in stark opposition to the received view.

1.3 Against Unification: Modal Asceticism

1.3.1 A Manifesto

The Ascetic Modalizer is a no-thrills modalizer. She is quite content with the objective modalities that she countenances with her ordinary objective modalizing. Beyond that, the Ascetic Modalizer believes that she is to be *moved* into adopting a lexicon that accommodates further objective modalities, and that nobody has yet demonstrated the need to do so. The Ascetic Modalizer therefore rejects the *Credo in Rarefication*. The Ascetic Modalizer also believes that ordinary objective modalizing does not countenance modalities of different strengths. She believes, for example, that something is either (ordinarily) objectively necessary, or that it is not: that there is no sense in which *P* is (ordinarily) objectively necessary in one way, but not in another. She therefore rejects the *Credo in Commensurability*. And the Ascetic Modalizer also sees no reason to believe that objective necessities are correlated – logically, semantico-conceptually, metaphysically, or epistemologically – with some degree of counterfactual invariance. She is inclined to view the suggestion of such correlation as gratuitous. She therefore rejects the *Credo in Invariance*.

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[13] Williamson (1988, p.405) claims that we have no reason to think that, 'unbeknownst to us', the following is true: 'If there had been nothing but a gold or silver sphere, it would have been gold'. He uses this conditional to argue directly against Stalnaker's equivalence. Moreover, Williamson (1988, p.406) suggests that this conditional might be equivalent to the following: 'If there had been nothing but a gold or silver sphere, it might not have been gold'. *That* would imply Lewis' duality reading, although Williamson choose not to develop this (or indeed any) argument against Stalnaker's theory of 'might' counterfactuals. But as the above shows, it is possible to use Williamson's conditional *and* 'might' counterfactuals to argue against Stalnaker's theory, whilst remaining agnostic about Lewis' duality reading.

To be clear, the Ascetic Modalizer is *not* (necessarily) a sceptic about degrees of counterfactual invariance. Indeed, the Ascetic Modalizer is *not* (necessarily) a sceptic about *unrestricted* counterfactual invariance. And she would *not* (necessarily) be opposed to our introducing a concept to mark counterfactual invariance: a concept which could then be used to define other concepts, in the same sort of way that necessity can be used to define possibility, impossibility, non-necessity, and contingency. The Ascetic Modalizer simply resents the presumption that she ought to view these different counterfactual statuses as (tracking) necessities, possibilities, impossibilities, non-necessities, and contingencies.

The Ascetic Modalizer rejects the suggestion that her disagreement with the received view amounts to little more than a terminological squabble. She points out that her position is significant in at least two respects. The first is pedagogical. If the Ascetic Modalizer is right that A-necessity is not the same sort of thing as that which we ordinarily call *necessity*, then adopting the same terminology for both is bound to confuse the student of philosophy. The second is theoretical. The Ascetic Modalizer will point to the widespread belief that a theory of modality ought to accommodate ordinary *and* philosophical "modalities". This is most obvious when we consider Neo-Aristotelian theories of modality. Barbara Vetter (2015, pp.197-300), for instance, works very hard to accommodate A-modality within her framework, and views it as a point against her theory that she cannot countenance all *prima facie* A-possibilities. But the Ascetic Modalizer will urge that Vetter has been working under the influence of a false *desideratum*.

Finally, the Ascetic Modalizer rejects the assertion that the strength of an objective necessity is measured by counterfactual invariance, both with regards to its content and to its presupposition. She rejects its content, because she rejects the *Credo in Invariance*. But just as importantly, she rejects its presupposition: that the strength of objective necessity is an issue worth commenting about. For given her rejection of the *Credo in Commensurability*, there are no two species of *ordinary* objective necessity whose strengths we might like to compare; and given her rejection of the *Credo in Rarefication*, this unique species of ordinary objective necessity is the *only* species of objective necessity there is. For the Ascetic Modalizer, then, ordinary objective necessity is *trivially* the strongest species of objective necessity.

1.3.2 *Edgington 2004*

With this schematic presentation of the Ascetic Modalizer's position in hand, we can turn to Edgington (2004) for a concrete rendition. Edgington places her view within the context of Saul Kripke's (1980). Edgington's (2004, pp.5-6) goal is to:

take as basic our pre-philosophical use of modal concepts, and to derive the more rarefied philosophical use from these. The novice at philosophy has some catching on to do in coming to understand the philosopher's favourite sense, according to which e.g. 'It is possible that the Conservative Party won the last election' is true, and 'It is possible that a man lives for years unaided under water' is true. And I think there are two primitive modal notions, both context dependent, in terms of which we can define two more abstract notions. A primitive epistemic possibility is what you are considering when you are wondering whether something is the case. It is relative to an individual and a time. The other pre-philosophical notion is that certain things can happen, certain things can't; people and other objects can do certain things and can't do others. What can and can't happen, in this sense, is a matter of empirical discovery.

It is obvious that Edgington's pre-theoretical modals are our ordinary subjective and objective modals. Edgington wants to build up to *a priority* and A-necessity using only these humble resources. And in motivating this project, Edgington (2004, p.2) seemingly rejects the *Credo in Rarefication*:

> it is not uncommon, in explaining the allegedly important, philosophers' sense of the modal notions, to do so by contrast with 'mere' epistemic possibility, or with 'mere' physical possibility (or impossibility). I try to show, on the contrary, that we can get by with just these two families of modal notions

In order to carry out this project, Edgington (2004, pp. 6-7) introduces non-relativized versions of ordinary objective and subjective modalizing. In the case of ordinary objective modalizing, lost is relativisation to particular moments in time. Edgington will understand the A-necessity of *P* to consist in *P*'s being ordinarily objectively necessary *at all* times, where the temporal invariance of $\mathbf{NEC}_oP$ is explained by the laws of nature. In the case of ordinary subjective modalizing, lost is the relativisation to the states of information of particular subjects at particular moments in time. Edgington will understand the *a priori* impossibility of *P* to consist in *P*'s being such that, for any subject *s*, and for any state of information *i*, it is objectively possible for *s* to recognise that $\mathbf{IMP}_sP$ when in *i*.[14]

Reading Edgington as denying the *Credo in Rarefication* requires some care. Is there not quite clearly a sense in which Edgington countenances modalities "beyond" those recognised by ordinary modalizing? We do not ordinarily talk about *a priority* and A-necessity, after all. However, it isn't always clear that Edgington *does* (wholeheartedly) countenance the *a priori* and the A-necessary. Thus, consider the following passage, in which Edgington (2004, p.7) appears to be putting some distance between herself and "the philosopher":

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[14] I will discuss Edgington's view of the *a priori* in Chapter 5, as well as her thoughts about *logical* necessity.

> Philosophers take a professional interest in timeless, eternal, in some sense necessary truth. I have tried to explain these notions in terms of ordinary tensed modal talk. When a philosopher says 'It is possible that ...' or 'There is a possible situation (or world) in which ...' she means 'There is or will be or was a possible situation in which ...' No great harm in that, but we are in danger of losing the very significant difference between a past and a present possibility, the difference between what may be true and what might have been true but no longer may be true, whether that is read epistemically or [objectively].

Edgington is saying that relativisation is an important aspect of ordinary modalizing. This might suggest that Edgington should not view her non-relativized constructions as countenancing *ordinary* modalities. But Edgington has also stated that we do not need to introduce any extraordinary modal notions. How then should Edgington understand her own constructions?

I think that we can make better sense of Edgington's position by first reckoning with another interesting aspect of the above passage, which is that Edgington's claim about what philosophers mean by absolute possibility appears to be quite *obviously* false. Indeed, Edgington (2004, p.1) is fully aware that her reading of Kripke is non-standard. Moreover, Edgington (2004, p.18) writes that Lewis' 'fundamental notion [of possibility] is, at least extensionally, much closer to what I called (absolute) epistemic possibility than to what I call metaphysical possibility'. But then how could Edgington propose that her concepts of *a priori* necessity and A-necessity are also the philosophers'?

In my view, when Edgington is talking about what the philosopher means by 'possible', she is best understood as offering her assistance to an ordinary modalizer, who is trying to understand philosophical modalizing. Edgington therefore provides the ordinary modalizer with a *charitable interpretation of the philosophical discourse*: charitable, because she rejects the *Credo in Rarefication*, and therefore thinks that the philosopher is mistaken in thinking that he has identified any special modality. Her aim is to make as much sense of philosophical modalizing as she can, all whilst respecting Kripke's insight. Edgington therefore doesn't see herself as bound to the typical standards of intensional and extensional adequacy, and this manifests in her *de facto* denial of *Unrestricted Invariance*.

In this way, Edgington can view her constructions as forming a bridge between the philosophical and the ordinary. From the perspective of someone who denies the *Credo in Rarefication*, Edgington attempts to discern what it is that philosophical modalizers *might have tried to mean* by (say) 'A-necessary'. Her suggestion is that the philosopher was aiming for ordinary objective necessity at all times. Is this a further kind of necessity, over and above the relativized? If Edgington thinks that temporal relativisation is *essential* to the ordinary notion, then no. If she doesn't, then: *perhaps*. After all, there is no obvious need to mark the ever-necessary as its own *kind*

of necessity, just like there would be no obvious need to mark (say) the ever-moving as its own *kind* of moving: as *absolutely moving.*

1.3.3 Reasons for Asceticism

Reading Edgington as denying the *Credo in Rarefication*, we thereby have some reason to suppose that Edgington would also deny the *Credo in Commensurability*. She must therefore also deny clause (B) of the *Credo in Invariance.*[15] But more importantly still, Edgington has shown us that the Ascetic Modalizer's position, like the possible worlds picture, has its own theoretical attractions. Sticking with our ordinary objective modals keeps the conceptual and metaphysical primitives to a minimum, whilst respecting an important feature of ordinary modalities, which is that they are relativized to times. But Edgington also mentions two further motivations for her view.

Firstly, Edgington's position affords a nice *rapprochement* between modal and *probabilistic* notions. It is widely thought that there are two species of probability: one subjective and related to agent's cognitive access to the facts, another objective and discoverable through empirical means. As Edgington notes, these notions seem to correspond nicely to ordinary subjective and objective possibility. (Indeed, for Edgington, probability is 'weighted possibility – a measure on the space of possibility'.) A modal theory that countenances only ordinary objective and subjective possibility therefore seems to sit most comfortably with this bifurcated view of probability.

Secondly, Edgington's position allows for a simple account of the laws of nature. Certain universal generalisations seem less accidental and more theoretically significant than others. We are inclined to describe those generalisations as laws of nature. But what is the crucial difference between laws and non-laws? What lies behind our intuition that the laws are less accidental and more theoretically significant? According to Edgington, the Neo-Humean proposal, which denies that there are modal connections in nature, is unsatisfactory. The most natural counter-proposal is to appeal to modalities which, like the laws of nature, are empirically discoverable: the ordinary objective modalities. The laws don't just state that such-and-such never happens. They state that such-and-such *cannot ever happen.*

We can at this stage add another reason in favour of Edgington's position. As Edgington rightly points out, we often seem to acquire ordinary objective modal knowledge empirically: our sense experience gives us evidence that such-and-such is possible. However, our knowledge of

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[15] Whether she also denies (A) is a delicate question, one which demands a careful study of Edgington's theory of counterfactuals (for instance, in Edgington (2008)). But since our goal is to locate Edgington's position with respect to the Ascetic Modalizer, and since the Ascetic Modalizer is most concerned to discourage belief in (B), we may sidestep this (important) issue for the time being.

philosophical modality is not often rooted in this kind of experiential evidence. For example, Williamson (2007) has argued that A-modal knowledge goes via our knowledge of counterfactual conditionals. And as Williamson (2007, pp. 165-177) argues, the role of sense experience in our counterfactual knowledge is rather difficult to pin down. Many cases of counterfactual knowledge are not *obviously* rooted in experiential evidence. But more importantly for our purposes, some counterfactual knowledge is quite obviously *not* rooted in experiential evidence: for example, our knowledge that if two twos had been five, then two twos would have been five. So there seems to be an important *epistemological* difference between our ordinary subjective and objective modalizing. That is a *prima facie* difference in favour of disunity.

1.4   Functional Considerations

Now it goes without saying that we have just strayed into controversial territory: the laws of nature, the connection between modality and probability, the epistemology of modality. And, of course, the same is true of the reasons that we gave in favour of modal unification. But then given the sheer volume of high-calibre philosophy that has been written on the semantics, metaphysics, and epistemology of modality – the arguments for and against the enormous variety of plausible positions that concern these complex, interwoven topics – it is easy to feel that an impasse has been reached. What is our alien anthropologist to do? What is the status of the received view, of the unifying credos?

The Ascetic Modalizer does not view philosophical modalizing *as* modalizing. There are several reasons why this might be. One is metaphysical: she does not see how ordinary and philosophical modals could have the same kind of subject-matter. Another is semantico-conceptual: she does not see how the meanings or concepts expressed by ordinary and philosophical modals could have the same content. But yet another is *functional*: she is convinced that ordinary and philosophical modals play very different roles. The Ascetic Modalizer could think that treating something *as* an ordinary modality is not the same kind of thing as treating something *as* a philosophical "modality".

Now whatever we may think about the connection between the functional, metaphysical, and semantico-conceptual, the Ascetic Modalizer that I am imagining is concerned with function. Moreover, she is willing to grant that *if* she is wrong about ordinary and philosophical modalizing, then metaphysical and semantico-conceptual similarity follow suit. The most efficient and direct challenge to the Ascetic Modalizer would therefore be to leverage functional considerations in favour of the unifying credos. But there is a further incentive to go down this route: it is the road

least travelled by. Optimistically, we might suggest that the much-neglected topic of modal function promises to offer a fresh perspective on the received view.

Now functional considerations would support the *Credo in Rarefication*, if it could be shown that that at least one species of objective philosophical modalizing – say, A-modalizing – has the same kind of function as ordinary objective modalizing. How much functional similarity is enough functional similarity? That will presumably depend, in part, upon the degree of functional similarity that we find in our ordinary modalizing more broadly: for instance, in the degree of functional similarity that we find between ordinary objective and subjective modals. The more these functions approach something like a natural kind, the harder it will be to motivate the *Credo in Rarefication*. But if the functional profile of ordinary modalizing is heterogeneous enough, then the functional case for the *Credo in Rarefication* will be easier.

Functional considerations would also support the *Credo in Commensurability*, if it could be shown that objective modalizing would benefit from admitting different modals of commensurable strength – or, at the very least, that it could *tolerate* these different modals. It might be argued, for instance, that our ordinary objective modalizing would best function if it countenanced several different commensurable ordinary modal concepts. And if the *Credo in Rarefication* is true, then perhaps it is functionally advantageous, or at least tolerable, for our ordinary and philosophical objective modalizing to admit concepts that are commensurable in strength.

Finally, functional considerations would support the *Credo in Invariance*, if it could be shown that the concept of something's being objectively necessary functions identically to the concept of something's having an invariant counterfactual status. But partial vindication of this credo could also come from functional considerations. Thus, one might think that *only* clause (A) of the *Credo in Invariance* would be supported, if (say) it could be shown that the concept of something's being objectively necessary would benefit from entailing the concept of something's being counterfactually invariant; *mutatis mutandis* for clause (B).

Summary

In this chapter, I have set this thesis's agenda: to approach the relationship between ordinary and philosophical modalizing via the theory of function. My primary goal is to investigate the degree of functional similarity between ordinary objective and A-modalizing. My secondary goal is to do so with an eye towards assessing the Ascetic Modalizer's rejection of the unifying credos. And my tertiary goal is to draw, from those reflections, some further consequences for the theory of

modality. In the next chapter, I will investigate two interrelated phenomena that are of importance to the issue of modal function: conditionals and suppositions.

CHAPTER 2
CONDITIONALS AND SUPPOSITIONS

In the previous chapter, I set the agenda for this thesis: to investigate the relationship between ordinary and philosophical modals with a function-first methodology. In this chapter, I will lay the groundwork for this investigation, by getting clear about two interrelated phenomena, both intimately connected to modalizing: *conditionals* and *suppositions.*

In Section 1, I will argue that there are *three* species of conditionals: *indicatives, weak subjunctives*, and *strong subjunctives (counterfactuals).* These conditionals are marked by important morphological differences. But what do these morphological differences communicate? And why do we have three kinds of conditional, anyway? This chapter will propose harmonious answers to these questions: that which the morphological differences communicate is correlated, to a perhaps surprising degree, with the functional differences between conditionals.

In Section 2, I will suggest some hypotheses about the roles of these different conditionals. From these functional hypotheses, I derive some hypotheses about what the conditionals *presuppose.* I argue that indicatives presuppose antecedent uncertainty, that strong subjunctives presuppose certainty of antecedent falsity, and that weak subjunctives presuppose neither. These presuppositional hypotheses will make it easier to test the functional hypotheses against putative counterexamples: I do this in Section 3 for indicatives, and Section 4 for strong subjunctives.

With that discussion in hand, I turn to the morphological differences. In Section 5, I argue against Inés Crespo, Hadil Karawani, and Frank Veltman's (2018) theory of indicatives and weak subjunctives. Finally, in Section 6, I propose my own theory. The basic idea is that the morphological differences between the three conditionals communicate different assertability conditions. These are all versions of the Ramsey Test, which I explicate using the notion of a supposition. These assertability conditions become more demanding, as we move from indicative to weak subjunctive and to strong subjunctive. I then show how these assertability conditions align with the functional profiles of the three conditionals, before considering some problems for my theory.

2.1 Indicatives and Subjunctives

2.1.1 How Many Conditionals?

There are at least two kinds of conditional. Consider this famous duo:

(1)   If Oswald didn't shoot Kennedy, (then) someone else did.

(2)   If Oswald hadn't shot Kennedy, (then) someone else would have.

Sentences like (1) are often called *indicative conditionals*, and sentences like (2) *counterfactual conditionals*. Indeed, (1) and (2) are supposed to be *paradigmatic* indicatives and counterfactuals. Both are past-directed, and the former is in the indicative mood, the latter in the subjunctive. Are we therefore to conclude that the *only* indicatives are past-directed and in the indicative mood, and that the *only* counterfactuals are past-directed and in the subjunctive mood? That seems far too hasty. Consider, for instance, the following future-directed conditionals:

(3)   If he goes to the party tomorrow, nobody will have fun.

(4)   If he had gone to the party tomorrow, nobody would have had fun.

My intuition tells me to group (1) with (3) and (2) with (4). If that is correct, then indicatives and counterfactuals can be future-directed too. So, perhaps the difference between indicatives and counterfactuals is merely that the latter are in the subjunctive mood? But that doesn't seem right either, for there are subjunctively stated conditionals which, at least superficially, look rather different from conditionals like (2) and (4):

(5)   If he were going to the party tomorrow, nobody would have fun.

Keith DeRose (2010) calls conditionals like (5) *'were'ed-up conditionals*, and Sabine Iatridou (2000) calls them *future less perfect* conditionals. I will adopt the nomenclature of Crespo, Karawani, and Veltman (2018) throughout this chapter, calling sentences like (2) and (4) *strong subjunctive conditionals*, and sentences like (5) *weak subjunctive conditionals*. Strong subjunctives have two layers of past tense morphology, whereas weak subjunctives only have one.[16]

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[16] How many of these layers of past tense morphology encode temporal information? I will argue in Section 6 that the layer of past tense that weak and strong subjunctives have in common does *not* encode temporal

How should we classify these conditionals? Nobody would be contradicting themselves if they accepted (1) but rejected (2), and Lewis (1973, p.3) takes this datum to suggest a difference in meaning. Where does that place conditionals like (5)? Supposing that Lewis is right, then a natural method for classifying conditionals would begin with semantic theorising: for with a proposal about the meaning of indicatives and strong subjunctives in hand, we could ascertain their degree of semantic similarity to weak subjunctives. But as DeRose (2010, p.2) points out, far too much is contentious in the semantics of conditionals for this general strategy to work. Indeed, it is even debated that conditionals are truth-apt! But then how to approach their classification?

In response to this difficulty, DeRose (2010, p.3) suggests that we should aim to uncover differences in the semantically relevant *behaviours* of paradigmatic indicatives and strong subjunctives. DeRose then suggests two tests for indicativity and, applying them to certain weak subjunctives, DeRose's verdict is that there is only a minimal difference between indicatives and weak subjunctives: that these are just "souped up" indicatives. But I think that Crespo, Karawani and Veltman (2018) are more likely to be correct, when they say that there are three basic species of conditional: indicatives, weak subjunctives, and strong subjunctives (counterfactuals).

2.1.2 *DeRose on the Conditionals of Practical Deliberation*

Let us first review DeRose's (2010) argument. It should be noted from the outset that DeRose was *not* concerned to capture weak subjunctives in their full glory. Rather, DeRose was aiming to attack an entrenched belief: that the conditionals of *practical deliberation* are strong subjunctives. Here are Allan Gibbard and William L. Harper (1978, p.153):

> We begin with a rough theory of rational decision-making. In the first place, rational decision-making involves conditional propositions: when a person weighs a major decision, it is rational for him to ask, for each act he considers, what would happen if he performed that act. It is rational, then, for him to consider propositions of the form 'If I were to do *a*, *c* would happen'. Such a proposition we shall call a *counterfactual.*

Much condensed, DeRose's argument goes as follows. Letting '*A > C*' represent any *future directed conditional* (FDC), we say that '*A > C*' is *deliberationally useful* for an agent *s* **IFF**, to the extent that *s* has reason to believe that $A > C$, and to the extent that *s* wants *C* (not) to obtain, *s* has reason try to make *A* (not) obtain. (DeRose, 2010, pp.6-7) DeRose then uses his tests to show us that, for any deliberationally useful '*A > C*', its indicative and weak subjunctive versions behave in very

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information, but that the strong subjunctive's extra layer does. However, unlike some other "fake past" theorists, such as Iatridou (2000), I do not interpret the non-temporal layer "modally".

similar ways. But I think that although DeRose is right about their behaviours, he is wrong to conclude from this that weak subjunctives are simply indicative with panache.

Now DeRose claims to have isolated two important differences between indicatives and strong subjunctives. The *first* is that paradigmatic indicatives, but not paradigmatic strong subjunctives, have 'certain remarkable assertibility conditions' (DeRose, 2010, p.12). DeRose's starting point here is William Lycan's (2001, p.48) version of the Ramsey Test (Frank P. Ramsey, 1931):

> To evaluate A > C, add A hypothetically to your current belief set, make such revisions in your new total belief set as would be rationally required to preserve coherence while retaining A, and see whether C would be a member of the revised set. If it would, the conditional may be asserted; if not, not.

DeRose (2010, pp.14-15) modifies this test by adding a constraint: *C* must be *assertable*, and not merely believed, given the hypothetical addition of *P*.[17] On the basis of DeRose's modification of Lycan's reading of the Ramsey Test, one might therefore propose the following assertability condition for indicatives: '$A \rightarrow C$' is assertable by *s* **IFF** *s* has (i) hypothetically added <*A*> to their prior belief set, Γ, before (ii) checking Γ&*A* for incoherence, and removing any incoherence by altering Γ, whereupon (iii) *s*'s newest belief set puts them in a position to assert <*S*>.[18]

This assertability condition looks plausible for (1). Upon hypothetically believing that Oswald didn't shoot Kenney, we are indeed in a position to assert that someone else did. The Ramsey Test therefore gives the right results for indicatives. And since (2) seems to be unassertible, DeRose concludes that the Ramsey Test *does not* apply to strong subjunctives. But this seems too quick. In the first instance, if we hypothetically believe that *Oswald hadn't shot Kennedy*, then it *doesn't* look like we can assert that *someone else would have*. Deploying a strong subjunctive morphology as we apply the Ramsey Test therefore gives the right results for strong subjunctives, too. Moreover,

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[17] DeRose (2010, p.15) leaves undetermined the exact nature of <*C*>'s being assertable in this context, on the grounds that this is likely parasitic upon the assertability of <*C*> quite generally. If one believes that assertability ordinarily goes by sufficiently high probability, then <$A \rightarrow C$> is assertible if the probability of *C* is sufficiently high, given the addition of <*A*> to one's belief set. If one believes that the assertion of <*C*> would normally require knowing that *C*, then <$A \rightarrow C$> is assertible if the <*C*> is known, given the addition of <*A*> to one's belief set. We can follow DeRose in feigning neutrality about this matter.

[18] Without qualification, this biconditional is too strong, because it makes unassertible some paradigmatic indicatives which constitute (say) knowledge by testimony. In response to this difficulty, we can mirror a move that has been made by Divers and José Edgar González-Varela (2013, p.366), in the context of theorising about the acquisition of belief in A-necessity: we are to say that the biconditional only concerns the *canonical* assertability conditions of paradigmatic indicatives, where these are assertability conditions that are *only* sensitive to the best possible and most direct kind of evidence that one might have for belief in paradigmatic indicatives. Henceforth, talk of assertability conditions for conditionals will be understood to be implicitly restricted to the canonical case.

we should note that Stalnaker's (1968) point of departure is that *all* conditionals have Ramsey-like assertability conditions. For these reasons, I am sceptical of DeRose's first test for indicativity.

We could, it is true, try to run the Ramsey Test using a strong subjunctive morphology, and then an indicative morphology. We could then attempt to ascertain which version of the Ramsey Test best aligns with our intuitions about the corresponding weak subjunctive's assertability. But this seems too unreliable, for we might become misled by superficial or incidental morphological differences: perhaps running the Ramsey Test for weak subjunctives would just *sound better* with one or the other morphology, even though neither actually matches the weak subjunctive's assertability conditions.

We do better to focus on DeRose's (2010, pp.16-20) *second* test for indicativity. It is based on the fact that paradigmatic indicatives appear to elicit intuitions about the validity of certain inferences which, together with other *prima facie* valid inferences, generate a paradox. Thus, intuitively, $<\neg P \to Q>$ is entailed by $<P OR Q>$. Equally intuitively, $<\neg P \to Q>$ is *not* entailed by $<P>$. However, if $<P>$ entails $<P OR Q>$, then by the transitivity of entailment, $<P>$ *does* entail $<\neg P \to Q>$ after all. Trusting all these intuitions would force us to say that $<P>$ entails $<\neg P \to Q>$ and that it does not. Something has got to go, but it isn't clear what. This is the "Paradox of Indicative Conditionals." [19] DeRose's innovation is to use the Paradox for classificatory purposes.

Paradigmatic indicatives are subject to the Paradox. Paradigmatic strong subjunctives are not. From <Oswald shot Kennedy>, neither (1) nor (2) intuitively follows. However, from <Oswald shot Kennedy or someone else did>, (1) intuitively follows, but not (2). So (1) is subject to the Paradox, and (2) is not. Conditionals which are subject to the Paradox of Indicatives are therefore similar to paradigmatic indicatives, in at least one important respect.[20] The question, then, is that of whether deliberationally useful weak subjunctives *are* subject to Paradox. And it seems reasonably clear to me that they are. Consider the following examples, from DeRose (2010):

(6)   If the house is not painted, it will soon look quite shabby.

(7)   If the house were not to be painted, it would soon look quite shabby.

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[19] The paradox dates back to Stalnaker (1975). The name is due to Frank Jackson (1987, pp.4-8).
[20] There is complication: even with paradigmatic indicatives, the clear intuition of entailment almost entirely disappears when the disjunction contains a negative proposition, and the conditional has that proposition as antecedent: $<(\neg P) OR Q>$ does not intuitively entail $<P \to Q>$. DeRose (2010, p.17) tentatively responds to the problem like so. When we consider a conditional that has a positive antecedent, and we wish to test its inferential properties in the manner above, we must first negate its antecedent: '$P \to Q$' becomes '$\neg P \to Q$'. We can then apply the test as normal. But since this is a little awkward, DeRose is happy to take his second test as indicating indicativity *if passed*, but not necessarily as indicating non-indicativity *if failed*.

Both seem to boast the crucial Paradox-generating entailment, from <*P*OR*Q*> to <*A* > *C*>:

(8)   Either the house is painted, or it will soon look quite shabby.

    a.   So, if the house is not painted, it will soon look quite shabby.

    b.   So, if the house were not to be painted, it would soon look quite shabby.[21]

Moreover, DeRose notes that there is something marked, and perhaps even incoherent, about asserting (6) but denying or questioning (7):

(9)   a.   ?? If the house is not painted, it will soon look quite shabby. But if the house were not to be painted, it wouldn't soon look quite shabby.

    b.   ?? If the house is not painted, it will soon look quite shabby. But if the house were not to be painted, would it soon look quite shabby?

This data alone suggests that any semantically relevant differences between deliberationally useful indicatives and weak subjunctives are in no way as significant as those that exist between indicatives and strong subjunctives. And if we add to this our intuitions about the Paradox of Indicatives, then it is easy to see why DeRose felt happy to group weak subjunctives with the indicatives. But I think that this was too hasty.[22]

2.1.3   *Three Conditionals!*

As Crespo, Karawani and Veltman (2018) have shown, weak subjunctives can sometimes look just like strong subjunctives. DeRose's classificatory mistake was to ignore examples like the following:

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[21] DeRose (2010, pp. 36-37) actually reports that intuitions are split and indecisive about these weak subjunctives. Although I myself have the (rather strong!) intuition that these conditionals *are* subject to the Paradox of Indicatives, it may nonetheless be premature to classifying weak subjunctives as "souped up" indicatives on the basis of this test alone. But that this is not an argument for grouping it with the corresponding strong subjunctive.

[22] We should note in passing, and on behalf of DeRose's agenda, that *strong* subjunctives are completely infelicitous when we are practically deliberating. Compare (Aa) and (Ab):

(A)   [Let's make a decision: either we paint the house, or we redo the garden.]
    a.   If the house were not to be painted this summer, it would soon look quite shabby.
    b.   ?? If the house had not been painted this summer, it would have soon looked quite shabby.

(10)   If he were alive today, he would be happy to see that.

(11)   I know he's not coming. If he were coming, mommy wouldn't be crying.

Example (10) is drawn from Michela Ippolito (2006), and example (11) from Crespo, Karawani, and Veltman (2018). Notice how neither is (obviously) subject to Paradox, in that the crucial Paradox-generating inference is of questionable felicity:

(12)   a.   ? Either he's alive today, or he's happy to see that. So, if he were not alive today, he would be happy to see that.

        b.   ? Either he's coming, or mommy isn't crying. So, if he were not coming, mommy wouldn't be crying.

Moreover, asserting (10) or (11) whilst denying or questioning their strong subjunctive counterparts sounds just terrible:

(13)   a.   ?? If he were alive today, he would be happy to see that. But if he had been alive today, would he have been happy to see that?

        b.   ?? If he were coming, mommy wouldn't be crying. But if he had been coming, mommy would have been crying.

It therefore looks as though weak subjunctives can sometimes pattern like indicatives, and sometimes like strong subjunctives. This suggests that weak subjunctives are their own species of conditional. Indeed Crespo, Karawani, and Veltman (2018, pp.9-12) point out that these conditionals have a unique pattern of temporal distribution in English and Dutch, where indicative-patterning weak subjunctives can sound awkward when present- or past-directed.[23] Although this does not generalise robustly – for instance, these constructions sound fine in Palestinian Arabic – their observation adds weight to the idea that there are three classes of conditional.

Now there are *many* questions that one could ask at this stage, but I will focus on just two. The *first* question is that of what these different conditionals are for: what roles do they play in our lives? We have already seen that indicatives and weak subjunctives can assist in our practical

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[23] Crespo, Karawani, and Veltman (2018) do not put the point in terms of "indicative patterning" weak subjunctives, but it is clear that they are talking about assertions of weak subjunctives which are *not* supposed to be getting a "counterfactual" reading.

deliberations. Do they have any other roles? And what about strong subjunctives? What do we need *them* for? The *second* question is that of the significance of the subjunctive mood (in conditionals). Does it contribute the same thing to weak and strong subjunctives? And what *does* it contribute? In what follows, I will attempt an answer to the question of mood by first defending an answer to the question of function.

2.2   Function, Presupposition, and Settledness

2.2.1   *Functional Hypotheses*

We often reason from propositions which are *settled* for us: we move form an old settled belief to a new settled belief, by reflecting upon the prior belief. As Robert Fogelin (1967, p.15) notes, the paradigmatic device that marks reasoning from settled propositions is 'so'. Devices like 'therefore' and 'since' can also be used.

But reasoning from settled propositions is not the only reasoning we do. Sometimes, required is a device that functions to non-assertorically "put forth" the *negation* of a settled proposition, so that we may reason from *that*. A reasonable suggestion is that strong subjunctives play this role. And at other times, required is a device that functions to non-assertorically "put forth" a proposition or its negation, so that we may reason from either, even though we consider that proposition *unsettled*. A reasonable suggestion is that indicatives play this role. I am interested in defending these functional hypotheses in their strongest forms:

> *Indicative Function* – Indicatives, but not strong subjunctives, function to help us reason from unsettled propositions and their negations: '$P \rightarrow Q$' and '$\neg P \rightarrow Q$' are *for* when $<P>$ is unsettled; neither '$P \;\square\!\!\rightarrow Q$' nor '$\neg P \square\!\!\rightarrow Q$' play this role.

> *Strong Subjunctive Function* – Strong subjunctives, but not indicatives, function to help us reason from the negations of settled propositions: '$P \;\square\!\!\rightarrow Q$' is *for* when $<\neg P>$ is settled; '$P \rightarrow Q$' does not play this role.

Several writers have suggested that something like these functions hypotheses are on the right tracks. Often, the point is put in terms of *knowledge*. For example, here is Fogelin (1967, pp.17-18), discussing G. E. Moore:

> We can get a clue about the function of "if-then" sentences from a passage in G. E. Moore's *Commonplace Book* [...] Moore seems to be saying the following: in using an "if-then" sentence we are neither affirming nor denying the component propositions; instead, we are assigning a problematic status to them. The standard reason, but not the only reason, for such an ascription is that we simply do not know the truth status of the component propositions; thus the use of this construction when we do know the truth status of the component propositions would normally be misleading.

We can read Fogelin has offering qualified support to the positive claim in *Indicative Function*, where the unsettledness of <*P*> for an agent, *s*, just amounts to *s*'s not knowing whether *P*. Fogelin (1968, p. 18) also appears to endorse the positive claim in *Strong Subjunctive Function*, and the negative claim in *Indicative Function*, when he writes that the strong subjunctive 'commits us to the falsity of the antecedent'. And Ben Holguín (2020, no pagination), once again appealing to knowledge, has come close to endorsing the positive claims in *Indicative Function* and *Strong Subjunctive Function*:

> the idea that the main purpose of the indicative conditional is for reasoning and talking about propositions whose truth-value is unknown [...] really is an intuitive one. If you've settled whether p, you shouldn't be asserting things like 'If p, q'. Instead, you either should be asserting q (when you know that p), or—if determined to assert a conditional—you should be asserting a strong subjunctive 'If it were that p, it would be that...' (when you know that ¬p).

Now the functional hypotheses must be construed sensibly. I have no doubt that people sometimes end up reasoning from <*P*> to <*Q*>, when <*P*> is unsettled for them, as a result of asserting or evaluating the strong subjunctive '$P \,\square\!\!\rightarrow Q$'. Likewise, it is not uncommon for 'since' to be neglected in favour of 'if'. But these cases should not refute our functional hypotheses.

Indeed, consider a notion of language function that we inherit from Ruth Garrett Millikan (2005): roughly, that the function of a linguistic construction in a community is the effect that its utterance has on the members of that community which explains why the construction is reproduced. The naturalist in me is rather drawn to this thought, which, happily, insulates our functional hypotheses from facile criticism. Thus, the mere fact that '$P \,\square\!\!\rightarrow Q$' sometimes prompts people to reason from the unsettled <*P*> does not suggest that such effects explain the fact that we keep going in for the strong subjunctive. According to *Strong Subjunctive Function*, the crucial effects are those in which someone reasons from <¬*P*>, when <*P*> is settled.

I will assume that the positive functional claims are obviously true. The negative claims are more controversial. Indeed, prominent counterexamples seem to abound. These are not considered to be marginal cases, or instances of loose speak: there are supposedly entire classes of indicatives that prompt reasoning from settled propositions, and whole families of strong

subjunctives that prompt reasoning from unsettled propositions. Not so in my view: when we look at the different cases more closely, most if not all of these putative counterexamples turn out to be false. Indeed, I think that many putative counterexamples to *Strong Subjunctive Function* turn out to be *weak subjunctives* (a misdiagnosis that was already corrected by DeRose (2010) with respect to the conditionals of practical deliberation). That is partly because *Weak Subjunctives* can function as indicatives *or* as strong subjunctives:

> *Weak Subjunctive Function* – Weak subjunctives function to help us reason from the negations of settled propositions, or from (the negations of) unsettled propositions: 'P $\Box\!\!\to$ Q' is *for* when <¬P> is settled, *or* for when it is unsettled whether *P*.

The weak subjunctive is therefore the least discriminating conditional, from a functional perspective. And as we have already seen, it can indeed sometimes act like an indicative, and sometimes like a strong subjunctive.

2.2.2   Presuppositional Hypotheses

But how are we to ascertain whether these functional hypotheses are correct? My approach will be to formulate hypotheses that we would expect to be true, if the functional hypotheses were themselves correct:

> *Indicative Presupposition* – If an indicative 'P → Q' is asserted in a context, *c*, the assertion presupposes that, in *c*, <P> is unsettled for speaker or audience.

> *Strong Subjunctive Presupposition* – If a strong subjunctive 'P $\Box\!\!\to$ Q' is asserted in a context, *c*, the assertion presupposes that, in *c*, <¬P> is settled for speaker or audience.

Weak Subjunctive Presupposition – If a weak subjunctive '*P* []→ *Q*' is asserted in a context, *c*, the assertion presupposes that, in *c*, <*P*> is not settled for speaker or audience.[24]

Three things about the above. *Firstly*, we will not have anything to say about what presupposition amounts to: about whether, for instance, we are working within a broadly Stalnakerian (1973) system. The inference from our functional hypotheses to our presuppositional hypotheses is motivated by the thought that, if our functional hypotheses are true, then we would expect *some* kind of mechanism to arise, which would act to make (say) strong subjunctives infelicitous or inappropriate when their antecedents are unsettled by every conversational participant. Presupposition is one such mechanism, though there could be others: implicatures, for instance. However, since it is common to find data about (in)felicitous or (un)marked conditionals being leveraged in debates about what conditionals presuppose, then making contact with that literature is easiest if we focus on presuppositional hypotheses.

 Secondly, we leave open the question of what came first, function or presupposition. For just as these pre-suppositions could encourage the development of those functions, so these pre-suppositions might arise to safeguard the functions. More plausibly still, these two mechanisms may have acted together: for example, a reasonable proportion of (proto-)indicatives were reproduced because they helped people reason from unsettled propositions; this made something like *Indicative Presupposition* true; and that made a higher proportion of (proto-)indicatives reproduced because they helped people reason from unsettled propositions.

 Thirdly, we observe that the antecedent of the conditional must be in a state of (un)settledness for speaker *or* audience. This requirement is important, because reasoning from propositions often occurs in multi-agent scenarios, wherein, for instance, what is settled for the speaker is unsettled for the audience. In such cases, it can be immensely helpful for the speaker to assert '*P* → *Q*', even though <*P*> is settled for them, *because* <*P*> is unsettled for their audience. This can occur in pedagogical contexts. For example, the teacher wants the student to conclude that ¬*P* via <*P* → *Q*> and <¬*Q*>. In order to do so, the teacher may tentatively put forward <*P* → *Q*> as a hypothesis; the student reasons from the (supposed!) <*P*>, develops <*Q*> within its scope, and thereby believes <*P* → *Q*>; and upon noticing that ¬*Q*, concludes that ¬*P*.

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[24] Note that <*P*>'s not being settled for *s* is compatible with <*P*>'s being unsettled for *s*, if <¬*P*> is also not settled for *s*, *and* with <¬*P*>'s being settled for *s*, if <*P*> is also *not unsettled* for *s*. For instance, if settledness is thought about in terms of knowledge: <*P*>'s not being known to be true by *s* is compatible with <*P*>'s truth-value being unknown to *s*, if <¬*P*> is also not known to be true by *s*, *and* with <¬*P*>'s being known to be true by *s*, if <*P*>'s truth-value is also not unknown to *s*.

2.2.3   Settledness

But what is settledness? As I have already indicated, the writings of Holguín and Fogelin suggest that settledness might amount to *knowledge*: <P> is *settled$_K$* for *s* **IFF** *s* knows that *P*; <P> is *unsettled$_K$* for *s* **IFF** *s* does not know whether *P*. And although it is natural to think about the matter like so, this is not the only possibility on the market. Settledness, for instance, could also amount to *certainty*: <P> is *settled$_C$* for *s* **IFF** *s* is certain that *P*; and <P> is *unsettled$_C$* for *s* **IFF** it is uncertain for *s* that *P*. But then in terms of which species of settledness should we formulate our functional and presuppositional hypotheses?

What is it for *s* to know that *P*? I leave that as an open question. Our familiarity with knowledge-ascriptions is enough to carry us through this discussion. The same goes for certainty and our certainty-ascriptions, although one difference emerges even at this pre-theoretical level: that between *psychological* and *epistemic* certainty. In ordinary language, epistemic certainty is often marked by the 'it is a certainty that *P*' locution, whereas psychological certainty is often marked by the '*x* is certain that *P*'. Bob Beddor (2020a, p.2), in an interesting discussion of certainty, glosses over the disctintion like so:

> Psychological certainty is a matter of strength of conviction. A belief can be certain in this sense even if it is held for no good reason. By contrast, if a belief is epistemically certain, the believer must stand in a strong epistemic relation to its content.

We now have three species of settledness on the table: one that is couched in terms of knowledge, another that is couched in terms of epistemic certainty, and yet another that is couched in terms of psychological certainty. What are their interrelations?

Epistemic and psychological certainty are linked by a plausible normative principle: *P* is epistemically certain for *s* **IFF** *s* ought to be psychologically certain that *P*. (Beddor, 2020a, pp. 2-3) And I think that Beddor (2020a, pp.3-5) has convincingly argued that epistemic certainty requires a stronger epistemic position than does knowledge. So, given the normative link, it follows that epistemic certainty demands a higher degree of psychological certainty than does knowledge. But even if *s* has the degree of psychological certainty that *P* which is *required* for epistemic certainty in *P* (and hence for knowledge that *P*), it does *not* follow that *s* knows that *P* (and hence it does not follow that *P* is epistemically certain for *s*). This is because *s*'s degree of psychologically certainty might be *too high*, given the strength of their epistemic reasons.

I believe that the most likely functional relationship between conditionals and settledness is one that takes settledness to be a matter of *certainty*, and psychological certainty at that. This is partly because knowledge and epistemic certainty, but not psychological certainty, seem to have a *normative* component to them, such as justification. But it is plausible that psychological states can explain a wider range of phenomena than normatively laden states: they have a *wider cosmological role*, in Wright's locution. Indeed, it seems to me that a functional explanation of our normative discourse will exist at the same "level" as the above functional hypotheses. Normative concepts would therefore be excluded from the current explanation.

This is not a decisive reason to favour psychological certainty in our functional and presuppositional hypotheses, of course. But it is, I think, reason enough to proceed with psychological certainty at the forefront of our minds, as we move towards putative counterexamples. In what follows, 'certainty' is therefore elliptical for 'psychological certainty', unless otherwise stated.

2.2.4   *Specific Predictions*

Our general functional and presuppositional hypotheses suggest some more specific predictions about the roles of different kinds of conditionals. For instance, when we are practically deliberating *P*, where <*P*> describes our doing such-and-such, it follows that we are uncertain that *P*. So, given our hypotheses, we would only expect indicatives and weak subjunctives to be useful in practical deliberation. And that is indeed what we find.

Here are some further specific predictions. We predict that reasoning by *Modus Ponens* and *Modus Tollens* can be done with indicatives and weak subjunctives, but not with strong subjunctives. This is because when we reason by *Modus Ponens* or *Modus Tollens*, we are uncertain about the antecedents of the conditionals. In the former case, we move from being uncertain about its antecedent and consequent, to being certain that its consequent is true, *via* our becoming certain that its antecedent is true. In the latter, we move from being uncertain about its antecedent and consequent, to being certain that its antecedent is false, *via* our becoming certain that that its consequent is false.

We also predict that reasoning by *Inference to the Best Explanation* can be done with indicatives and weak subjunctives, but not with strong subjunctives. This is because we can only *infer* the antecedent of a conditional, on the grounds that it best explains a known phenomenon, if we are initially uncertain that the antecedent is true. If we were already certain either way, there could be no inference.

This might seem to leave strong subjunctives functionally inert. But that is not correct: our hypotheses predict that a whole host of essential roles can be played by strong and weak subjunctives, but not by indicatives. Thomas Kroedel (2012) has noted that strong subjunctives can help us learn from mistakes. But they also help us to determine *which* actions were mistakes. As Daniel Nolan (2013) has argued, strong subjunctives are 'relevant to assessments of responsibility, of the legitimacy of pride or regret, and of praise or blame.' They are the conditionals with which we *evaluate* the past actions of ourselves and others. Edgington (2003, p.26) agrees:

> they also explain and justify our reactions of being glad and sorry, relieved or regretful, that such-and-such has happened. [...] These positive and negative reactions to what has happened are an important part of our lives [...] It is hard to believe that many of our desires, beyond the most basic hard-wired ones, would survive if we were always indifferent to what has happened.

High praise indeed! And not something I would wish to dispute. The conditionals of evaluation are past-directed, and not subject to Paradox. Consistent with *Strong Subjunctive Presupposition*, they require us to be certain that the actions described in their antecedents did not occur. The conditionals of evaluation are strong subjunctives, through and through.

Now it would be far beyond the scope of this thesis to assess all these predictions in the level of detail that they deserve. My approach will therefore be piecemeal: I will argue against certain notable *prima facie* plausible counterexamples to our presuppositional and functional hypotheses. That will allow us to draw on these hypotheses with greater confidence, in our discussion of the subjunctive mood.

2.3 Indicatives

We are defending *Indicative Presupposition:* the claim that if an indicative 'P → Q' is asserted in a context, *c*, the assertion presupposes that, in *c*, <P> is uncertain for speaker or audience. In this section, I want to look at two kinds of conditionals that might be taken to provide counterexamples to *Indicative Presupposition.* I will not question their indicativity, but I will question their felicity.

Following Holguín (2020), I will call our first lot of putative counterexamples *non-canonical uses* of indicative conditionals. These are indicative conditional assertions that occur in the absence of the usual conversational pressure to assert the strongest of one's relevant beliefs. Holguín (2020, no pagination) details three such non-canonical uses: *echoing uses* and their rhetorically inflected counterparts, *Dutchman uses*, as well as *concessive uses*. I will discuss these in Section 2.3.1. Then, in Section 2.3.2, I will look at a class of conditionals that Holguín calls conspiracy conditionals. That

discussion will culminate in a further argument for appealing to psychological uncertainty in our functional and presuppositional hypotheses.

2.3.1 Non-Canonical Indicatives

We begin with echoing uses, such as the following:

(14)   If Dave is here, Roger is home. Roger is not home. So, Dave is not here.

(15)   If Dave is here, then I'm a Dutchman.

Holguín (2020, no pagination) states that echoing uses are felicitous when the conversational pressure it to display some evidence for believing a proposition. This is why echoing uses are most at home in "dialectical" situations, wherein one is aiming to rehearse one's case for a believing a proposition, with the aim of presenting that case to someone else. For example, one could assert (14) in a dialectal situation, wherein the aim is to convince someone else that Dave is not here.

It was partly with echoing conditionals in mind that I introduced a disjunctive presupposition for indicatives: for a presupposition which only concerned what was uncertain for the *speaker* would erroneously predict echoing uses to be inappropriate. But then in order for echoing conditionals to generate counterexamples to *Indicative Presupposition*, we would need to find non-marginal and felicitous echoing assertions, which occur in spite of the fact that the speaker believes that neither speaker or audience is uncertain about their antecedents:

(16)   a.   ?? Look, we are all completely certain that Dave is not here. But/and if Dave is here, Roger is home.

        b.   ? Look, we are all completely certain that Dave is here. But/and if Dave is here, Roger is home.

Both (16a) and (16b) seem marked to me, although (16a) to a much greater extent. What might explain the discrepancy? Well, the agents in (16b), who are certain that Dave is here, can reason by *Modus Ponens* to the conclusion that Roger is home, by coming to accept <If Dave is here, Roger is home>. Not so for those agents in (16a), who are certain that Dave is not here. This seems like an important clue. Thus, consider:

(17)   a.   X: Look, we are all completely certain that Dave is here...

Y: And that Roger is home!

X: ?? And that Roger is home. But/and if Dave is here, then Roger is home.

b.   X: Look, we are all completely certain that Dave is here...

Y: But we're not sure about whether Roger is home.

X: Right. But/and if Dave is here, then Roger is home.

Now there are two things to note about the above. The *first* is that the conditional in (17a) sounds just awful. This was to be expected, given the fact that there is simply no need to reason by *Modus Ponens* in the (17a) scenario. The *second* concerns the *intonation* with which the conditional in (17b) can be felicitously uttered. A flat or descending intonation sits uneasily with the thought that we are *uncertain* about Roger's being home. Contrastingly, an ascending intonation suggests that X is coming to the realisation that Roger is home, as she works through the conditional. This is consistent with the following patterns of felicity:

(18)   a.   X: ? Right. But, obviously, if Dave is here, then Roger is home.

         b.   X: Right. But – hold on! – if Dave is here, then Roger is home!

To my mind, (18a) seems odd in the present context, and (18b) perfectly natural. Indeed, (18a) seems to communicate that X is already certain that Roger is home, and (18b) suggests that X is just coming to realise this. But there is more.

     The felicitous ascending intonation in (17b), and the surprise-indicating nature of (18b), suggest that the crucial conditional here is being *recalled*. This can be seen in other, non-conditional contexts. For example, consider the following, which involves exclusive disjunction:

(20)   a.   X: Look, we are all completely certain that Dave is here...

Y: But we're not sure about whether Roger is home.

X: [Ascending] Right. But either Dave is here, or Roger is home!

         b.   X: Look, we are all completely certain that Dave is here...

Y: But we're not sure about whether Roger is home.

X: Right. But – hold on! – either Dave is here, or Roger is home!

The assertions of the disjunctions in (20a) and (20b) seem to communicate two things about the speaker. The first is that she is just coming to the realisation that Roger is not home. The second is that she is doing so on the basis of recalling or remembering the disjunction. The same goes, I

think, for ascending (17b) and (18b).

It is emerging that when one is certain that *P*, and uncertain that *Q*, it seems as though there is a special *way* in which one may felicitously assert '*P*→ *Q*'. These are situations in which one has *just* inferred <*Q*> from <*P*> and <If *P*, then *Q*>. But this involves recalling the prior belief that <If *P*, then *Q*>. Now, suppose that this belief is being recalled because one took it on testimony that if *P*, *Q*. Suppose also that this was asserted when the speaker was uncertain that *P*. Then in asserting this conditional, there is a sense in which one is *quoting* the speaker, who did not run afoul of *Indicative Presupposition*. Moreover, it looks like the same is true of when we reasoned to <If *P*, then *Q*> *by ourselves*. In asserting '*P*→ *Q*', we may be thinking back to our former selves, at a point where we were uncertain that *P*. When we assert '*P*→ *Q*', we are quoting our past self, who did not flout *Indicative Presupposition.*

I believe that these brief reflections offer the germ of a solution to the apparent tension between *Indicative Presupposition* and the felicity of ascending (17b) and (18b). Again, I do not wish to dispute that people often seem to use 'since' and the indicative 'if' as though these were interchangeable. It seems to me, however, that those echoing uses which do *not* fit into the above pattern will be marginal cases. They should not prompt us to revise *Indicative Presupposition* nor, by extension, our functional hypotheses.

Let us move on to a different sort of non-canonical indicative assertion: the concessive use. Concessive uses may seem to threaten the claim that the indicative '¬*P* → *Q*' cannot which helps us to reason from <¬*P*>, when we are certain that *P*. Here is an example:

(21)   Dave is here. But even if he isn't, we should still tread carefully.

Holguín (2020, no pagination) understands this kind of conditional assertion like so:

> Concessive uses of 'If p, q' tend to occur in circumstances in which the speaker has settled that ¬p and q, but knows that it is unlikely that her audience will take her to know whether ¬p. In light of this the speaker must settle for a "backup" position, q. In these circumstances a speech like '¬p; but even if p, q' can seem perfectly natural.

Let us develop this thought in a way that is most relevant to our discussion, as it has unfolded. The idea is that the indicative conditional '¬*P* → *Q*' can be concessively asserted by *s* when (i) *s* is certain that *P* and that *Q*, and (ii) when *s* is *not* certain that *s*'s audience will think that *s* should be certain that *P*. Thus, in our example, we are certain that Dave is here and that we should treat carefully. However, we are not certain that our audience will believe that we *should* be certain that

Dave is here. So, we concessively assert the conditional in (21). And we seemingly do so seemingly felicitously.

A concessive '$\neg P \to Q$' is counterexample to *Indicative Presupposition* only if it can be felicitously asserted when the speaker believes that the audience is uncertain that P, or in the case in which the speaker *is* the audience. This second suggestion can be quickly dismissed: (21) just sounds crazy in a solo-reasoning situation. But what about the first suggestion? Let us set the scene. We are certain that Dave is here and that we should tread carefully. However, we are unsure that our audience will consider justified our certainty in Dave's being here. Suppose now that believe that our audience is uncertain about the need to tread carefully. We then make the following speech:

(22)   Okay, I am completely certain that Dave is here – although you might think I've
         no right to be so sure about that. Indeed, I know that you are uncertain that Dave
         is here! But even if Dave is not here, we should still tread carefully.

The conditional in (22) is perfectly felicitous, but does not run afoul of *Indicative Presupposition*. Compare this to:

(23)   ?? Okay, I am completely certain that Dave is here – although you might think I've
         no right to be so sure about that. Still, you *are* certain that Dave is here! But even
         if Dave is not here, we should still tread carefully.

The conditional in (23) would be a counterexample to *Indicative Presupposition*, were it felicitous. But it is not. In a situation where (23) is said, the conversation calls for the assertion that we should tread carefully, and perhaps for a discussion about *why* our uncertainty is not considered justified. concessive uses are therefore not counterexamples to *Indicative Presupposition*.

2.3.2   *Conspiracy Conditionals*

I now want to look at an intriguing argument from Holguín, for a *contextualist* account of knowledge-ascriptions. For this argumentative purpose, Holguín (2020, no pagination) will introduce a class of conditionals called *conspiracy conditionals*. The label is a nod to their most famous

example, which, as Holguín notes, happens to be the philosopher's paradigmatic indicative: 'If Oswald didn't shoot Kennedy, someone else did.'

Conspiracy conditionals are defined as indicatives whose antecedents express propositions, such as <Oswald shot Kennedy>, which the *moderate invariantist* about knowledge-ascriptions claims many people to know. Moderate invariantism is an invariantist position, in that if '*s* knows that *P*' is true in one context, then it is true in all contexts. But it is moderate in holding that many humdrum beliefs are known to be true, such as those accessed by memory, perception, or testimony. The moderate invariantist will therefore want to say that if 'Tim knows that Oswald shot Kennedy' is true in one context, then it is true in every context – but also that it is not unlikely that 'Tim knows that Oswald shot Kennedy' is true.

Holguín's argument for epistemic contextualism begins with the following principle:

Ignorance – In every context *c*: if '*s* knows whether *P*' is true in *c*, then 'it is inappropriate for *s* to assert the indicative conditional 'If *P*, *Q*' in the canonical way' is true in *c*.

Holguín (2020) points out that *Ignorance* stands uneasily with moderate invariantism. The problem is that conspiracy conditionals, such as (1), seem to be canonically assertable by an arbitrary *s* in many, many contexts. Given *Ignorance*, it follows that in many contexts, '*s* knows whether *Oswald shot Kennedy is false*' is false. But since conspiracy conditionals are *defined* as having antecedents which the moderate invariantist thinks we often know, something has got to give.

After engineering this dialectal situation, Holguín (2020, no pagination) patiently argues against a number of alternatives: (i) accept *Ignorance*, but argue that conspiracy conditionals are invariably non-canonical assertions; (ii) reject *Ignorance* in favour of a different principle; (iii) accept *Ignorance*, but provide an error-theory that explains why we often think that conspiracy conditionals are felicitously assertable; (iv) remain an invariantist, but lose the moderate part, either by accepting *sceptical invariantism*, or by accepting *sensitive invariantism*, a position according to which knowledge is sensitive to (e.g.) pragmatic factors. Against these alternatives, Holguín suggest that we adopt epistemic contextualism: the view that expressions like 'knows' can receive different interpretations across contexts, yielding different application conditions across contexts, even when the epistemic facts are kept constant.

Now I am not a big fan of epistemic contextualism. Nor, for that matter, of rampant contextualism in general. As Herman Cappelen and Ernest Lepore (2005) have argued, words like 'knows' do not look much like paradigmatically context-sensitive expressions, such 'I' and 'now':

they fail many tests that are passed by all the paradigmatic cases. Admitting 'knows' as a context-sensitive expression therefore turns what initially looked like a natural kind concept into a family resemblance idea. What could make this worthwhile? Although the issue is complex, I do not share the intuition, which often motivates contextualism, that our semantics should make as many of our assertions as possible come out true. For this reason and others, contextualism is unattractive to me.

Of course, not everyone is unhappy with contextualism about 'knows'. But for those of us who are, something must be said about Holguín's manoeuvre. In what follows, I want to take issue with Holguín's argument against rejecting *Ignorance* in favour of a different principal. Let us begin by recalling *Indicative Presupposition*, which states that if an indicative '$P \rightarrow Q$' is asserted in a context, c, the assertion presupposes that, in c, $<P>$ is uncertain for speaker or audience. This naturally suggests an alternative to Holguín's *Ignorance:*

> *Ignorance** – In every context c: if 's believes that *either* $<P>$ is certain for everyone in the conversational context, *or* that $<\neg P>$ is certain for everyone in the conversational context' is true in c, then 'it is inappropriate for s to assert the indicative conditional 'If P, Q'' is true in c.[25]

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[25] *Indicative Presupposition* generates *Ignorance** because a context in which everyone is certain about $<P>$ or everyone is certain about $<\neg P>$ is *ipso facto* a context in which neither speaker nor audience is uncertain about $<P>$. As it stands, however, *Indicative Presupposition* could also be used to arrive at a different version of *Ignorance*:

> *Ignorance*** – In every context c: if 's believes that, for everyone in the conversational context, either $<P>$ is certain or $<\neg P>$ is certain' is true in c, then 'it is inappropriate for s to assert the indicative conditional 'If P, Q'' is true in c.

This is because a context in which everyone is either certain about $<P>$ or certain about $<\neg P>$ is also a context in which neither speaker nor audience is uncertain about $<P>$. However, I am not so sure that *Ignorance*** is true. It seems plausible to me that in contexts in which all conversational participants are certain about incompatible propositions, the indicative conditional is not inappropriate: or, at least, only weakly inappropriate. And perhaps this is because in situations such as these, the group *treats* these propositions *as* uncertain, or ought to do so.

The simplest way to build this idea into the existing framework is to add more information to *Indicative Presupposition*: if an indicative '$P \rightarrow Q$' is asserted in a context, c, the assertion presupposes that, in c, $<P>$ is uncertain for speaker or audience, *or is treated as such by speaker and audience.* If the notion of treating a proposition as uncertain proves to be opaque, however, then we could opt for a more Spartan proposal: if an indicative '$P \rightarrow Q$' is asserted in a context, c, the assertion presupposes that, in c, $<P>$ is uncertain for speaker or audience, *or* $<P>$ is certain for some in c, and $<\neg P>$ is certain for others. More sophisticated proposals are no doubt possible, perhaps by building upon Stalnaker's (1973) notion of the common ground. In any case, these complications, though interesting, can be ignored throughout this discussion for simplicity's sake.

Unlike *Ignorance*, *Ignorance** is not restricted to canonical uses. This is because *Ignorance** is derived from *Indicative Presupposition*, which handles canonical and non-canonical indicatives equally well. *Ignorance** therefore inherits the disjunctive element of *Indicative Presupposition*.

We should note at the outset that there is no obvious reason to expect that *Ignorance** will generate Holguín's dialectic. Conspiracy conditionals, after all, are supposed to be conditionals whose antecedents the moderate invariantist takes many people to often be in a position to know. But there is no *a priori* assurance that contexts in which most people are likely to be able to know that *P* are *also* contexts in which someone believes that <*P*> or <¬*P*> is uncertain for everyone in the conversational context. So, the fact that many conspiracy conditionals are assertable in many contexts is no guarantee that there is a tension between *Ignorance** and moderate invariantism.

Indeed, *Ignorance** seems to handle conspiracy conditionals very well. Consider first the paradigmatic conspiracy conditional, (1). When Ernest Adams (1970, p.90) first introduced this conditional, he did so off the back of (24), a conditional stated to be 'closely related' to (1):

(24)　　If A didn't murder V, then B didn't either.

In Adams paper, (24) is asserted in the context of an investigation into the murder of V. It is established that only A or B could have murdered V, and that A, but not B, had a motive and a weapon. Adams (1970, p.90) then writes that on the basis of this evidence, 'it is tentatively concluded that A was the murdered'. Note the 'tentative': when Adams initially introduced (1), he compared it to a conditional whose antecedent is stipulated to be psychologically uncertain. And I maintain that (1) *is* infelicitous when asserted in a context in which no one is uncertain that Oswald shot Kennedy, as per the oddity of (25):

(25)　　X: Did Oswald shoot Kennedy?
　　　　Y: ?? Oh, absolutely. But/and if Oswald didn't shoot Kennedy, then someone else did.

Not all conspiracy conditionals have conspiratorial antecedents. As Holguín (2020, no pagination) notes, conspiracy conditionals are frequently encountered in philosophical settings:

(26)　　If the Evil Demon is real, then we hardly know a thing.

Again, however, I do not think that *Ignorance** is threatened by these examples. When we assert conditionals like (26) in the appropriate philosophical context, the assertion is felicitous because it is likely that someone, even if it is not ourselves, will feel uncertain about the Evil Demon hypothesis. After all, this is partly why Cartesian scepticism is so *troubling*: even if we suspect that we shouldn't or needn't feel uncertain about such a matter, it can be difficult not to be. Psychological certainty is fickle like that.

Has nobody ever asserted (26) in a room full of people whom all believe that everyone is certain that the Evil Demon is *not* real? Possibly. Were those assertions felicitous? Once we take the precaution of distinguishing ordinary assertion from half-assertion half-quotation phenomena, or from assertions that are made on behalf of a non-present interlocutor, I would say that these assertions *are* infelicitous. But even if I am wrong, such cases would be so marginal that we needn't, I don't think, worry that our functional and presuppositional hypotheses are falsified by conspiracy conditionals.

In closing, we should note how the above can be leveraged into an argument for appealing to psychological certainty in our functional and presuppositional hypotheses. It seems correct that something in the vicinity of *Ignorance* is true. But if this is cashed out in terms of knowledge or epistemic certainty, then Holguín's argument suggest that we must accept contextualist theses about ascriptions of such states. To the extent that this is undesirable, we have reason to accept *Ignorance**. And *Ignorance** is exactly what we would expect to find, if the functions and presuppositions of conditionals were understood in terms of psychological certainty.

2.4   Strong Subjunctives

We now turn to a defence of *Strong Subjunctive Presupposition:* the claim that if a strong subjunctive '$P \,\square\!\!\rightarrow Q$' is asserted in a context, *c*, the assertion presupposes that, in *c*, $<\neg P>$ is certain for speaker or audience. This aligns nicely with the positive claim in *Strong Subjunctive Function* – that '$P \,\square\!\!\rightarrow Q$' functions to help people reason from certain $<P>$, when they are certain that $\neg P$ – and with the negative claims in *Indicative Function*, that '$P \,\square\!\!\rightarrow Q$' does not function to help people reason from $<P>$ when they are uncertain that it is true. In this section, I want to look at some important putative counterexamples to these functional and presuppositional hypotheses.

When we are uncertain that *P* is the case, and we wish to resolve our uncertainty about $<P>$, we can forward $<P>$ as the antecedent in a conditional, and draw inferences from there. This might result in our reasoning by *Inference to the Best Explanation*, or by *Modus Tollens*. In either case, we move from being uncertain about the antecedent to being certain that it is, respectively,

true or false. Given the above hypotheses, we would therefore expect that strong subjunctives could not play these roles. I want to see how far it is possible to maintain that these predictions are indeed true, in spite of apparent counterexamples. I will discuss reasoning by *Inference to the Best Explanation* in Section 2.4.1, and reasoning by *Modus Tollens* in Section 2.4.2

2.4.1 Inference to the Best Explanation

Inference to the Best Explanation (*IBE*) is a species of inference wherein a number of candidate explanations for a given phenomenon are assessed for explanatory power, and the best is inferred. It has been claimed that strong subjunctives can function to assist in our reasoning by *IBE*, which may seem to threaten our presuppositional hypotheses. Perhaps that was to be expected: natural language is rarely nice and neat. Still, the relationship between strong subjunctives and *IBE* is rather more complicated than it might initially seem and, for this reason, our strong subjunctives are actually rather more disciplined than the counterexamples suggest. Or so I want to argue.

Edgington (1995, p.240) takes strong subjunctives to be 'ingredients in' *IBE*. She considers *arsenic conditionals*, conditionals that are inspired by Alan Ross Anderson's (1951) classic example:

(27)   If the patient had taken arsenic, he would have shown these very symptoms.

In a later paper, Edgington (2003, p.23) formalises the role of arsenic conditionals like so:

(28)   *A*. Because, *C*. And if it had been the case that *A*, then it would have been the case
          that *C*.

Someone begins by asserting that *A* and *C*. They then assert '*A* > *C*', which appears to communicate that *A* is explained by *C*. This conditional is felicitously asserted, even though the assertion that *A* indicates that the speaker is certain that *A*.[26] So, if conditionals like (27) are felicitously assertable when the speaker *and* the audience are certain that the patient took arsenic then (27) is a counterexample to *Strong Subjunctive Presupposition*.

Crespo, Karawani, and Veltman (2018, p.7) have already shown that arsenic strong subjunctives are felicitous when the speaker is certain that the antecedent is true, and the audience is certain that the antecedent is false. Their example, slightly readjusted:

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[26] For arguments that assertion is governed by a norm of psychological certainty – assert only that which you are psychologically certain about – see Beddor (2020b)

(29)   I am certain that the patient took arsenic. You are certain that he didn't. But at
         least you should admit that if he had taken arsenic, he would have shown exactly
         those symptoms.

These cases are not counterexamples to *Strong Subjunctive Presupposition*. However, the strong
subjunctive becomes infelicitous when the speaker *and* audience are certain about antecedent truth:

(30)   ?? We know for certain that the patient took arsenic. And if he had taken arsenic,
         he would have shown exactly those symptoms.

But what about cases in which speaker and audience are certain that the antecedent is true?
Consider, for instance:

(31)   X: We have to find out whether the patient took arsenic. You seem to think so?
         Y: I do. If he had taken arsenic, he would have shown exactly those symptoms.

It should indeed be granted that the arsenic conditional in (31) would not ordinarily cause anyone
to bat an eyelid. *Perhaps* we can begin to discern that there is something a little awkward about it,
if we squint and find the right angle. But (31) does nonetheless make our hypotheses look bad.

       But things are about to get even stranger: I want to draw attention to the fact that strong
subjunctives can also sound *terrible* when we reason by *IBE*. In a discussion about strong
subjunctives, and whilst noting their relevance to *IBE*, Williamson (2007, p.137) approvingly
quotes Edgington (2003). But Williamson (2016, p.266) would later write about the *IBE* reasoning
process without once referring to strong subjunctives:

> We can rank theories (or hypotheses) as potential explanations of our evidence. The point
> of the qualifier "potential" is that a false theory is not the *actual* explanation of the data; in
> that sense, it does not really explain them. But we need to rank theories as potential
> explanations before knowing whether they are true, in order then to use the ranking to
> guide our judgments as to which theory *is* true. A *potential* explanation of the evidence is
> anything that would explain the evidence *if it were true*. A theory T is a better potential
> explanation of evidence E than a theory T* if and only if T *would* explain E if T were true
> better than T* *would* explain E if T* were true—in brief, T would explain E better than T*
> would.

Of course, given Williamson's (2007) prior endorsement of Edgington (2003), and his use of the
subjunctive mood in the above, it seems reasonable to suppose that Williamson (2016) conceives

of strong subjunctives as assisting in our reasoning by *IBE*. For Williamson, this involves forming a conjunction of subjunctive conditionals, whose antecedents describe some state of affairs, and whose consequents state an explanatory relationship between that state of affairs and some known fact. The potential explanations are then graded from worst to best:

(32)   *C.* If it were that *A*, then *A* would explain *C*. If it were that *A**, then *A** would explain *C*. But *A* would explain *C* better than *A** would. So, *A*.

Let us call conditionals like the above *explanation-stating* conditionals. In the first instance, notice that *Williamson's* explanation-sating conditionals are all weak subjunctives, not strong subjunctives. And notice that when we rewrite (31) with explanation-stating conditional, the strong subjunctive is infelicitous:

(33)   X: We have to find out whether the patient took arsenic. You seem to think so?
         Y: ?? I do. If he had taken arsenic, then that would have explained why he is showing exactly these symptoms.

This is bizarre. The conditionals in (31) and (33) are playing the exact same roles. However, when we use an explanation-stating conditional in (33), the conditional is infelicitous, even though this conditional is merely making explicit our explanatory agenda. Notice also that the indicative version of (31) sounds infelicitous, unlike the weak subjunctive version of (31), and the indicative and weak subjunctive versions of (33):

(34)   X: We have to find out whether the patient took arsenic. You seem to think so?
         Y: a. ?? I do. If he took arsenic, then he is showing exactly these symptoms.
                b. I do. If he were to have taken arsenic, then he would be showing exactly these symptoms.
                c. I do. If he took arsenic, then that explains why he is showing exactly these symptoms.
                d. I do. If he were to have taken arsenic, then that would explain why he is showing exactly these symptoms.[27]

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[27] We should at this point recall Crespo, Karawani, and Veltman's (2018) observation that in certain languages, weak subjunctives can sound a bit awkward when past-direct. But it seems to me as though maximal felicity can be restored if we employ the 'is the case' locution:

When we forward *P* as potential explanation for *Q*, the felicity data are therefore as follows:

- $P \rightarrow Q$ Infelicitous
- $P \rightarrow P\ EXPLAINS\ Q$ Felicitous
- $P\ [] \rightarrow Q$ Felicitous
- $P\ [] \rightarrow P\ EXPLAINS\ Q$ Felicitous
- $P\ \square \rightarrow Q$ Felicitous
- $P\ \square \rightarrow P\ EXPLAINS\ Q$ Infelicitous

It emerges, in the first instance, that the least controversial conditional for reasoning by *IBE* is the weak subjunctive. However, since past-directed weak subjunctives can sound a bit awkward, then that is perhaps why conditionals like (31) are opted for, instead of their weak subjunctive variants. But this leaves unexplained why conditionals like (33) sound terrible. And we have not yet explained why conditionals like (34a) sound bad either.

The conditionals of *IBE* are therefore perplexing things. What is their relevance to our hypotheses? If we look at certain examples, like (31), *Strong Subjunctive Presupposition* looks false. If we look at others, like (33), there seems to be no problem with it at all. Should we therefore amend our hypothesis, leaving a loophole for conditionals like (31)? Perhaps, for instance, what conditionals presuppose is a function of what we intend to use them for. But then why is the explanation-stating conditional in (33) not subject to the same exemption? Perhaps, then, we should just abandon (those) presuppositional hypotheses? But that would also leave unexplained the discrepancy between (31) and (33).

Now there is a way of reading this discrepancy in a way that favours our hypotheses. When we use the explanation-stating strong subjunctive, we leave no room for doubt that an explanation of the patient's symptoms is on our mind. And, indeed, that is as it should be, because we are trying to reason by *IBE*. But then given *Strong Subjunctive Presupposition*, (33) is incongruous because it suggests that we are certain that arsenic does *not* explain the symptoms. However, since the conditional in (31) does *not* make it obvious that we are thinking about an explanation of the patient's symptoms, then we must rely on context to infer that explaining those symptoms is on the speaker's mind. Perhaps, however, it is not, and so we are more inclined to cut the speaker some slack when they assert (31).

(B)   a. I do. If that were the case, then he would be showing exactly these symptoms.
              b. I do. If it were the case that took/had taken arsenic, then that would explain why he is showing exactly these symptoms.

This explanation has the potential to account for why the explanation-stating conditional sounds worse than its plain counterpart. But it also predicts that we would view the assertion in (31) as somehow irrelevant in that context, which we do not. Still, the explanation could perhaps account for why there might be a loophole in our presuppositional hypotheses: why we have become prepared to overlook or ignore the presupposition in (31), but not in (33). *However*, if this is correct, then a minor amendment must be made to our *functional* hypothesis: for it certainly would appear that strong subjunctives can, in some instances, help us to reason from a proposition about which we are uncertain. Just how common this actually is, I do not know, although it cannot be all that rare, if it explains why we tend to ignore the strong subjunctive's presupposition in the context of *IBE*.

As to *why* we sometimes opt for the strong subjunctive, I again do not know. Perhaps this is only a quirk of English (and Dutch) which, for whatever reason, makes past-directed weak subjunctives sound awkward. If that were indeed true, then we would expect strong subjunctives to be less felicitous, within the context of *IBE*, in languages which better tolerate past-directed weak subjunctives, like Palestinian Arabic. I will not comment further on this possibility, closing with the platitudinous remark that language is messy (but perhaps, if the above is correct, not always as messy as we might think).

2.4.2 *Modus Tollens*

Strong subjunctives have also been claimed by Edgington (2003, p.23) to assist in our reasoning by *Modus Tollens*. If strong subjunctives are felicitous in these context, then we have a counterexample to *Strong Subjunctive Presupposition*. However, Edgington's (2003) examples are all of cases in which a conditional is merely used to indicate that reasoning by *Modus Tollens* has occurred. Consider, for instance:

(35)   They are not at home. For the lights are off. And if they had been at home, the
         lights would have been on.

Since the speaker in (35) is already certain that they are at home, then the strong subjunctive in (35) is no counterexample to *Strong Subjunctive Presupposition*. These examples can nonetheless be restructured so as to give the impression that someone is gearing up to the possibility of reasoning by *Modus Tollens*. But when they are so-restructured, the strong subjunctive can be incredibly infelicitous:

(36)   ?? Since we're in the area, let's quickly see whether they're at home. If they had been at home, the lights would have been on.

The conditional in (36), in which a present-directed conditional is used, is plain bizarre. The speaker seems to go straight from suggesting an inquiry into whether their friends are at home, to using a conditional which implies or presupposes that they are not. Notice, however, that when we switch to the indicative, sanity is restored:

(37)   Since we're in the area, let's quickly see whether they're at home. If they are at home, the lights will be on.

This pattern is also observed when we look at past-directed conditionals:

(38)   a. ?? Oh, you're neighbours with some other friends of ours! Were they at home yesterday? If they had been at home, then their lights would have been on.
b. Oh, you're neighbours with some other friends of ours! Were they at home yesterday? If they were at home, then their lights were on.

The same goes for future-directed conditionals:

(39)   a. ?? Oh, you're neighbours with some other friends of ours! By any chance, will you tell us whether they are home tomorrow? If they had been at home, then their lights would have been on.
b. Oh, you're neighbours with some other friends of ours! By any chance, will you tell us whether they are home tomorrow? If they are going to be at home, then their lights will be on.

We should also note that weak subjunctives can sound quite awkward in these contexts, although no way near as bad as strong subjunctives:

(40)   a. ? Since we're in the area, let's quickly see whether they're at home. If that were the case, their lights would be on.

b. ? Oh, you're neighbours with some other friends of ours! Were they at home yesterday? If that were the case, then their lights were off.

c. ? Oh, you're neighbours with some other friends of ours! By any chance, will you tell us whether they are home tomorrow? If they were to be at home, their lights would be on.

I therefore conclude that the uncontroversial conditionals of *Modus Tollens* are indicatives. Weak subjunctives sound somewhat marked in this context, and strong subjunctives even more so. But then our functional and presuppositional hypotheses remain unaffected by these data.

2.5 Crespo, Karawani, and Veltman's Theory

2.5.1 The Theory

Our functional and presuppositional hypotheses stand largely unscathed. In Section 6, I will propose a theory of the subjunctive mood that aligns nicely with the functions of different conditionals. But before that, I want to assess Crespo, Karawani, and Veltman's (2018) account of what indicatives and subjunctives presuppose. For although they do not present their theory *as* an account of the subjunctive mood, it is interesting to read it in this way.

On Crespo, Karawani, and Veltman's (2018, p.6) theory (henceforth, the *CKV theory*), indicatives, weak subjunctives, and strong subjunctives all presuppose something different about their antecedents. The presuppositional hypotheses, however, are rather different to our own:

- The indicative '$P \rightarrow Q$' presupposes that P *might* be the case: that it is a subjective possibility that P.
- The weak subjunctive '$P \,[] \rightarrow Q$' presupposes that P is *unlikely* to be the case.
- The strong subjunctive '$P \,\square \rightarrow Q$' presupposes that P is *not* the case.[28]

Now strong subjunctives have two layers of past tense morphology, whereas weak subjunctives only have one. On behalf of Crespo, Karawani, and Veltman (2018), we may therefore propose that the layer of past tense morphology that weak and strong subjunctives have in common

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[28] We should perhaps note that the notion of presupposition being deployed here is that which applies to a form of dynamic semantics called *update semantics*. But I do not think that anything hangs on this, in the present context.

(somehow) signals antecedent improbability, and that the *extra* layer of past tense morphology in the strong subjunctive (somehow) signals antecedent falsity. Although I cannot assert that this extension to the CKV theory yields an elegant theory from the perspective of modern linguistics, it certain strikes *me* as nicely simple and unifying. Unfortunately, however, I do not think that it is correct. I will now present two problems for the CKV theory.

2.5.2   First Problem: Indicatives Don't Presuppose Antecedent Possibility

It is a widespread assumption that indicatives presuppose that their antecedents are subjectively possible.[29] But as natural as this thought may seem, I think that it is wrong. Although indicatives presuppose that their antecedents are *uncertain*, this does not map onto subjective possibility, because subjective necessity and impossibility modals are entirely consistent with psychological uncertainty. And, indeed, I think that some linguistic data does suggest that assertions of (say) subjective necessity do stand perfectly comfortably alongside an indicative conditional whose antecedent is (the negation of) the modal's prejacent.

In the first instance, I want to defend the claim that assertions of subjective necessity are compatible with uncertainty about their prejacents. Although Daniel Lassiter (2016, pp.122-126) has found naturally occurring and felicitous *juxtapositions* of uncertainty claims and subjective necessity modals, Kai von Fintel and Anthony Gillies (2020) demur. As they point out, juxtapositions needn't be conjunctions. Take any passage in which uncertainty of about $<P>$ is expressed after/before assent to $<\mathbf{NEC}_sP>$. Is this not compatible with an agent's being uncertain about $<P>$ after/before coming to assent to $<\mathbf{NEC}_sP>$? Von Fintel and Gillies (2020, pp.10-11) write:

> 'We think that is what is going on here [...]: Lassiter has found some examples in the wild where epistemic modals undergo shifts in the possibilities deemed relevant, the modal horizon. In the first sort of example, a must is followed by uncertainty: this is a speaker who is expanding the modal horizon. In the second sort of example, a speaker is considering some possibilities but then concludes with a must: here there's a decision to reset the modal horizon to a more realistic boundary. Both sorts of cases involve instability across contexts and the claim that must ϕ entails ϕ is about what happens within a given context.'

Von Fintel and Gillies then argue that if we control these cases for changes in context, the resultant juxtapositions look marked. For example, when someone goes from assenting to $<\mathbf{NEC}_sP>$ to expressing uncertainty about $<P>$, it is possible to just ask them what they currently think. Their

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[29] See Holguín (2020, no pagination), and references therein.

example (von Fintel and Gillies, 2020, p.11):

(41)   X: That must be an old DTS diesel setup but I'm not certain. Why would they
                 have added this extra injector?

         Y: So, given that you're not certain, do you still think that it must be an old
                 DTS diesel setup?

         X: I guess not./Yeah, it must be; I'm sure of it./Like I said: it must be but I'm
                 not certain.

It is the judgment of von Fintel and Gillies (2020, p.11): that only this last response is problematic, although they note that both their reviewers did not share in this judgment. But divergences in intuition also arise with respect to their appeal to 'although' prefixes, which are known to control for changes in context. Thus, von Fintel and Gillies (2020, p.12): claim that assent to $<$**NEC**$_s P>$ after expressions of uncertainty about $<P>$ are marked when an 'although' prefix is used. They feel as though (42) is marked, although their reviewers do not agree:

(42)   Although I'm not certain, it must be an old DTS diesel setup.

The final context-controlling device that von Fintel and Gillies (2020, pp.12-13): consider is embedding behaviour. They imagine a scenario in which two tests are available for a disease. Test A is cheap but fallible, often indicating only that a patient is more or less likely to be infected. Test B is extremely expensive, but is always definitive. Von Fintel and Gillies then suggest that an insurance company would have rules like (43a), but not like (43b):

(43)   a.   Test B can only be administered if the results of Test A are that it is not
                 certain that the patient has the disease but that she likely has it.

         b.   ?? Test B can only be administered if the results of Test A are that it is not
                 certain that the patient has the disease but that she must have it.

Likewise, von Fintel and Gillies suggest that in an insurance company's training manual, one might find questions like (44a), but not like (44b):

(44)   a.   Suppose the results of Test A are that it is not certain that the patient has
                 the disease but that she likely has it. Should we approve Test B?

b.   ?? Suppose the results of Test A are that it is not certain that the patient
         has the disease but that she must have it. Should we approve Test B?

Now, von Fintel and Gillies (2020, p.13) happily report that their reviewers agree that (43b) and (44b) are marked. As do I. However, this might *not* be because there is something problematic about conjoining <**NEC**$_s$*P*> with an expression of uncertainty about <*P*>. My preferred explanation would exploit the fact that subjective modals can struggle in the antecedents of conditionals and within supposition reports *anyway*. It is a well-established fact that subjective modals struggle in many embedded contexts. Looking at corpus data, Valentine Hacquard and Alexis Wellwood (2012, p.6) have observed that the subjective 'must' is basically absent from the antecedents of conditionals. We would therefore expect the same pattern within supposition attitude reports, and this seems to be the case:

(45)   a. ? Test B can only be administered if the results of Test A are that the patient
         must have the disease.
         b. ? Suppose that the results of Test A are that the patient must have the disease.[30]

Now if subjective necessity modals really are compatible with prejacent uncertainty, it follows from *Indicative Presupposition* that asserting <**NEC**$_s$*P* & (¬)*P* → *Q*> should be felicitous. And that is indeed what we seem to find:

(46)   a. Although I'm not totally certain, it just has to/must rain tonight – I mean, look
         at those clouds! And if it does, indeed, rain tonight, the tomatoes will be saved.
         b. Although I can't be sure, it must have escaped. What else could explain those
         terrible howls last night? But if hasn't escaped, then it still in here.

I therefore claim that, contra the CKV theory and prevailing wisdom, indicatives do not presuppose antecedent subjective possibility.

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[30] Some more examples:

(C)   a. ?? If he must be in town, then he's buying ice cream.
         b. ?? Supposing that he has to be in town, then he's buying ice cream.

As with (45a) and (45b), these sentences are only felicitous when the modal is read objectively or deontically.

2.5.3 Second Problem: Weak Subjunctives Needn't Have Unlikely Antecedents

The distinctive claim of the CKV theory is that weak indicatives presuppose antecedent improbability. Although they do not cite DeRose (2010, p.9), it should be noted that he briefly wonders whether the weak subjunctive conditional 'somehow signals that its antecedent is improbable, where the type of signalling in question is such that the conditional is not rendered false or wrong if the antecedent is not actually improbable.' In any case, here is an example that Crespo, Karawani, and Veltman (2018, p.5) use to motivate their theory:

(47) Journalist: Sir, what will you do if you lose the election?
      Candidate: I expect to win by a big amount.
      Journalist: I see, sir, but what if you were to lose?

This is an intriguing case, although it seems insufficient motivation for their presuppositional hypothesis. Indeed, we can rewrite the example so that the indicative has the same effect as the weak subjunctive:

(48) Journalist: Sir, what would you do if were to lose the election?
      Candidate: I expect to win by a big amount.
      Journalist: I see, sir, but what if you do lose?

More importantly, however, their theory is subject to plausible counterexamples:

(49) I know that it's very unlikely that I'll win the lottery. But in spite of that, I would still be disappointed if I were to lose.
(50) It's a fool's errand. Your chances of success are as good as zero. And if you were indeed to fail, think about how humiliating that would be!

Neither conditional above seems marked or infelicitous to me. And I am unconvinced about Crespo, Karawani, and Veltman's (2018, p.9) claim that the following is marked:

(51) Maybe John will come to the party, and if he came, he would have a great time.

Counterexamples aside, this presuppositional hypothesis would also make it rather mysterious why it is so easy to opt for weak subjunctives when practically deliberating. If these conditionals *presupposed* the unlikeliness of their antecedents, then we would surely expect these conditionals to be *less* common than the indicative in deliberative circumstances. This is because, *ceteris paribus*, it is less rational to deliberate bringing about some *P* thought unlikely than it is to deliberate bringing about some *Q* not thought unlikely. The same goes for their role in *IBE*.

Now it was perhaps with examples like the above in mind that DeRose (2010, pp. 9-10) wrote that:

> when one more carefully considers the range of situations in which one might opt for the [weak subjunctive] I think one will be led to postulate a somewhat more general hypothesis, and say instead that the function of [weak subjunctives] is to call attention to the possibility that the antecedent is (or will be) false, where one reason one might have for calling attention to the possibility that the antecedent is (or will be) false is that it is quite likely that it is (or will be) false.

But as DeRose (2010, p.37) points out, this role of weak subjunctives:

> does not seem to have the status of a warranted assertability condition of [weak subjunctives]: if you were to assert a [weak subjunctive] when there is no good reason to call attention to the possibility of the falsity of its antecedent, this does not make your assertion seem wrong or unwarranted.

Indeed, DeRose (2010, p.37) would go on to present an alternative, 'more serious' difference between weak subjunctives and indicatives (discussed in fn.15 below). Finally, it may be awkward for this account that, like indicatives, weak subjunctives are felicitous when their antecedents are (the negations of) the prejacent of a subjective necessity modal:

(52)   a. Although I'm not totally certain, it just has to/must rain tonight – I mean, look at those clouds! And if it were, indeed, to rain tonight, the tomatoes would be saved.

b. Although I can't be sure, it must have escaped. What else could explain those terrible howls last night? But if that *weren't* the case, then it would still be in here.

We should also note that, as a theory of the subjunctive mood more broadly, this DeRoseian amendment to the CKV theory is obviously in tension with at least *many* of the contexts in which strong subjunctives are felicitously used. For this reason, I think that we should look elsewhere for a general theory of subjunctive conditionals.

2.6 Suppositions and Subjunctives

I will now outline a new theory of subjunctive conditionals. The theory draws on the proposals, suggestions and clues of many different writers. The basic idea is that all conditionals have the Ramsey Test as their assertability condition; that weak and strong subjunctives have a more demanding assertability condition than the indicative; and that the strong subjunctive has a still more demanding assertability condition than the weak subjunctive. After introducing my theory, I will show that it aligns nicely with the different roles that indicatives and subjunctives have been found to play. I will also defend it against some objections.

2.6.1 How Should We Understand the Ramsey Test?

I want to build up to my theory by first arguing that the Ramsey Test is best understood in terms of *suppositions*. This is because the notion of "hypothetical belief addition" is problematically underspecified. Do we mean by this that there is a special mode of belief that deserves the prefix 'hypothetical'? If so, what are its distinguishing marks? And what is it to "add" a belief to one's belief set, hypothetically or otherwise? Can this even be done, if doxastic voluntarism is false? In response to these difficult questions, my preferred strategy is to interpret talk of hypothetical belief addition as talk of supposition, leaving unaddressed the extent to which supposition looks like belief. If we do so, a simple version of the Ramsey Test will look something like this: '$A > C$' is assertable by s **IFF** s has supposed that A, and $<C>$ is assertible within the scope of this supposition.

Mitchell S. Green (2000), in an illuminating discussion of supposition, advances a similar relationship between conditionals and suppositions. I endorse five points from Green's article (2000, pp.377-380). *Firstly*, suppositions can be speech acts and intentional states both. *Secondly*, suppositions-qua-speech-acts can be occasioned explicitly – i.e. 'I suppose that P' – or non-explicitly. *Thirdly*, supposition involves non-assertorically putting forth a proposition, in such a way that (i) the reasoner is entitled to draw inferences from that proposition, perhaps in conjunction with some auxiliary propositions, and where (ii) this kind putting forth differs from assertion, but also conjecture, presupposition, and presumption, in that the reasoner is *not* at fault should the supposed proposition be untrue. *Fourthly*, if some proposition is inferred in this way, it is inferred within the scope of that supposition, and is not automatically believed or accepted outside its

scope. *Fifthly*, if a reasoner infers <*Q*> from within the scope of the supposition of <*P*>, then she has epistemic reason to believe the corresponding conditional: '*P* > *Q*'.

This last point is in need of generalisation. When a conditional is evaluated, the reasoner supposes its antecedent, and sees whether she is in a position to assert its consequent from within the scope of that supposition. And as Green says, this could be because the reasoner has *inferred* the consequent from within the scope of the supposed antecedent. However, inference is not the only way in which someone might find themselves able to assert a proposition from within the scope of a supposition. To see this, consider Alan White (1971, p.291) on inference.

> To infer is neither to journey towards, nor to arrive at or be in a certain position; it is to take up, to accept or to change to a position. Inference is not the passage from *A* to *B*, but the taking of *B* as a result of reflection on *A*.

Thus, I suppose that it will rain tomorrow. Within the scope of that supposition, I assent to <the earth spins tomorrow>. However, this is not because I *reflected upon* <it will rain tomorrow>: and yet it nonetheless seems as though I have reason to believe <if it rains tomorrow, the earth will spin>.

2.6.2 Divers and Elstein on Supposition

If we understand the Ramsey Test in terms of supposition, then perhaps *one* important difference between indicatives and subjunctives is that different kinds of supposition are involved in their assertability conditions. Drawing on the contrast between indicatives and strong subjunctives, Divers and Daniel Y. Elstein (2012) have distinguished between *supposing-as-actual (A-supposition)* and *supposing-as-counterfactual (C-supposition)*. Generalising this thought to encompass weak subjunctives, we might therefore suggest that an indicative's Ramsey Test uses A-supposition, whereas a subjunctive's Ramsey Test uses C-supposition.

Although I think that different conditionals do employ different versions of the Ramsey Test, I am not certain that these differences are best thought about in terms of their being different *kinds* of supposition. In my view, supposition (or, at least, *supposition-qua-speech-act*) is everywhere the same: it is a species of non-assertoric propositional putting-forth, which is able to evidentially support conditionals. However, depending on the conditional that is being evaluated, different *constraints* are imposed on the corresponding supposition, so that a person's being able to properly assert a conditional's consequent, within the scope of the supposition of its antecedent, requires that person to jump through more or less hoops.

It will nonetheless be extremely important to look at Divers and Elstein's discussion of A- and C-supposition for clues about what these constraints might be. Divers and Elstein (2012, pp.122-123) have suggested that A-supposition, but not C-supposition, is subject to an *epistemic* constraint on supposition-relative belief. This constraint is supposed to have an effect on which of our antecedent beliefs are (properly) believed within the scope of an A-supposition, as well as on whichever further beliefs we may acquire within its scope:

> When we A-suppose, we typically project assumptions that vary from our beliefs about what is actually the case: and we do so—usually—for such purposes as working out how things would look if certain things are true which we currently believe false, or about which we are presently agnostic. [...] The way in which what follows from an A-supposition deviates from what is antecedently believed is epistemic: when we believe that P, and A-suppose that S, P will still be believed under the supposition unless S is (taken to be) a defeater for our knowledge that P.   (Divers and Elstein, 2012, pp.122-123)

The problem with this suggestion is that C-supposition is *also* subject to the epistemic constraint, whether conceived as acting on assertion or belief. When we C-suppose that Oswald did not shoot Kennedy, neither <someone shot Kennedy> *nor* <Oswald killed Kennedy> remain assertable or believable within the scope of this C-supposition, *because within the scope of this C-supposition*, we no longer have good enough epistemic reasons to claim knowledge of either proposition. Whether we A- or C-suppose that *P*, what may (still) be believed or asserted to within its scope depends upon what epistemic reasons we have for belief or assertion *relative* to the supposition that *P*.

Divers and Elstein (2012, p.123) also suggest that C-supposing a proposition means treating it as a limiting condition on a (potentially) non-actual world, whereby propositions accepted within the scope of this supposition are taken to be about *that* (potentially) non-actual world:

> What is C-supposed is treated less as if it were believed than what is A-supposed; rather it is considered as a limiting condition on a world, where that world may be non-actual, and the conclusions of the suppositional reasoning concern that world.

But I am also unsure about this, because we often conceive of C-supposed contents as being about the *actual* world. for example, as being about the *actual* Oswald and Kennedy. This aspect of the phenomenology of C-supposition is well-known and, indeed, it may even inform Kripke's (1980, p.45) famous Humphrey objection to Lewis' (1968) counterpart theory. But it also suggests that someone who C-supposes a proposition treats it as a limiting condition on the *actual* world. And the problem is that this seems true of A-supposition as well.

Now I do not want to deny that, unlike A-suppositions, the contents of C-suppositions appear somewhat detached from the actual world. But we risk overstating or misconstruing this

fact by appealing (however metaphorically) to non-actual worlds. Both A- and C-suppositions impose limiting conditions on the actual world, in the sense that both impose limitations on supposition-relative acceptance *that is about that world*. I think that the "detachment" that we feel when we C-suppose is most likely an artefact of the fact that C-supposition is often directed towards *strong subjunctives*. More specifically, I think that our feeling of detachment is due, in part, to the psychological effects of *Strong Subjunctive Presupposition*, but also to a unique constraint, to be introduced shortly, on the strong subjunctive's Ramsey Test.

Finally, I want to turn to a brief remark of Divers and Elstein's (2012, p.123) which, I think, points us in the right direction: 'When we C-suppose, we are concerned not with such evidential dependence but instead with some form of (broadly) worldly dependence.' I believe that this is broadly correct. When we "C-suppose", we are indeed interested in some form of dependence. In my view, this is because "C-supposition" *just is* an act of supposition whose role is to evidentially support a subjunctive conditional (*mutatis mutandis* for "A-supposition" and indicatives"). And subjunctive conditionals, in turn, have an assertability condition that requires us to be sensitive to dependencies (whereas indicatives do not).

However, I am not entirely happy with the thought that this dependence is *worldly*. Talk of worldly dependence brings to mind talk of dependencies amongst *facts* or *things*, but one might worry that such dependencies may be difficult to characterise in a satisfying way, especially when we C-suppose propositions whose subject-matters are opaque to us. For example, when C-supposing a countermathematical, one may lack *any* impression of what worldly dependence amounts to. I therefore think that, at least as far as the assertability conditions of subjunctives go, we should view the dependence as broadly *explanatory*: when we C-suppose some <P> with the intention to evaluating a subjunctive 'P > Q', we have to be sensitive to propositions of the form <Q because R>. We can then let these propositions track whatever it is that they ordinarily track, outside the scope of the supposition. Perhaps, in some cases, that will be some form of causal (and hence worldly) dependence. But perhaps in other cases we think about explanation in wholly different terms: we do not think about our explanations as being good or bad in virtue of their tracking certain kinds of dependencies between facts or things.

I have said that when we C-suppose some <Q> with the intention to evaluating a subjunctive 'P > Q', we have to be sensitive to propositions of the form <Q because R>. Now it is important that this <R> need not be identical to <P>. Lewis (1981, p.21) made us aware of why:

> If we want to express a dependency hypothesis in ordinary language, it is hard to avoid the use of counterfactual conditionals saying what would happen if the agent were to realise his various alternative options.

However:

> It is clear that not just any counterfactual could be part of a pattern expressing causal dependence. [...] We must exclude "back-tracking counterfactuals" based on reasoning from different supposed effects, back to different causes and forward again to differences in other effects. Suppose I am convinced that stroking [the cat] has no influence over purring, but that I wouldn't stroke Bruce unless I were in a mood that gets him to purr softly by emotional telepathy. Then I give credence to
>
> I stroke Bruce, □→ he purrs softly.[31]   (Lewis, 1981, p22)

Lewis' example tells us that it would be rash to expect subjunctive conditionals to have an assertability condition that is sensitive to explanatory propositions *which link consequent to antecedent.* However, the insight that weak and strong subjunctives pertain to (explanatory) dependencies is one that should be preserved. I now want to show that this can be done by positing a special assertability condition for subjunctives.

2.6.3   The Theory

Indicatives are distinguished from subjunctives, in part, by a layer of past-tense morphology. In my view, this "fake past" is related to the fact that subjunctives, but not indicatives, have an assertability condition that is sensitive to our beliefs about what explains what, within the scope of a supposition. Perhaps the fake past tense simply encodes this information about this assertability condition. Or, perhaps the fake past tense encodes some information about the "truth-conditions" of subjunctives, which are themselves reflected in their assertability conditions. Either way, I propose the following difference between indicatives and subjunctives:

> *Indicative Mood* – An indicative conditional, '$P \rightarrow Q$', is assertable by s **IFF**, within
>
> the scope of the supposition of $<P>$, $<Q>$ is assertible by s.

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[31] Indeed, Edgington (2011, p.86) uses this example against DeRose's (2010, pp.37-38) proposal about weak subjunctives. For DeRose, weak subjunctives which are not deliberationally useful are unassertible in *any* context, even when the context is not one of practical deliberation. And because DeRose takes deliberationally useless conditionals to just *be* conditionals whose assertion was dependent upon backtracking reasoning, DeRose's theory is therefore that back-tracking dependent weak subjunctives are always unassertible. But Lewis' example doesn't seem always unassertible.

Subjunctive Mood – A (weak or strong) subjunctive conditional, '*P* > *Q*', is assertable by *s* **IFF**, within the scope of the supposition of <*P*>, (i) <*Q*> is assertible by *s*, and (ii) *either* (a) <*Q*> is adducible by *s* within the scope of the supposition that <*P*>, *or* (b) for some <*R*> that is adducible by *s* within the scope of the supposition that <*P*>, <*Q* because *R*> is assertible by *s*.

In order to understand the contrast between these assertability conditions, we must have a conception of *adducible* propositions. A proposition is adducible within the scope of a supposition when it is rationally permissible for somebody to take that proposition for granted when developing that supposition. It is to use that proposition in developing the supposition, without having first *inferred* that proposition from the supposed content. Thus, when I suppose that *P* in order to check whether <*Q*> is assertable within its scope, I might reason from <*P*> to some <*R*>, and then use <*P*&*R*> to reason to *Q*. In so doing, I am *not* adducing <*R*>.

Clearly, having propositions to adduce is extremely useful. If we were only permitted to reason from the antecedent of a conditional, then we would get absolutely nowhere in checking most conditionals for assertability. We must therefore be able to draw on propositions which come from somewhere other than the supposed proposition itself. But where does this stock of adducible propositions come from?

In my view, they are a subset of the propositions about which we are certain, *outside* the scope of that supposition. Indeed, in many cases, adducible propositions will be a *proper* subset of those certainties, as the requirement that our suppositions be *logically consistent* will weed out certain beliefs. This constraint on adducible propositions is active in the assertability conditions of indicatives and subjunctives, weak and strong. But I think that *strong* subjunctives are subject to a further constraint, one that is related to their extra layer of past tense morphology. And I think that this extra layer *does* communicate temporal information: it tells us that, within the scope of the supposition of a strong subjunctive's antecedent, a belief that makes reference to a time is only adducible if that time is *earlier* than the antecedent time, if it has one. More specifically:

Maintain Consistency: For any conditional, '*P* > *Q*', any proposition <*R*> is *not* adducible by *s*, within the scope of the supposition of <*P*>, if (i) *s* does not believe that *R* with certainty, or if (ii) <*R*> is inconsistent with <*P*>.

Rewind: For any strong subjunctive, '*P* □→ *Q*', if <*P*> makes reference to some time, *t2*, then any proposition <*R*> which makes reference to some time, *t1*, is only

adducible by *s*, within the scope of the supposition of <*P*>, if *t1* is earlier than *t2*.

As advertised, indicatives, weak subjunctives and strong subjunctives can be ordered by the number of constraints that are imposed upon their Ramsey Tests. Indicatives are subject to *Indicative Mood*, but strong and weak subjunctives are subject to *Subjunctive Mood*, which is a more demanding constraint on what can be *asserted*, within the scope of the corresponding supposition. Additionally, strong subjunctives are subject to *Rewind*, which imposes a stronger constraint on what can be *adduced*, within the scope of the corresponding supposition, than *Maintain Consistency*, to which every conditional is subject. My theory correlates these differences in assertability conditions, in a principled fashion, with the morphological differences between our three conditionals.

Rewind plays an important role in my theory. In fact, attending to *Rewind* is crucial for warding off a potential misunderstanding. After all, a quick glance at *Indicative Mood* and *Subjunctive Mood* might suggest that every time a subjunctive conditional is assertable, then so is the corresponding indicative. This is because *Subjunctive Mood* is conjunctive, and has *Indicative Mood* as a conjunct. However, if my theory predicted this, then clear counterexamples would abound. For instance, it seems right to say that, if Oswald had missed, Kennedy might have survived; it seems wrong to say that, if Oswald missed, Kennedy might have survived.

Thankfully, however, my theory does not have this consequence. Whilst it is true that no *weak* subjunctive conditional is assertable unless its indicative counterpart is assertable too, this is not the case when it comes to *strong* subjunctives. Why? Because whether or not a conditional's consequent is assertable, relative to the supposition of its antecedent, partly depends upon which propositions are *adducible* within the scope of the supposition. And since *Rewind* will often act to remove certain propositions from the adducible set of *strong* subjunctives, a proposition could be unassertible when *Rewind* is *not* in effect, but become assertable when it is. It is wrong to say that, if Oswald missed, Kennedy might have survived. Why? Because the proposition that Kennedy died is adducible within the scope of the corresponding proposition. But when *Rewind* kicks in, that proposition is no longer adducible. We are then at liberty to assert that Kennedy might have survived, within the scope of the supposition that Oswald had missed.

But for all the good that *Rewind* does here, some may object to its presence. Sidney Morgenbesser has drawn our attention to a range of *prima facie* assertable strong subjunctives which, if indeed assertable, are incompatible with *Rewind*. Thus: after betting heads on the outcome of a coin toss (whilst the coin is in mid-air), and then seeing it land tails, it seems perfectly fine to complain that, if I had only bet tails, I would have won. However, *Rewind* would make the

proposition that the coin landed tails unadducible, when developing the supposition of this conditional's antecedent. And if all we know, within the scope of this supposition, is that a fair coin is currently in mid-air, then it seems unwarranted to assert that the coin *would* land tails: it might not. But that clashes with our original intuitions about this case.

It should be conceded that Morgenbesser cases are compelling. They present a good reason to be *suspicious* of any *Rewind*-like principle. But let me make two points in response. *Firstly*, one might be able to find such counterfactuals compelling, without ultimately conceding their assertability. Ian Phillips (2007, p.42), for instance, has argued that Morgenbesser cases *appear* correct because we are under the grip of a 'deeply entrenched deterministic mind-set.' Once we control to exclude the possibility of determinism, the coin's landing tails – to take the present example – becomes harder to assert within the scope of the same supposition.[32] *Secondly*, it may be possible to deny *Rewind*, but to accept a weaker *Rewind*-like principle which could, if adequately fleshed out, nonetheless insulate my theory from the disastrous consequence that every strong subjunctive is assertible only if its indicative counterpart is too. Channelling Edgington's (2003) response to Morgenbesser cases, we could allow as adducible those propositions which refer to a later than does the antecedent, but *only* when these propositions are *explanatorily independent* of the counterfactual's antecedent. For instance, since my betting heads or tails was explanatorily independent of the coin's landing tails, the coin's landing tails remains assertable within the supposition that I bet tails. Contrastingly, when we ask what would have happened if Oswald had missed, then since Oswald's not missing *explains* why Kennedy died, Kennedy's death is no longer adducible within the scope of the supposition that Oswald missed.

2.6.4 *Mood and Function*

With those caveats in place, and by way of illustration of and motivation for my theory, I want to show how these assertability conditions are related to the functional distributions of different conditionals.

I have argued that the weapon of choice for reasoning by *Modus Ponens* and *Modus Tollens* is the indicative. This is what we would expect, given the permissive nature of its assertability condition. For if these conditionals had been subject to *Subjunctive Mood*, then our capacity for reasoning by *Modus Ponens* and *Modus Tollens* would have been diminished.[33] Consider a scenario in

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[32] Phillips' argument has been questioned by Arif Ahmed (2011); Phillips responds in his (2011).

[33] It may seem outrageous to express that thought with a strong subjunctive. But given *Strong Subjunctive Presupposition*, what choice did I have? Moreover, I am not here reasoning *from* the antecedent of the

which Jones, the infallible mathematician, has declared that he will stop working on the Riemann hypothesis next Sunday. We are certain that it will be impossible for Jones to be unhappy on Monday if he proves the Riemann hypothesis on Sunday. We are also certain that that he will either prove or disprove it on Sunday. You then say:

(53)   If Jones is happy on Monday, the Riemann hypothesis is true.

The conditional seems assertible. If we find out that Jones was happy on Monday, we can then reason by *Modus Ponens* to the Riemann hypothesis. If we find out that the Riemann hypothesis is false, we can instead reason by *Modus Tollens* to Jones' terrible Monday. But the conditional would be unassertible, if subject to *Subjunctive Mood*: within the scope of the supposition that Jones is happy on Monday, there is no adducible *<R>* which is such that I may assert, within the scope of this supposition, *that the Riemann hypothesis is true because R*. None of my primitive mathematical beliefs could even *begin* to make that assertible for me. Conversely, then, *Subjunctive Mood* explains why the weak subjunctive version of (54) sounds quite odd:

(54)   ? If Jones were to be happy on Monday, the Riemann hypothesis would be true.[34]

Subjunctive Mood also explains why weak subjunctives are helpful for reasoning by *IBE*. Did the patient take arsenic? 'If that were the case, he would certainly be showing these symptoms'. Given clause (iib) of *Subjunctive Mood*, the conditional is assertible only because amongst the doctor's adducible propositions is the certain belief that arsenic poisoning has such-and-such effects, a belief which puts her in a position to assert, within the scope of the supposition that the patient

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conditional, *to* its consequent, so that I may then reason by *Modus Tollens*: after all, I am already certain that antecedents and consequents are false.

[34] Consider also the strong subjunctive:

(D)   If Jones had been happy on Monday, the Riemann hypothesis would have been true.

Given *Strong Subjunctive Presupposition*, our speaker must be certain that Jones was unhappy on Monday. This means that she is certain that the Riemann hypothesis is false. But then by *Maintain Consistency*, she cannot adduce, within the scope of the supposition that Jones was happy on Monday, one of the following beliefs: <the Riemann hypothesis is false> and <it was impossible for Jones to be unhappy on Monday *and* for the Riemann hypothesis to be true>. Which has to go? This is Goodman's (1955) problem of *cotenability,* in an epistemological setting. I briefly address it in the next section. Clearly, however, there seems to be something very *odd* about jettisoning <the Riemann hypothesis is false>. And if this belief does indeed remain adducible, it follows from clause (iia) of *Subjunctive Mood* that (D) is unassertible.

took arsenic, that he is showing those symptoms *because* he took arsenic, which has has-and-such effects.[35]

Can *Subjunctive Mood* also explain why many have thought that the conditionals of deliberation are subjunctives? We must at this stage tread *very* carefully. For if the suggestion is that *Subjunctive Mood* makes weak subjunctives useful in practical deliberation by encouraging us to consider the causal consequences of our hypothetical actions, then it will be difficult to avoid straying into vexed debates in the theory of rational decision making.[36] Still, reflecting on the causal consequences of our actions needn't be useful for us because (say) it gives us the best possible decision procedure. Rather, reflecting upon those consequences may be helpful because it draws attention to what we might (hypothetically) be *morally responsible* for. Indeed, it is difficult to imagine a concept of moral responsibility that is not in any way sensitive to the presence or absence of our actions' causal profiles.[37]

I also want to argue that *Rewind* is an important constraint on strong subjunctives, given the role that they have in action evaluation. Suppose that you have missed your 15:15 train, because at 15:00, you went to your favourite coffee shop for a quick fix, where a large queue and a mismanaged order kept you behind for too long. Was that decision a mistake? Should you feel regret?

It depends. Suppose that *just before* 15:00, it was incredibly *unlikely* that the train would run. For instance, we might suppose that the on-board computer system was hacked, and that the odds of removing the malware in time were very low. However, the technician gets lucky: at 15:00, the odds of a running 15:15 skyrocket to their normal middling levels. In this situation, it seems somewhat irrational to feel foolish about your decision. Within the scope of the supposition that you did *not* go for coffee at 15:00, you adduce the belief that, just before 15:00, the odds of a running train were very low. You then reason to the belief that you would have most likely been late, cold, *and* coffeeless (rather than late, warmed up from the walk, and sipping on some great

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[35] We should note two things at this stage. *First*, the *indicative*'s permissive Ramsey Test explains why the indicative version of the above conditional sounds marked in this context: it brings nothing new to the table, whereas the weak subjunctive's assertability condition *forces* reflection upon an explanatory relationship. *Second*, we should record the curious case of *mixed* indicative-weak subjunctives, which, as Fogelin (1967, pp.19-20) notes, are also well-suited to reasoning by *IBE*:

(E)   If he took arsenic, he would be showing these very symptoms.

A reasonable hypothesis about these odd conditionals is that they emerged to help us cope with the awkwardness of past-directed subjunctives, and (hence) are subject to *Subjunctive Mood*.

[36] As (e.g.) Lewis (1981) and Edgington (2011) do.

[37] Although see Carolina Sartorio (2007) for the difficulties and subtleties involved in making this connection interesting and plausible.

coffee, as you actually are). Not so if you instead adduce the belief that, at 15:00, the odds of a running train were decent: in that case, you would reason to its being pretty *likely* that you would get onto the train, and hence be warm, though coffeeless. This might make your action seem regrettable or foolish, when intuitively it was not.

Aside from these functional considerations, some linguistic data suggests *Rewind*. Vishnu is annoyed, because James did not go to Emma's wedding ceremony, only to the reception. He tells James:

(55)   # If you had come to the ceremony, then since you would have come to the reception, you would have made Emma really happy!

There is something a bit marked about (55): specifically, about the use of 'since', which suggests that James' counterfactually going to the reception was a given. Intuitively, however, it isn't a given. *Rewind* predicts this: even though Vishnu is certain that James went to the reception, he cannot simply *adduce* this belief when he is evaluating (55), because it concerns a time after the antecedent time.

2.6.5   Goodman's Problem of Cotenability

I now want to turn to some difficulties for my theory. The first one is shared by just about anybody who ventures some thoughts about conditionals: it is Goodman's (1955) problem of *cotenability*. The second problem – or, rather, family of problems – affect the proposal that strong subjunctives are subject to *Rewind*. I will turn to those problems in the next section, after making some brief points in connection with the problem of cotenability.

When Goodman (1955, pp. 9-16) was searching for truth-conditions for counterfactual conditionals, he struggled to discern which propositions to bundle together with the antecedent. It was supposed to be from this bundle of antecedent and auxiliary propositions that the consequent would (not necessarily logically) follow, **IFF** the counterfactual was true. The problem of finding the right auxiliary propositions is the problem of cotenability.[38]

In the present setting, where our concern is assertability conditions, the problem of cotenability is the problem of adducible propositions. I have suggested that adducible propositions

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[38] More specifically, in the arena of truth-conditions, it is the problem of avoiding what Goodman (1955, p.15) ultimately felt forced to do: appealing to the very notion of counterfactuality in specifying the propositions in the bundle. Goodman introduced the term 'co-tenable' to mark the bundled propositions which are not such that, had the antecedent been true, they would have bene false.

are subsets of our certain beliefs. Which subsets they are depends upon the conditional in question: whilst all conditionals are subject to *Maintain Consistency*, only strong subjunctives are subject to *Rewind*. But those constraints do not solve the problem of cotenability.

My theory does handle *some* problematic conditionals pretty well. Consider the following example from Goodman (1955, p.14), said of match that was never struck:

(56)   If that match had been struck, it would have lit.

For Goodman, the difficulty was to find a rule which generated a bundle of propositions that would make (56) come out true. This bundle could not contain, for instance, the proposition that the match was wet, but it should contain the proposition that the match was dry. My theory tells us that we may adduce <the match was dry> only if we believe this for certain, in which case we may not adduce <the match was wet>. In this scenario, then, the epistemological problem of cotenability is solved. But what about if we are *unsure* that the match was dry? Again, I think that the theory gets us the right results: (56) comes out unassertible. Without that proposition, we are simply not in any position to assert that the match would have lit, within the scope of the supposition that the match had been struck.

It should be noted that this problem arises for indicatives too:

(57)   If that match is struck, it will light.

This conditional is also unassertible, given uncertainty about the match being dry. Indeed, I think that the *epistemological* problem of cotenability is a quite general one. Whether all conditionals *also* face this problem *qua* problem about their truth conditions depends upon at least two things: first, upon whether all conditionals *have* truth conditions, and second, upon whether there is a tight connection between the assertability and truth conditions of all conditionals. But that is not a topic that I could hope to get into now.

Generally speaking, when an uncertain proposition R is made salient during the course of our attempting to apply the Ramsey Test, it seems to me as though the supposition that P decomposes into two different suppositions: that of $P\&R$, and that of $P\&\neg R$. If the consequent, <Q>, is unassertible within the scope of either, or in one, then the conditional '$P > Q$' is also unassertible. And it is tempting to say that the conditional would be assertible if <Q> is assertible within the scope of both. However, one might worry about that suggestion, given the fact that there will be *many* an uncertain proposition which could *itself* decompose the suppositions that

P&R and that *P&¬R*, if it were to be made salient. I do not know how to respond to this difficulty, other than with the timid suggestion that assertability within the scope of suppositions may be relativized to salient propositions.

The decomposing of suppositions also occurs, I believe, when *Maintain Consistency* determines that some proposition must go, but there seems to be no principled way of choosing which. Goodman's example is that of a subjunctive whose antecedent is <Jones was in Carolina at its formation>. Suppose that we are certain about the following: <Jones was not in South Carolina at its formation>, <Jones was not in North Carolina at its formation>, <North Carolina plus South Carolina is identical with Carolina >. Which proposition must go? The contest is naturally between the first two, but it would be arbitrary to side with either. In that case, the supposition decomposes into that of <Jones was in South Carolina at its formation> and that of <Jones was in North Carolina at its formation>. The conditional is then assertible if its consequent may be asserted within the scope of both.[39]

2.6.6 Lewis 1979

In his 1979 paper, Lewis proposes and then rejects a theory that is somewhat similar to *Rewind*. Although a detailed comparison of these theories would take us too far afield, we can nonetheless draw on Lewis' discussion, which suggests some important questions for my theory.

The theory which Lewis (1979, 462) briefly considers provides a truth-condition for strong subjunctives. The truth condition interprets strong subjunctives as being about possible worlds. Where *P* is entirely about some stretch of time, *t*, the strong subjunctive '*P* $\square\rightarrow$ *Q*' is said to be true **IFF** every possible world in which (i) *P* obtains, and which (ii) is exactly like the actual world at all times before a short transition period that begins before *t, and* which (iii) conforms to the actual laws of nature at all times after *t*, is also a possible world in which *Q* obtains.

Whilst there are many differences between this theory and *Rewind*, the important similarity lies in the thought that the antecedent time determines which worlds or propositions are "bundled" together with the antecedent. This idea can be expressed in all sorts of theoretically inflected ways but it is, at its core, a familiar one. The phenomenology of strong subjunctive thinking often does suggest that, when we suppose the antecedent of a strong subjunctive, we "think back" to what actually occurred just before the antecedent's time and, from a time slice in

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[39] *Why* does it seem just obvious that we should keep <North Carolina plus South Carolina is identical with Carolina > on-board? For the same reason that we should keep <the Riemann hypothesis is false>, if we are certain that it is false: a reason that we will get to in the next chapter.

that vicinity, develop the supposition in a forward-looking direction. The question is about the extent to which we can work this intuitive thought into the truth or assertability conditions of conditionals.

One important difference between Lewis' theory and *Rewind* is that Lewis (1979) allows for a transition period that begins shortly before the antecedent's time. If I were to build some such transition period into *Rewind*, then not every pre-antecedent-time belief would be adducible within a suppositions scope, even once *Maintain Consistency* had done its thing. But Lewis was motivated to postulate this transition period because he thought there would be 'abrupt discontinuities' without it: 'Right up to *t*, the match was stationary and a foot away from the striking surface. If it had been struck at *t*, would it have travelled a foot in no time at all?' (Lewis, 1979, p.463) Does *Rewind* therefore commit me to the absurd conclusion that, upon supposing that the match was struck at *t*, adducible is our belief that, at some slightly earlier time, the match was a foot away from the striking surface?

It does not. I have said that when we suppose the antecedent of a strong subjunctive, we may draw on *any* belief that concerns a pre-antecedent time, provided we retain consistency. We suppose that the match was struck at *t4*. But even thought <at *t3*, the match was a foot away from a striking surface> concerns a pre-antecedent time, some of our other beliefs are rich enough for it to be ousted by *Maintain Consistency*. One such belief concerns ordinary objective impossibility of a matches being struck the merest moment after being a foot away from a striking surface: <at *t2*, it was impossible for the match was a foot away from a striking surface at *t3*, and to be struck at *t4*>. Given the alethicity of objective modality, it follows that either the *t3* belief, about the match being far from the striking surface, or the earlier *t2* modal belief, has got to go.

At this point, we are engaging in backtracking reasoning. And I think that a plausible constraint on backtracking reasoning, at least for strong subjunctives, is the following:

> *Roll Back*: For any strong subjunctive, '*P* □→ *Q*', if two certain beliefs, <*R*> and <*S*>, are inconsistent with <*P*>, where <*R*> and <*S*> and <*P*> make reference to *t1*, *t2*, and *t3* respectively, then when any *s* develops the supposition that *P*, unadducible within its scope is *t2*.

The idea behind *Roll Back* is simple: at least in so far as strong subjunctives are concerned, *Maintain Consistency* is immune to the problem of cotenability when there is a temporal difference between beliefs that satisfy *Rewind*. At this point, consistency is maintained time slice by time slice, going backwards in the temporal order. That, I claim, *just is* strong subjunctive backtracking. And in

Lewis example, it makes us remove the belief that, at *t3*, the match was a foot away from the striking surface.

Of course, that just creates another abrupt discontinuity, between the match's being a foot away from the striking surface at *t2* and its being mysteriously close to the surface at *t3*. But then *Roll Back* and *Maintain Consistency* kick in again: for the "abrupt discontinuity" is simply, in my view, an artefact of the fact that we believed, at some yet earlier time *t1*, that it was impossible for the match to be far away from the striking surface at *t2*, but then suddenly close to the surface at *t3*. So, we may no longer adduce the belief that, at *t2*, the match was far away from the striking surface, preserving our earlier modal belief. This process continues until we are satisfied that we have avoided inconsistency. How far back we have to go before we have eliminated inconsistency in this way depends upon the content of the supposition in question.

It seems undeniable to me that our ordinary beliefs about objective modality play a crucial role in backtracking reasoning. Indeed, I would say that backtracking revisions to our pre-antecedent beliefs are often simply illegitimate, within the scope of a supposition, *unless* a problem of logical inconsistency can only be resolved by altering an ordinary necessity or impossibility beliefs. Consider, for instance, an example discussed by Lewis (1979, p.456):

> Jim and Jack quarrelled yesterday, and Jack is still hopping mad. We conclude that if Jim asked Jack for help today, Jack would not help him. But wait: Jim is a prideful fellow. He never would ask for help after such a quarrel; if Jim were to ask Jack for help today, there would have to have been no quarrel yesterday. In that case Jack would be his usual generous self. So if Jim asked Jack for help today, Jack would help him after all.

There is only one way for this last strong subjunctive to be true, given the information we have: before the argument took place yesterday, it was impossible for Jim and Jack to argue yesterday, *and* for Jim to ask Jack for help today. If that was, indeed, an impossibility, then upon supposing that Jim asks Jack for help today, *Maintain Consistency* and *Roll Back* require that we backtrack to an earlier time slice, yesterday, and remove the belief that an argument took place. In so doing, we preserve our belief about some still earlier time slice: that the day before yesterday, it was impossible for Jim and Jack to argue yesterday, and for Jim to ask Jack for help today.

Why did Lewis not anticipate the above response to the problem of abrupt discontinuities? Why, indeed, did he not consider seeing these discontinuities as glitches in the modal matrix? For the same reason, I conjecture, that Lewis wanted to accommodate certain judgments about backtracking strong subjunctives which are, in my view, faulty: Lewis inhabits a philosophical perspective that downplays our *ordinary* modal notions. I will not speculate as to whether this is mainly due to Lewis' Humeanism, or to a preoccupation with the more exotic "modal" notions.

And I do not wish to suggest that Lewis' concerns about our ordinary modal notions are not well-founded. Objective impossibilities and necessities and contingencies are mysterious things indeed. But these notions also occupy a special, central role in our ordinary thinking about the world, including our ordinary, subjunctive thinking about the world.

Lewis (1979, p.464) discusses a few other problems for the (1979) theory. One is that some strong subjunctive antecedents are not about specific times: 'If kangaroos had had no tails...' But these antecedents are just incomplete. In order to be properly evaluated, they must be precisified. And their incompleteness afflicts all conditionals, not just strong subjunctives. You ask we what happened to kangaroos if, at one point in their evolutionary history, they had no tails. I can then pick some arbitrary time, or simply ask you for more temporal information.

Another problem for the (1979, p.464) theory is provided by strong subjunctives that are about time travel. If, at t_5 I had gone back in time to strike the match at t_3, it would have lit at t_4. That seems right. How does *Rewind* handle it? Perfectly fine, although it shows us just how hard it is to evaluate time travel strong subjunctives. Presumably, it was impossible at some still earlier time, t_2, for me to go back in time, at t_5, to strike the match at t_3. So, that modal belief has to go. But was that impossibility merely contingent at some yet earlier time, t_1? If not, then it was necessary at t_1 that, at t_2, for me to go back in time, at t_5, to strike the match at t_3. So, the t_1 modal belief has got to go. How much further back do we have to get, before we can adduce our prior beliefs? And how many of those beliefs would be left standing within the scope of our supposition? Possibly very few: there is a reason why most people don't torture themselves in an attempt to answer questions about time travel.

Summary

In this chapter, I have argued that the morphological and functional differences between conditionals are both correlated with differences in their assertability conditions. Although many questions remain unanswered, I hope to have shed some light on these constructions, and on their relationship to suppositions. We are now better placed to begin theorising about the functions of modalizing, ordinary and philosophical.

CHAPTER 3
TWO PROGRAMMES

In Chapter 1, I argued that an investigation into the similarities and differences between ordinary and philosophical objective modalizing would do well to focus on the neglected issue of modal function. After having spent a good deal of time investigating the closely related matter of conditionals and suppositions in Chapter 2, we are now in a position to begin our functional theorising in earnest. But where to start?

In Section 1, I will introduce what I call the *Toulminian Programme*, which is named after its first, and arguably only, serious exponent: Stephen Toulmin (1958). Toulmin's insight was that different kinds of *ordinary* modals – objective, subjective, deontic – all play remarkably similar roles in our practical and theoretical deliberations: the crucial Toulminian thought being that ordinary modals are used to demarcate what does and does not get (further) deliberated about. After providing some theoretical motivation for functional unity in our ordinary modalizing, I will introduce Toulmin's work on ordinary modals, before showing that his functional hypotheses have been echoed in the writings of several contemporary thinkers. That ought to give the Toulminian Programme some plausibility, which I then reinforce by addressing some methodological questions for the Programme.

In Section 2, I will introduce what I call the *Millian Programme.* This Programme has developed a remark of J. S. Mill's (1891) into a serious and sophisticated account of the function of certain *philosophical* modals: the key idea being that A-necessity modals function to induce a disposition to accord their prejacent a special status, within the development of any C-supposition whatever. I will comment on some recent incarnations of the Millian Programme, suggesting some minor amendments.

Finally, in Section 3, I address the issue of how to bring these Programmes into accord. I suggest that we ought to focus our attention on those C-suppositions which are *directed towards* practical and theoretical deliberation. We should then investigate the roles that different modals have in structuring these goal-directed C-suppositions: both with respect to what is *C-supposed*, and with respect to what is *adduced* within their scope.

3.1 The Toulminian Programme

The same word, like 'can' and 'must', can express different modal notions: subjective, objective, deontic. These different uses nonetheless have remarkably similar functions – or so argued Stephen Toulmin in *The Uses of Argument* (1958). Unfortunately, the Toulminian Programme was never developed beyond a somewhat programmatic (!) stage. It deserves better than that. In this section, I will motivate, describe, and defend this neglected approach to the function of ordinary modals.

3.1.1 *Motivating Functional Unity*

After providing a story about the function of *propositional* knowledge ascriptions, Craig (1990, pp.140-162) felt compelled to extend his account so that it may cover ascriptions of abilative knowledge, knowledge by acquaintance, and linguistic knowledge. Why? Because the pattern that can be observed with the English word 'knows' – in which the same word is used to ascribe different kinds of knowledge – is replicated, with respect to translations of 'knows', across a wide range of (un)connected languages.

The situation is much the same with modals. Cross-linguistic analysis suggests that many languages have a group of words, which roughly translate to English language modals like 'can' and 'must', wherein each word may express several different meanings, or a single meaning that possesses a highly context-sensitive parameter (on this issue, see Viebahn & Vetter (2017)). On one occasion, 'can' expresses objective possibility. On another, subjective possibility. On yet another, deontic permissibility. Is functional unity therefore a *prima facie desideratum* in the theory of modal function?

Although Craig never tells us *why* the linguistic data supports his methodological assumption, it isn't too difficult to image an argument to this effect. In the first instance, notice that if many languages have one word, *'W'*, which can express *<F>* or *<G>* or *<H>*, then there can't be anything too *disadvantageous* about this system. After all, if it were too disadvantageous, it wouldn't be so prevalent. And if the uses of *'W'* which express different concepts have similar functions, then this would go towards explaining *why* the system isn't too disadvantageous: for then not much could go wrong, if one were to incorrectly interpret a tokening of *'W'* as expressing (say) *<F>* rather than *<G>*.

But how, exactly, does a word with several, similar functions come to express different concepts? Here is a sketch. Recall the Millikan (2005)-inspired conception of function that we

encountered in the previous chapter: that the function of a linguistic construction in a community is the effect that its utterance has on the members of that community which explains why the construction is reproduced. Now suppose that, at first, 'W' is reproduced because its effect on the population is E_1. After some time, however, subtle variations begin to emerge in this effect, so that 'W', *when uttered in situation S_1*, gets reproduced because it has effect E_1, and *when uttered in situation S_2*, gets reproduced because it has effect E_2.

Now since 'W' is reproduced in this way for a while, it must be doing something useful for the population which produces it, often enough. So, it would make sense that certain norms would arise with respect to 'W', norms which: (i) discouraged the predication (say) of 'W' to anything which is neither S_1 nor S_2; (ii) encouraged those who assent to 'x is W' in S_1 to bring about E_1; (iii) encouraged those who assent to 'x is W' in S_2 to bring about E_2. In this situation, we might be seeing the emergence of two concepts, $<F>$ and $<G>$, whose "acquisition" or "truth" or "assertability" conditions are, respectively, S_1 and S_2.

I therefore think that we should expect some degree of functional similarity in our ordinary modalizing. And Toulmin found exactly that. In what follows, I will draw extensively on Toulmin's writings to determine his functional hypotheses. I will then show that similar hypotheses have been endorsed, in some form or another, by several contemporary authors.

3.1.2   *Modals and Deliberation*

Toulmin's suggestions about the function of modals occupy an early chapter of *The Uses of Argument* (1958) The matter of modal function is therefore nor the primary focus of Toulmin's project. But in spite of his more expansive agenda, Toulmin leaves us with some valuable clues about modal function, clues that we would be unwise to ignore. At the heart of the Toulminian picture lies the idea that modals structure our *deliberations*, which I understand roughly as follows:

> *Deliberation:* An activity in which agents look for, present or assess (putative) normative reasons for or against belief – *theoretical deliberation* – or action – *practical deliberation* – with the intention of resolving (psychological) uncertainty about what to believe or what to do.

I will make two brief comments about the above. *Firstly*, it is my hope that one might appeal to the language of reasons without incurring an ontological debt. Indeed, I suspect that appeals to reasons can be paraphrased in terms of agents' concerns about making correct *judgments* about

reasons for action or belief, or in terms of agents treating certain things *as* reasons for action or belief, or something similar. Nevertheless, talking in the material mode is helpful for expository purposes.

Secondly, something must be said about the *normative* status of normative reasons, and here I will allude to a familiar contrast. On the one hand, there are *motivating reasons*, the reasons *for which* people act and believe in the ways that they do. Thus, my being hungry is the reason for which I ate the cake, and my misreading the label is the reason for which I took it to be healthy. On the other, there are the normative reasons: reasons in *favour of* acts or beliefs, which are capable of providing *justification* for actions and beliefs.[40] In what follow, 'reasons' is elliptical for 'normative reasons'.

Now, in looking at Toulmin's work, we see no explicit mention of deliberation. Nevertheless, I believe that an undeniably *Toulminian* account of modalizing will place deliberation at its heart, and that this account, though not explicitly Toulmin's, is harmlessly attributed to the author. After all, Toulmin's (1958, p.7) interest in modals was contingent on his primary goal of understanding the very process of *argumentation*, which often occurs in a deliberative setting:

> Arguments can be compared with law-suits, and the claims we make and argue for in extra-legal contexts with claims made in the courts, while the cases we present in making good each kind of claim can be compared with each other. A main task of jurisprudence is to characterise the essentials of the legal process: the procedures by which claims-at-law are put forward, disputed and determined, and the categories in terms of which this is done. Our own inquiry is a parallel one: we shall aim, in a similar way, to characterise what may be called 'the rational process', the procedures and categories by using which claims-in-general can be argued for and settled.

Talk of arguing for and settling claims brings to mind deliberation, and *theoretical deliberation* at that. Indeed, when providing examples of questions which could prompt argumentation, Toulmin (1958, pp.16-17) reveals a penchant for theoretical matters:

> When will the next eclipse of the moon take place? Who will play in the doubles in the American team for the next Davis Cup match? Were there sufficient grounds in law for condemning Crippen?' In these cases, we can formulate clear enough questions. All we may be able to do, however, is to ask, less coherently, 'What are we to think of Sir Kenneth Clark's reassessment of Piero?' or, 'How are we to make sense of the phenomenon of electrical super-conductivity at extremely low temperatures?'

And when is concerned with theoretical deliberation, *subjective* modals take centre stage:

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[40] Of course, there are deep questions about how these relate to one another. But we needn't engage with these issues here, as everyone is familiar with reasons *under the normative guise*, so to speak: that stealing is wrong is reason in favour of not stealing; that the president incoherently rambles on is reason in favour of thinking him inept. These are the reasons that matter for deliberative purposes.

> These terms—'possible', 'necessary' and the like—are best understood, I shall argue, by examining the functions they have when we come to set out our arguments. To mention the first stage first: in dealing with any sort of problem, there will be an initial stage at which we have to admit that a number of different suggestions are entitled to be considered. They must all, at this first stage, be admitted as candidates for the title of 'solution', and to mark this we say of each of them, 'It may (or might) be the case that....' At this stage, the term 'possibility' is properly at home, [...]: to speak of a particular suggestion as a *possibility* is to concede that it has a right to be considered.[41] (Toulmin, 1958, p.17)

What we have from Toulmin, then, is a suggestion about the function of subjective possibility modals. It receives a slightly different formulation elsewhere in the text (Toulmin, 1958, p.34):

> In order for a suggestion to be a 'possibility' in any context [...] it must 'have what it takes' in order to be entitled to genuine consideration *in that context*. To say [...] 'Such-and-such is a possible answer to our question', is to say that, bearing in mind the nature of the problem concerned, such-and-such an answer deserves to be considered.

The core of the proposal seems clear enough: the language of subjective possibility functions to recommend a proposition for *consideration*. However, Toulmin is never explicit about what consideration amounts to, which forces the Toulminian to attempt a characterisation of *theoretical consideration* that is faithful to the spirit of Toulmin's writings. I have settled for the following:

> *Theoretical Consideration:* When an agent theoretically considers <*P*>, they look for, present or assess (putative) *epistemic reasons* for or against believing <*P*>, with the intention of resolving uncertainty as to believing <*P*>.

On the account so far, then, an assertion of subjective possibility functions to *prompt* the theoretical consideration of its prejacent. And consistent with this functional hypothesis is the suggestion that subjective impossibility modals function to *stop* the theoretical consideration of a proposition:

> taking into account everything of whose relevance we are aware, we may still not find any one conclusion unequivocally pointed to as the one to accept. [...] We may at any rate be able to dismiss certain of the suggestions initially admitted to the ranks of 'possibilities' as being, in the light of our other information, no longer deserving of consideration: 'After all,' we say, 'it *cannot* be the case that such-and-such.' One of the original suggestions, that is, may turn out after all to be inadmissible. In such a situation further modal terms find a natural use – 'cannot', 'impossible', and the like. (Toulmin, 1958, p.20)

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[41] Notice that paradigmatic expressions of subjective possibility employ the word 'might'. Moreover, if *P* really is worth considering, then it isn't enough for it to be *objectively* possible, since it can be the case both that *P* is objectively possible and that *P* doesn't obtain.

But there is more to Toulmin's theory than subjective modality and theoretical consideration. Toulmin also discusses practical deliberation, deliberation about what to *do*. This occurs when Toulmin (1958, p.23) writes about 'cannot':

> Your physique being what it is, you can't lift that weight single- handed—to attempt to do so would be vain'; 'The bye-laws being as they are, you can't smoke in this compartment, Sir—to do so would be a contravention of them and/or an offence against your fellow passengers.

In these examples, Toulmin the modals are naturally as expressing objective impossibility and deontic impermissibility or impropriety. And with this change of focus comes a different suggestion about modal language, one which centres not on 'claims', but on *actions* (Toulmin, 1958, p.27):

> But the common implication of all these statements, marked by the use of the word 'cannot', should be clear by now. In each case, the proposition serves in part as an injunction to *rule out* something-or-other—to dismiss from consideration any course of action involving this something-or-other—

Notice an important similarity between deontic impermissibility and impossibility modals: all function to stop our considering *something*. Subjective impossibility modals function to halt the theoretical consideration of their prejacents. Objective impossibility and deontic impermissibility modals halt the *practical* consideration of the actions which their prejacents describe.

> *Practical Consideration:* When an agent practically considers *Fing*, they look for, present or assess (putative) *practical reasons* for or against *Fing*, with the intention of resolving uncertainty as to whether to *F*.

Now, Toulmin (1958, p.19) sometimes slides between practical and theoretical concerns, such as in his discussion of the function of 'necessary' and its cognates:

> At any rate, when we do for once find ourselves in a situation in which the information at our disposal points unequivocally to one particular solution, we have our characteristic terms with which to mark it. We say that the conclusion 'must' be the case, that it is 'necessarily' so – a 'necessity' of the appropriate sort. 'Under the circumstances', we say, 'there is only one decision open to us; the child *must* be returned to the custody of its parents.' [...] Or again, 'Considering the dimensions of the sun, moon and earth and their relative positions at the time concerned, we see that the moon *must* be completely obscured at that moment.'

Despite these slides, we must take care to notice the differences that have emerged. Whilst all 'musts' function to *force* the consideration of *something* when deliberating, the subjective 'musts' function to force the theoretical consideration of the propositions expressed by their prejacents, whilst the deontic and objective 'musts' function to force the practical consideration of the actions described by their prejacents. That, at any rate, is how I propose to make sense of the differences that we find in Toulmin's descriptions of the subjective and non-subjective cases, where talk of 'claims' are allied with the former, and talk of 'actions' with the latter.

Further inquiry in Chapter 4 will prompt us to revise this simple, bifurcated picture, in which objective modals only effect practical deliberation. But it will do us no harm to go forward with Toulmin's original hypotheses in mind, as their simplicity does not belie the crucial Toulminian thought: that modals can function to effect *what it is* that we practically and theoretically consider. They are the agenda setters, the tools with which we demarcate the boundaries of our deliberations.

3.1.3 Contemporary Support

If a slogan is needed for the Toulminian Programme, then we cannot do much better than a remark of Blackburn's (1993, p.60): 'We allow possibilities, rule out impossibilities, and insist upon necessities.' And as the offhand nature of Blackburn's remark suggests, the germ of the Toulminian programme is *prima facie* plausible. Unsurprisingly, then, Blackburn isn't the only contemporary writer with a Toulminian leaning. This is Vetter (2015, p.244):

> Knowing that the vase *can* break (dynamic modality) or not being able to rule out that it *will* break (epistemic modality) both lead to the same result: I will pack the vase safely. A child's knowing that she is unable to do a cartwheel in the classroom (dynamic modality) and her knowing that she is not allowed to do a cartwheel in the classroom (deontic modality) both have the same result, at least in a rational and obedient child: she will not attempt to do a cartwheel in the classroom. Dynamic, deontic, and epistemic modality alike play the role of delimiting the space of options in our practical deliberation. Their metaphysics may be very diverse, and they may easily come apart in more sophisticated deliberation. But the basic function of the different types of modal knowledge is the same.

Vetter's use of the functional idiom suggests that we are at liberty to side-line the appeal to modal knowledge, but maintain the core of her suggestion, that modals function to structure our practical deliberations. For Vetter, this is where modals earn their keep, and we can see reminders of Toulmin's position in Vetter's suggestion about deontic and objective ('dynamic') modals. Notice,

however, that we also find a complication of the simple Toulminian story: for Vetter, assertions of *subjective* modality effect our practical deliberations.

Vetter's proposal about the function of deontic modals is of a kind with a suggestion of Gunnar Björnsson and Stephen Finlay's (2010). Concerned with the use of deontic 'ought'-sentences, during the course of practical deliberation, they write that "ought claims [...] have the pragmatic role of recommendations" for action. (Björnsson and Finlay's, 2010, p.22). Extending the thought, we get the idea that 'ought not' has the pragmatic role of *discouraging* action. Although this connection between 'ought' and practical deliberation doesn't *exactly* match Vetter's suggestion – that the deontic 'cannot' *supresses*, and doesn't merely discourage, action – the connection to practical deliberation stands out in both. Modals can push and shove.

Inspired by Björnsson and Finlay's paper, Benjamin Lennertz (2014, p.192) has argued that "an assertive utterance of 'It might be that S' [...] typically conveys that [the content of S] is a serious option in reasoning and deliberation." Lennertz's proposal, which concerns subjective possibility, can be illustrated with his own compact vignette. Imagine that two people are trying to get to the bottom of who ate their cookies. After some time theoretically deliberating the following assertion is made:

(1)   Angelica might be the thief.

On Lennertz's (2014, p.191) view, this assertion presents "Angelica's being the thief as a serious option in reasoning and deliberation about the question at hand." The conveyance can be understood in a few different ways (Lennertz, 2014, pp.193-194):

> First, an utterance of (1) might be an *assertion* that it is a serious option that Angelica is the thief. Second, an utterance of (1) might offer a *recommendation*—one to take seriously the possibility that Angelica is the thief. Third, an utterance of (1) might be an *expression* of some mental state of taking it as a serious option that Angelica is the thief.

The idea that assertions of subjective possibility function as recommendations to take seriously a proposition obviously chimes nicely with Björnsson and Finlay's suggestion about deontic 'oughts'. It is also close to Toulmin's original proposal about subjective possibility, and Lennertz (2014, p.191) does cite Toulmin (1958) as an early proponent of this view.

Finally, Brett Sherman's (2018) recent picture of subjective modal discourse is striking in its resemblance to Toulmin's dynamic, inquiry-relative account. Indeed, Sherman provides many interesting insights which support the Toulminian account. Consider, for instance, what Sherman (2018, p.826) has to say about the word 'possibility':

> imagine that you approach a group of people who are in the middle of a conversation. You hear one of the conversational participants say, 'Well, that's one possibility.' What information can you glean from overhearing that remark? [...] Among other things, you learn that there is some issue or question that is taken to be unsettled, and under discussion, by the conversational participants. The issue might be a theoretical one: how to explain the double-slit experiment. It might be practical: how to get to the conference hotel. It might concern the future: how will climate change affect coastal cities? It might concern the past: when did horses first arrive in North America? The utterance reveals that a particular answer to an open question of this sort has been proposed, but the question has been left on the table. You can infer this simply from the fact that the speaker characterises what was proposed as a *possibility*.

This observation aligns nicely with Toulmin's description of the first stage of inquiry, in which 'possible' and its cognates is used to forward potential solutions to questions or problems. And just like Toulmin, Sherman will argue that the subjective 'must' often takes as its prejacent the last answer that remains standing, after the others have been disregarded.

The Toulminian Programme, then, seems well worth pursuing. A unified account of the function of ordinary modals is desirable, and Toulmin's picture is the closest that we have come to some such account. Moreover, within contemporary circles, a Toulminian sensitivity to the functional unity of modalizing is slowly emerging, one that has evolved largely independently of Toulmin's work. But before committing to this programme, something must be said about the Toulminian methodology: about the aspiration to view modals as devices which function to structure our practical and theoretical deliberations, and about the manner in which we are to detect the functions of modals. I turn to these issues next.

3.1.4   Circularity Concerns

I have described deliberation as an activity in which agents look for, present or assess (putative) normative reasons for or against belief or action, with the intention of resolving uncertainty with respect to what to believe or what to do. Some may have noticed, however, that at least two circularity worries might be raised by this definition.

The first circularity worry is triggered by analyses of reasons in terms of deliberation, like that proposed by Jonathan Way (2015). After all, *if* an analysis of this kind is correct, then my characterisation of deliberation becomes less informative, on account of including in its *analysans* a concept that can only be analysed in terms of the *analysandum*. But although this conditional is no doubt true, I find myself rather unperturbed. After all, the antecedent is not a given; and even if it were, it would not follow that my characterisation of deliberation is *uninformative*, as the appeal

to reasons doesn't *exhaust* what I say about this phenomenon. Moreover, in providing this rough-and-ready characterisation of deliberation, I did not aim to give an original or insightful account of deliberation. My intention was rather to fix our ideas on an important and relevant phenomenon, and it is hardly obvious that circular analyses are unfit for *that* purpose.

The second circularity worry is of greater concern. This worry is rooted in an important Toulminian *desideratum*: that our conception of deliberation does not make reference to modalizing *itself*. After all, on the Toulminian story, we have been placing the use of modal terms *within* the activity of deliberation, with the aim of showing how the deployment of this vocabulary functions to facilitate or shape the deliberative enterprise. But this presupposes that deliberation can be characterised without reference to modalizing itself, which is not obviously the case. I have spoken of deliberation as being animated by the intention to resolve uncertainty about what to believe or do. But in talking about resolving uncertainty about what to believe or do, it is tempting to describe this mind-set as a concern to determine what one *ought* to believe or do. And if that is indeed what this mind-set reduces to, then we cannot hope to purge deliberation of modalizing.

These are large and delicate issues that I cannot hope to resolve here. One thing that seems worth mentioning, however, is that I am not alone in my suspicions about an ought-centric conception of the deliberative mind-set. For instance, Björnsson and Finlay (2010, p.16) suggest that:

> 'agents' fundamental concerns in deliberating are to promote and protect certain values or things that matter to them, and not simply to determine the correct answers to particular ought questions

Going a little further in the same direction, I propose that we drop the concern with modal questions altogether. When practically deliberating, we are aiming to make a decision about our future actions, in such a way that those actions align with that which we value or desire. And when we are *theoretically* deliberating, our fundamental concern is not to determine the correct answer to the question of what to believe. Rather, our fundamental concern is to form beliefs that are true, and perhaps even justified – or so I would suggest, following Christopher Hookway (1999, pp.380-381):

> Deliberation can be carried out well or poorly; and in general, we hope that if our deliberations are carried out well, they will lead to true justified beliefs. In this respect, individual deliberation is analogous to public inquiry in which we attempt to reach the truth through discussion, experimentation and other investigative techniques.

With that, I end this discussion of the circularity worry (noting also that when I speak of practical and theoretical deliberation, I have in mind its solo- and multi-agent forms). I now turn to another methodological issue: that of how, exactly, we are to detect the functions of modals.

3.1.5   Detecting Functions

Toulmin was prescient in his perception of functional unity amongst modals. But Toulmin didn't simply *state* his account of modal function: he also wished to defend it, by inferring modal functions from the kinds of *behaviours* which, given on one's assent to some modal declarative, would typically, and *prima facie* correctly, be apt to elicit certain *normative* judgments from an invested onlooker (for want of a better term, I will call this the *normative data*). I now want to explore this aspect of Toulmin's work, and to provide it with a little more theoretical underpinning.

What justifies these inferences from normative judgments to function? In Chapter 2, I argued that if certain hypotheses about the functions of different conditionals are true, then different conditionals would acquire certain presuppositions, which would themselves explain those judgments of (in)felicity that are provoked by the assertion of these conditionals in various contexts. And in the context of that discussion, I drew on Millikan's (2005) view of function in order to justify this inference to the best explanation. I propose to do the same thing here. Consider, for instance, Toulmin (1958, p.18) on subjective impossibility modals:

> Suppose, for instance, that a man is required to defend some claim he has made; that a counter-suggestion is made to him, and he replies, 'That is not possible'; and yet that he proceeds on the spot to pay close attention to this very suggestion [...] with the air of one who regards the suggestion as entitled to his respectful consideration. If he behaves in such a manner, does he not thereby lay himself open to a charge of inconsistency, or perhaps of frivolity? He *says* that this suggestion is not possible, yet he *treats* it as possible.

The basic Toulminian idea is that if x assents to $<\mathbf{IMP}_sP>$, then x would be judged *inconsistent* or *frivolous* for proceeding to theoretically consider $<P>$. It is from this inconstancy data that Toulmin infers that subjective impossibility modals function to halt the theoretical consideration of their prejacents.[42]

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[42] This inconsistency data – and I do think that we are dealing with *inconsistency* in the case of subjective impossibility modals, not frivolity – may appear to be subject to an important exception, which must be mentioned at the outset. When one is asked to *justify* one's assent to $<\mathbf{IMP}_sP>$, then the only way forward is to look for, present or assess (putative) epistemic reasons for or against believing $<P>$. However, one is not doing so with the intention of resolving uncertainty as to believing $<P>$, but rather with the intention of persuading the interlocutor to one's point of view. So, when we look for, present or assess (putative) epistemic reasons for or against believing $<P>$ in *this* context, we are not theoretically considering $<P>$. This is an important aspect of modalizing quite generally, and it should be born in mind as we proceed to

Millikan's (2005) approach to function can help us to explain why this inference may be reliable. We can imagine that an ancestor to the subjective impossibility modal was reproduced in large part because it prompted people to halt the theoretical consideration of its prejacent. Because this was useful to us in some way, certain pro and con attitudes began to emerge, with regards to this proto-modal: perhaps it became common to call someone *irrational* if they assented to <**PROTO-IMP**$_s$*P*> and then theoretically considered <*P*>. This made it even more likely that assertions of <**PROTO-IMP**$_s$*P*> were reproduced because they stopped the theoretical consideration of <*P*>. Perhaps the norms of judgment then became even further entrenched, and so forth, until we finally reach the modern practise of subjective modalizing.

Now like any form of *IBE*, this kind of reasoning is defeasible. Moreover, there is something very *speculative* about the above genealogy of subjective modalizing. We should not, however, let that deter us. Every inquiry has to begin from somewhere, and this includes taking certain methodologies for granted, at least in the first instance. Perhaps there are other, better ways of detecting functions, as well as other, better conceptions of function, than those which we have drawn on so far. But this is not intended as the final word on the matter, and so it should not be treated as such.[43]

Indeed, as with any form of inquiry, improvements and developments in our theoretical and methodological backdrop can arise organically, as new situations and problems are countered. For example, Toulmin's (1958, p.18) discussion of subjective possibility modals suggests a modest but important distinction amongst linguistic functions:

> if when a particular suggestion comes up he says, 'That is possible' or 'That might be the case', and yet does not thereupon pay any attention whatever to the suggestion, a similar situation arises: once again he must be ready to defend himself against a charge of inconsistency. There will, of course, in suitable cases be a perfectly good defence. He may, for instance, have reason to believe that this particular suggestion is one of the more remote possibilities, which there will be time enough to consider after we have found grounds for dismissing those which at present appear more serious. But, by allowing that a particular suggestion is 'possible' or 'a possibility', he at any rate allows it a claim on his attention in due course: to call something 'possible' and then to ignore it indefinitely without good reason is inconsistent.

Toulmin is suggesting that someone who assents to <**POS**$_s$*P*> is inconsistent unless <*P*> is given

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discuss other modals.

[43] Of course, not every behaviour or action that might attract appraisal or criticism is indicative of function. It is inconsistent to assert the negation of a subjective impossibility modal claim, right after having assented to that very claim. However, blocking the negations of subjective impossibility modal claims is presumably not what the assertions of those claims are *for*. It will be important to bear this general point in mind as we go forward.

some theoretical consideration. This inconsistency data would indicate that subjective possibility modals function to prompt the theoretical consideration of their prejacents. Now, I don't myself think that it is *inconsistent* for someone to assent to <**POS**$_s$*P*> and then to forget about <*P*>: for example, if they believe that *P* is very unlikely, but nonetheless assert that **POS**$_s$*P*, merely in order to challenge another person's assertion that **IMP**$_s$*P*. Still, there does seem to be something objectionably *frivolous* about asserting **POS**$_s$*P*, not in response to contradictory modal assertion, and in a context in which everyone is attempting to answer an open question, but *without* then giving *P* any thought. What, then, should we say about the function of subjective possibility modals?

It seems to me that we must at this stage distinguish between what I will call *negative* and *positive* functions. The negative function of an expression is an effect which constitutively *interferes* with another function. Thus, subjective possibility modals have, as negative functions, interference with subjective impossibility and necessity modals. For instance, if I assert that **IMP**$_s$*P*, and you convince me that **POS**$_s$*P*, then your assertion that **POS**$_s$*P* interfered with the effect that my assertion that **IMP**$_s$*P* functions to produce: halting the theoretical consideration of <*P*>. As for positive functions, they are simply non-negative functions. And in the case of subjective modals, an important positive function is revealed by the frivolity data: the assertion that **POS**$_s$*P* functions to prompt the theoretical consideration of <*P*>.

This contrast is helpful when we think about the function of an impossibility modal. By asserting that **POS**$_s$*P*, <*P*> is blocked from entering into our deliberations about what is the case. But why is *that* useful? Well, in part, it is useful because assertions of <*P*> *themselves* function to prompt certain behaviours, behaviours which are not beneficial if, for instance, *P* is not the case. So, aside from the fact that impossibility modals save us from the wasteful enterprise of theoretically deliberating something that is not the case – this can be considered their positive function – they *also* have the negative function of undercutting the functions of their prejacents.[44]

3.2   The Millian Programme

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[44] It may at this point justly be wondered what distinguishes ordinary impossibility modals from the mere *denial* of their prejacents, and ordinary necessity modals from mere *assertion* of their prejacents. In a sense, that is *the* mystery of impossibility and necessity, recast as a puzzle about function. What distinguishes treating something as false from treating it as impossible, and treating something as true from treating it as necessary? What *extra ingredient* is supplied by the modal judgment? In the next chapter, I will venture a tentative answer to this question on behalf of the Toulminian Programme.

Having motivated interest in the Toulminian Programme, I now turn to the Millian Programme. I call it that out of respect for J. S. Mill (Book III, Chapter v, Section 6), whose important remark – 'The necessary, that which *must* be, means that which will be, whatever supposition we make with regard to other things' – prompted Ian McFetridge (1990, p.150) to begin the Programme in earnest. Since the Millian Programme is far more firmly established than the Toulminian Programme, I will allow myself to ignore its historical development, focusing instead on its detailed implementation in Divers and Elstein (2012) and Divers and González-Varela (2013).

In Section 3.2.1, I will outline the account of belief in A-necessity that is developed in those papers. In so-doing, I will argue against its more complex iteration in Divers and González-Varela (2013), settling for a middle-ground between those accounts. Then, in Section 3.2.2, I will propose a further small change to the resultant proposal, one which is suggested by Divers and Elstein. In so-doing, I make a stronger case for the utility of belief in A-necessity.

3.2.1   *Belief in A-Necessity*

What is the purpose of A-modalizing? The Millian Programme invites us to answer this question by turning to the *beliefs* that our talk of A-necessity functions to co-ordinate: more specifically, by turning to the ways in which such beliefs are properly *manifest*.[45] The manifestation condition in question involves C-supposition.[46] Let us begin with the condition that Divers and Elstein (2012, p.127) argue is, for every rational *x*, both necessary and sufficient for manifesting belief in the A-necessity of *P*:

(AN)   In aiming at stability-preservation, *x* is prepared to add <*P*> as a premise to any
        un-nested C-supposition *S*.

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[45] Why not begin this story, as Divers and Elstein (2012, p.110) do, with McFetridge's (1990) central concern: the *logical* modalities? After all, one might quite reasonably be tempted to join Divers and Elstein in viewing logical necessity as a subspecies *of* A-necessity. However, one might also, again quite reasonably, be tempted to join *Edgington* in characterising logical modalizing as a kind of *subjective* modalizing. In the interest of maximising theoretical neutrality, we will therefore approach A-modal belief without prejudging the issue of its relationship to the logical case.

[46] In Chapter 2, I argued that C-suppositions are suppositions which function to evidentially support weak and strong subjunctive conditionals. Since checking a subjunctive conditional requires the reasoner who supposes its antecedent to anticipate and explore explanatory connections, C-suppositions have a different and more demanding character than A-suppositions. But although my notion of C-supposition is not *identical* to that found in Divers and Elstein (2012) and in Divers and González-Varela (2013), it is similar *enough* that the differences will often go unnoticed.

Two things must immediately be noted about (AN). *Firstly*, the norm of *stability-preservation* is intended to capture one important respect in which rationally manifesting belief in A-necessity is tied to only *certain* C-suppositions, those for which certain norms of thought (justifiably) hold sway. And for a great many C-supposition – though perhaps not for all, such as in the special case of *reductio* proof – proper reasoning from within its scope requires adhering to the norm of stability-preservation: it to *those* C-suppositions that manifesting belief in A-necessity is rationally tied. The norm in question instructs us *not* to add, to our C-supposed and stable $\{<S>\}$, any $<P>$ which would render $\{<S>, <P>\}$ unstable, where the *instability* of a set of propositions consists in its having an arbitrary proposition as a consequence. (Divers and Elstein, 2012, p.116)

Secondly, the requirement that the C-supposition be *un-nested* is absolutely crucial in guarding against the fact that many a believer in the A-necessity of *P* will *not* be prepared to add $<P>$ as a premise to any C-supposition *simpliciter*. Consider, for instance, the Kripkean modalizer who, despite believing in the A-necessity of Socrates' being human, is disposed *not* to add <Socrates is human> as a premise to those C-suppositions which *themselves* occur within the A-supposition of (say) <Socrates is not human>. (Divers and Elstein, 2012, pp.124-125)

The above qualifications insulate (AN) from unproductive criticism. More positively, Divers and Elstein (2012, p.125) argue that (AN) is necessary for manifesting belief in the A-necessity of *P*, via an appeal to the widespread acceptance of (the left-to-right direction of) *Unrestricted Invariance*: *P* is A-necessary **IFF** $\forall S\ (S\ \Box\!\!\to P)$. Their argument, reconstructed, runs as follows:

(I)   For all rational *x*: If *x* believes that it is A-necessary that *P*, then for every *S*, *x* will be prepared to believe $<S\ \Box\!\!\to P>$.

(II)   For all rational *x*: For every *S*, if *x* is prepared to believe $<S\ \Box\!\!\to P>$, then in aiming at stability-preservation, *x* will also be prepared to add $<P>$ as a premise to any un-nested C-supposition *S*.

(III)   Therefore, for all rational *x*: If *x* believes that it is A-necessary that *P*, then in aiming at stability-preservation, *x* is prepared to add $<P>$ as a premise to any un-nested C-supposition *S*.[47]

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[47] This proposed relationship between *Unrestricted Invariance* and C-supposition does give us reason to pause, and to consider its connection to the view, advanced in the previous chapter, that subjunctive conditionals come in two forms. For given my picture of C-supposition as a *directed* activity, one which can have both weak and strong subjunctives as objects, and which is subject to different constraints in accordance with the kind of subjunctive that it is directed towards, it follows that the crucial premiss (II) may well be false, given counterexamplery C-suppositions that are directed towards weak subjunctives only. Now this premise could, of course, be salvaged: for instance, by augmenting *Unrestricted Invariance* so that it covers *all*

Something very much like (AN) is therefore well-motivated, in light of the core idea that drives so much contemporary theorising about A-necessity. The proposal is then further developed in Divers and González-Varela (2013, pp.387-388), where (MAN) replaces (AN), and is advanced alongside (ACQ), a necessary and sufficient *acquisition condition* for belief in the A-necessity of *P*:

(ACQ)   (i) *x* believes that *P* and *x* finds herself [(ii) able to A-suppose that *P* and (iii) unable subsequently to C-suppose that not-*P*].

(MAN)   (i) *x* believes that *P* and (ii) for all *S*, such that *x* finds herself [(ii) able to A-suppose *P* and (iii) subsequently to C-suppose that *S*] *x* is prepared to add <*P*> as a premise in reasoning from the C-supposition that *S*.

Now there are several things to note about (ACQ) and (MAN). The *first* is that they are intended to be *rationally interdependent*: a rational *x* satisfies (ACQ) **IFF** *x* satisfies (MAN). The *second* is that (ACQ) and (MAN) are implicitly restricted to the *proper* acquisition and manifestation of belief in A-necessity, where propriety is partly a matter of these acquisition and manifestations conditions being canonical and, at least in the case of (ACQ), of the best possible kind. The *third* is that (ACQ) and (MAN) are implicitly restricted to the development of suppositions that are (intended to be) *rational*, where this involves the intention to preserve stability, as in Divers and Elstein (2012), but also to avoid *loss of content*: upon supposing <*S*>, our subsequently attending to <*S*> within the scope of that supposition must *not* be confused with our subsequently attending to some <*S*>-seeming counterfeit. In the case of (ACQ), these conditions are (amongst) those that must be met, in order for someone to count as having successfully developed a supposition. If some *x* finds that she cannot develop the C-supposition that ¬*P without* loss of content or instability, then she finds herself unable to develop that supposition. She thereby satisfies condition (iii) in (ACQ). (Divers and González-Varela, 2013, p.371)

It is also noteworthy that (ACQ) and (MAN) involve explicit mention of A-supposition, in condition (ii). This has the effect of guarding against the cases that motivated Divers and Elstein's (2012) appeal to un-nested C-supposition. But it also introduces the need for condition

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subjunctive conditionals, and not just counterfactuals. And in light of the twin facts that many have glossed over the distinction between weak and strong subjunctives when discussing "counterfactuals" and A-necessity, *and* that all subjunctives share an important assertability condition, this augmentation would certainly not be unmotivated. Indeed, so as to simplify inquiry, it is to this revised version of *Unrestricted Invariance* that I will henceforth refer. But I do *not* thereby deny possibility of hidden difficulties for this approach, difficulties which should perhaps prompt the Millian Programme to restrict its attention to the C-suppositions that specifically pertain to strong subjunctives.

(i): for conditions (ii) and (iii) are jointly satisfied by belief in the A-*impossibility* of *P* as well. For example, the Kripkean, who believes in the A-impossibility of Aristotle's not being human, is perfectly able to A-suppose that Aristotle is not human, and within the scope of *that* supposition, is unable to develop the supposition that Aristotle *is* a human. Extensional adequacy is restored once we add to (ACQ) the belief condition (i).

But I am sceptical about condition (ii), as it seems to get the phenomenology of belief acquisition wrong: it strikes me as inaccurate to describe my beliefs in A-necessity as having been reached via (ii). Divers and González-Varela (2013, p.375) do address this concern, suggesting that we may often overlook a conventional attitude of A-supposing that which we believe, unless asked to do otherwise. However, it seems unlikely that some such convention is actually in place. In the first instance, it would appear to be both cognitively redundant *and* demanding. Moreover, in Divers and Elstein (2012, p.122) it is correctly observed that, unlike belief that *P*, one cannot automatically infer *from one's A-supposing that P* that one believes that *P*, within the scope of that supposition. But then given (ACQ), it would follow that someone's properly acquiring belief in the A-necessity of *P* coincides with their being a state in which they may not automatically infer that they believe that *P*. And although these are admittedly not the firmest of grounds for dismissal, introspection appears to suggest otherwise.

It therefore seems to me that condition (ii) is unnecessary, and that (implicitly) appealing to *un-nested* C-suppositions is enough to ward off counterexample. And if condition (ii) goes, then so does some motivation for (i), as the case of A-impossibility is no longer problematic: the Kripkean who believes in the A-impossibility of Aristotle's not being human *is* able to C-suppose that Aristotle is human. Still, Divers and González-Varela (2013, p.376) argue that condition (i) is also important because it easily secures the (essential) result that a rational *x* who believes in the A-necessity of *P* also believes that *P*. Respecting this intuition, I will therefore build (i) into the simpler acquisition and manifestation conditions that I now propose on behalf of the Millian Programme:

(ACQ-S)   (i) *x* believes that *P* and (ii) *x* finds herself unable to C-suppose that not-*P*.

(MAN-S)   (i) *x* believes that *P* and for all *S*, such that *x* finds herself able to C-suppose that *S*, (ii) *x* is prepared to add <*P*> as a premise in reasoning from the C-supposition that *S*.[48]

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[48] It may be worth noting that the difficulty which the Kripkean encounters in C-supposing, but not in A-supposing, that <Socrates is not human>, may well be explained by the more demanding character of the former supposition. For in developing the former, we will often try to have this proposition figure as an *explanation* of something else. This isn't necessary when developing the latter.

3.2.2   A Modest Revision

If we approach the function of A-modalizing via the manifestation conditions of the beliefs that it helps to co-ordinate, it follows that assertions of A-necessity function to coordinate the disposition to add their prejacents as a premise within the scope of any C-supposition whatsoever. And as Divers (2018, p.18) emphasises, some such disposition could be extremely helpful, when we are C-supposing some outlandish <S>. For in those situations, we may encounter the crippling worry that some candidate premise is unsuited for premisory addition within this C-supposition's scope. In these situations, belief in the A-necessity of P is helpful because it allows us to deploy <P>, as a premise or "imaginatively", 'without further ado – without the need to consider the limits of co-tenability (Goodman 1954) imposed by the content or context of the supposition.' (Divers, 2018, p.18)

But I have two concerns with this thought. The first is with regards to the *nature* of the suggested disposition: for without the crucial qualification that <P> be judged *relevant* to the development of the supposition that S, counterexamples to (MAN-S) abound. The second is with regards to its suggested *value*: for whilst it is no doubt true that the disposition in (MAN-S) would be useful in the situations that Divers describes, one might suspect that these situations are not all that common, even when we are C-supposing some far-out propositions.

It would therefore be nice if we could find a counterexample-free manifestation condition for belief in A-necessity, one which can also give belief in A-necessity a more impressive functional profile. And this can indeed be done. Not, as Divers and Elstein (2012, p.115) initially suggest, by understanding the disposition in (MAN-S) as a preparedness *not to resist* the addition of some A-necessary P to any C-supposition whatever. This suggestion is also prone to counterexample: upon C-supposing many a (humdrum *or* extraordinary) <P>, the addition of <1=1> as a *premiss* will often be resisted, on grounds of irrelevancy. We should instead aim to develop Divers and Elstein's (2012, p.115) other suggestion, that the disposition is one to treat the propositions as *permanently available* for premisory addition. And given the terminology of Chapter 2, this would appear to amount to the disposition to treat the propositions as *adducible* within the scope of any C-supposition whatever:

(MAN-S*)   (i) x believes that P and for all S, such that x finds herself able to C-suppose that S, (ii) x treats $<P>$ as adducible from within the scope of the C-supposition that S.[49]

Now just as Divers (2018) says, (MAN-S*) will indeed be useful when our C-suppositions are so radical that we will be disposed to worry about the adducibility of many a proposition. This can happen when, for instance, we are unsure about whether a C-supposed $<S>$ is inconsistent with our certain beliefs. But the discussion in Chapter 2 also shows us how this disposition could be useful in less unusual settings. Consider, for instance, the C-supposition that <Jones was in Carolina at its formation>. We are certain about the following: <Jones was not in South Carolina at its formation>, <Jones was not in North Carolina at its formation>, <North Carolina plus South Carolina is identical with Carolina >. Given *Maintain Consistency*, one proposition must go. But although nothing in *Maintain Consistency* forces us to do so, it seems clear to many of us that <North Carolina plus South Carolina is identical with Carolina> will remain adducible. Why? Because this proposition is a true identity statement, and many of us Kripkeans are therefore happy to call it A-necessary. It is the sort of proposition whose negation we (have found that we) cannot C-suppose. So, if *Maintain Consistency* operates over a set that contains this proposition, we will treat it as exempt from the constraint. The disposition in (MAN-S*) therefore reduces the potential for any C-supposition to decompose into further C-suppositions, when a set of inconsistent propositions is recognised as such. And that ought to be recognised as an advantage no matter the content or context of the C-supposition.

3.3   Bridging the Gap

I have introduced the Toulminian and Millian Programmes. The former has been concerned with the roles of (ordinary) modals in demarcating what gets deliberated about. The latter has been concerned with the roles of (philosophical) modals in demarcating what is adducible within the scope of C-suppositions. I contend that a satisfactory account of the functional (dis)continuities between ordinary and philosophical modals will accommodate the insights of both. However, the full range of possible functions that falls within the remit of the resultant project far exceeds what can be treated here. For this reason, I will focus on an artificially restricted range of modal

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[49] It may be worth noting that the difficulty which the Kripkean encounters in C-supposing, but not in A-supposing, that <Socrates is not human>, may well be explained by the more demanding character of the former supposition. For in developing the former, we will often try to have this proposition figure as an *explanation* of something else. This isn't necessary when developing the latter.

functions as we go forwards. The functions in question, however, are of undeniable importance, for they concern the roles that various modals have in demarcating (i) what is *C-supposed*, and (ii) what is *adduced* within the scope of C-suppositions, where the C-suppositions in question are *directed* towards two significant goals: practical and theoretical deliberation.

In Chapter 2, I followed DeRose (2010) in taking weak subjunctives to be involved in practical deliberation. These conditionals can be used to practically consider the (negations of) their antecedents: in asking ourselves what would happen if we were (not) to do such-and-such, we can begin to weigh the reasons for and against so-acting. But weak subjunctives are evidentially supported by C-suppositions and – whether directly or via this evidential role – they can *themselves* be directed towards the practically consideration of a proposition: supposing that we were to do such-and-such, what would happen? And with respect to *these* goal-directed C-suppositions, we can determine some of the normative data that attaches to some modal, '*M*'.

The first is the normative data which, given assent to $<MP>$, pertains to our practically C-supposing that $(¬)P$. The second is that of the normative data which, given assent to $<MP>$, attaches to our adducing $<P>$ within the scope of the practical C-supposition of some $<Q>$. Would these behaviours be frowned upon? Would they be encouraged? Or is assent to this modal simply irrelevant to what may properly be C-supposed or adduce when practically deliberating? With answers to these questions in hand, we can then follow Toulmin in positing some plausible functions for '*M*': functions which pertain to *those* goal-directed C-suppositions.

In Chapter 2, I also argued that weak subjunctives can be used in reasoning by *IBE*. But in so-using weak subjunctives, we are *theoretically* considering their antecedents: the extent to which the antecedent explains some phenomena becomes relevant to the case that can be made for (dis)believing it. For this reason, C-suppositions can *also* be directed towards the goal of theoretically considering their antecedent. And as before, we can inquire into the normative data that, given our assent to $<MP>$, pertains both to the theoretical C-supposition of $<P>$, and to the adducing of $<P>$ within the scope of the theoretical C-supposition of some other $<Q>$. This will allow us to propose some plausible functions for '*M*', functions which pertain to *these* goal-directed C-suppositions.

In the context of practical and theoretical deliberation, C-supposed propositions are practically or theoretically considered. It will be interesting to see whether and how ordinary and philosophical modals function to circumscribe what is so-considered. It will likewise be interesting to see how and whether these modals function to circumscribe what is adduced, within the scope of these goal-directed C-suppositions. And in focusing on these possible modal functions, we keep to a manageable discussion, while further developing the insights from the Millian and Toulminian

Programmes. But it should again be emphasised that this is emphatically *not* to suggest that modal locutions are *only* useful because of their effects on (these) goal-directed C-suppositions.

For instance, we saw in Chapter 2 that strong subjunctives can be used to evaluate our past actions: that they can help us to recognise and learn from mistakes, to elicit or manage feelings of regret or remorse, and that they figure amongst the processes that apportion blameworthiness and praise. Since C-suppositions can evidentially support strong subjunctives, it follows then we can evaluate our past actions by developing a C-supposition, whose object describes our doing something other than what we really did. And it seems clear to me that the ordinary notion of objective contingency is, in these contexts, of crucial importance in circumscribing the objects of these goal-directed C-suppositions.

Indeed, there are many important topics that our inquiry must leave out. One is the matter of deontic modals. Whilst a functional account of these modals is absolutely essential to the development of Toulmin's (1958) vision of functional unity within ordinary modalizing, it is far beyond the scope of this thesis to consider them here. Deontic modals are also somewhat tangential to this thesis' central preoccupation, which is that of the relationship between ordinary and philosophical *objective* modals. Having said that, I *will* be providing an account of the functions of our ordinary *subjective* modals. This is because an accurate measure of the degree of functional similarity amongst ordinary and philosophical objective modals will be facilitated by our having an impression of the functional profile of ordinary modals *in general.*

The plan is therefore as follows. Focusing on those C-suppositions which are directed towards the practical and theoretical considerations of their supposed contents, we will attempt to determine two sets of normative data, both of which pertain to our assenting to certain modal declaratives: those of ordinary objective and subjective modalizing, and those of A-modalizing. The first set concerns the sorts of normative judgments that it would be reasonable to receive, given ones' assent to some modal declarative, with respect to one's (not) C-supposing (the negation of) its prejacent. The second set concerns the sorts of normative judgments that it would be reasonable to receive, given ones' assent to some modal declarative, with respect to one's (not) adducing its prejacent, within the scope of the C-supposition of a different content. This normative data will then be used to formulate some plausible functional hypotheses for our different modal locutions. And those functional hypotheses will then be used to gauge the degree of functional similarity between ordinary and philosophical objective modals.

Summary

In this chapter, I have outlined two important approaches to the functions of modals. The first is the (neglected) Toulminian Programme, which looks to the roles of ordinary modals in practical and theoretical deliberation. The second is the Millian Programme, which looks to the roles of philosophical modals in our C-suppositions. I also suggested a method for developing the insights of both, in a way that facilitates a comparison of ordinary and philosophical modalizing. In the next chapter, I implement my proposal.

CHAPTER 4

FUNCTIONAL DIFFERENCES

In this chapter, I try to bring together some of the insights of the Toulminian and Millian Programmes. I do so with the overarching aim of illuminating the functional profiles of ordinary and absolute objective modalizing. My central contention will be that in so far as we are concerned with C-suppositions that are directed towards practical and theoretical deliberation, ordinary objective modals, but not A-modals, have significant roles to play.

In Section 1, I will begin by charting the deliberative roles of *mere* assertion and denial, which will serve as crucial contrast classes to assertions of necessity and impossibility. I will argue that assertion and denial are sometimes governed by epistemic standards, and sometimes by practical standards, anticipating the importance of this contrast to our functional theorising. In Section 2, I argue that ordinary subjective modals have an important role to play in our theoretical deliberations, and a less prominent role to play in our practical deliberations. In Section 3, I argue that ordinary objective modals have important roles to play in both. And in Section 4, I argue that A-modals do not have a significant role to play in either. Finally, in Section 5, I will summarise the functional hypotheses so far considered, before briefly discussing the relevance, to the Ascetic Modalizer, of the functional differences between ordinary and absolute objective modals.

4.1 Assertion and Denial

4.1.1 *The Practical and Theoretical Viewpoints*

Something happens. Does it matter whether this was contingent or necessary? Another thing doesn't. Do we stand to gain anything special from knowing whether it was impossible or contingent? An account of modal function should light the way towards a satisfactory answer to these questions: modal locutions are far too widespread and entrenched for the assertion of *P*'s necessity to contribute nothing more than the assertion that *P*; *mutatis mutandis* for the assertion of *P*'s impossibility and the denial of *P*.

But what *is* that something more? And how does it relate to the function of *contingency* claims? In this chapter, I will venture some answers to these questions, as they pertain to subjective, objective, and A-modalizing.

My primary goal is, of course, to ascertain the degree of functional similarity amongst the latter two species of modals. But for this reason, subjective modalizing must also be investigated: for when we eventually reconsider the figure of the Ascetic Modalizer – who suspects that ordinary and philosophical "modals" are so functionally disparate that they should not both be considered *modals* – the degree of functional similarity amongst ordinary modals becomes dialectically important. After all, the more functionally homogenous this domain, the harder it will be to convince the Ascetic Modalizer to expand her modal lexicon.

Our investigation will centre on the roles that modals have in structuring goal-directed C-suppositions. These C-suppositions are goal-directed in the specific sense that their development is supposed to help an agent to gauge the reasons for believing or doing what the C-supposed content describes. They therefore occur within the contexts of theoretical and practical deliberations. And in order to inquire into the functional differences between (say) asserting that *P* and asserting that *P* is necessary *in those contexts*, we will need to compare the normative data that pertains to assenting to *P* and to assenting to the necessity of *P in those contexts.*[50]

That in turn requires us to fix our ideas about the sorts of *norms* that operate upon assertion within our practical and theoretical deliberations. And it is tempting to think that assertion and denial are governed by entirely different norms, depending on whether the context is theoretical or practical. After all, in a theoretical context, our *beliefs* are sensitive to epistemic reasons for belief, such as evidence. This is even the case when we are forming beliefs about our own future actions. In a theoretical context, we may lean on what *evidence* we have for believing that *P*, where <*P*> describes our doing such-and-such: for example, on the fact that we sometimes don't do what we set out to do. In *practical* contexts, however, our beliefs about what we will do are sensitive to the reasons that we can discern *for* so-acting. In such contexts, we do not seek to predict our own actions: we seek to resolve to act in certain ways.[51]

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[50] This is very important, because at least in so far as (say) ordinary necessity modals go, there is no *semantico-conceptual* or *logical* obstacle to C-supposing some *P* judged necessary. However, there is something marked about doing so when the C-suppositions are directed towards the theoretical considerations of the supposed content, for instance. And that is because, as Toulmin (1958) showed, there is something marked about theoretically considering a necessity modal's prejacent. C-suppositions therefore inherit the normative data which pertain to the broader activity towards which they are directed.

[51] As Yang Liu and Huw Price (2019) show, we can accept some such thought without denying that there is a sense in which we can assign credences to our own actions.

By way of illustration: I am practically deliberating about whether to go on my usual run. Will I complete it today, or will I not? It is horribly cold and wet and windy outside. I know that every time I've completed this run, I've felt much better, no matter the weather. I also know that, in the vast majority of cases, I had quickly abandoned this run, or had not even attempted it, *because* the weather had been this uninviting, and *even though* I knew that it would likely have beneficial effects. In this situation, I weigh the practical reasons for and against running. On the one hand, it would make me feel good. On the other, it is difficult. But I nonetheless resolve, quite sensibly, to complete my run: the pros outweigh the cons.

The situation is different form the onlooker's perspective. Will I complete my run today, or will I not? In this situation, it seems that the onlooker can safely ignore the practical reason that I have for running. (This is especially so if the onlooker knows that I had considered this practical reason in all similar past deliberations.) The onlooker can just predict what I will do on the basis of my terrible track record. He will reason that, since I often don't complete my run in this weather, there is ample evidence that, *ceteris paribus*, I will do so again.

Notice how the very same fact – my often not running in such weather – is interpreted differently, depending on which perspective we take. From the theoretical perspective, it is taken as a good epistemic reason to believe that I will not run. From the practical perspective, however, it would be really strange for me to reason as follows: since I often don't do my run in this weather, I will not do so today. In so-reasoning, there would be a sense in which I am "giving up" on my own agency.[52] However, this fact is not *irrelevant* to my practical deliberation. It can instead be approached as evidence that doing my run in his weather is *difficult*, where the difficulty of an action is, quite plausibly, the sort of thing which can act as a practical reason *not* do resolve to do it.[53] But it is only one practical reason amongst many, and that is why, whilst it is rational for the onlooker to believe that I won't complete my run, it is also rational (or so I would argue) for me to resolve do so.

In such cases, theoretical and practical rationality seem to pull in opposite directions. This is a deep puzzle, which I cannot address here. However, *prima facie* clashes between different normative considerations are not uncommon. It can be epistemically irrational, but practically useful, to deceive oneself. It can be epistemically rational, but ethically impermissible, to perform animal testing. Nevertheless, I understand the impulse to downplay the differences between the practical and theoretical standpoints. Mightn't it be, for instance, that practical reasons can *also* act

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[52] This idea dates back at least to Jean-Paul Sartre (1969). Berislav Marušić (2015, pp.122-174) develops it in a very sophisticated way.

[53] This insight is essentially Marušić's (2015, pp.122-174)

as theoretical reasons? Mightn't the fact that the reason for running outweighs the reason for not running constitute an epistemic reason: a reason to believe that I will run?

The idea that practical deliberation is just a special kind of theoretical deliberation, perhaps one that has an extra motivational component, undoubtedly has its attractions. I do not have a decisive objection against it – and, anyway, so long as *some* important difference divides these cases, what follows will remain largely unaffected.[54] So, regardless of how, exactly, we frame these cases, it is presumably of great importance that we can take these different perspectives on our actions. That is certainly what I will assume throughout this chapter.

But how do these perspectives interact with the fact that assertion is a *norm-governed activity*: with the fact that when it comes to assertion, not just anything goes? Is assertion governed by a broadly evidential standard when we are theoretically deliberating, and a broadly practical standard when we are practically deliberating? I think that this is exactly right. However, I also think that assertion is governed by exactly the same *norm* in practical and theoretical contexts, a norm which can nonetheless be respected differently, depending on the standards which operate in that context.[55] And that is because I take assertion to be subject to a norm of *certainty*, where certainty is sometimes normatively constrained by our evidence, and sometimes by our practical reasons.

Now Beddor (2020a, 2020b) has argued that assertion is governed by a norm of *subjective certainty* – assert that *P* only if you are subjectively certain that *P* – and by a norm of *epistemic certainty*: assert that *P* only if you are epistemically certain that *P*. Beddor has also argued that these species of certainty are linked by a normative biconditional similar to the following:

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[54] I do have a tentative argument against this view, however. I approach it by making some controversial – but not, I think, unmotivated – assumptions. *First*, that treating something as a normative reason for belief or action is treating is as something that *explains* why there is *reason* for belief or action – this is Daniel Fogal's (2016) idea. *Second*, that explanations are *cognitive* phenomena: there are no explanatory relations "out there". *Third*, that which explanation it is appropriate to give is dependent upon the 'why'-question at issue. *Fourth*, that in practical deliberation, the 'why'-question at issue is 'will I (or should I) *F*?' In theoretical deliberation, it is 'what will I (or should I) think about *x*?' It follows that, in the practical context, to treat something as a reason for action is to use it to explain why there is reason for that action; it is *not* to use it to explain why there is reason to believe that we will so-act, simply because that is not the question under discussion. (Which is not do deny that we do not form beliefs in light of our practical deliberations.)

[55] In this respect, my view is different to that of Berislav Marušić's (2015, pp.150-155), who argues that assertions which express theoretical beliefs are subject to the *knowledge norm* of assertion – assert *P* only if you know that *P* – whereas assertions which express *practical beliefs* – beliefs about one's own actions, which 'are formed in light of, and made rational by' the practical reasons for so-acting – are not: the norm for these assertions is instead to assert that we will *F* only if we should *F*. It is beyond the scope of this thesis to address Marušić's extremely subtle and interesting discussion of these and related matters, a discussion that is certainly relevant to this thesis' concern. However, it seems to me as though Marušić would welcome what I am about to say about assertion, as it can accommodate his insights without resorting to a disjunctive norm of assertion.

Epistemic Certainty – *P* is epistemically certain for *s* **IFF** it is epistemically rational for *s* to be psychologically certain that *P*.[56]

I agree that assertion is governed by a norm of psychological certainty. But I don't think that it is governed by a norm of *epistemic* certainty. Rather, I think that it is governed by a norm of *proper certainty* – assert that *P* only if it you are properly certain that *P* – where proper certainty can sometimes be epistemic, and sometimes *practical*:

Practical Certainty – *P* is practically certain for *s* **IFF** it is practically rational for *s* to be psychologically certain that *P*.

When will it be practically rational for *s* to be psychologically certain that *P*? Although I don't have a settled answer to this question, the basic thought must be that (i) <*P*> describes the *s*'s doing such-and-such, and that (ii) it is rational for *s* to such-and-such. I have even less to say about the difficult question of epistemic certainty. It would certainly *not* be epistemically rational for *s* to be psychologically certain that *P*, if *s*'s evidence for *P* is weak, or if they have some evidence to the contrary. It would also be epistemically irrational for *s* to be psychologically certain that *P* if they did not know that *P*. But the details do not matter so much for our purposes: I think that we all have an intuitive grasp on when psychological certainty is epistemically rational, and on when it is not. That will be enough to carry us through this discussion.

On my view, then, assertion is governed by a norm of proper certainty. However, proper certainty comes in two different flavours, epistemic and practical. Meeting this norm of assertion therefore requires either epistemic or practical certainty, depending on the kind of proper certainty that we ought to be aiming for. For this reason, in deliberative contexts, assertion requires the kind of proper certainty that is appropriate to the *nature* of our deliberation. Thus, when we are theoretically deliberating whether *P*, we are looking to resolve our uncertainty as to whether *P* by weighing the epistemic reasons for believing that *P*. In this context, asserting that *P* therefore requires epistemic (and psychological) certainty that *P*. But when we are practically deliberating whether to *F*, we are looking to resolve our uncertainty as to whether to *F* by weighing the practical

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[56] Beddor actually appeals to '*P* is epistemically certain for *s* **IFF** *s* ought to be psychologically certain that *P*' in his (2020a), and to '*P* is epistemically certain for *s* **IFF** *s*'s epistemic position renders it permissible for *s* to be psychologically certain that *P*' in his (2020b). I have opted for a formulation that stays true to the spirit of these proposals, but which does not presuppose a grasp of deontic modal locutions.

reasons for so-acting. In this context, asserting that we will F therefore requires practical (and psychological) certainty that we will F.[57]

4.1.2 Normative Data: Non-Modal Assent and Denial

Our investigation is into the roles of ordinary and philosophical modals within our practical and theoretical deliberations. Our approach will put a good deal of weight on the differences between asserting that P and asserting its necessity, and on the differences between denying that P and asserting its impossibility. It will therefore be helpful to end this section with a brief rundown of the normative data, as they pertain to assent and denial. This will allow us to gauge the effects that assertion and denial have on our deliberative practises.

Assent To	Theoretical Deliberation		Practical Deliberation	
	C-Suppose $(\neg)P$	Adduce P	C-Suppose $(\neg)P$	Adduce P
P	Marked	Unmarked	Marked	Unmarked
$\neg P$	Marked	Marked	Marked	Marked

Table 1 - Non-Modal Assent

Table 1 records the normative data that pertains to assenting or denying a non-modal proposition (denying P is treated as equivalent to assenting to $\neg P$). We note three of its properties at the outset. *Firstly*, the locutions 'marked' and 'unmarked' are not intended to register *sui generis* kinds of normative statuses, but rather as umbrella terms for all manner of (respectively) negative and neutral normative statuses. For example, something could be marked because irrational, or trivialising, or inconsistent, and unmarked because it fails to be irrational, trivialising, and inconsistent. *Secondly*, positive normative statuses, which are not represented in the above, will be recorded with 'marked $\neg$', to be read as 'marked not to'. *Thirdly*, the supposing and adducing columns pertain to distinct episodes of theoretical deliberation and practical deliberation. In particular, when we ask whether assenting to $<P>$ is consistent with adducing $<P>$ within the

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[57] The fact that assertion goes by different standards in different deliberative contexts will be extremely important to the issue of modal function. It should be remembered, however, that not *every* assertion in (say) the practical context must be accompanied by practical certainty. Plausibly, those which are not about our own future actions are subject to epistemic standards. And in theoretical contexts, there may be *moral* reasons not to let assertions about our own future actions go with an epistemic standard, because there is something problematic about merely predicting one's own actions. These caveats will have to be borne in mind as we begin to record the normative data that we need.

scope of *a* C-supposition, we are *not* asking about the consistency of adducing *<P>* within the scope of the supposition that (¬)*P*. Rather, we are asking about whether *<P>* might be adducible within the scope of the C-supposition of a different proposition.

Now in the theoretical and practical cases both, C-supposing that (¬)*P* is inconsistent with assenting to (¬)*P*. When *<P>* or *<¬P>* were asserted, the inconsistency is straightforwardly explained by the fact that these assertions require certainty that *P* or that ¬*P*. But being certain that (¬)*P* is inconsistent with one's sincerely C-supposing (¬)*P*, with the aim of theoretically or practically considering (¬)*P*. After all, theoretically or practically considering (¬)*P* requires psychological uncertainty that *P*.[58]

The normative data that pertains to *adducing* propositions within the scope of these goal-directed C-suppositions is a little more delicate. In Chapter 2, I argued that within the scope of any C-supposition, the set of adducible propositions is a subset of those propositions which we are certain to be true. For this reason, assenting to ¬*P* is inconsistent with adducing *<P>*. And at first blush, whether adducing *<P>* is consistent with assenting to *P* will depend upon whether *<P>* is ousted by constraints on adducible propositions beyond those imposed by the requirement of psychological certainty. In particular, one might think that whether it is proper to adduce *<P>* within the scope of these C-suppositions depends upon whether *<P>* has been ousted by the all-important *Maintain Consistency*. Accordingly, it would seem to follow that, given one's assent to *P*, adducing *<P>* is neither marked nor unmarked *simpliciter*: that assenting to *P* carries no invariable commitment with respect to adducing *<P>* within the scope of these C-suppositions. But against this natural thought, I want to argue that when C-suppositions are directed towards practical and theoretical deliberation, adducing *<P>* is always *unmarked* given assent to *<P>*.

Suppose that we are practically or theoretically considering some *<Q>*, about which we are *ipso facto* uncertain. Suppose also that we have assented to *P* and that, because we were sincere, we are psychologically certain that *P*. But now imagine that in C-supposing that *Q*, we find that *<P>* is inconsistent with *<Q>*. We have at this point reached a fork in the road. *On the one hand*, we might become certain that ¬*Q*, in which case our goal-directed C-supposition breaks down. In this scenario, it is therefore *impossible* for us to adduce *<P>* within the scope of the very C-supposition that we started out with. So, there *is* no normative data which pertains to our adducing *<P>*, given assent to *<P>*, within the scope of *that* C-supposition. *On the other hand*, we might become uncertain that *<P>*, in which case the requirement that adducible propositions be

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[58] It is less obvious why *assenting* to these assertions has the same normative profile. Perhaps this is simply because assent is subject to the same norms as assertion. However, I will not assume that this is the case as we go forward, leaving unexplained the fact that assent seems to pattern like assertion in the scenarios that we will focus on.

psychological certainties rules against our adducing *<P>* within the scope of the C-supposition. But that does not mean that adducing *<P>* is marked *given our assent to <P>*, for in this new context we are no longer *entitled* to assent to *<P>*. As soon as we become uncertain that *<P>*, we are no longer bound by our earlier act of assent. So, again, there is no normative data that pertains to our adducing *<P>*, given *assent* to *<P>*, within the scope of the C-supposition.[59]

It is absolutely essential to bear in mind that the above is due to the *deliberative roles* of these C-suppositions. When we C-suppose some *<Q>* for an entirely different purpose – say, that of evaluating our past actions – adducing *<P>* is not always unmarked, nor always marked, given assent to *<P>*. In *those* contexts, whether it is proper to adduce a proposition to which we have assented is partly a matter of whether or not *Maintain Consistency* has ousted that proposition. But when practical or theoretical deliberation is in the offing, finding logical inconsistency either causes the C-supposition to break down, or creates a situation in which we are no longer bound to our assent. In either case, assenting to *P* is never inconsistent with adducing *<P>* within the scope of the goal-directed C-supposition.

With all that being said, it is time to begin our investigation into the deliberative functions of our modal locutions. I will warm up to the main event – ordinary objective modalizing and A-modalizing – by first considering ordinary subjective modalizing. In all cases, I will begin by determining the normative data that pertains to deliberative C-suppositions, before using this data to formulate functional hypotheses. I will do so for theoretical C-suppositions, and then for practical C-suppositions.

4.2   Ordinary Subjectives

4.2.1   *Theoretical Deliberation*

Assenting to **NEC**$_s$*P* is inconsistent with the theoretical consideration of (the negation of) its prejacent. This is nicely illustrated by an example of Matthew Mandelkern's (2019, p.239):

(1)   Detective A: The gardener must be the murderer.

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[59] Some may at this point protest. As we saw in Chapter 3, there are sometimes cases in which we are uncertain about whether our supposed *<Q>* is inconsistent with some certain *<P>*. And in those situations, wouldn't we choose to err on the side of caution, as Divers (2018) suggests, removing *<P>* from the set of adducible propositions? That is indeed correct, but it doesn't threaten the argument given here. For upon becoming uncertain about the consistency of {*<P>*, *<Q>*}, it seems to me that we are required to become uncertain that *P*: for in this situation, we are uncertain that *Q and* uncertain that *P&Q*. But then if we become uncertain that *P*, we are no longer bound by our prior assent.

Detective B:　　?? I concur. Let's bring him and the butler in to see if we can pin down which of them actually is the murderer.

The inconsistency is manifest in oddity of assenting to $\mathbf{NEC}_s P$ and theoretically C-supposing $(\neg)P$:

(2)　　X:　　We've looked everywhere else. It must be in the garage.

　　　　Y:　　a. ?? I agree. And suppose that that were true...

　　　　　　　b. ?? I agree. But suppose that that were true...

The same goes for assenting to $\mathbf{IMP}_s P$. However, assenting to $\mathbf{POS}_s P$ is perfectly consistent:

(3)　　X:　　It might be in the garage.

　　　　Y:　　a. I agree. And suppose that that were true...

　　　　　　　b. I agree. But suppose that that were true...

Indeed, after assenting to $\mathbf{POS}_s P$, there is something frivolous about *not* theoretically considering (the negation of) its prejacent. This was already observed by Toulmin (1958).

　　　Assenting to $\mathbf{NEC}_s P$ is also consistent with adducing its prejacent within the scope of a theoretical C-supposition. This is not the case with assent to $\mathbf{IMP}_s P$ or $\mathbf{POS}_s P$:

(4)　　X: Oh no! It must be in the garage.

　　　　Y: And suppose that James were to go in there...

　　　　X: Then since it's in the garage, it would eat James!

(5)　　X: Oh phew. It can't be in the garage.

　　　　Y: And suppose that James were to go in there...

　　　　X: ?? Then since it's in the garage, it would eat James!

(6)　　X: Oh my! It might be in the garage.

　　　　Y: And suppose that James were to go in there...

　　　　X: ?? Then since it's in the garage, it would eat James!

The normative data for assenting to **NEC**_S*P* and to **IMP**_S*P* are therefore identical to those which are found for assent to *P* and to ¬*P*. *Table 2* records this with highlighted rows for **NEC**_S*P* and **IMP**_S*P*, along with data for assent to **POS**_S*P*:[60]

Assent To	Theoretical Deliberation	
	C-Suppose (¬)*P*	Adduce *P*
NEC_S *P*	Marked	Unmarked
POS_S*P*	Marked ¬	Marked
IMP_S*P*	Marked	Marked

Table 2 - Subjective Modals: Theoretical Deliberation

Does this tell us that necessity and impossibility modals function just like the assertion and denial of their prejacents? Yes and no: for there is more to function than normative data.

I have been working under the assumption that assertion is subject to norms of psychological and proper certainty. In a theoretical context, the latter norm instructs us not to assert that which is epistemically uncertain. I think that this is correct, and that it helps us to see what is distinctive about assertions of subjective necessity and impossibility. The crucial point is that theoretical assertion is subject to *demanding* epistemic standards.

Now I think that it is usually a good thing that theoretical assertion is subject to these demanding norms. Even if these norms are routinely flouted, they motivate us to assert sensibly. But sometimes, attempting to abide by these norms can be damaging. Sometimes, we do not feel psychologically certain that *P*, even though we cannot see how it could be that *P* is false. In these circumstances, we may also feel uncertain about the level of psychological certainty that it is epistemically rational for us to have: we are not sure that *P* is epistemically certain for us. But we don't always have the luxury of further inquiring into some proposition about which we are uncertain. Likewise, we are sometimes pressed to rely on propositions which we feel like we cannot assert.

For instance, Brett Sherman (2018, p.830) discusses situations in which, after reasoning by elimination, we remain uncertain about the remaining <*P*>. This can happen if we are unsure about whether the standards that have ruled out the other propositions should also rule out <*P*>. It can also happen if we worry that our initial disjunction was not expansive enough. And it is easy

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[60] Throughout this chapter, dotted lines indicate that the circumscribed normative data is functionally *de jure.*

to imagine scenarios such as these, in which it would be against our best interests to further C-suppose that $(\neg)P$, or not to adduce $<P>$ when C-supposing that Q.

It is exactly for this reason that we have assertions of subjective necessity. In effect, the subjective necessity operators allow us to lower – or, better, to *circumvent* – the epistemic standards of assertion, so that propositions like the above can sneak through. These are propositions which have been caught in limbo: we do not quite have enough psychological or epistemic certainty to properly assert them in a theoretical context, but no plausible alternatives suggest themselves to us. The subjective impossibility operator does exactly the same for denial. These operators allow us to close deliberation, even though it has not reached its natural stopping point: we are still unsure about their prejacents. And they allow us to adduce propositions which are not usually adducible, because we are not certain that they are true.[61]

Consider an example. We are trying to determine who ate the cookies. Could it be James? No, he doesn't like chocolate. Randa then? No, she wasn't here yesterday. Only Nathan remains. But we do not make such accusations lightly. Some doubt remains in our minds. Although we can't think of another possible suspect, there's still the sense that we might have overlooked a crucial detail, or that we have been misled. In this situation, it seems appropriate for us to say that Nathan *must* have eaten them.

Notice how these functional hypotheses nicely explain an observation of Mandelkern's (2019, p.228):

> *Support* – Assertions of subjective necessity are degraded unless an argument for
> believing its prejacent is endorsed by the speaker and salient to the audience.

Given the functional hypotheses, we would expect some such norm to arise, so that subjective necessity and impossibility modals are not exploited. These norms arose as safeguards against people prefixing any old claim with a subjective necessity or impossibility modal, so that they might simply evade, without any consideration for their importance, the usual epistemic norms on assertion.

As for subjective possibility modals, I cannot much improve upon Toulmin's (1958) initial hypothesis. Their negative function is to allow people to theoretically consider (and hence C-

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[61] This idea aligns nicely with Lassiter's (2016) proposal that subjective modals can be given a kind of threshold semantics. Suppose that epistemic certainty can be measured by assigning it a number between 0 and 1 inclusive. We can now say that asserting P requires being certain that P to degree 1, and that asserting *must* P requires being certain that P to a degree that is equal to or greater than x, where x is less than 1 but high enough. If we accept that the subjective *must* and *might* are duals, then asserting *might* P requires being certain that P to a degree that is greater than $(1-x)$.

suppose) their prejacents. Their positive function is to act as prompts for the theoretical consideration (and hence C-supposition) of their prejacents. But they also have positive and negative functions with respect to what we can adduce when theoretically C-supposing some *<Q>*. In particular, subjective possibility modals function negatively to stop us from adducing their prejacents. And they function positively by prompting us to decompose our C-supposition into two: one in which the prejacent is C-supposed along with *<Q>*, the other in which the *negation* of the prejacent is C-supposed along with *<Q>*.

4.2.2   Practical Deliberation

Practically C-Supposing the prejacent of a subjective modal is always marked. I will build up to this conclusion by first appealing to *Support*. Imagine that we are practically deliberating whether *P*, where *<P>* describes our doing such-and-such. In this context, an argument for believing that *P* just is an argument *for P*. It is an argument that appeals to the *practical reasons* that are in favour of *P*. It would therefore appear to follow that, in a practical context, assertions that $\mathbf{NEC}_s P$ would be sensitive to practical argument for *P*. But that is not what we find. Indeed, even when a practical argument for its prejacent is salient, it is difficult to get a subjective reading from a necessity modal:

(7)   I am perfectly able to stay at home or to go out. I have no moral or legal or
         prudential obligation to do either. But since I feel a slight preference for having a
         cup of tea, I must go out.

The *de re* 'must' in (7) reads like a claim of deontic obligation or objective necessity, one that seems inconsistent with the opening monologue. However, going syntactically *de dicto* can force a subjective reading:

(8)   I am perfectly able to stay at home or to go out. I have no moral or legal or
         prudential obligation to do either. But since I feel a slight preference for having a
         cup of tea, it must be the case that I will go out.

But that modal claim seems false, or at least infelicitous. Someone who hears (8) could, quite reasonably I think, deny the modal claim, on the grounds that weak preferences for actions don't generally constitute good evidence for those actions being carried out. More likely, they would simply find the modal out of place. Notice, however, that asserting the bare prejacent is not

similarly perplexing:

(9)   I am perfectly able to stay at home or to go out. I have no moral or legal or prudential obligation to do either. But since I feel a slight preference for having a cup of tea, I will go out.

The assertion that I will go out is apt in this practical context. Moreover, challenging it on the grounds that weak preferences for actions aren't good evidence for those actions just misses the point: in the absence of countervailing reasons, weak preferences are perfectly acceptable practical reasons for action.

This disparity can be explained if, whenever a necessity modal describes our future actions, the *only* reasons that are relevant to the modal's assertability are epistemic reasons to believe *that* we will act in some way; this amounts to a strengthening of *Support*. In other words, subjective necessity modals are only sensitive to epistemic standards on belief and assertion. And when we make explicit the (epistemic) argument for believing their prejacents, their oddness in the practical context stands out even more:

(10)   What shall we do tonight?
        a.   ?? Well, we sometimes go out, and sometimes don't. So, we might go out.
        b.   ?? Well, since we always go out, it must be the case that we will go out.

Subjective modals introducing a standard of assertion and belief that is at odds with the present deliberative context. The subjective modal invites us to predict our future behaviour, when we are trying to make a decision about what to do. But then the preconditions for making assertions of subjective necessity modals are incompatible with the preconditions for practically considering, and hence C-supposing, their prejacents.

However, these pre-conditions are *not* inconsistent with adducing *<P>* when practically considering *Q*. Indeed, assenting to **NEC**$_s$*P* is even consistent with treating *P* as a *non-hypothetical* reason for action, as another example of Mandelkern's (2019, p.239) demonstrates:

(11)   Detective A: The gardener must be the murderer.
        Detective B: I concur. Let's arrest him.

By contrast, adducing *<P>* within the scope of the practical supposition of *<Q>* is inconsistent

with assenting to **IMP**$_s$*P* or to **POS**$_s$*P*:

(12) a. It must be in the garage. And suppose that we were to go in there. Then since it
would be in there with us, it would surely attack us.

b. ?? It might be in the garage. And suppose that we were to go in there. Then
since it would be in there with us, it would surely attack us.

c. ?? It can't be in the garage. And suppose that we were to go in there. Then since
it would be in there with us, it would surely attack us.

So, just as in theoretical contexts, the normative data for assent to **NEC**$_s$*P* and to **IMP**$_s$*P* are
identical to those for assent to *P* and to ¬*P*. And although the practical and theoretical cases also
boast the same *adducing* data with respect to **POS**$_s$*P*, there *is* a difference in the normative data
which pertains to our C-supposing that which we have judged to be subjectively possible:

Assent To	Practical Deliberation	
	C-Suppose (¬)*P*	Adduce *P*
NEC$_s$ *P*	Marked	Unmarked
POS$_s$*P*	Marked	Marked
IMP$_s$*P*	Marked	Marked

Table 3 - Subjective Modals: Practical Deliberation

The most significant difference between the practical and theoretical cases, however, is that in so-
far as *practical* C-supposition goes, the normative data are only significant when they pertain to
what it is that we *adduce*, and not to what it is that we *suppose*. Thus, when we practically C-suppose
that *Q*, asserting that **NEC**$_s$*P* still works to circumvent the epistemic standards that operate over
what is assertable and assentable in this context.[62] But the normative data which pertains to what
we C-suppose is irrelevant to the functions of these modals. Why? Because the data is explained
by their being a clash between the *preconditions* for making subjective modal assertions, and those
for practically C-supposing their prejacents. Thus, we do not fail to practically C-suppose that *P*
because we have asserted that **NEC**$_s$*P*. Rather, we do not practically C-suppose that *P* for the same
reason that we assert that **NEC**$_s$*P*: we are using epistemic reasons to *predict* our own behaviour. A

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[62] Note that Beddor (2020b) has produced independent arguments for epistemic and psychological certainty
being the norm of relying on a proposition when practically deliberating.

raison d'être of subjective modals is therefore not that of circumscribing what we practically consider.

4.3   Ordinary Objectives

4.3.1   *Theoretical Deliberation*

Determining the normative data which pertain to objective modals is a lot easier than determining those which pertain to their subjective cousins. This is because we treat objective necessity and impossibility claims as *alethic*: something's being objectively necessary means that it happens, something's being objectively impossibly means that it won't.[63] For this reason, asserting that P is objectively necessary or impossible boasts the same normative data as asserting or denying that P, both with respect to the theoretical C-supposition that $(\neg)P$, and with respect to adducing <P> within the scope of a theoretical C-supposition. And I also think that assertions of objective contingency can be somewhat frivolous, if we do not theoretically consider their prejacents. The normative data therefore stand like so:[64]

Assent To	Theoretical Deliberation	
	C-Suppose $(\neg)P$	Adduce P
NECoP	Marked	Unmarked
CONoP	Marked $\neg$	Marked
IMPoP	Marked	Marked

Table 4 - Objective Modals: Theoretical Deliberation

But what does this data mean for the theoretical functions of objective modals? Let us begin with their role in demarcating what gets theoretically C-supposed.

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[63] Do we not treat subjective modals as alethic? I will argue in the following chapter that we do not.

[64] Partly for want of space, and partly to focus on the more interesting deliberative cases, the ordinary objective modal claims that we will investigate will always be such that the time at which P obtains is *later* than the time at which P has whatever modal status the claim says it does. For instance, we will be looking at claims which tell us that, right now, it is impossible for us to travel to Mars, or that, at noon, it was necessary for the sun to set at dusk. We will not be concerned with claims to the effect that, right now, the past is necessary. Moreover, when it comes to ordinary objective contingency modals, I am only interested in the data that pertains to their assent in situations where we are uncertain about their prejacents: where the *most* that we know about <P>'s truth-value is that it is objectively contingent.

It seems to me that there is a large asymmetry here between the past and the future. When the prejacent of an objective modal concerns the past, it does not seem to matter very much whether it was necessary, contingent, or impossible. If we assent to necessity or impossibility, we thereby assent to truth or falsity. Hence, theoretical C-suppositions are ruled out. If we assent to contingency, theoretical C-suppositions are ruled in. And the same is, of course, true of those prejacents which concern the future. *However*, there is an important difference between past and future contingents: we are sometimes epistemically certain of the former, but we are arguably *never* epistemically certain of the latter. Here is A. N. Prior (1968, pp.36-36):

> But while contingent futures [...] can in this way be correctly or incorrectly guessed, I cannot see in what way they can be 'known'; or to put it another way, I cannot see in what way the alleged knowledge, even if it were God's, could be more than correct guessing. For there could be *ex hypothesi* nothing that could *make* it knowledge, no present *ground* for the guesses' correctness which a specially penetrating person might perceive.

Now this thought inhabits a sophisticated discussion about omniscience, one which is sensitive to the sometimes highly counterintuitive debates about the metaphysics and semantics of future contingents. But it seems to me that Prior's remark can be taken to expresses an intuitive and powerful idea *regardless* of one's commitments (or lack thereof) about the nature of future contingents.

I consider it a datum that we take ourselves to have more *a posteriori* knowledge about the past than we do about the future. History is not a foolish enterprise when, but only when, it concerns itself with what has gone before. We do, of course, make *predictions* about the future. However, the nature of prediction further supports the belief that we feel less epistemic certainty about the future. As Fabrizio Cariani (2020) convincingly argues, there are counterexamples to the popular and intuitive view that prediction invariably concerns the future. However, the future is not wholly irrelevant to prediction: predicting that *P* is a speech-act that seems to be sensitive to our feeling that *P* is not *yet* epistemically settled, but that future evidence will (likely) settle the question of whether *P*. But notice what this suggests about our epistemic self-conception. When we think about prediction, it is almost irresistible to think of them as future-directed. Plausibly, this is because *most* predictions are about the future. Intuitively – to me, at least – this is because we are less likely to feel that any given future-directed proposition is presently epistemically settled, when compared to a given past-directed one.

Why should this be the case? Well, we get *a posteriori* knowledge via our sense experience. We see or hear or feel or smell or taste that something is so-and-so. We hold the corresponding belief in our memory, from which it can be retrieved. Others can then acquire it through our

testimony. But that process only ever takes us from the past to the present. We never literally *see* what will be. We don't remember the future. We don't gossip about tomorrow's events. The pathways to *a posteriori* knowledge don't reach back to us from beyond the temporal horizon. We take ourselves to be *responsive* to the world, and this responsiveness goes forwards in time.

I think that this is why we feel less certain about the future than we do about the past. And on the plausible assumption that retro-causation never occurs, this thought is consistent with a causal theory of *a posteriori* knowledge. That is perhaps not the only way of fleshing out the intuitive idea that *a posteriori* knowledge requires responsiveness, and that we are not responsive to the future. But it is a plausible way to do so, and I'll take it in stride going forward.

This picture of ourselves does not have to be true for it to be widespread and influential. Indeed, it does not have to be true for it to be useful. But it also seems to me that remaining epistemically uncertain about *every* future-directed *a posteriori* proposition could be a hindrance. Thankfully, then, we have concepts which allow us to mark exceptions to this epistemological self-image. When we take ourselves to be epistemically certain that it *was* objectively necessary or impossible that some future P obtains, then we also take ourselves to be epistemically certain that (respectively) future P does or does not obtain. This is because (i) our modal knowledge seems to be causally downstream from the modal facts themselves, and (ii) these modal concepts are alethic: $<\mathbf{NEC}_s P>$ implies $<P>$. We can therefore be epistemically certain in our knowledge that P will occur when we think that P was pre-determined. The extent of our epistemic certainty, however, is confined to those cases. When someone is overconfident that P will occur, we need only remind them of P's contingency to make them snap out of it: it could go that way, or it could not.

This means that in so far as future contingents go, inquiry can never properly end until the future contingent becomes present or past. When we are theoretically deliberating whether P, we are aiming to resolve uncertainty as to whether P. However, given the normative link between psychological and epistemic certainty, we know that we never *should* feel certain about a future contingent, until it becomes present or past: for only then might it be true that we know it to obtain. Knowing that some past or present P *was* contingent is therefore no obstacle to our eventually asserting P to be the case, and (hence) it is no obstacle to our eventually putting a moratorium on P's being theoretically C-supposed. Not so when some future P is currently contingent.

The objective modal notions therefore have a crucial role in demarcating which future-directed propositions get theoretically C-supposed. The notion of an objective future contingency is the notion of something that it is presently epistemically irrational to be certain about: it is therefore the notion of something that cannot be asserted, that can be theoretically deliberated

about, and that cannot be *adduced* within the scope of a theoretical C-supposition. The notion of an objective future necessity is the notion of something that it is presently epistemically irrational to *not* be certain about: it is therefore the notion of something that can be asserted, that cannot be theoretically deliberated about, and that can be adduced within the scope of a theoretical C-supposition.

I have claimed as widespread the idea that some future propositions are never known to be true, because knowledge of those truths would require (say) our beliefs about the corresponding states of affairs to be caused by those states of affairs, which would require backwards causation, which does not occur. Those propositions we call future contingents. But why would it be useful to so-demarcate some future-directed propositions, excluding them from the realm of epistemic certainty?

I do not know how to answer this question. Suppose that we were to survey the genesis of our ordinary objective modalizing. Those of our ancestors who remained uncertain about certain future-directed propositions tended to fare better than those who did not. The concept of an objective contingency thereby arose to co-ordinate this response. Our ancestors stopped asserting and adducing *those* kinds of future-directed propositions. Doing so had "survival value", when it was applied to *those* kinds of future-directed propositions. But why did it not have survival value when the judgments were directed towards *these other* future-directed propositions? It will at this point be almost irresistible to appeal to objective modality "itself" in our explanation: it was useful for our ancestors to so-treat these propositions *because* they were future-contingents!

If we do go down this route, then we also give an *explanatory* role to objective modals. Not everyone will be happy with that. It may be objected that the ordinary notions of objective modalizing are too mysterious for them to have this explanatory. The question is then about the extent to which the Humean can accept the above functional account in good conscience. I do not have any constructive thoughts about this deep problem.

4.3.2   Practical Deliberation

Given the presumed alethicity of objective modals, the normative data that pertains to practical deliberation is identical to that which pertains to theoretical deliberation, in the case of necessity and impossibility. And it also seems to me that assenting to the future-contingency of some *P* seems frivolous, when practically deliberating, unless <*P*> is practically considered thereafter:

Assent To	Practical Deliberation	
	C-Suppose $(\neg)P$	Adduce P
NECoP	Marked	Unmarked
CONoP	Marked $\neg$	Marked
IMPoP	Marked	Marked

Table 5 - Objective Modals: Practical Deliberation

But what do these data tell us about the practical functions of objective modals? I think that the adducing functions are exactly the same as those in the theoretical case: they determine those future-directed propositions that are rational to adduce. But what about their functions in determining what gets practically C-supposed? When someone asserts that **IMP$_o$$P$** and then practically C-supposes that $(\neg)P$, they present themselves as being in an irrational or perhaps even impossible state of mind. But we should perhaps spend some time unpacking and defending this alleged inconsistency, before using it as a foundation for our functional theorising.

To this end, let us begin not with practical C-suppositions, but with *actions* and *intentions*. It initially looks just *obviously* true that assenting to **IMP$_o$$P$** makes it irrational to try to $(\neg)P$. Indeed, one might even suggest that it is impossible to *genuinely* try to $(\neg)P$, given one's sincere assent to **IMP$_o$$P$**. For one might think that trying to P requires *intending* to P, which itself requires *believing* that P, which is impossible if one already believes that P cannot happen. But Kirk Ludwig (1995) has taken issue with this picture.

Ludwig (1995, p.465) argues that we can intend and attempt to do what we think is impossible. He gives the example of a man who maintains that he cannot perform some athletic feat. But his friend thinks that this individual is perfectly capable of it, and so keeps pestering him until, exasperated, the man decides to *show* his friend that he cannot do it. This involves the man trying as hard as he can to perform a feat that he believes to be impossible. And against all odds, he succeeds! But then since it looked like he performed this feat *intentionally*, then assuming that an intentional action was an intended action, it follows that the man intended to do that which was impossible. Ludwig (1995, p.566) writes:

> The only reason it can seem puzzling that one can intend and try to do something one believes to be impossible is that generally the point of intending and trying is derived from the successful carrying out of the intention. This is a pragmatic, not a conceptual connection, however. The examples I give exploit the possibility of having reasons for intending and trying to do something other than one's chances of success.

That seems exactly right. We *can* have reasons to intend or to try to *F*, which are unconnected to the success of these activities. In Ludwig's example, the reason is that of demonstrating the very impossibility of the thing that is being intended and attempted, which is precisely *why* intention and trying are required. So, one can have reasons to intend or attempt that which is believed to be impossible.[65]

But can that make the intention or attempt *rational*? Ludwig wants to say so. He recounts a tragic folk tale, in which a fisherman has been stranded on a remote island with his son. The tide is rising, the water is freezing cold. The man sees that it is impossible for him or his son to survive. And yet the man raises his son's head above his shoulders, keeping him from the rising tide. Ludwig (1995, p.564) writes:

> What was the fisherman trying to do? What did he intend? He meant to hold his son's head above the water [...] Did he believe that he could do this? Did he believe that he would live, or that his son would live? Part of the tragic heroism of the fisherman in the story lies in his knowledge that he could not do this; that both he and his son would die of drowning in the frigid waters of the ocean. If he had believed his efforts could be successful, he would not be heroic, but foolish. 'Perhaps, then, he did not intend or try to save his son's life, but was only going through the motions, or perhaps only meant to preserve it as long as possible.' He did not try to save his son's life! He did not intend to save it! Could he not try to save his son's life, though he had no hope of success? There was nothing that meant more to him than this end. To fail to try, to strain every fibre of his body, would have been ignoble, a failure to act out of the great love that he felt for his child. 'He must have deluded himself, then. He must have thought that he could hold his son's head above the water through the long night.' But this is again to make him out to be a fool. 'Was he, then, perhaps, simply irrational?' *Irrational?* No. Surely the rational man does not have to await his fate passively. These revisionary accounts of this tale of stoic heroism ring false.

I largely agree with Ludwig, until his last objection. For mightn't the tragic heroism of the fisherman's actions be at least *partly* rooted in their irrationality? It seems to me plausible that this is so. Love and desperation have driven the fisherman to compromise the rational accord that would otherwise exist between his actions and his beliefs about the possibility of their success. But that doesn't make us see him unfavourably. Sometimes, we simply don't care about rationality. Indeed, we sometimes think that the irrational response is the appropriate, even honourable one!

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[65] Some might suggest that the man's intention and trying are simply to prove his friend wrong, *rather than* to perform the athletic feat *x*. But this suggestion can be resisted, and arguably it should. Ludwig doesn't want to deny that the man is intending and trying to prove to his friend that he cannot do *x*. Rather, Ludwig wants to say that the man intends and tries to prove this inability *by* unsuccessfully trying to do *x*. How else to prove the inability to *x*, other than to really try to *x*? If the man were not to try, his friend could well insist that the inability is there. Thus, in characterising the man's intention to prove his friend wrong, we must mention his intention to try to do *x*.

It may well be irrational to become indignant at a grave injustice, for instance, and yet we can sometimes feel frustrated at those who, in its face, manage to maintain their *sang-froid*.

Less dramatically, consider Ludwig's athlete. Isn't there something rather *absurd* about the whole situation? The man was driven, out of sheer frustration, to intend and attempt that which he believed to be impossible. It is easy to imagine him feeling pretty silly, as he prepares to give an impossible doing his very best shot, only to silence his insufferable friend. Thus, although he had reason to do so-act, his actions were irrational. The absurdity of the situation appears to derive from exactly this fact.

It is sometimes in our best interests to do something that is seemingly irrational, or not to do something which is seemingly rational. Roy Sorensen (2004) has some nice examples of this. Is it rational to fear a dot, if fearing that dot is rewarded by a free book? (Sorensen, 2004, p.257) A different case (Sorensen, 2004, p.258):

> Consider a man out on a ledge. He must escape a burning building by walking a long plank to a neighboring building. There is a real danger of falling, so the inner logic of fear is satisfied. But this fear is apt to cause a misstep. Accordingly, the man stifles his fear. (And his fear of the fear.) He averts his eyes from the abyss. He may even cultivate defiant anger against the fire to make his steps resolute. This anger is irrational. But out on the ledge, it is rational to cultivate a useful irrational emotion. (Fear of my dot may be like that.)

Sorensen (2004) sees these cases as paradoxes of rationality. Perhaps that is also how we should see Ludwig's (1995) examples: as cases of rational irrationality. I won't pursue these thoughts any further, however, wishing only to note that there is *a* sense in which intending or trying (not) to do the impossible or the necessary is irrational – or imperfectly rational, or inadvisable, or perhaps simply absurd – even if it is possible to intend or attempt that which we think impossible or necessary. And by parity of reasoning, I want to say that there is a sense in which it is irrational to practically C-suppose that which we think impossible or necessary.[66] This strongly suggests that there is an important conceptual connection between the notion of contingency and the notion of what it is not irrational to practically consider. I therefore propose that a practical function of

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[66] Is it *impossible* to sincerely do so? Seeing as practically considering something requires intending to resolve uncertainty about bringing that something about, this seems unlikely. After all, given one's belief in that something's impossibility, there is no uncertainty to resolve. But perhaps a Ludwig-style (1995) counterexample is in the offing. Suppose that an evil scientist has connected you to a brain scanner. He tells you that if you do not practically consider something that you believe to be impossible, you will die. Thus, you must look for practical reasons for doing some impossible thing, with the intention of resolving uncertainty about what to do. Can you intend to do just that? Not if intention requires belief, for that would require you to believe that you will resolve uncertainty about what to do, even though you believe that this is impossible, since there is no uncertainty to resolve. But if intention doesn't require belief, as Ludwig (1995) has argued, then it may be possible to form this intention.

ordinary contingency talk is that of demarcating what gets practically C-supposed, as Toulmin anticipated (1958).

Now it is essential that we sometimes answer the question of what we will do by weighing the practical reasons for and against acting in different ways. Within this context, assertion and belief go by a practical standard: one is to assert and believe that which one has found most reason to do. But it would clearly be disadvantageous if we applied this standard of assertion and belief to *every* thinkable proposition. This is where the concepts of objective necessity and impossibility come in. In saying that something is objectively necessary or impossible, we are entitled not to practically consider that something *without* having to weigh up the reasons for and against so-acting. If it is impossible *now* for me to *F later*, then I may assert that I will not *F*, and not undertake to *F*, without working through the pros and cons.

I have just said that it is disadvantageous to practically consider every proposition that we happen to think about, as we practically deliberate. Why should this be? I think that it will again be *tempting* to appeal to objective modality "itself" when answering this question. Perhaps those of our ancestors who practically considered certain future-directed propositions did less well than those who did not. Perhaps the notion of a future-contingent emerged in part to help us to co-ordinate which future-direct propositions we practically considered. But not just any old future action is disadvantageous to practically consider: only *those* ones are. Which ones? Why the impossibilities and necessities, of course!

4.4   A-Modals

After having spent a considerable amount of time on the deliberative functions of ordinary objective modals, I turn more briefly to the issue of A-modals. More briefly, because we have already encountered, in this chapter and the last, nearly all the evidence that we need for a rather startling claim: that A-modals have no special role to play in our practical and theoretical deliberations.

Let us begin by briefly noting the fact that the alethicity of A-modals makes the normative data for claims of A-necessity and of A-impossibility identical to that of plain assertion and denial. As for claims of A-contingency, we must be reminded of what exactly those are supposed to be:

A-Contingency – **A-CON**$_o$$Q$ **IFF** $(\exists P \neg(P > Q)\ \&\ \exists S \neg(S > \neg Q))$[67]

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[67] Here '>' indicates a subjunctive conditional.

How to paraphrase that equivalence into a homelier thought? Perhaps like so: Q is A-contingent **IFF** there is a way the world would have been, such that it isn't the case that if the world had been that way, Q would have been the case, *and* there is a way the world would have been, such that it isn't the case that if the world had been that way, Q would not have been the case. But that is still quite difficult to get a handle on. Indeed, I think that the easiest route to an intuitive grasp of this notion will go via the proper acquisition condition for belief in A-contingency, modelled – extremely crudely in the present case, as we only need to fix ideas – on the work of Divers and González-Varela (2013): we find that we *can* properly develop the C-supposition that Q, and also that we can properly develop the C-supposition that $\neg Q$.

With that being said, what of the normative data which pertain to assenting to the *A-Contingency* of P? It is clear that adducing <P> within the scope of practical and theoretical C-suppositions is marked. But what about C-supposing that P in either of these goal-directed ways? When we are uncertain about P, there is no problem there. However, the mere fact that we can develop the C-supposition that P and that $\neg P$ is presumably not enough grounds to warrant further investigation: most propositions are like this. I therefore do not think that it is marked *not* to practically or theoretically C-suppose that $(\neg)P$, given assent to the A-contingency of P.

Assent To	Theoretical Deliberation		Practical Deliberation	
	C-Suppose $(\neg)P$	Adduce P	C-Suppose $(\neg)P$	Adduce P
A-NECo P	Marked	Unmarked	Marked	Unmarked
A-CONoP	Unmarked	Marked	Unmarked	Marked
A-IMPoP	Marked	Marked	Marked	Marked

Table 6 - A-Modals

But why do I say that none of the above normative data are functionally *de jure*? Well, one problem for A-modals lies in their acquisition conditions. More precisely, it lies in the requirement that properly acquiring belief in the A-necessity of P arises only when someone believes that P:

(ACQ-S)   (i) x believes that P and (ii) x finds herself unable to C-suppose that not-P.

So, before having properly acquired belief in the A-necessity of P, we are *already* disposed not to practically or theoretically C-suppose that $(\neg)P$, and to adduce <P> within the scope of a practical

or theoretical C-supposition. Acquiring the modal belief doesn't add anything new to those dispositions.

Some may respond to this problem by dropping condition (i). It is then incumbent on them to provide a similarly plausible condition that guarantees properly acquired belief in an *alethic* modality. But even if it is true that *properly* acquiring belief in the A-necessity of *P* does not require belief that *P*, it certainly seems to be a contingent empirical fact that these beliefs are acquired that way. For most of us, it seems fair to say that we discover that water is H20 *before* discovering its A-necessity (and regardless of whether or not this further discovery came via our failing to C-suppose the contrary). But then there is at least one important sense in which talk of A-necessity does not have the above deliberative functions: any such deliberative dispositions would be explained by beliefs that were historically prior to the advent of A-modalizing.

Even if we could make sense of a properly (i.e. canonically) acquired belief that *P* is A-necessary that did not presuppose belief that *P*, we might doubt whether such belief could qualify as *knowledge*. As Divers and González-Varela (2013, pp.377-378) emphasise, knowledge that *P* is A-necessary has historically been thought to go via our *a posteriori* knowledge that *P*, along with our *a priori* knowledge that if *P*, then *P* is A-necessary. But if we want our concept of A-necessity to function (say) as the ordinary concept of objective necessity does, then it would seem that a revisionary epistemology would have to be defended. For recall one crucial role of the ordinary notion of necessity: allowing us to circumvent the important conceptual obstacles to our seeing ourselves as having *a posteriori* foreknowledge. The ordinary notion of objective necessity can do this job because we take knowledge of these necessities to be *a posteriori*, causally downstream from the necessity itself, *and* to output knowledge of the prejacent via our capacity for deductive reasoning. It is therefore clear that a traditional epistemology of A-necessity makes the notion unfit to play this role.

Finally, it should be noted that even *if* our talk of A-necessity could be stretched into something that plays the deliberative roles of our ordinary talk of necessity, then the role of A-necessity modals in demarcating what may be *adduced* is not that which was anticipated in Divers (2018) and Divers and Elstein (2012). For in so far as we are concerned with *deliberative* suppositions, what is adducible just is what is certain, and so there isn't the scope to worry about what is co-tenable with what. For instance, if we C-suppose that *P* for the purposes of determining whether to *P*, then upon noticing that <*P*> is inconsistent with some certain <*Q*>, we either stop to C-suppose that *P* in this goal-directed way, or we become uncertain that <*Q*>. Nothing about that changes if we are certain that *Q* is A-necessary.

There are, of course, certain goal-directed C-suppositions in which (ACQ-S) does not detract from belief in A-necessity having a special role in demarcating what remains adducible. Suppose, for instance, that we are C-supposing some past *Q* with the intention of determining whether it was (say) regrettable. In that context, finding an inconsistency between *<Q>* and our certain beliefs {*<O>*, *<P>*} does not cause the C-supposition to break down. And at this point, *Maintain Consistency* kicks in, and *if* we merely believe that *O* and *P*, then our C-supposition decomposes into C-supposing that *Q&O* and C-supposing that *Q&P*. But *if* we believe in the A-necessity of *P*, then our C-supposition doesn't need to decompose: we simply oust *<O>* from the set of adducible propositions. Thus, when it comes to *those* C-suppositions, belief in A-necessity has an identifiable and important role in circumscribing what is adducible. But it does not when we are looking at deliberative C-suppositions.

4.5   Functional Differences

Our discussion has been rather involved. In this closing section, I will summarise the key points that I have tried to make about the ordinary modals that we have looked at. I will then attempt to determine their significance to the Ascetic Modalizer's position.

4.5.1   Deliberative Functions

Subjective necessity modals have the same effects as the assertion of their prejacents on what we adduce within the scope of deliberative C-suppositions; *mutatis mutandis* for subjective *impossibility* modals. Additionally, subjective necessity modals have the same effects as the assertion of their prejacents on what we theoretically C-suppose; *mutatis mutandis* for subjective impossibility modals.

Assent To	Theoretical Deliberation		Practical Deliberation	
	C-Suppose $(\neg)P$	Adduce P	C-Suppose $(\neg)P$	Adduce P
NEC$_S$ P	Marked	Unmarked	Marked	Unmarked
POS$_S$ P	Marked $\neg$	Marked	Marked	Marked
IMP$_S$ P	Marked	Marked	Marked	Marked

Table 7 - Subjective Modals

The utility of these modals stems from the fact that they have the same effects as (theoretical) assertion and denial, but at a lower cost. Usually, theoretical deliberation reaches its goal when we resolve uncertainty about what we are considering. Subjective necessity and impossibility modals allow us to close inquiry in the absence of certainty. Usually, adducing a proposition when deliberating requires certainty in the propositions. Subjective necessity and impossible modals allow us to circumvent that requirement.

Subjective possibility modals remind us not to adduce their prejacents within the scope of deliberative C-suppositions. Additionally, they can act as prompts for us to theoretically C-suppose their prejacents.

Ordinary *objective* necessity modals have the same effects as the assertion of their prejacents on what we adduce within the scope of deliberative C-suppositions; *mutatis mutandis* for objective impossibility modals. Objective necessity modals also have the same effects as the assertion of their prejacents on what we theoretically and practically C-suppose; *mutatis mutandis* for objective impossibility modals.

Assent To	Theoretical Deliberation		Practical Deliberation	
	C-Suppose (¬)P	Adduce P	C-Suppose (¬)P	Adduce P
NECo*P*	Marked	Unmarked	Marked	Unmarked
CONo*P*	Marked ¬	Marked	Marked ¬	Marked
IMPo*P*	Marked	Marked	Marked	Marked

Table 8 - Objective Modals

In the case of practical C-supposition, the utility of these necessity and impossibility modals stems from the fact that when we are practically deliberating, resolving uncertainty as to whether P – and (hence) intending and announcing and promising that P – requires us to weigh the practical reasons for and against (¬)P. Not every proposition that pops into our mind is deserving of that attention. By calling them necessary or impossible, we can close or forestall their practical consideration (and hence practical C-supposition) without going through the oft-demanding process *of* practical consideration.

In the case of theoretical C-supposition, and in the case of adducing propositions within the scopes of deliberative C-suppositions, the utility of these necessity and impossibility modals stems from (what I am alleging to be) the twin facts that (i) we (take ourselves to) face considerable obstacles to being epistemically certain about future-directed propositions, and that (ii) being uncertain about every future-directed proposition is not useful. The problematic (i) stems from

two *prima facie* common commitments: that (*a posteriori*) knowledge that *P* is causally downstream from *P*, and that causation doesn't run backwards. By calling something necessary or impossible, we can be certain about its prejacent's truth-value *without* being causally downstream from what the prejacent describes. The ordinary notions of necessity and impossibility are able to play this role because (a) we are (seemingly) causally downstream from the necessity or impossibility of some future *P*, and (b) <*P*> is entailed by <**NEC$_o$***P*>, and <¬>is entailed by <**IMP>$_o$***P*.

Objective future contingency modals allow us to demarcate what gets deliberated about, and what it is best not to adduce. They can also sometimes act as deliberative prompts. Objective future contingents function to make us feel epistemically uncertain about their prejacents, when epistemic standards on thought and talk are in play. They also demarcate the propositions with respect to which it can be useful to direct *practical* standards of certainty: standards in which certainty goes by the strength of our practical reasons.

We should note at this point an important element of functional continuity between the objective and subjective cases. As I noted at the outset of this chapter, it is clear that something must distinguish mere assertion from assertions of necessity. And with respect to what we might call their *deliberative outputs*, it is hard to see any difference between them. However, this does not mean that ordinary necessity modals bring nothing to the table: that we could get by just as easily without them, settling instead with mere assertion. For necessity modals allow us to get around the various problems that pertain *to* mere assertion. Mere assertion, for instance, is often subject to a norm of epistemic certainty. When it is, many propositions do not pass the test: and so many cannot properly be adduced, and remain up for deliberation. And when this becomes a problem, subjective and objective necessity modals help us to get around it. The former allows us to make a statement that has the same force as an assertion of its prejacent, but without our being epistemically or psychologically certain about it. The latter allows us to do the same, by giving us the conceptual tools to feel confident that we *are* epistemically certain about its prejacent, in spite of the *prima facie* problems facing *a posteriori* foreknowledge.

4.5.2 *Revisiting the Credos*

These functional similarities are certainly relevant to the Ascetic Modalizer's position. To recap, the central point of contention between the Ascetic Modalizer and her orthodox interlocutors is the former's unwillingness to view philosophical "modals" as modals. She rejects the following principle:

Credo in Rarefication – There are objective modalities beyond those countenanced by our ordinary objective modal concepts; these ordinary objective modal concepts do not exhaust the space of objective modal concepts.

Now even *if* the functional differences between A-modals and ordinary modals are so great that the former should not, as the Ascetic Modalizer insists, be grouped with the latter, a wholesale rejection of this credo is clearly unwarranted. There are, after all, philosophical modals beyond the absolute case. Having said that, it should also be conceded that the absolute case is of great importance, as it arguably contains a host of significant philosophical modals as sub-species: (broadly) logical necessity, analytic necessity, mathematical necessity, and metaphysical necessity. (Divers and Elstein, 2012, p.110) It would therefore be a sizeable win for the Ascetic Modalizer if she could disqualify absolute modals from the modal realm. The important question for us is therefore that of the extent to which the above functional inquiry could motivate this radical move.

The most straightforward route to this conclusion would go via the suggestion that the above functions are *essential* to making a modal what it is. As a starting principle, this claim is obviously question-begging. But that is not how the Ascetic Modalizer should present it. Rather, this claim should be understood as deriving its plausibility from its explanatory potential. It is to be argued that we simply have no *better* criterion for modalizing; that the functional similarities between objectives and subjectives suggests that this criterion is on the right tracks; and that we can anticipate that the functions of *deontic* modals would further bolster our confidence that the criterion is correct: for it is obviously the case that those modals structure our deliberations. It could then, quite sensibly, be argued that the addition of A-modals would only dilute a natural kind concept into what is perhaps at best a family resemblance idea.

This would initially appear to be a promising move for the Ascetic Modalizer. And if I was at all correct, in Chapter 1, to represent the theoretical clash between the Ascetic Modalizer and her discontents as fast approaching deadlock, then one might well think that the suggested criterion could worry the orthodoxy. The matter, however, is not quite so simple, for even ordinary modals have functions beyond their deliberative roles. For instance, I briefly suggested in Chapter 3 that ordinary objective modals have a crucial role to play in structuring the *counterfactual evaluation* of past actions. I suspect that deontic modals do too. And in this chapter, I also hinted that A-modals sometimes lend their hand to this enterprise. Whether or not there are any *significant* functional continuities to be found there is a matter for inquiry. It does seem clear to me, however, that the battle for a functional criterion of modalizing must spill over into this terrain, if either side is legitimately to claim victory.

So it is with the *Credo in Rarefication*, so it is with another contentious principle:

> *Credo in Invariance* – (A) For any objective necessity, *X*, if *Q* is *X*-necessary, then for all *P* that meets some condition *X*, (*P* □→ *Q*); and (B) for any condition, *X*, if (*P* □→ *Q*) for all *P* that meets *X*, then *Q* is objectively *X*-necessary.

As far as the deliberative functions of modals go, it is clear that this credo is hopeless. For a start, too many of the necessity modals which it defines are not alethic, and so cannot have the same force as assertion. They are also extensionally inadequate. This is certainly the case with A-modals. For instance, the notions of A-necessity and A-impossibility are far too restrictive for *those* to be the only notions that we lean on in (say) demarcating what does not get practically deliberated. The *Credo in Invariance* defines many more such notions. Equally many have exactly the opposite problem: they are far too *permissive*. Indeed, we might at this point wonder whether there could so much as *be* different objective necessity modals that play the deliberative roles. We might therefore doubt that the deliberative functions of modals could ever support:

> *Credo in Commensurability* – Objective modalizing admits of different modal notions that are commensurable in strength.

Recall Lewis' (1976, p.150) "power" to speak Finnish. In view of facts about his larynx and nervous system, Lewis says that he can speak Finnish. In view of his lack of training, Lewis says that he cannot. Lewis then instructs us *not* to rely on the former possibility claim when making decisions: Don't take me to Helsinki as your interpreter... But could there ever be a trip to Helsinki in which it would be *useful*, in a deliberative sense, to modalize in the first way – or, for that matter, in a way that is more permissive with what it counts as impossible? It is certainly the case that no two objective contingency modals could play the above deliberative roles in the *same* deliberative context. But why think that it is useful for us to hop between different contingency modals *across* deliberative contexts?

It remains to be seen whether these *prima facie* challenges to the unifying credos are generated by the functions of ordinary and philosophical modals in counterfactual evaluation. It also remains to be seen whether the orthodox modalizer can meet the challenges. But the Ascetic Modalizer will be happy with the progress that she has made so far: for our functional theorising has certainly put her interlocutor on the back foot. And it is within this dialectal context that the Ascetic Modalizer ends with a *tu quoque*.

According to an important and widespread thought in modal theorizing, A-modal beliefs and knowledge go via our recognition of the limits of our capacity to entertain certain ideas. We wonder, for instance, whether some form of inconceivability might be a reliable guide to impossibility, in this most restrictive sense of 'impossible'. In Chapter 3, we saw how Divers and González-Varela (2013) developed this core idea by appealing to C-suppositions: in particular, with the suggestion that properly acquiring belief in the A-necessity of P requires our finding that we *cannot* develop the C-supposition of its negation. It is against the A-modalizer who sees their A-modal beliefs or knowledge as stemming from a recognition of some such breakdown in thought that the Ascetic Modalizer now directs her argument.

As Divers and González-Varela (2013, pp.379-380) note, their account of the acquisition condition for belief in A-necessity is consistent with the perspective of the modal nihilist. On their account – or, rather, on my variation of their account – the modal nihilist is an individual who claims the ability to C-suppose the negation of *any* proposition whatsoever. Consequently, the modal nihilist does not see any proposition as A-necessary. Of course, this is a controversial position: we might simply not be prepared to grant that the modal nihilist *can* C-suppose whatever he likes. But the important thing to note for our purposes is that the debate between the modal nihilist and other A-modalizers is supposed to be a substantive one.

Notice, however, that this debate would be instantly trivialised if, in claiming that it *is* possible for him to C-suppose the negation of any P, the modal nihilist was allowed to appeal to the notion of *A-possibility*. The modal nihilist could then simply assert (for instance) that it is not the case that, had his powers of thought been God-like, it would not have been the case that he would have developed the C-supposition that (say) $1 \neq 1$. Given the thought that **A-POS$_o$** Q **IFF** $\exists P \neg (P \,\square\!\rightarrow\, \neg Q)$, then if that counterfactual were true, it would be possible for the lazy modal nihilist to "find" that he "can" C-suppose that $1 \neq 1$. And although some may doubt that this counterfactual *is* true, it is presumably not over its truth-value that battles about the extent of A-necessity are (taken to be) properly fought.

The trivialisation of the debate could also go in the other direction, if we accept the *Credo in Invariance*. For that credo generates *many* highly inclusive notions of impossibility. We can then imagine a lazy necessitarian who "finds" that it is "impossible", in one of these most inclusive senses of 'impossible', for him to C-suppose the negation of *every* propositions whatsoever. This lazy necessitarian will then label every proposition whatsoever A-necessary. Moreover, we can imagine an absurd situation, in which the lazy nihilist and the lazy necessitarian come to debate the extent of A-necessity, each claiming his own notion of "possibility" as wholly applicable to the present dispute. From our sensible perspective, this looks like a spurious debate.

The Ascetic Modalizer will at this point wish to make four points. The *first* is that if we are to have a debate about the plausibility or otherwise of A-modal nihilism, then we must settle on *one* notion of possibility, which will figure in our conception of the acquisition of A-modal beliefs and knowledge. The *second* is that this modal notion cannot be located at the extreme ends of the spectrum of counterfactual invariance, on pain of trivialising or mis-locating the substantive dispute. The *third* is that all participants to the debate have known this all along, whether explicitly or not, and hence that they were giving a privileged role, in their thinking about A-modality, to this notion of possibility, whatever it may be. The *fourth* is that in the absence of any alternative and plausible suggestions, our default stance should be that this notion always was the *ordinary* notion of objective possibility. And so, the Ascetic Modalizer now claims, A-modalizers of the above stripe have been treating the ordinary modal notions as special all along: as having a privileged explanatory role in the A-Modalizer's self-image.

Now it is admittedly not entirely clear what the Ascetic Modalizer can hope to achieve with this speech, even if each of the above points is true. Perhaps, as with all the moves that have preceded it, it has only served to further muddy the waters. But the under-represented Ascetic Modalizer will welcome that as a win. The above *ad hominem* suggests an important *prima facie* difference in the roles of ordinary and philosophical modals. The deliberative functions further solidify this vision of disunity. And so the Ascetic Modalizer will at this point want to probe into the source of the conviction that her position isn't worth serious attention, should any such conviction remain.

Summary

In this chapter, I have charted some of the functional differences that exist between ordinary and absolute objective modals. I have also commented on the functions of ordinary subjective modals. The vision of ordinary and philosophical modalizing which the present inquiry delivers has been argued to be congenial to the Ascetic Modalizer's vision of modal disunity. I have also indicated what I think is the most promising move for the orthodox modalizer: to focus on the topic of evaluative roles of counterfactuals, with the aim of unearthing some significant functional continuities there. That topic, however, is far too vast for it to receive a meaningful treatment here. In the next and final chapter of this thesis, my aim will therefore be to build on this chapter's results, by determining their possible relevance to two ancient ideas about modality.

CHAPTER 5

MODALITY, DEDUCTION, AND ALETHICITY

In the previous chapter, I proposed some functional hypotheses for ordinary subjective and objective modals. I also argued that these functional hypotheses do not settle the debate between the Ascetic Modalizer and the orthodoxy. In this final chapter, I want to explore the interconnections that exist between that discussion and two ancient ideas about modality.

In Section 1, I will briefly outline the doctrines of *Aristotelian Entailment* and of *alethicity*. The former tells us that a species of necessity pertains to deductively valid arguments. The latter tells us that the actual is always possible, and the necessary is always actual. But to what extent can the Ascetic Modalizer accept the former doctrine? And how do our functional hypotheses square with the thought that ordinary subjective and objective modals are alethic?

In Section 2, I explore the extent to which the Ascetic Modalizer can, without begging any questions, accept some of the ideas and intuitions that may lie behind *Aristotelian Entailment*. I show that she can accept McFetridge's (1990) argument that these arguments are objectively necessarily truth-preserving, in the strongest sense of 'necessary', *and* that there is an important correlation between deductive validity and unrestricted counterfactual invariance. I also show that she can accept Edgington's (2004) point that deductively valid arguments are maximally persuasive. I then sketch a way in which to develop the work of the Toulminian Programme into an account of belief in deductive validity, one that is neutral between Modal Asceticism and the orthodoxy. In this way, I hope to show that the Ascetic Modalizer is not obviously compromised in her thinking about deductive validity.

In Section 3, I turn to the alethicity of ordinary subjective modals. I argue that linguistic evidence suggests that they are not, though in the somewhat surprising sense that this evidence supports non-cognitivism about subjective modals. I then argue that if we were to *engineer* a representational meaning for these constructions, it could not support alethicity, on pain of making subjective modals functionally redundant. Finally, in Section 3, I argue that there is a disquieting *prima facie* tension between the role of objective modals and their presumed alethicity.

5.1   Two Aristotelian Ideas

When a student is introduced to philosophy, they will be taught to distinguish between *inductively valid* and *deductively valid* arguments. Both kinds of argument have premises which support a conclusion. However, true premises in an inductively valid argument only need make the conclusion likely to be true, or something similar, whereas true premises in a deductively valid argument can be said to *guarantee* the truth of the conclusion.

This guarantee applies to both *formally* and *informally* deductively valid arguments. I will not attempt here a precise characterisation of either, and will leave the distinction at an intuitive level. As an example of formal deductive validity, we have:

(1)   Socrates is a man; All men are mortal; Therefore, Socrates is mortal.

Notice that there is a sense in which this argument has the same *form* as an argument whose subject matter is entirely different:

(2)   Tibbles is a cat; All cats are mammals; Therefore, Tibbles is a mammal.

Both arguments seem to instantiate a form of deductively valid argument: *x* is an *F*; all *Fs* are *Gs*; Therefore, *x* is a *G*. Contrast this with the following example of informal deductive validity:

(3)   The sky is blue; Therefore, the sky is coloured.

Though this argument seems to be deductively valid, it instantiates a *form* of argument which is not: *P*; Therefore, *Q*. But despite the differences between formal and informal deductive validity, both kinds of argument are such that the truth of their premises can be said to "guarantee" the truth of their conclusions. The truth of <Socrates is a man> and <All men are mortal> seem to guarantee the truth of <Socrates is mortal>. Likewise, the truth of <The sky is blue> seems to guarantee the truth of <The sky is coloured>.

But what exactly does this guarantee come down to? One important idea, which goes back at least to Aristotle's day, is that a deductively valid argument is an argument that is *necessarily* truth-preserving. Aristotle (*Prior Analytics*, 24[b] 18-19) writes:

> A *deduction* is a discourse in which, certain things having been supposed, something different from the things supposed results of necessity because these things are so.

I think that it should be conceded that some arguments provoke in us a phenomenology of necessity, so to speak. When someone accepts the premises in (1), and is then asked whether the conclusion is false, the answer seems non-negotiable: the conclusion just *can't* be false. And although enquiry may eventually decide that this feeling only tracks an epiphenomenon to deductive validity, or perhaps even that it tracks nothing at all, the matter is surely worth investigating further.

Let us then call this putative necessity *broadly logical*. So-understood, the *notion* of a broadly logical necessity is a theoretical one: it has been introduced in order to draw or to explain the contrast between inductively and deductively valid arguments. If we say that the relationship between the premises and conclusion of a deductively valid argument is that of *consequence* or of *entailment*, then our first principle of Aristotelian pedigree can be formulated as follows:

> *Aristotelian Entailment* – If a set of propositions, Γ, entails some proposition, <*P*>, then it does so with broadly logical necessity.

We notice that there seems to be a contrast between two kinds of argument, and we notice that a feeling of necessity attaches to the one but not the other. We then introduce the notion of a broadly logical necessity on the back of this feeling, and we ask ourselves what sorts of properties it needs to have, *if* it is to do its work in circumscribing or explaining deductive validity:

> Deductive validity is the central topic of logic. So if, as Aristotle and others have thought, to think of an argument as deductively valid requires us to deploy *a* notion of necessity, then that notion, if any, will deserve the label 'logical' necessity. There will be a legitimate notion of 'logical' necessity only if there is a notion of necessity which attaches to the claim, concerning a deductively valid argument, that if the premises are true then so is the conclusion. (McFetridge, 1990, p.136)

The issue of whether and how *Aristotelian Entailment* is true is obviously of great significance to our understanding of logic and related matters. But as we shall now see, *Aristotelian Entailment* is also of importance to the second ancient idea about modality that this chapter aims to treat.

Although Aristotle (*De Interpretatione*, 23ª21-6) held some apparently outrageous doctrines about possibility and necessity, even he did not stray from the following intuitive pair:[68]

(POS) $\forall P$ (If *P*, then it is possible that *P*).

(NEC) $\forall P$ (If it is necessary that *P*, then *P*).

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[68] On Aristotle's unconventional perspective on modality, see Sarah Waterlow (1982).

Since Aristotle's day, (POS) and (NEC) have remained central pillars of philosophical and logical inquiry into modality. Indeed, (POS) and (NEC) are amongst the axioms that Jan Łukasiewicz (1970, pp.352-354) thought necessary and sufficient for a modal logic – a logic which, pre-theoretically, we might characterise as one that makes use of the terms 'possible' and 'necessary'. It therefore seems to me that if any theory is worthy of being called a "doctrine of alethicity", then it must include something like (POS) and (NEC). But it is also common to find analogues of (POS) and (NEC) represented as axioms of deductive modal logic – in system **T**, for instance – and this is certainly how Łukasiewicz (1970) saw them. To my mind, this suggests that (POS) and (NEC) may have close cousins:

(POS*) $\forall <P>$ (*<P>* entails *<Possibly P>*).

(NEC*) $\forall <P>$ (*<Necessarily P>* entails *<P>*).

It is emerging that there might exist two doctrines of alethicity. We can define *Plain Alethicity* as the doctrine that (POS) and (NEC) are true, and *Logical Alethicity* as the doctrine that (POS*) and (NEC*) are true. Supposing that Γ's entailing *<P>* implies the truth of *<If Γ, then P>*, it therefore follows that *Logical Alethicity* implies *Plain Alethicity*.

Given their form, *Logical Alethicity* and *Plain Alethicity* act as criteria for possibility and necessity. This reflects Łukasiewicz's idea (1970) that (POS) and (NEC) are necessary axioms for a modal logic, and Michael Huemer's (2007, p.120) suggestion that the non-obtaining of the impossible 'is a platitude that ought to hold for any sort of "impossibility" worthy of the name.' But I do not myself believe that alethicity *is* a good criterion for modality. This is because I believe that, upon further inspection, *prima facie* paradigmatic modals turn out not to be alethic. In particular, I will eventually argue that (NEC) and (NEC*) are both false, when they are understood to be about ordinary subjective necessity.

But much ground must be cleared before we can reach that point. In particular, determining the status of (POS*) and (NEC*) requires us to get clear on *Aristotelian Entailment*. In the next section, I will attempt to make a small contribution towards our understanding of this imposing topic. After that, I will try to determine whether or not ordinary subjective and objective modals are alethic.

5.2   Deduction and Necessity

5.2.1 McFetridge's Argument

If a notion of necessity is needed in order to circumscribe or illuminate deductive validity, then what properties must that necessity have? Ian McFetridge (1990, pp.135-140) has argued that it must be the *strongest* objective necessity.[69] Marking broadly logical necessity (*L-necessity*), objectively construed, with the sentential operator '**L-NEC**$_O$', the claim that it is the strongest form of objective necessity comes down to this: for any objective necessity N_O, and for any P, if **L-NEC**$_O P$, then $N_O P$. McFetridge has an interesting argument for this conclusion:

> *If* the claim that an argument is deductively valid involves a notion of necessity then it involves the strongest notion of necessity. More fully: I understand the antecedent to be the view that for an argument 'p, so q' to be valid is for it to be necessary, in some sense, *i.e. logically* necessary that if p then q. The consequent then claims that if it is logically necessary that if p then q, then there is no other sense of 'necessary' in which it is *not* necessary that if p then q, *i.e.* no sense of 'possible' in which it is possible that p and *not-q*.

McFetridge wants to say that *if* Γ entails $<P>$ only if **L-NEC**$_O$(If Γ, then P), then for any objective necessity, N_O, N_O(If Γ, then P). He will argue for this conditional by *reductio*:

(i)	There is an objective possibility, P_O, such that $P_O(\Gamma \& \neg P)$.	*Assumption for reductio.*
(ii)	For any objective possibility P_O, if $P_O P$, then there is some $<Q>$ which describes a situation in which P.	*Assumption.*
(iii)	Γ entails $<P>$.	*Assumption.*
(iv)	If Γ entails $<P>$, then for any $<R>$, $\Gamma \& <R>$ entails $<P>$	*Assumption.*
(v)	If Γ entails $<P>$, then assertable is any conditional, indicative *or* counterfactual, of the form: If Γ, then P.	*Assumption.*
(vi)	There is some $<Q>$ which describes a situation in which $(\Gamma \& \neg P)$.	*From (i) and (ii).*
(vii)	$\Gamma \& <Q>$ jointly entail $<P>$.	*From (iii) and (iv).*
(viii)	Assertable is any conditional, indicative or subjunctive, of the form: If $\Gamma \& Q$, then P.	*From (v) and (vii).*
(ix)	There is some $<Q>$ which describes a situation in which $(\Gamma \& \neg P)$; and assertable is any conditional, indicative or subjunctive, of the form: If $\Gamma \& Q$, then P.	*From (vi) and (viii).*

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[69] I follow Ian Rumfitt (2010, p.43) in taking McFetridge's concern to be broadly, and not just formal, logical necessity.

Since (ix) is highly implausible, it follows that one of our assumptions must be false. McFetridge will say that it is assumption (i). But if (i) is rejected, then it looks like there cannot be a counterexample to McFetridge's conditional. So, L-necessity is the strongest objective necessity.

Even the Ascetic Modalizer can accept that L-necessity is the strongest objective necessity. After all, the Ascetic Modalizer only recognises one species of objective necessity, and this would trivially be the strongest objective necessity. But that is not how McFetridge conceives of L-necessity. For McFetridge (1990, pp.150-153), *Aristotelian Entailment* is to be understood as stating that if Γ entails <*P*>, then it does so with absolute necessity: that Γ entails <*P*>, then **A-NEC$_o$**¬(Γ&¬*P*). Notice, however, that McFetridge's argument cannot by itself establish that L-necessity *is* A-necessity, for it cannot establish the unrestricted counterfactual invariance of ¬(Γ&¬*P*), nor *Unrestricted Invariance*:

> *Unrestricted Invariance* – *P* is absolutely necessary **IFF** *P* is unrestrictedly counterfactually invariant.

It therefore follows that the Ascetic Modalizer *may* accept McFetridge's argument, *and* accept that the unrestricted counterfactual invariance of ¬(Γ&¬*P*) is tied to Γ's entailing <*P*>, without compromising her outlook. Of course, whether or not she is *right* to disqualify the notion of unrestricted counterfactual invariance from the modal realm is another matter entirely. In Chapter 4, I tried to make a compelling case on behalf of the Ascetic Modalizer, but the results were inconclusive. Still, so as not to beg the question against this figure, it may be worth simply focusing on the question of whether the following principle is true:

> *Invariance Entailment* – If a set of propositions, Γ, entails some proposition, <*P*>, then it is unrestrictedly counterfactually invariant that ¬(Γ&¬*P*).

Now *if* Γ's entailing <*P*> with L-necessity *just is* its being the case that it is L-necessary that ¬(Γ&¬*P*), and *if* L-necessities are the strongest objective necessities, and *if Unrestricted Invariance* is true, then *Aristotelian Entailment* is equivalent to *Invariance Entailment*. It is therefore consistent with the Ascetic Modalizer's stance that *Aristotelian Entailment* and *Invariance Entailment* are both true, and that McFetridge's argument is sound, provided that *Unrestricted Invariance* is false. In this way, we can see how even the Ascetic Modalizer can accept a great deal that is *prima facie* important about deductive validity.

5.2.2 The Edgingtonian A Priori

We have so far been working under the assumption that L-necessity is an objective necessity. This can be denied. If it is, the resultant position is also consistent with Modal Asceticism. Indeed, it is even consistent with Modal Asceticism and *Invariance Entailment*. But *should* anyone deny that assumption? In order to answer that question, it will be instructive to look at an interesting attempt at a subjective conception of L-necessity. It is due to Edgington (2004).

Edgington (2004, pp.8-10) approaches L-necessity like McFetridge (1990): as a theoretical posit for distinguishing deductive validity from the rest. However, Edgington suggests that our sense of deductive validity is sensitive to more than a feeling of necessity. For Edgington (2004, p.9), there is an epistemological component too:

> an argument is valid if and only if it is necessary that the conclusion is true if the premises are true [...] [and] if an argument is valid, and you accept that the premises are true, you need no further empirical information to enable you to recognise that the conclusion is true. The premises rationally commit you to the conclusion.

From that point onwards, Edgington will argue that the best way of accommodating *both* intuitions is to understand broadly logical necessity as she understands *a priori* necessity. Along the way, Edgington will take issue with McFetridge's (1990, pp.135-140), argument. This is because Edgington thinks that this argument motivates an unnecessarily complex view, in which L-necessity is the strongest objective necessity *and* is *a priori* necessary. But the debate between Edgington and McFetridge isn't confined to this exchange: in that paper, McFetridge was responding to an ancestor of Edgington's (2004). And then in response to Edgington, Rumfitt (2010) enters the fray, on behalf of McFetridge. Ignoring the resultant complexities, I will now make a modest contribution to the wider dialectical situation.

Edgington notices that deductive validity seems to implicate necessity and *a priority*. In Chapter 1, I briefly noted that Edgington (2004, p.6) builds a concept of *a priori* necessity out of ordinary subjective modalizing: P is *a priori* necessary **IFF** P is such that, for any subject s, and for any state of information i, it is objectively possible for s to recognise that **NEC**$_s P$ when in i. Aiming to capture both intuitions about deductive validity, Edgington now wants to say that *this* is the notion of L-necessity that we've been looking for. Thus, Edgington can say that if Γ entails $<P>$, then it is *a priori* necessary that $\neg(\Gamma \& \neg P)$, where this amounts to $<\neg(\Gamma \& \neg P)>$'s being recognisable as subjectively necessary, by anybody, in any state of information.

But this introduces a difficulty. In Section 3, I will argue that there are compelling reasons for thinking that subjective modalizing does not even satisfy *Plain Alethicity*. These reasons are

entirely independent of the matter of *Aristotelian* Entailment, and so there is no circularity or question-beggingness afoot here. And I am right, then $\textbf{NEC}_s\neg(\Gamma\&\neg P)$ is compatible with $(\Gamma\&\neg P)$. But then it looks as though Edgington's notion of the *a priori* necessary cannot help us to capture the distinctive character of deductive validity. After all, the Edgingtonian *a priori* necessity of $\neg(\Gamma\&\neg P)$ cannot even guarantee that if Γ, then *P*. And speaking quite generally now, we should be suspicious of Edgington's construction of the *a priori*, if subjective modalizing is not alethic.

If Edgington wishes to stand by her intuition that some notion of necessity pertains to deductive validity, then she cannot only appeal to the *a priori*. Of course, this does not tell us that Edgington is wrong about *a priority* being a component of our (pre)theoretical notion of deductive validity. But should we think that this is true? Edgington (2004, p.10) writes:

> In my view it is the least departure from traditional, pre-Kripkean thinking, and more consonant with the point of distinguishing valid from invalid arguments, to take validity to be governed by epistemic necessity, i.e., an argument is valid if and only if there is an a priori route from premises to conclusion.

This passage alludes to the question of what we stand to gain from marking arguments as deductively valid. Edgington seems to be suggesting that the purpose of deduction-talk is functionally similar to our claiming an *a priori* route from Γ to *<P>*. Presumably, that function is to locate arguments which are, in some sense, *maximally persuasive*: this much seems implicit in Edgington's (2004, p.9) claim that the premises in a deductively valid argument 'rationally commit' us to the conclusion. We can grant Edgington this important observation without assimilating deductive validity to *a priority*, however. Many candidate formulations suggest themselves at this point, but I think that it will be helpful to opt with something like the following:

> *Persuasive Entailment* – If a set of propositions, Γ, entails some proposition, *<P>*,
> then for any rational *s* who accepts that Γ, *s* must accept that *<P>*.

Persuasive Entailment allows us to capture *a* feeling of necessity which pertains to our experiences of deductively valid arguments. But if we do find that certain arguments are such that *we* cannot jointly accept their premises and the negation of their conclusions, then if this is an objective modal fact, it is about *us*. *Persuasive Entailment* therefore cannot capture the idea that if an argument is deductively valid, then *it* is necessarily truth-preserving. It therefore cannot be equivalent to *Aristotelian Entailment*. And, finally, *Persuasive Entailment* does not settle the issue of whether

maximal persuasiveness is a constitutive feature of deductive validity, or one that merely tracks it. It nonetheless seems to be an important aspect of our thinking about deductive validity.

5.2.3 Belief in Deductive Validity

I now want to return to Divers and Elstein (2012), who argue for an interesting conception of the manifestation conditions of belief in *L-necessity*. Drawing on Divers and González-Varela (2013), I will show how this work *might* be extended into an account of the proper acquisition and manifestation conditions for belief in deductive validity. This account promises to vindicate both *Persuasive Entailment* and *Invariance Entailment*, without prejudging the debate between the Ascetic Modalizer and the orthodoxy. Now, my intention here is only to showcase the *potential* for some such proposal to be developed in detail: it is emphatically *not* the finished article. I nonetheless believe that this brief and incomplete exercise is worth doing, and not least because it allows us to see how, exactly, the Ascetic Modalizer may wish to co-opt the intuitions that might appear to drive *Aristotelian Entailment*.

Divers and Elstein (2012, p.110) aim to capture the importance of *Invariance Entailment* as a component in our thinking about L-necessity, with a view towards extending this project to A-necessity more broadly. In this way, they wish to capture and generalise McFetridge's crucial insights. To that end, Divers and Elstein make propositions the focal point of their inquiry, rather than arguments or inferential rules. But they also take great care to distinguish between the general class of A-modalizing and its sub-species in L-modalizing. In particular, according to Divers and Elstein (2012, pp.127-128), properly manifesting belief in the L-necessity of P means properly manifesting belief in the A-necessity *and a priority* of P, where the latter's manifestation condition construed is – in a way that is acknowledged to be somewhat revisionary – as follows:

(AP)   In aiming at stability-preservation, x is prepared to add $<P>$ as a premise to any un-nested A-supposition S.

Bearing in mind Divers and González-Varela's (2013) subsequent development of the manifestation condition for belief in A-necessity, and my own modest revision to this proposal in Chapter 3, minimal departure from (AP) therefore suggests the following manifestation condition for belief in the L-necessity of P:

(LN) (i) *x* believes that *P*; and (ii) for all *S*, such that *x* finds herself able to C-suppose that *S*, *x* treats *<P>* as adducible from within the scope of the C-supposition that *S*; and (iii) for all *S*, such that *x* finds herself able to A-suppose that *S*, *x* treats *<P>* as adducible from within the scope of the C-supposition that *S*.

(MAN-E) (i) *x* believes that ¬(Γ&¬*P*); and (ii) for all *S*, such that *x* finds herself able to C-suppose that *S*, *x* treats *<*¬(Γ&¬*P*)*>* as adducible from within the scope of the C-supposition that *S*; and (iii) for all *S*, such that *x* finds herself able to A-suppose that *S*, *x* treats *<*¬(Γ&¬*P*)*>* as adducible from within the scope of the A-supposition that *S*.

Now if (MAN-E) is true, then in circumscribing the domain of deductive validity, one would have to be prepared to treat ¬(Γ&¬*P*) as unrestrictedly counterfactually invariant. One would therefore be committed to *Invariance Entailment*. And so *if* one accepts *Unrestricted Invariance*, then circumscribing the domain of deductive validity requires commitment to the A-necessity of ¬(Γ&¬*P*). But we must at this stage remind ourselves of two important points.

Firstly, in maintaining our intended neutrality about the Ascetic Modalizer's position, we do well to remain agnostic about *Unrestricted Invariance*. But *secondly*, and more importantly still, *whatever* gloss we may wish to put on unrestricted counterfactual invariance, it does not follow from (MAN-E) that manifesting belief in Γ's entailing *<P>* requires us to view the unrestricted counterfactual invariance of ¬(Γ&¬*P*) as (somehow) *grounding* or *constituting* Γ's entailing *<P>*. And, indeed, there are powerful considerations in favour of *not* doing so: considerations that stem from the controversial but fair-minded suspicion that an *explanatory* role for unrestricted counterfactual invariance seems under-motivated, in light of the problems, recounted in Chapter 1, for realism about counterfactuality. And although that is certainly only the beginning of the conversation, it does suggest a *prima facie* problem for understanding *Invariance Entailment* in a constitutive sense.

What does (MAN-E) suggest about the proper acquisition conditions for belief in Γ's entailing *<P>*? One might be tempted to say that it must be structurally analogous to (MAN-E), if acquisition and manifestation are to be rationally harmonious, in the manner of Divers and González-Varela (2013) on belief in A-necessity. Thus, one might propose that our rational *x* must already believe that ¬(Γ&¬*P*), and must find herself unable to develop the A- *and* C-suppositions

that ($\Gamma \& \neg P$). But there is a reason to resist maximal structural similarity, even if it does complicate the issue of rational harmony. My issue is with the requirement that x already believe that $\neg(\Gamma \& \neg P)$: for building this into the proposed acquisition condition would make it difficult to see how, should our rational x come across Γ & P for the first time, and be uncertain about both, x could come to *acquire* the belief that $\neg(\Gamma \& \neg P)$ by coming to believe that Γ entails $<P>$. I therefore want to propose a simple acquisition condition for belief in Γ's entailing $<P>$:

(ACQ-E) x finds herself unable to A-suppose that ($\Gamma \& \neg P$) *and* to C-suppose that ($\Gamma \& \neg P$).

It is this acquisition condition which guarantees that someone who properly acquires belief in Γ's entailing $<P>$ must accept $<P>$, should she accept Γ: it is what guarantees *Persuasive Entailment*. For given her acceptance of Γ, and upon failing to properly develop the A and C-suppositions that ($\Gamma \& \neg P$), our rational x will simply find that she is *unable* to accept $<\neg P>$. Or so it seems to me, although an argument for this conclusion would require a more thorough investigation into the inability described in (ACQ-E) than I can give it here. Two points are nonetheless worth making at this early stage.

The *first*, anticipated by Divers and Elstein (2012, p.116), is that significant difficulties may lurk in our evoking the notion of *stability preservation* in (ACQ-E). For recall that, following Divers and Elstein, we have implicitly restricted our acquisition and manifestation conditions to what is supposed to be *good* reasoning, where this has been understood to be, in part, a matter of maintaining the stability of the supposed contents. But this norm cannot straightforwardly be applied to the present case, for the instability of a set of propositions was defined by Divers and Elstein as consisting in its having an arbitrary proposition as *consequence*. But then if we want to say that our x, *in aiming at stability preservation*, finds herself unable to A-suppose that ($\Gamma \& \neg P$), then we presuppose on behalf of our x a belief about what entails what. This is unlikely to make (ACQ-E) as satisfying account of properly acquired belief in deductive validity. And for similar reasons, we note that the requirement of *Maintain Consistency*, which may well be intimately connected to the norm of stability preservation, also enjoys a complicated status when thinking about (ACQ-E).

The *second* is that we may (therefore) wish to lean rather heavily on the norm of good reasoning that is introduced in Divers and González-Varela (2013, p.371): the norm of *content preservation*. Thus, in order for our rational x to find herself *able* to A-suppose that ($\Gamma \& \neg P$), she would need to find that, whenever a content that "looks like" $<(\Gamma \& \neg P)>$ crops within the scope of that supposition, that content *really is* $<(\Gamma \& \neg P)>$. The suggestion might therefore be that acquiring belief in Γ's entailing $<P>$ is – at least partly – a matter of our x finding that, upon trying

to develop the A-supposition that ($\Gamma\&\neg P$), she cannot still think about ($\Gamma\&\neg P$). And this may be why, should our x already accept Γ, and upon finding that she cannot develop the A-supposition that ($\Gamma\&\neg P$), x finds that she must accept that P.

There is, therefore, a good deal more work to be done here, before this account can pass for a serious contender (and I must emphasise that its shortcomings can all be traced back to my somewhat cavalier attitude towards the *far* more careful approach that is found in the Toulminian Programme). Still, there is promise in this embryonic proposal. In the first instance, notice how (ACQ-E) may vindicate *Persuasive Entailment* without making properly acquired belief in deductive validity carry a commitment to maximal persuasiveness being *constitutive* of deductive validity. It does, however, require us to think that in circumscribing the domain of deductive validity, one must be prepared to accept *Persuasive Entailment*. And as already noted, the same goes for *Invariance Entailment*. But this neutrality ought to be seen as a positive feature of the account. In this way, (ACQ-E) and (MAN-E) can claim to be neutral with respect to the metaphysics of deductive validity, a neutrality inherited from the proposals of Divers, Elstein, and González-Varela.

More importantly for our purposes, (ACQ-E) and (MAN-E) show us that the Ascetic Modalizer is free to accept a great deal of what philosophical modalizers may have wanted to say with *Aristotelian Entailment*. The thought that deductive validity requires objective necessary truth-preservation can be endorsed by the Ascetic Modalizer, provided that it is ordinary objective necessity that we are talking about. The same goes for McFetridge's (1990) argument that this modality's being the strongest objective modality. And the Ascetic Modalizer also finds that she can accommodate the important ideas of *Persuasive Entailment* and *Invariance Entailment*. Finally, the Ascetic Modalizer can locate, in (ACQ-E), the *feeling* of necessity that attaches to our experiences of deductive arguments.

All that puts her in a dialectally powerful position: for it is now incumbent upon her interlocutor to discern, within the present context, the theoretical value in (say) *Unrestricted Invariance*. What do we stand to gain from putting a modal gloss on *Invariance Entailment*, when our interest is in theorising about (our beliefs about) deductive validity? Quite apart from anything else, the Ascetic Modalizer's challenge can certainly force us to look harder when locating the precise source of our various commitments in this area.

5.3   Are Subjective Modals Alethic?

5.3.1   *An Uphill Battle*

At first blush, it may seem obvious that subjective modals are not alethic. Is there not compelling linguistic data that suggests that attitudinal necessity cannot satisfy (NEC)? Here is an example, from Sherman (2018, p.820). Suppose that you are standing outside in the pouring rain, and that your friend phones you, asking what the weather is like. Consider now two possible responses:

(4)   It is raining out.

(5)   ?? It must be raining out.

It would be very odd for you to respond with (5), as it seems to connote uncertainty with respect to its prejacent, an uncertainty that is inappropriate in this scenario. But then if assenting to $<\textbf{NEC}_sP>$ requires uncertainty about $<P>$, how could (NEC) be true?

Nevertheless, von Fintel and Gillies (2010) have argued that such data needn't suggest non-alethicity. In outline, the thought is that we have misconstrued a connotation of *indirect inference* for a connotation of epistemic uncertainty. On this view, an assertion of $<\textbf{NEC}_sP>$ communicates that $<P>$ has been indirectly inferred, not that one isn't fully certain about it. As it applies to our rainy scenario, the proposed explanation is that (2) is inappropriate because the truth of (1) will have been directly perceived, and not inferred.

Now, as von Fintel and Gillies (2010, p.368) themselves admit, it isn't immediately obvious *why* there ought to be this connection between subjective necessity and indirect inference. Moreover, the suggestion appears to be descriptively inadequate: as Sherman (2018, pp.822-823) argues, their proposal fails to explain some subjective uses of 'must', and predicts that 'must' would be appropriately used in cases where this is plainly not so. This tells me that we should only accept the alethicity of subjective modality as a last resort. However, in a later paper, von Fintel and Gillies (2020) present some interesting data which appears to square poorly with the non-alethic position. In what follows, I review their case for alethicity.

5.3.2   Linguistic Evidence

In our rainy scenario, 'must' seems to connote uncertainty. However, there appear to be cases in which it does not. Von Fintel and Gillies (2010, p.362) give the following example, in which 'must' is used in the conclusion of a deductively valid argument. Chris loses here ball, but she knows with certainty that it is either in box A or B or C. Reasoning aloud, she argues as follows:

(6)   The ball is either in A or B or C; It is not in A or B; So, it *must* be in C.

There are at least two ways in which to respond to such examples. The first is to argue that the subjective 'must' sometimes connotes weakness even in these contexts. This is basically the line taken by Sherman (2018, pp.830-831), who writes:

> arguments from elimination are notoriously bad arguments. Perhaps, one thinks, considerations of the sort that lead one to eliminate all but one possibility would also eliminate the remaining possibility. Or perhaps the considered possibilities were not exhaustive. That is, perhaps there is a possibility that has not been considered.

In such a context, a concluding 'must' could still connote uncertainty. Of course, von Fintel and Gillies' agent is *stipulated* to have certain knowledge of her disjunction. But then given the existence of contexts in which a concluding 'must' connotes uncertainty, one might simply *insist* that the 'must' in von Fintel and Gillies' example is infelicitous.

Von Fintel and Gillies (2010, p.364) provide another example involving deductive validity, where 'must' finds its way into a premise. Consider the following argument:

(7)   If Carl is at the party, then Lenny *must* be at the party; Carl is at the party; So, Lenny is at the party.

Von Fintel and Gillies tell us that this argument instantiates a deductively valid form. Obviously, this could not be the case if $<\textbf{NEC}_sP>$ were not alethic. However, Von Fintel and Gillies (2010, p.364) note that a reviewer did not share in their impression of validity. Moreover, as Daniel Lassiter (2016, p.140) has argued in connection with this premisory 'must', impressions of validity are slippery. Psychological research suggests that our intuitive sense of deductive "validity" doesn't require guaranteed truth-preservation, and is best understood as working on a probabilistic scale: the higher the probability of the conclusion conditional on its premises, the more "intuitively valid" the argument will tend to be judged. Lassiter suggests that this might explain away the intuition felt by von Fintel and Gillies.

In a more recent paper, von Fintel and Gillies (2020) respond to Lassiter. They begin by considering an analogue of (7), which also boasts a *concluding* 'must' (von Fintel and Gillies, 2020, p.4):

(8)   If Carl is at the party, then Lenny *must* be at the party; Carl is at the party; So, Lenny *must* be at the party.

Von Fintel and Gillies (2020, p.4) then say that 'there is no relevant difference' between these two versions of their argument, and that a 'theory that says there is a difference but explains it away by insisting that we are systematically mistaken about it is dispreferred to one that embraces the non-difference and predicts it.' But this move is puzzling. When von Fintel and Gillies say 'we', who do they mean? Surely not those experts who do *not* share the intuition that their original argument is valid. Could it therefore be the folk? Perhaps, although it is debatable that we should rely on the intuitions of non-experts, when it comes to circumscribing the realm of deductively valid inference.

The problem is this. On the basis of *their* intuitive judgments of deductive validity, von Fintel and Gillies claim that there is no difference between the two versions of their argument, which would imply the aletheicity of subjective necessity. But those intuitions are not universally shared, and may be unreliable, as Lassiter's (2018) response suggests. Within this dialectal context, it is bizarre to just *insist* that there is no relevant difference. And there we have it again: some people have one intuition about subjective modals, and others do not.

5.3.3 Constructing Subjective Modals

With data that points in so many different directions, it can be difficult to know where to go. Does our subjective modalizing indicate aletheicity, or does it not? I think that there is a way of seeing this data which suggests that aletheicity is false. But I also think that when non-aletheicity is motivated in this way, as a descriptive thesis, the matter of aletheicity is not thereby settled as a normative thesis. Allow me to explain.

There is a real danger that subjective modals are not *truth-apt*. To see this, consider Crispin Wright's (1992) *minimalism* about truth-aptness. For Wright (1992, pp.27-29), the declarative sentences of an area of discourse are truth-apt only if two conditions are met. The first is that the discourse is *disciplined*: it exhibits well-established norms that govern assent to its declarative sentences. The second is that the discourse *behaves* like paradigmatically truth-apt discourses do: its declarative sentences survive embeddings into negations, conjunctions, disjunctions, conditionals, and propositional attitude ascriptions. But it is doubtful that subjective modals satisfy *either* of these conditions.

Judgments about the felicity or correctness conditions of subjective necessity modals seem to vary greatly, which challenges the requirement of discipline. Moreover, subjective modals can struggle in many embedded contexts. Looking at corpus data, Valentine Hacquard and Alexis Wellwood (2012) have observed the following distributions. Firstly, the subjective 'might' is hardly

ever observed as the compliment of *desideratives* ('want', 'wish') or *directives* (orders, permissions and prohibitions). Secondly, almost no subjective 'must' is ever seen as the compliment of desideratives, directives, or *emotives* ('anger', 'bother', 'hope', 'fear'). And finally, the subjective 'must' is hardly ever found in conditional antecedents.

Now it is a good question whether we could really make sense of (NEC*) being true of subjective modals, if these modals are not truth-apt. After all, some may wish to insist on the thought that entailment requires truth-preservation. But there is another route from non-cognitivism about subjective modals to the denial of (NEC*). For if subjective necessity modals cannot survive embedding in all conditional antecedents, then (NEC) must be gibberish, and (hence) neither true nor false: after all, (NEC) is a schema in which a subjective necessity operator is embedded into a conditional antecedent. And if (NEC) is gibberish, then it is *not* assertable. But now recall this *prima facie* plausible premise in McFetridge's argument that logical necessity is the strongest necessity: If Γ entails <P>, then *assertable* is any conditional, indicative or counterfactual, of the form 'If Γ, then P'. If that is true, then by *reductio*, (NEC*) is false.

It therefore looks like non-aletheticity *is* motivated by the data, though probably not in the way that many would have thought it might be. Notice, however, that there is something very *uncomfortable* about the resultant position. After all, we certainly *want* to use the truth-predicate when subjectively modalizing. Moreover, we quite naturally ascribe beliefs whose objects are subjectively modal contents. But non-cognitivism in this domain suggests that we cannot continue to do so in good conscience. Perhaps, then, a properly philosophical task is before us: we must *stipulate* a meaning for subjective modals, one which will rescue this discourse from non-cognitivism by imposing discipline and syntacticality upon it. This sort of project is familiar from work in *conceptual engineering*, in which the philosopher aims to improve upon a representational device, rather than to describe it – see, for instance, Cappelen (2018). In this case, however, there is a twist: for if subjective modals are not even truth-apt, then they cannot *be* representational devices. In the present case, we are to improve upon subjective modalizing by *making it into* a representational device.

What sorts of constraints are appropriate for this project? Well, to the extent that there is widespread agreement in our subjective modalizing, the proposed meaning should be extensionally adequate to the non-controversial cases. However, the common divergences in our intuitions will make this constraint fairly weak. My suggestion, naturally enough, is therefore that we pay close attention to the *function* of subjective modalizing. We are to construct a meaning for subjective modals which (somehow) aligns with whatever it is that these modals are good for.

This is why the issue of alethicity about subjective modals is unsettled as a normative thesis, even if we think it descriptively true. From the ameliorative point of view, we face a choice: between stipulating a meaning for subjective modals that delivers alethicity, and stipulating a meaning which does not. And when functional considerations are brought to bear on this issue, the question becomes that of whether the function of subjective modalizing requires alethicity, or whether it does not.

In Chapter 4, I argued that the utility of subjective necessity modals lies in their having the same effects as the assertion of their prejacents, but at a lower cost. Asserting $<\mathbf{NEC}_sP>$ allows us to stop theoretically C-supposing P, and to adduce $<P>$ within the scope of a C-supposition, without $<P>$ meeting the norms of psychological and epistemic certainty. It is therefore clear that a meaning for subjective necessity modals which committed us to (NEC) or (NEC*) would be disastrous, from the point of view of these functions: for then asserting $<\mathbf{NEC}_sP>$ would *force* us to be certain that P. Indeed, it would then become *easier* to assert that P than to assert that $\mathbf{NEC}_sP$. Functional considerations therefore counsel against alethicity in this domain.

What, then, should the meaning for these constructions be? Sherman (2018, pp.825-833) has argued that we should understand subjective possibilities as complete answers to epistemically open questions, and that we should understand subjective necessity operators as universally quantifying over subjective possibilities so-defined. In this way, P might be subjectively necessary because it is the *only* complete answer that we have to an epistemically open question. I will not comment on this interesting proposal, nor on Sherman's suggestion that it be generalised to modals beyond the subjective. I simply wish to register the thought that in so far as functional considerations bear on the project of constructing a meaning for subjective modals, then we must (somehow) ensure that alethicity is not thereby generated.

5.4   Are Objective Modals Alethic?

5.4.1   *Alethicity and Time: Four Options*

Unlike the discourse of subjective modality, objective modals are well-disciplined, and seem to behave like other paradigmatically representational modes of discourse. It might therefore appear more than a little misguided to challenge their presumed alethicity. But I hope that it is not. In my view, working through the case against alethicity in the objective domain forces some interesting reflections.

The difficulty here is that objective modal statuses are had *at times*: before my injury, it was possible for me to run up that hill; but it is possible for me no more. I do not believe that we can really make sense of a timeless notion of ordinary objective modality, and I *certainly* do not think that the resultant notion, even if intelligible, would be a very useful to us, given the roles that we unearthed for objective modals in Chapter 4. But as I now want to show, the functionally *de jure* temporality of objective modals turns out to meddle with the sacrosanct. In what follows, I will focus on objective possibility in order to show that whatever we do to build time into the alethicity of objective modals, we will run into *prima facie* problems of some sort.

Option 1: Past Possibility. Our first option is to say that something actual was possible at some point in time *before* it was actual. For any time, t, and any $n > 0$, (POS) and (POS*) are thereby glossed as follows:

(Past-POS) $\qquad\qquad \forall P$ (If P-at-t, then at t–n, $\mathbf{POS}_o P$).

(Past-POS*) $\qquad\qquad \forall <P>$ ($<P$-at-$t>$ entails $<$At t–n, $\mathbf{POS}_o P>$)

Now, if *Plain Alethicity* is wedded to (Past-POS), then it is clear that the alethicist cannot accept that there was a first moment in time. For suppose that some P obtains at this first moment in time, t. Then it follows from (Past-POS) that it was possible at t–n that P. But that cannot be, because t was the first moment in time, so nothing, including the possibility of P, could have obtained before then. So, the alethicist who holds (Past-POS) is committed to their being no first moment in time. She must then reckon with whatever outstanding difficulties are thought to attach to the suggestion that the actual world extends infinitely into the past, if time is discrete, or commit herself to a dense conception of time: between any two instants in time, there is another instant.

There may not be a safe way out for the present defender of *Logical Alethicity*, however. Consider, for instance, *Invariance Entailment*, the claim that if Γ entails $<P>$, then it is unrestrictedly counterfactually invariant that $\neg(\Gamma \& \neg P)$. If that is accepted, then (Past-POS*) commits us to their being no Q such that $Q \,\square\!\!\rightarrow (P$-at-$t$ & $\neg$(At t–n, $\mathbf{POS}_o P$)). But there clearly seems to be some such Q: for if P had obtained at t, and t had been the first moment in time, then P would have obtained at t, and it would not have been the case that, at t–n, $\mathbf{POS}_o P$. I do not see any obvious reason why this counterfactual isn't true.

Option 2: Concurrent Possibility. Our second option is to say that something actual is possible at that very moment. For any time, t, (POS) and (POS*) are thereby glossed as follows:

(Concurrent-POS) $\forall P$ (If P-at-t, then at t, $\mathbf{POS}_o P$).

(Concurrent-POS*) $\forall <P>$ ($<P$-at-$t>$ entails $<$At t, $\mathbf{POS}_o P>$)

Option 2 faces two difficulties. The *first* is that it threatens a commitment to an actual infinity of a potentially worrisome kind. This problem is discussed by Graham Oppy (2019), in his response to Edward Fesser's (2017) Aristotelian Proof for the existence of God. But we needn't delve into the details of this debate to appreciate Oppy's concern.

Oppy's move can be succinctly put. A premise in Fesser's argument, as understood by Oppy (2019, p.3) is the following: 'The existence of S at any given moment itself presupposes the concurrent actualization of S's potential for existence.' Oppy takes this to commit Fesser (2017) to the more general thesis that something cannot be F at t unless it is also potentially F at t. But then since it would be *actually* potentially F at t, (Concurrent-POS) implies that F is potentially potentially F at t. And Oppy (2019, p5) writes that 'it would be intolerably arbitrary to halt this regress after taking the first step; the obviously better move is not to make the first step.'

The defender of Option 2 may at this point protest the charge that she has a regress on her hands: for whilst the above certainly looks like an infinite proliferation of modal properties, it is not (obviously) an infinite *ordered sequence* of a potentially regressive sort. The matter, however, is not so simple. Fesser's argument, for instance, assumes that there cannot be any infinitely extending *hierarchical causal series*. If we read Oppy's challenge within this context, then his move looks to be fair-minded: for perhaps the premise that something cannot be F at t unless it is also potentially F at t commits Fesser to some such series. For there are many plausible-seeming principles that appear to be capable of generating infinite hierarchical series in concert with (Concurrent-POS). For example, one might think that any actual P is (partly) caused or explained by $\mathbf{POS}_o P$; and hence that $\mathbf{POS}_o P$ is (partly) caused or explained by $\mathbf{POS}_o \mathbf{POS}_o P$; and so forth. To the extent that she is happy with causation or explanation, the defender of Option 2 may well accept such a principle. She would therefore appear to have an infinite hierarchical series on her hands.[70]

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[70] It is of course possible for someone to deny any such principle, so that the concurrency view does not generate ordered sequences for them. But unless an independent reason is given for doing so, the move will look *ad hoc*. Moreover, there are reasons to think it independently unmotivated. Although we rarely care to make them explicit, removing possibilities from explanations sounds extremely odd. (*The plant survived, but in no part because it was possible for it to do so*.) And we sometimes do appeal to possibilities as parts of our explanations. (Why does the coin only ever land heads or tails? *Because it can land heads, and it can land tails, but it can't land in any other way*.) A better move, I think, is to deny that these modality-involving hierarchical sequences are in some way problematic. But it is clear that this is the start, and not the end, of the conversation: Fesser and Oppy, for instance, worry about such sequences.

Suppose now that a defender of *Plain Alethicity* holds (Concurrent-POS). Then in light of the above, she must attend to whatever difficulties might threaten whichever actual infinite hierarchy she finds herself saddled with. That could be a tall order, though she may have an easier job on her hands than whomever holds (Concurrent-POS*) and *Invariance Entailment*. Indulging in a familiar idiom for illustrative purposes, to defend *this* version of *Logical Alethicity* would be to argue that there are no possible worlds in which there are no infinite hierarchies of the sort that the alethicist accepts.

The *second* difficulty for Option 2 is, I think, more serious. The problem is that Option 2 would make the notion of objective modality pretty much useless. In Chapter 4, I argued that ordinary contingency modals allow us to circumscribe the domain of future-directed propositions about which we should remain epistemically uncertain, *and* to circumscribe the domain of future-directed propositions that it is not *ipso facto* irrational to practically consider. But if the modal status of some P is concurrent with P, it is rather difficult to see how this notion could play these roles. The reason we can be certain about necessities obtaining was, I suggested, that we have *a posteriori* certain knowledge that some future P *is or was* necessary, and *a priori* knowledge that when something it necessary, it obtains. But then if Option 2 is correct, having *a posteriori* certain knowledge that P is or was necessary can only ever make us epistemically certain that P *has obtained or will obtain.* Not only could we have found that out without recourse to the modal notion, but we obviously cannot use this notion, so construed, as a way of reducing the set of future-directed epistemically uncertain propositions. Similarly, in the practical case. We need *a posteriori* knowledge that it is *now* contingent for us to do F later. If all we can know about future F's modal status is that it either will or won't be contingent at the time at which it either will or won't obtain, then we cannot *now* use the notion of contingency to determine whether or not we should practically consider whether to F.

Option 3: Future Possibility. Our third option is to say that something actual is possible at some point in time *after* it is actual. For any time, t, and any $n > 0$, (POS) and (POS*) are thereby glossed as follows:

(Future-POS) $\forall P$ (If P-at-t, then at $t + n$, $\textbf{POS}_{O}P$).

(Future-POS*) $\forall <P>$ ($<P$-at-$t>$ entails $<$At $t + n$, $\textbf{POS}_{O}P>$)

This bizarre view is not worth much consideration. For reasons that mirror those concerning Option 1, Option 3 commits the alethicist to an actual infinite future. Moreover, actual

counterexamples abound: when a cup that once held drink is thrown into the furnace, it is not possible for it to hold drink in the future. Since I don't think that anyone would be much concerned to defend alethicity in this form, I will leave the matter at that, and propose to ignore this option in the rest of the discussion.

Option 4: The Disjunctive View. The final strategy for building time into the alethicity of objective modals begins with the thought that something actual is possible concurrently or before being actual. For any time, *t*, and any $n > 0$, (POS) and (POS*) are thereby glossed as follows:

(Disjunctive-POS) $\forall P$ (If *P-at-t*, then at *t–n* or *t*, $\mathbf{POS}_O P$).

(Disjunctive-POS*) $\forall <P>$ (*<P-at-t>* entails <At *t–n* or *t*, $\mathbf{POS}_O P$>)

Of course, if the disjunctive alethicist is to hold a distinctive position here, then she must also *deny* (Past-POS) and (Concurrent-POS), as both imply (Disjunctive-POS). She must also deny (Past-POS*) and (Concurrent-POS*), as both imply (Disjunctive-POS*). So, Option 4 also includes a denial of Option 1 and Option 2.

Now, since I cannot think of any plausible counterexamples to (Disjunctive-POS*), I am inclined to say that this is the only version of *Logical Alethicity* plus *Invariance Entailment* which can tolerate the addition of time. For this reason, Option 4 might look like the most promising so far. It is nonetheless suspiciously *ad hoc*. The only way of denying (Past-POS) and (Concurrent-POS) whilst maintaining (Disjunctive-POS) is to say that some actualities are *only* concurrently possible, and that some actualities were *only* possible before being actual. But why should this be the case? Unless the alethicist can give us some indication of how these discrepancies might be explained, then some may suspect that her position amounts to something of a last resort. And whist we can perhaps empathise with her situation, it is presumably important to do so whilst maintaining a healthy aversion to gerrymandered modal terrains.

5.4.2   A Worrying Possibility

Certain principles enjoy a default status, and this is no doubt true of the presumed alethicity of objective modals. I now hope to have shown that anyone who accepts that objective modals are alethic has some work on their hands. This old monolith does not come for free. But then where do we go from here?

If our primary concern is to have a functional notion of objective modality, then it looks as though Option 2 is all but ruled out. That leaves us with Options 1 and 4. Option 1 gets us *Plain Alethicity* only, whereas Option 4 looks *ad hoc*. Between losing a cherished principle and accepting suspicious explanatory debts, my preference is for the former. But the matter isn't so simple, because without *Logical Alethicity*, serious function-related concerns begin to emerge.

In Chapter 4, I tried to show that one crucial use for ordinary objective modals lies in their ability to make us feel comfortable about *a posteriori* foreknowledge. I claimed that this was rooted in two of their features: that we can have *a posteriori* knowledge that it is *presently* impossible for some future P to obtain, and that the present impossibility of future P *entails* future P's not obtaining. But suppose that this is, indeed, why these modals have been so good at playing this role up to now. What then happens if we lose *Logical Alethicity*? Well, we seem to be left with our knowledge that every present impossibility went on not to obtain. We are left, in other words, with an impressive *a posteriori* generalisation. And it should certainly make us feel *confident* that present impossibilities will continue not to obtain. But do we thereby have the right to be *certain* that they will? Answering 'yes' would seemingly commit us to the claim that inductive grounds for belief can be just as strong as deductive ones. That is, needless to say, a very controversial idea. But to say 'no' would be to renounce our right to use objective modals as foundations of our foreknowledge, at least in good faith.

If this puzzle is genuine, then it is very disturbing. On the one hand, the utility of objective modals seems to depend upon their being sensitive to time. On the other, working this essential temporality into their logic threatens their very utility. It would therefore seem that the utility of objective modals depends upon our being insufficiently reflective about their logic: upon our *not* trying to develop A-suppositions in which the actual isn't possible.

It will not be automatically helpful to respond to this problem by going for Option 4, for obvious reasons: Option 4 does not tell us the *ratio* of possibilities that predate actuality to possibilities that do not. Perhaps, then, we may wish to argue that we were too dismissive of (Past-POS*). Perhaps it *is* unrestrictedly counterfactually invariant that $\neg(P\text{-at-}t$ & $\neg(\text{At } t\text{–}n, \textbf{POS}_OP))$. Perhaps trying to develop the A-supposition that $(P\text{-at-}t$ & $\neg(\text{At } t\text{–}n, \textbf{POS}_OP))$ *is* impossible. And these are, of course, not the only moves to be made here. But it seems to me that *something* quite radical has to be said, if we are to hang on to at least one important function of our ordinary objective modalizing.

Summary

In this closing chapter, I have shown the relevance of the Ascetic Modalizer's function-driven stance to two ancient ideas about modality. In so-doing, I hope to have persuaded the reader that there is some mileage in our attending to the Ascetic Modalizer's concerns.

CONCLUSION

My project was to explore the relationship between ordinary and philosophical modalizing, whilst advancing our understanding of modal function. In closing, I will highlight some of the more original developments and arguments in this thesis. I will then suggest some areas in which this project might be extended.

In Chapter 1, I introduced the figure of the Ascetic Modalizer. This allowed us to uncover and question elements of the received view of ordinary and philosophical modalizing, elements which easily go unnoticed and unchallenged. Along the way, I had occasion to:

- Argue against Stalnaker's (1984) theory of 'might' counterfactuals.
- Find reason to resist the linguistic data that could be taken to support contextualism about objective possibility ascriptions.

In Chapter 2, I explored the topic of conditionals and suppositions. After motivating and defending some functional hypotheses about three types of conditionals, I used those functional hypotheses to argue for some new assertability conditions for weak and strong subjunctive conditionals. This led me to:

- Argue against Holguín's (2020) argument for epistemic contextualism.
- Challenge the view that strong subjunctives are useful for reasoning by *Modus Ponens* and *IBE*.
- Argue against Crespo, Karawani, and Veltman's (2018) suggestion that indicative conditionals presuppose antecedent subjective possibility, and that weak subjunctives presuppose antecedent unlikeliness.

In Chapter 3, I advocated for an unfairly-neglected research project, the Toulminian Programme. I also made some slight adjustments to the Millian Programme, before showing how deliberative C-suppositions bridge the gap between these projects. Then, in Chapter 4, I determined some deliberative functions for ordinary objective and subjective modalizing, but could not find any for A-modalizing. I suggested that this should raise the Ascetic Modalizer's confidence.

Finally, in Chapter 5, I showed that the Ascetic Modalizer can accept a great deal that has been said about deductive validity, without begging the question against modal orthodoxy. I also used my functional hypotheses to argue that subjective modals are not alethic (and that this is a good thing), and that objective modals may not be alethic (and that this would probably be a bad thing).

But much remains largely unaddressed, if not wholly ignored. For example, a host of interesting questions become pertinent once the Ascetic Modalizer's position is on the table. How many further discontinuities, functional or not, might be found to separate ordinary and philosophical modalizing – and at what point would these constitute a win for Modal Asceticism? And what, exactly, would it be *like* to modalize in the limited way that the Modal Ascetic recommends? Would it afford us a liberating perspective on longstanding philosophical issues – such as the alleged possibility of radical scepticism – if we only allowed ourselves ordinary notions? Or would reflecting on these problems show us the need to introduce rarefied notions of modality? Whatever one's views about modal unification, the *idea* of Modal Asceticism certainly appears to be a potent catalyst for inquiry.

The theory of modal function, too, retains many more secrets. It would be a fascinating project to develop the Toulminian-Millian Programme beyond what was achieved here. Of obvious importance are the deontic modals. And although there wasn't the scope to explore these matters here, Toulmin's (1958) contains many an interesting discussion of logic and logical modality, but also of *probability ascriptions*. Those are certainly topics which the theory of modal function should aim to encompass or touch upon.

Finally, I think that the assertability conditions that I proposed for different conditionals have the potential to be developed into a much fuller, more explanatory, more sophisticated theory. And despite the numerous improvements that this account undoubtedly needs, I hope to have showcased the desirability of a theory of conditionals in which function and semantics are in close accord.

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