Peacocke's Epiphany:
A Possible Problem for Semantic Approaches to Metaphysical Necessity

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Abstract

Being Known par Peacocke essaie d'expliquer notre connaissance des nécessités métaphysiques. Il propose une conception sémantique fondée sur des principes comprenant, d'une part, ses Principes de Possibilité qui fournissent des conditions nécessaires et suffisantes pour ADMISSIBILITÉ, un concept nouveau, et la seconde, les caractérisations de possibilité et de nécessité en termes du concept.

Je me concentre sur une caractéristique structurelle; l'application récursive impliqués dans la spécification de la ADMISSIBILITÉ. J'introduis un protagoniste fictif, Cautious Peacocke, dont la cohérence je pretends montre que la proposition de Peacocke ne peut pas être améliorée, et puis conclus avec la conjecture que l'échec sera présents, pour toutes propositions fondes sur la semantique, pour l'épistémologie de la métaphysique nécessité.

Abstract

In his *Being Known* Peacocke sets himself the task of answering how we come to know about metaphysical necessities. He proposes a semantic principle-based conception consisting of, first, his Principles of Possibility which provide necessary and sufficient conditions for a new concept 'admissibility', and second, characterizations of possibility and of necessity in terms of that new concept.

I focus on one structural feature; *viz.* the recursive application involved in the specification of 'admissibility'. After sketching Peacocke's proposal, I introduce a fictional protagonist, Cautious Peacocke, whose coherence I claim shows that Peacocke's proposal cannot be made good. I conclude with the conjecture that similar failure will attend any such semantic-based attempts to ground the epistemology of metaphysical necessity.

1 Introduction

Peacocke calls the general problem of reconciling our metaphysics with our epistemology in a given area the Integration Challenge.[1] The question is: how do we reconcile our account of what makes the statements of the area true, with our account of how we come to know those statements (when we do)? For the case of metaphysical necessity the challenge promises to be particularly tough. On the one hand there are realists, such as Lewis ([Lewis 1986]), who put forward what we can call a mind-independent view. For them, possible worlds are concrete worlds just like this one. This gives a most robust metaphysics. However, these worlds are causally disjoint from ours, which prevents any physical interaction. The robust metaphysics brings with it a substantial obstacle to explaining the epistemology. On the other hand, broadly speaking mind-dependent views attempt to explain necessities in terms of facts about ourselves, such as what we are capable of conceiving. Examples of this type of view can be found in [Blackburn 1987] and [Craig 1985]. The approach holds out the promise that the epistemology will be more amenable, since the relevant details are more likely within our grasp. It does, however, run the risk of losing objectivity in the subject matter.

Peacocke's proposal is his principle-based conception. This aims to steer a middle course between the mind-dependent and mind-independent views, reconciling the metaphysics and the epistemology via a theory of understanding for modal notions. He addresses the metaphysics first, by providing an account of the truth-conditions of statements involving metaphysical modalities. These are the Principles of Possibility, which form a substantive set of principles and which determine genuine possibilities. The theory of understanding is made up of possession conditions for the modal concepts involved; these possession conditions are provided by implicit knowledge of the same principles. Necessity is to be characterized in terms of the substantive account of possibility: this is the Characterization of Necessity, or (following Peacocke) 'Chzn' for short. Then, when one reaches a modal judgement based on this understanding, the 'judgement of the modal truth is explained by the thinker's implicit grasp of principles which *make* the modal truth hold' [162, emphasis in the original]. And thus we should see that such a judgement counts as knowledge.

Peacocke speaks of a 'formidable dilemma of a structural character' which the principle-based conception faces [151]. In short: is the Characterization of Necessity itself necessary? On this question, Peacocke sees himself at risk of being stuck 'between a rock and a hard place' [152]. The epiphany of the title of this paper informs his response to this situation.

To show what is involved in Peacocke's proposed solution I introduce a fictional character, Cautious Peacocke.[2] Cautious Peacocke is not lacking in any fact, understanding or knowledge involved in Peacocke's proposal, save for the necessity of the Characterization of Necessity itself, about which she remains agnostic. I claim that the coherence of this character shows that the proposal as it stands is incomplete. Moreover, given the rock and the hard place, it is only by a leap of faith that the proposal can be made good. I conclude with the

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[1] All page references are to [Peacocke 1999] unless otherwise stated.

[2] I suggest that, if coherent, Cautious Peacocke would make room for an Eccentric (the Cautious Man's heir) about necessity; see [Wright 1980], [Wright 1989] and [Hale 1989]. I do not pursue that suggestion further here.

conjecture that a similar structural issue will affect any such semantic approach to answering the Integration Challenge for metaphysical necessity.[3]

2 Peacocke's Proposal

The Principles of Possibility are central to Peacocke's proposal. They determine whether a specification of a state of affairs is a genuine possibility, and they also form the implicit knowledge which underpins one's correct understanding of modal notions. The specifications involved are (in Lewis's terms) *ersatz* worlds; 'they are nothing more than sets of [Fregean] Thoughts and/or propositions' [141].

The approach proceeds in a standard Fregean way, with a semantic assignment giving each atomic concept a semantic value of the correct category; so, for instance, singular concepts receive objects, and monadic predicative concepts receive a function which maps objects to truth-values. Following Peacocke, I write '$val(C, s)$' for the semantic value of a concept C under an assignment s. I reserve 'a' in these contexts to refer to the actual assignment. As well as the atomic cases, there are also complex cases, where the rule for determining the semantic value is a function of the semantic values of its constituents. Writing 'SV' for semantic value, these rules are written thus:

$$R(SV_1, ..., SV_n)$$

Using that notation we can summarise an assignment as follows.

Semantic Assignment

An assignment s gives

(i) an atomic concept C a semantic value:

$$SV = val(C, s)$$

and (ii) a complex concept C a semantic value based on the rule governing C:
$$val(C, s) = R(val(C_1, s), ..., val(C_n, s))$$

Given the assignments to the atomic concepts, and the rules for complex concepts, the semantic value of a complete Thought can be derived. For an assignment, then, there will be a *corresponding specification* which is the set of Thoughts each of which is True under that assignment [127]. The aim is to identify the genuinely possible specifications by determining whether they are *admissible* according to the Principles of Possibility; the proposal being that

A specification is a genuine possibility iff there is some admissible assignment which counts all its members as true. [126]

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[3]I focus exclusively on the structural issue which Peacocke himself identifies as 'a rock and a hard place'. A broader-brushed scepticism about the principle-based conception can be found in [Heathcote 2001]. An earlier exposition of Peacocke's approach ([Peacocke 1997]) prompted [Sullivan 1998], which I have also found instructive.

It is the task of the Principles of Possibility to provide the necessary and sufficient conditions for determining the extension of the concept ADMISSIBLE. They are to explain why particular assignments are admissible or not.[4]

The necessary and sufficient conditions form an implicit definition: 'For the purposes of the theory itself, admissibility can be taken as defined by its role in the theory' [138]. Once the concept ADMISSIBLE is adequately defined, we can move to a characterization which gives the truth-conditions for a Thought or proposition to be possible:

Characterization of Possibility

A Thought or proposition is possible iff it is true under some admissible assignment. [150]

The truth-conditions for a Thought or proposition being necessary are also available:

Characterization of Necessity (Chzn)

A Thought or proposition is necessary iff it is true in all admissible assignments. [150]

2.1 The Principles of Possibility

2.1.1 Modal Extension Principle (MEP)

The main Principle of Possibility is the Modal Extension Principle (MEP). This states that 'the semantic value of [a concept] C according to [an assignment] s is the result of applying the same rule as is applied in the determination of the actual semantic value of C' [134]. Using the notation introduced above, this can be written as follows.

Modal Extension Principle

Where

$$val(C, a) = R(val(C_1, a), ..., val(C_n, a))$$

then, if an assignment s is admissible,

$$val(C, s) = R(val(C_1, s), ..., val(C_n, s))$$

and for *de jure* rigid concepts, if s is admissible, then

$$val(C, s) = val(C, a)$$

The last clause is to cope with rigid concepts. For instance, ventures Peacocke, one might expect that proper names, if they designate, should designate the same object under all assignments. He writes

[m]y claim is that there is a class of concepts and expressions grasp or understanding of which involves some appreciation that in their case, an assignment is admissible only if it assigns to each one of them its actual semantic value. [137]

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[4]Peacocke makes a simplifying assumption that the assignments are total [128]. This is for ease of exposition, and he discusses how it might be relaxed in Appendix B [198 ff].

2.1.2 A Constitutive Principle—of Fundamental Kinds

There is another type of Principle of Possibility which Peacocke argues that we must recognise. This is the class of constitutive principles. Where MEP concerns concepts and the level of sense to determine what is genuinely possible, constitutive principles perform the same role, drawing instead on objects, properties and relations. The proposal needs to take account of the fact that argument might persuade us, for instance, that the racehorse Red Rum has a fundamental kind of 'horse'. That is: it is an essential property of Red Rum that he be a horse. In that case, no assignment should count as admissible unless it is such that the object which it assigns to 'Red Rum' has the property of being a horse.

Broadly speaking, argument about the metaphysics of certain objects may lead us to conclude that they have essential properties. Without those properties, the thought runs, the object simply would not be the object that it is. This sort of consideration is captured in the example that Peacocke provides of a constitutive principle: the Constitutive Principle of Fundamental Kinds.

> If P is a property which is an object x's fundamental kind, then an assignment is inadmissible if it counts the proposition 'x is P' as false. [145]

2.1.3 Principle of Restrained Combination

The two principles introduced so far contribute to the necessary conditions for an assignment to be admissible. In order to complete the notion, we need a sufficiency clause. This is provided thus:

> An assignment is admissible if it respects the set of conditions on admissibility given hereto. [149]

The Principles of Possibility taken together, are to provide the necessary and sufficient conditions to fix ADMISSIBLE. As part of the principle-based conception they provide the explanation of why modal truths hold, and they also form the implicit knowledge which a competent user of modal terms possesses.

2.2 The Rock and the Hard Place

Peacocke finds his proposal is 'stuck between a rock and a hard place' [152]. To articulate the nature of the bind in which he finds himself, we can start by asking the following question. The Characterization of Necessity gives the truth-conditions governing the usage of the necessity operator, but is the characterization itself necessary? A negative answer implies that the proposal has fallen short of its stated aim, since, as Peacocke asserts, the point is to characterize necessity itself, not just some property or properties with which it happens to co-incide [151]. Furthermore, the necessity of the characterization is needed to account for the truth-conditions of iterated modalities. On the other hand, a positive response prompts the question as to whether this further use of 'necessarily'—Necessarily: A Thought or proposition is necessary iff it is true according to all admissible assignments—is explained by the proposal.

Peacocke considers simply adding an assertion to the principle-based conception, to the effect that the Characterization of Necessity necessarily holds

[151]. This will not do, he implies, since if this usage of 'necessarily' is not *explained* by the Principles of Possibility, then the proposal has fallen short of its stated aim [152]. A bald assertion will not help to explain why the necessity obtains; so the account will fail to provide a satisfactory metaphysics. A theory of understanding based on the implicit knowledge of a set of Principles of Possibility together with such an assertion will fail exactly at that point fully to elucidate the target concept. This failure will in turn impair the epistemology: the question of how we know that the Characterization of Necessity is necessary will receive no adequate answer. For these reasons Peacocke is committed to (i) the necessity of the Characterization of Necessity, (ii) that this necessity follow from the Principles of Possibility and (iii) that the necessity follow in a fashion which explains why it obtains.

The solution which he sees, and which he recounts it took some time for him to realise, is that the Modal Extension Principle applies recursively to itself. He writes:

> An important point to note about the Modal Extension Principle—
> one it took me some years to notice—is that it operates recursively.
> It is self-applicable; it applies to the concept which it helps to define.
> [151]

How is the recursive self-application intended to help? This is the argument Peacocke gives [152].

a) The Characterization of Necessity gives the rule for determining the actual extension of 'necessarily'.

b) This rule uses the notion of admissibility, which is constrained by (*inter alia*) MEP.

c) The rule for determining the actual extension of 'necessarily' is taken, and MEP is applied to it.

d) MEP ensures that on any admissible assignment *s*, the semantic value of NECESSARILY will include exactly those Thoughts which are true under any assignments which are admissible according to *s*.

e) Therefore on any admissible assignment, the Characterization of Necessity is true.

f) Hence the Characterization of Necessity is itself necessary.

Thus, the argument concludes that on the principle-based conception, the Characterization of Necessity turns out to be necessary. As the argument states, the Characterization of Necessity uses the notion of admissibility. If the Characterization itself were included as one of the constraints on that concept, then there would be a circularity. But while Chzn is part of the principle-based conception, it is not intended to be one of the Principles of Possibility: precisely not.

What I show below is that the recursive self-application of MEP does help, in so far as it supports the equivalents of the modal axioms T and 4 (associated with reflexivity and transitivity respectively) for the Characterization of Necessity itself. However, if Cautious Peacocke is coherent, then that shows us that

6

the recursive self-application is not enough in itself to support the equivalent of the modal axiom 5 (associated with symmetry). That would entail that there is room for coherent dissent from Peacocke's proposal. For the reasons outlined above, such dissent cannot be dealt with adequately by adding a bald assertion to the principle-based conception.

3   Cautious Peacocke

The question I wish to raise is whether Peacocke's epiphany issued in a genuine discovery. Did he discover a feature of the theory which had up until then escaped his notice? Or, as opposed to discovering a pre-existing feature of the theory, did he at that moment in some fashion augment it? If the epiphany resulted in a genuine discovery, then Peacocke has indeed avoided the rock and the hard place. On the other hand if it was more a matter of invention, then it has the same effect as the bald assertion discussed above; leading to an unsatisfactory metaphysics, an inadequate theory of understanding and consequently an impaired epistemology. This would put the proposal back between the rock and the hard place.

This is an example to illustrate what I mean by a genuine discovery for these purposes, from within the field of mathematics. Suppose Albert has been operating with the differential calculus for a number of years and is proficient with the exponential function, including such facts as

$$\frac{d}{dx}(e^x) = e^x$$

Suppose also that he understands from his geometry lessons that π is the ratio of the circumference of a circle to its diameter. Last, suppose in the course of his studies he has been introduced to complex numbers, so he is used to manipulating them, and is fully aware that

$$i = \sqrt{-1}$$

It is certainly plausible that Albert remains unaware throughout all of this that in fact these three *prima facie* distinct mathematical notions from different areas are related by a substitution instance of Euler's formula ($e^{i\theta} = \cos\theta + i\sin\theta$):

$$e^{i\pi} = -1$$

When this is first pointed out to Albert he may well be surprised; for him it is a genuine discovery of a previously unnoticed feature of the mathematical notions with which he is familiar.

How might we test for whether we have a genuine discovery or not? I propose that in the case of a genuine discovery, it will not be possible both to understand the rest of the theory and coherently to deny the feature. For Albert to contest the equation will be to betray some misunderstanding of the notions that—we can assume—he has been using perfectly well to date. Provided he is sincere, willing, and bright enough, there is no doubt that we will be able to prove to him that the equation does indeed hold. Conversely, if there is a coherent position available which contests some disputed feature, whilst taking account of the rest of the theory, then we are not dealing with a genuine discovery, but rather the choice of a theorist to go one way rather than another.

I claim that the consequence of Peacocke's epiphany, rather than being a discovery of a previously unnoticed feature of the theory, is more a decision to treat the recursion of MEP as entailing that the Characterization of Necessity be necessary. To justify this claim I introduce Cautious Peacocke. She is a fictional colleague of Peacocke, and is by hypothesis quite as knowledgeable and insightful as Peacocke himself. The one exception is that she does not agree that it follows from MEP's self-applicable recursion that the Characterization of Necessity is indeed necessary.

If the outcome of the epiphany is a genuine discovery of a previously unnoticed feature of the theory, then it will be possible to disclose some incoherence in Cautious Peacocke, since she understands and agrees with Peacocke on the theory up to the moment of revelation. On the other hand, if Cautious Peacocke is coherent, then this shows that the outcome of Peacocke's epiphany was not a discovery of a previously unnoticed feature of the theory, but instead represents a choice or decision that he made. The leading question, then, is whether or not Cautious Peacocke is coherent.

3.1   A Parallel With Possible Worlds Semantics

Can Cautious Peacocke understand Peacocke's proposal and still contest it? To show that she is coherent I show that by the lights of the theory itself, the Characterization of Necessity can be possibly true and even possibly necessarily true without actually being true. To do this I draw a parallel with Kripke's possible world semantics, and look at the analogues of the three main relations of accessibility between worlds; reflexivity, transitivity and symmetry.[5] This is how the parallel is to work: instead of worlds I consider semantic assignments and instead of accessibility I consider admissibility. What is in focus throughout is the semantic value assigned to the Characterization of Necessity.

It is worth emphasising that the analysis offered here is not aimed at answering which modal logic, in general, the principle-based conception supports. That question is taken up by Peacocke in [Appendix A, 192 ff]. The answer is that, in general, the principle-based conception supports the modal logic T. He also considers a restricted range of Thoughts, being the range for which the determination of an admissible assignment rests solely with MEP, the Characterization of Necessity, the concepts involved and the Principle of Recombination. For Thoughts in that range, the constitutive principles play no role in the determination of what is genuinely possible [195]. For this restricted range Peacocke argues that the S4 principle will obtain. The reasoning to establish this runs parallel to that offered above for the necessity of the Characterization of Necessity, and I present it diagrammatically below. As well as the restricted S4, Peacocke suggests that '[w]e could also make all the corresponding points for S5' [195]. This further suggestion comes in for more scrutiny in what follows.

I shall concentrate on one Thought from the restricted range: the Characterization of Necessity itself. What I am examining is whether the structure

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[5]One might think that employing a broadly Kripkean approach is at odds with the principle-based conception. I do not think Peacocke would share such doubts, since he writes '[i]t would be quite wrong to see the principle-based conception as in any way incompatible with the Kripke-style semantics' [197]. For Peacocke, the issue between the principle-based conception and Kripke-style semantics is one of explanatory priority, rather than incompatibility.

induced by the Principles of Possibility through the notion of admissibility supports reflexivity, transitivity and symmetry, for the Characterization of Necessity in particular. What I show is that whilst reflexivity and transitivity are unproblematic, there are difficulties associated with symmetry. To facilitate the discussion I introduce the following short-hand for 'assignment t is admissible from assignment s': if an assignment t is admissible from s, then I call it s-admissible. That means that t is admissible according to the semantic value assigned to AD-MISSIBLE by s. As before 'Characterization of Necessity' is abbreviated to 'Chzn'.

3.1.1 Reflexivity

First, take the analogue of the modal principle T ($\Box P \rightarrow P$):

$$\Box\text{Chzn} \rightarrow \text{Chzn} \hspace{4cm} \text{T}^*$$

This holds when assignments are admissible from themselves. Consider figure 1. The rounded rectangles represent assignments, and the arrows show the relation of admissibility between assignments. When a Thought is shown to be true under an assignment, it is written in the appropriate rounded rectangle. We begin with $\Box$Chzn being true under s; this entails that Chzn is true under all assignments that are s-admissible.
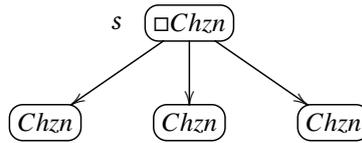
Figure 1: Reflexivity (i)

Where reflexivity holds, one of those s-admissible assignments is s itself, as in figure 2. Therefore, if the relation between assignments is reflexive, then whenever $\Box$Chzn is true, Chzn is true, which means that T* holds.
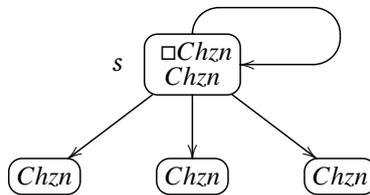

Figure 2: Reflexivity (ii)

Inspection of MEP reveals it supports reflexivity. The idea is that admissible assignments are constrained to be determined by the same rules as those employed in the actual assignment. The actual assignment is the actual assignment, and therefore the Principles of Possibility do induce reflexivity.

9

3.1.2 Transitivity

Next consider the analogue of 4 ($\Box P \to \Box\Box P$):

$$\Box\text{Chzn} \to \Box\Box\text{Chzn} \qquad\qquad 4^*$$

This is a consequence of transitivity. Transitivity means that where u is t-admissible and t is s-admissible, then u is s-admissible. If transitivity applies, then 4^* will hold. To prove this, take any assignment s, where $\Box$Chzn. Then on all s-admissible assignments, Chzn is true. Now consider one of those s-admissible assignments, say t. Figure 3 shows the case where Chzn is true under t. Since Chzn is true under t, Chzn is true on any assignment which is t-admissible. That means that $\Box$Chzn is true under t, where t is any s-admissible
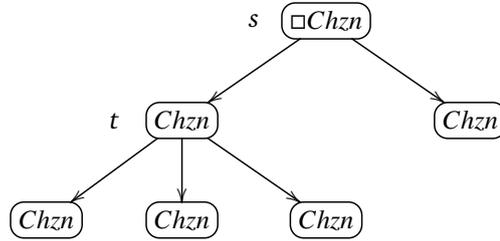
Figure 3: Transitivity (i)

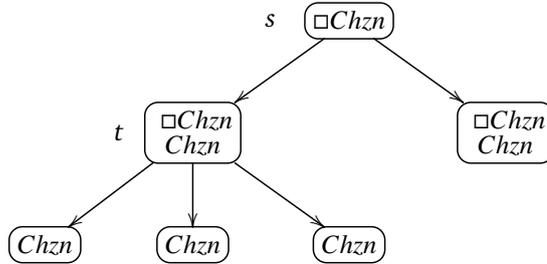assignment (figure 4). Since $\Box$Chzn is true under any s-admissible assignment,

Figure 4: Transitivity (ii)

$\Box\Box$Chzn is true under s (figure 5). Therefore if the relation between admissible assignments is transitive, we have 4^*. That is, when $\Box$Chzn is true under s, we will also have $\Box\Box$Chzn.

Does MEP support transitivity? The answer lies in its recursive self-application. Any s-admissible assignment has the same rule as s for determining the semantic value of ADMISSIBLE. Otherwise it would fail to be s-admissible. If Chzn is true under s, then it will be true under all s-admissible assignments. Hence Chzn will be true under all the assignments admissible according to those, and so on. Thus MEP does grant transitivity; 4^* holds good.
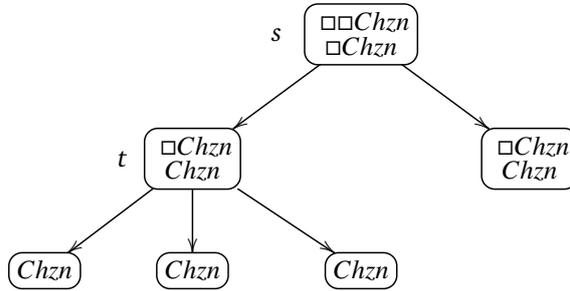
Figure 5: Transitivity (iii)

3.1.3 Symmetry

Lastly, take the analogue of the modal principle 5◇ (◇□P → □P), which is the dual of 5 (◇P → □◇P).

$$\Diamond\Box\text{Chzn} \rightarrow \Box\text{Chzn} \qquad\qquad 5\Diamond^*$$

This is a product of symmetry. Symmetry says that when t is s-admissible then s is t-admissible. If the relation between admissible assigments is symmetric, then 5◇* will hold. To prove this, begin with the antecedent, ◇□Chzn. It is possible that Chzn is necessary, so by the Characterization of Possibility we know that there is at least one s-admissible assignment under which □Chzn is true. Call it t (figure 6). Chzn is necessary under t, so by the Characterization of Necessity,

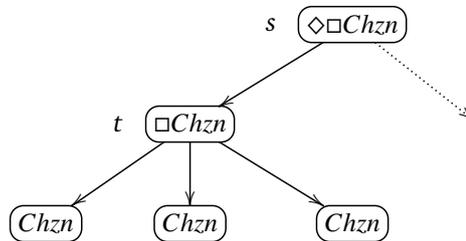Figure 6: Symmetry (i)

Chzn is true under all t-admissible assignments. Assuming that symmetry holds, then since t is s-admissible, s is t-admissible. Since s is t-admissible and Chzn is true on all t-admissible assignments, Chzn is true under s as shown in figure 7.

If Chzn is true under s, then Chzn is true on any s-admissible assignment. By the Characterization of Necessity, that makes Chzn necessary under s (figure 8). Hence, on the assumption that admissibility holds symmetrically between assignments, we have shown that wherever we have ◇□Chzn we also have □Chzn, which is for 5◇* to hold. The outstanding question is whether MEP licenses the symmetry of admissibility between semantic assignments, for the restricted range of Thoughts which includes Chzn.
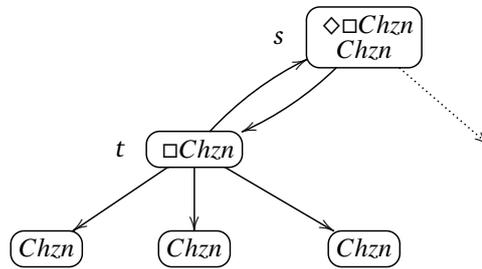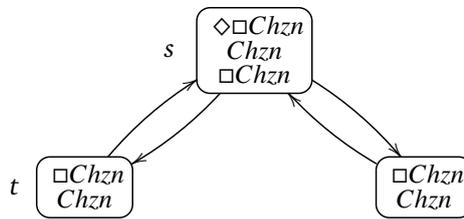
11

Figure 7: Symmetry (ii)

Figure 8: Symmetry (iii)

3.2 The Cautious Contention

Cautious Peacocke maintains that MEP does not license symmetry in the relation of admissibility between semantic assignments, for the restricted range of Thoughts under consideration, which includes Chzn itself. She admits that if Chzn is true, then it is so necessarily. However, it is consistent with the structure induced by MEP that Chzn be false. Figure 9 presents Cautious Peacocke's reason for doubt. Under *s* it is possible that Chzn is true, and so possible that it
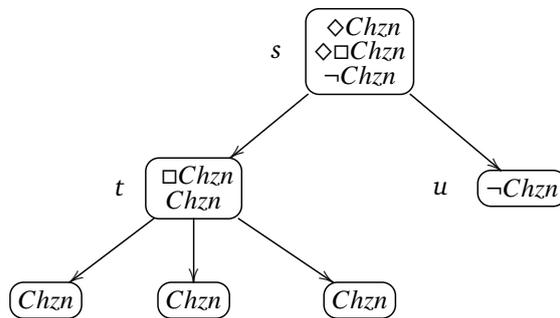

Figure 9: Cautious Contention

is necessarily true. But it need not be true, and so as it happens, need not neces-

12

sarily be true. Were it to follow from MEP that the relation between admissible assignments turned out symmetric then this position would not be coherent. But where both reflexivity and transitivity do follow—and hence T* and 4*—symmetry does not. And that means that 5◇* fails.

This is how things stand, intuitively. The principles which constrain the concept ADMISSIBLE—chiefly MEP—cannot *use* that very concept. If they did, then the definition would be circular. Since the constraints cannot make use of the concept, the most they can do is to guarantee assignments to ADMISSIBLE downstream, so to speak. Hence we do get transitivity. But because no use can be made of ADMISSIBLE, no guarantee can be made of what has happened upstream, as it were. Hence we have no guarantee of symmetry.

3.3 Cashing Out the Contention

Peacocke provides a condition sufficient for symmetry (5) to hold on the principle-based conception. I now introduce that condition, and cash out the intuitive picture from the previous section more formally in order to locate the potential circularity more precisely. To begin with, recall that the actual assignment 'assigns to each concept its actual semantic value, and to each property its actual extension' [194]. Next we introduce the notion of a second-level assignment, which is 'an assignment which assigns semantic values to the concepts ADMISSIBLE and NECESSARY themselves' [194]. A second-level assignment 'itself is admissible only if it respects the rules determining the actual semantic values of ADMISSIBLE and NECESSARY. According to the principle-based conception, these rules are given in the MEP and Chzn themselves' [194]. The suggested condition which is sufficient for 5 to hold is: 'if an assignment s_1 ... is admissible, then any admissible second-level assignment s_2 is such that s_1 is in the extension of ADMISSIBLE according to s_2' [197].

I use '$ADM_s()$' to denote the semantic value assigned to ADMISSIBLE by assignment s, and 'a' refers to the actual assignment, as before. Thus '$ADM_a(s)$' is True just when the semantic value assigned to ADMISSIBLE by the actual assignment includes the assignment s in its extension; which is to say, just when s is admissible. Then, with 's' and 't' ranging over first- and second-level assignments respectively, the condition suggested by Peacocke is equivalent to:

$$ADM_a(s) \rightarrow (\forall t)(ADM_s(t) \rightarrow ADM_t(s))$$

With 'u' also ranging over second-level assignments, we can add to Peacocke's suggestion the condition for transitivity (4):

$$ADM_a(s) \rightarrow (\forall t)(\forall u)(ADM_s(t) \,\&\, ADM_t(u) \rightarrow ADM_s(u))$$

and finally reflexivity (T):

$$ADM_a(s) \rightarrow (\forall t)(ADM_s(t) \rightarrow ADM_t(t))$$

The distinction between the first- and second-level assignments in this fashion is consonant with a basic tenet of the principle-based conception: 'that for any given concept C there will be some rule whose application determines the actual semantic value of C' [132]. MEP is then brought to bear upon the rule in order to help constrain which assignments are admissible and so determine

what is and what is not a genuine possibility. The working assumption is that there *is* a rule which determines the actual semantic value of ADMISSIBLE. This, however, is a unique case, since the actual semantic value assigned to ADMISSI-BLE is to be implicitly defined by the role the concept plays in the theory. For this concept we cannot rely upon a pre-theoretical rule for determining the actual semantic value, since there is no such rule.

The actual semantic value given to ADMISSIBLE will depend, in part, on what happens at the second-level assignments. And what happens at the second-level assignments is, by design, dependent on what happens at the actual assignment. For this special, yet crucial, case of ADMISSIBLE, we cannot hold the actual assignment apart from the second-level assignments. There is support for this observation: according to Peacocke's definition given above, the actual assignment should count as a second-level assignment, since it too assigns semantic values to the concepts ADMISSIBLE and NECESSITY. Assuming that is correct, what is the impact? If the actual assignment should properly be counted as a second-level assignment, then it is legitimate to substitute '*a*' for '*t*' in Peacocke's condition for symmetry:

$$ADM_a(s) \rightarrow (ADM_s(a) \rightarrow ADM_a(s))$$

which highlights the circularity involved. Such circularity does not result from substitutions of '*a*' in the other conditions. For reflexivity, this is trivially so:

$$ADM_a(s) \rightarrow (ADM_s(a) \rightarrow ADM_a(a))$$

For transitivity, there are two relevant substitution-instances, and neither

$$ADM_a(s) \rightarrow (\forall u)(ADM_s(a) \,\&\, ADM_a(u) \rightarrow ADM_s(u))$$

nor

$$ADM_a(s) \rightarrow (\forall t)(ADM_s(t) \,\&\, ADM_t(a) \rightarrow ADM_s(a))$$

exhibits the circularity.

4   Conclusion

The recursive self-application of MEP, with the implicit definition of the target notion, and under the condition of symmetry, means that the rule which determines the actual semantic value of ADMISSIBLE depends upon itself. If that is right, then the term which it is used to introduce is impredicatively defined. Supposing that the condition required for symmetry involves an inherent circularity, how harmful is it for the principle-based conception? It would not imply that the condition identified by Peacocke as sufficient for symmetry could not—nor indeed, does not—obtain. But from there onwards the consequences of the condition obtaining are much the same as those following from the inclusion of the bald assertion. Assume the condition does obtain. Then the theory of understanding which embodies the Principles of Possibility within the possession conditions of the modal concepts will fail fully to elucidate the key notion. Furthermore, on the principle-based conception the theory of understanding underpins the epistemology, and therefore a failure fully to elucidate the key notion will impair that epistemology.

The concern about symmetry is crucial, since it allows Cautious Peacocke coherently to contest the proposal. According to the test introduced above the coherence of Cautious Peacocke shows that the result of Peacocke's epiphany is not a discovery of a previously unnoticed feature of the theory. Certainly the epiphany induced the conviction that the actual assignment is one where Chzn is necessarily true, such as assignment t in figure 9. However, the proposal as it stands does not itself fully support this conviction. In particular, as Cautious Peacocke can coherently hold, the actual assignment may be s instead.

To escape from the rock and the hard place, the proposal requires symmetry of admissibility between assignments, at least for the restricted range of Thoughts which include Chzn. The theory as it stands need not be interpreted as inducing this symmetry: that is the lesson of the coherence of Cautious Peacocke. The inclusion of the bald assertion would result in an unsatisfactory metaphysics, an inadequate theory of understanding, and thus an impaired epistemology. Likewise if the condition for symmetry simply happens to obtain. It seems the only solution, then, is the leap of faith which Peacocke is happy to make, and Cautious Peacocke is not.

4.1   Conjecture

I finish with a conjecture that the structural issue brought out above will apply to any similar semantic way with necessity. Suppose we have the notion of semantic assignments and some form of accessibility relation between them, where Peacocke has admissibility. We can grant reflexivity and transitivity for the accessibility relation. The conjecture is that in these circumstances, one will be unable to establish symmetry of the accessibility relation without making use of the accessibility relation itself in the specification of that relation. Making use of the relation in its definition will introduce a circularity. In the case where we have no symmetry, and the case where we have a circularity, there will be the possibility of introducing a coherent objection on the lines of Cautious Peacocke above. If this conjecture is correct, then the chances of success of such semantic approaches to metaphysical necessity are slim.[6]

15

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