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Epistemic/Non-epistemic Dependence

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If someone knows something then there is something in virtue of which she knows it; and if someone justifiably believes something then there is something in virtue of which she is justified in believing it. That much is relatively uncontroversial. Only slightly more controversial is the claim that our having an epistemic achievement, such as knowing something or being justified in believing something, depends on how we are in *non-epistemic* respects. That is, our instantiating of epistemic properties depends on our instantiating non-epistemic properties. In this paper, I argue that epistemic/non-epistemic dependence should be given a central place in epistemology, and that doing so has significant consequences.

In the first part of this paper, the dependence approach is contrasted with what I shall call ‘the necessary and sufficient condition project’—the project of attempting to give necessary and sufficient conditions for someone’s knowing something or being justified in believing it. Although statements of the goal of uncovering necessary and sufficient conditions for knowledge or justification are often to be found in the first few pages of epistemology textbooks, I have yet to find an articulation or defense of the project to take as an explicit target. It is usually briefly stated, in passing, as if it were obvious, before moving on. So I will proceed by advancing the dependence approach forthrightly, and, only after that will I argue for the advantages of that approach over the necessary and sufficient conditions project. That is the first part of the paper. In the second part, I argue that non-defeat is not part of that on which epistemic properties depend. My views and arguments in this part are in agreement with some aspects of Jonathan Dancy’s views and arguments, although I do not go quite as far as his ‘particularism’. In the third part, I explore one important consequence of the focus on epistemic/non-epistemic dependence, which is the multiple realization of epistemic properties in non-epistemic properties—a result that has significant consequences for many familiar topics in epistemology. In the fourth and last part, I briefly consider other epistemic properties (such as understanding, wisdom and intelligence), and at the interrelation of different epistemic properties. I probe epistemic structure. Crucial claims will be defended, but some of this paper, especially the last part, is exploratory.

§1. Epistemic/Non-epistemic Dependence and Necessity

§1.1 Epistemic Notions

Before we consider the epistemic/non-epistemic dependence relation and the fertile consequences of making it the focus of epistemological enquiry, we should note the

epistemic relata that stand in the dependence relation. We should be aware of, and even wary of, the variety of epistemic phenomena.

A popular object of philosophical enquiry is *knowledge*. Many ask what it is. Some ask what explains it. Others ask why we want or value it. But there are important prior questions about the logical form of knowledge ascriptions. Clearly, knowledge must have an intentional object—there must be something we know. In many cases it has a *propositional* intentional object—such as that birds fly or that Caesar crossed the Rubicon or that I exist. But we may also know a *thing*, such as John or Rome. And we may know *how to* swim or fly. And there may be other kinds of intentional objects of knowledge. It is far from clear that any kind of intentional object of knowledge should take precedence in our thinking about knowledge. Furthermore, kinds of knowledge may be structured in that some may depend on and include others. For example, perhaps propositional knowledge includes the knowledge-how that is part of possessing the concepts that figure in propositions known. At any rate, the minimal moral is that we need to be conscious of the plurality of kinds of knowledge.

Another issue is this. Contemporary epistemologists tend to focus on knowledge and justified belief. But we can ask: why do we have these two epistemological notions? Are there others? Possible candidates are understanding or wisdom or intelligence (Kvanvig 2003). These are neither knowledge nor justified belief, but separate epistemic notions. This raises several questions: how many of such notions do we have? Why do we have the notions we do? How many should we have? Should any of these notions take precedence in our thinking? How are knowledge, justification and the other epistemic notions related to each other? Are some more basic than others?

Here I shall follow the standard practice among analytic philosophers of focusing on propositional knowledge and the justification of propositional belief. But it must be acknowledged that this focus may lead us to overlook important questions about the objects of knowledge, justification and other epistemic notions. We should be alert to the possibility that focusing on propositional knowledge and justified belief, to the exclusion of other kinds of knowledge and other epistemic notions, distorts what we say about propositional knowledge and justified belief. My suspicion is that what we say about propositional knowledge and justified belief should fit with a more general theory—but I shall not pursue this here.

§1.2 Epistemic/Non-epistemicDependence

Let us begin with knowledge. Whatever kind of object of knowledge is in question—propositions, objects, and so on—there is a fundamental principle of *epistemic/non-epistemic dependence*: knowledge cannot be *bare* in the same sense that evaluative properties quite generally cannot hold barely. As I noted at the beginning of this paper, if someone knows something then there must be something in virtue of which she knows it, just as if an action is bad then there must be something about the action in virtue of which it is bad (Zangwill 2006, 2008). A person cannot know barely, any more than she

can be barely bad.¹

We should distinguish between full and partial dependence. For example, knowledge may depend on belief, but belief is only part of the whole that is the full basis of knowledge. I shall use ‘maker’ to denote the full dependence basis, and say that where there is knowledge, there is a ‘knowledge-maker’. When we say that a person knows or is bad *because* of how she is in other respects, we have in mind full dependence.

Since dependence is central, we should ask what dependence is, or what kind of dependence is in question. The notion we need for epistemology is *fact* dependence, which is sometimes called ‘explanatory dependence’: the relata of the dependence relation are facts or states of affairs—someone’s having knowledge, for example. (I take facts to be property instantiations<<<???negative/Universal facts??>>>.) We can distinguish fact and object dependence even though objects are constituents of facts. Fact dependence is a very basic idea, one not plausibly reducible to other ideas. It is like identity in this respect.²

I shall avoid using the word ‘ground’ to indicate the relation between epistemic and non-epistemic facts and properties, and normative and non-normative facts and properties more generally. First, the word ‘ground’ has an established use in epistemology, meaning something like a person’s reason for belief; so using the same word for the epistemic/non-epistemic relation would be confusing. Second, even if we talk of grounds we still need to distinguish full and partial grounds, as we did for dependence; so there is no gain in clarity there. Third, some theorists of grounds think that grounds implies necessitation (for instance Fine 2012). If so, it cannot be the relation we need if the dependence relation between epistemic and non-epistemic properties and facts turns out to be contingent. By contrast, the metaphysical dependence relation, like causal dependence, has no such association. (For a useful guide to issues specific to grounding, see Audi 2012.)

Much epistemology, in my view, can be construed, or perhaps reconstrued, as an attempt to say what knowledge depends on. This applies to propositional knowledge, objectual knowledge, and any other kinds of knowledge that there are. My suspicion is that it is *because* of the fundamentality of the idea of epistemic/non-epistemic dependence that epistemologists went in search of necessary and sufficient conditions for knowledge. But that is not the same thing. What is crucial is dependence—that we know or justifiably believe, or understand, or are intelligent in virtue of, or because of, something else.

It is also plausible that this principle of epistemic/non-epistemic dependence is known a priori, like the principles of moral and aesthetic dependence; but this meta-epistemic matter will not be important here.

I take the epistemic/non-epistemic dependence relation not to be a special epistemic kind of dependence but rather the dependence, of a familiar kind, of epistemic facts (epistemic property instantiations) on non-epistemic facts (property instantiations). It is

¹ What about God’s knowledge? Even God’s knowledge must depend in part on God’s mental states or God’s nature or essence.

² Appealing to Leibniz’s Law just takes us from the identity of objects to the identity of properties. So while Leibniz’s Law holds it cannot be used to say what identity is. See McGinn 2002.

one of the relata of the relation that is epistemic, not the relation itself. (I here depart from Fine 2012 who invokes a specifically normative kind of dependence.) There may be a variety of dependence relations, but the one that I have in mind is non-symmetrical and non-reflexive. It is controversial whether or not the relation is transitive. My view is that it is not, as we shall see.

Since the work of Kit Fine it is now widely accepted that the notion of dependence cannot be explicated in modal terms (Fine 1995; see also Lowe 2009). Dependence stands in a complex relation to necessitation, but it is a distinct relation (for all but a revisionary Humean). One example, concerning objects, is this: necessarily Socrates exists if and only if the singleton set {Socrates} exists; but Socrates does not depend for his existence on the set. This shows that the necessitation relation is not the dependence relation. Another example is this—and the example is better for our purposes, first, because it is an example of fact dependence rather than object dependence, and second because it is an example of normative property dependence: necessarily if something is good then God does (or would if He existed) approve of it; but many hold that in spite of that a thing is not good *because* God approves (or would approve) of it. So sufficiency is not sufficient for dependence. There can be necessary connections without dependence.

One immediate way that this impacts on epistemology is this. The fact that $2+2=4$ holds in all possible worlds in which X knows that grass is green. But the knowledge that grass is green does not even partly depend on the fact that $2+2=4$ (even though necessarily if someone knows that grass is green then $2+2=4$). Furthermore, being a member of the set of instances of knowledge is both necessary and sufficient for knowledge, but it is not even partly what knowledge depends on. A set is an abstract object, outside space and time with no causal powers. Knowledge is not. They are distinct existences. Nevertheless, being a member of the knowledge set is necessary and sufficient for having knowledge. So something can be necessary and sufficient conditions for knowledge without making for knowledge.

§1.3 Contingent Epistemic Dependence

The distinction between dependence and necessitation also allows another possibility, which is particularly important in the metaphysics of normative properties, such as moral or epistemic properties: a dependency relation need not accompany a necessitation relation. In *many* cases, dependency relations explain necessitation relations. For example, water is necessarily H_2O *because* water depends on H_2O and *because* it is essentially H_2O . But in other cases, there are dependency relations where the things or facts related do not stand in necessitation relations. (Just as there can be necessities without dependencies, as the Socrates/{Socrates} example showed, so there can be dependencies without necessities.)

An example would be causal dependence, which only amounts to necessitation in theories that are Humean in character—that is, in theories that eliminate the idea of causal dependency in favor of the modal notion. Causal relations are intuitively contingent. If an egg breaks because it was dropped onto the ground, there is nothing necessary about that,

unless we just stipulate that causation is a special kind of necessity, as a matter of definition. In the familiar strict, or metaphysical, sense of necessity, causal relations are not necessary. Negative events like Superman's not intervening are not part of what caused a dropped egg to break. His non-appearance is a necessary condition for the breaking, but that does not make it a cause. So the egg's being dropped is a cause of its breaking without being a sufficient condition for its breaking. Are there an indefinite number of negative causes for every causal relation between two events? Surely not. So causes do not suffice for effects. It is true that we sometimes select part of the total cause, and say that it is 'the' cause, because of our interests. But that does not affect the point that causation is not necessitation, for even in these cases, we are typically only selecting part of the total cause. It remains implausible that the multitude of negative events that are necessary for the effect are part of the cause. I am not suggesting that negative events are never causes (see Schaffer 2004), only that many negative events are not causes. In many or most cases, causation is positively bringing something about. Negative necessary conditions are something else entirely. Moreover, since many negative facts are not causes, the conjunction of all the negative facts that are necessary for the effect is not one of the overall causes.

What about moral/non-moral dependence? Someone might do something morally wrong in virtue of lying, without it being wrong partly in virtue of the failure to obtain of all the possible defeaters (such as it being necessary to save a life), which would have, but did not, make it alright to lie on that occasion. The non-obtaining of all the possible defeaters does not make the act wrong in the way the lying does, even though both are necessary conditions for the wrongness. (Michael Stocker and Jonathan Dancy have argued this; see Stocker 1970, Dancy 2004.) This shows that the wrong-making relation is not a necessitation (sufficiency) relation. Moral/non-moral dependence is contingent. Non (see also Zangwill 2008).

Similarly for knowledge. Someone might know that Tom stole a book from a library partly in virtue of having a perceptual experience as of someone looking like Tom stealing a book in the library. This may be so even though there are many possible but non-actual defeaters. Tom might have an identical twin who was in the same library on the same day. Or the library might be in fake book country. The perceiver might have taken a hallucinogenic drug (Dancy 2004: 74). And so on, indefinitely. There are countless such possible defeaters, which in normal cases do not obtain, and if they did, the person would not know.³ But when they do not obtain, the fact that they do not obtain is not part of what *makes* that case knowledge. No, the person knows Tom stole the book partly because she had the perceptual experiences that she did. That is a knowledge-maker. And we can add others, such as belief and fact. But the overall knowledge-maker (the conjunction of all the partial knowledge-makers) does not suffice for knowledge, because all of the possible

³ There may be a second-order negative clause quantifying over non-defeat properties, such that there are no defeaters, or no undefeated defeaters. But that second-order property can only have the status of the first-order non-defeat properties than are its disjunctions. <<<??last sentence is cryptic??>>>

defeaters must also not obtain. It would be bizarre to say that the non-obtaining of any or all those possible defeaters is a knowledge-maker in the way that the fact that she had an experience as of Tom stealing the book is a knowledge-maker.⁴ If so, epistemic/non-epistemic dependence, like all normative/non-normative dependence, is contingent dependence. This claim will be defended in section 2.

§1.4 Three Comments

(A) *Gettier Liberation*:

The liberation afforded by the turn to dependence, can be illustrated by considering a consequence—one that may shock your philosophical grandmother—which is that possible and actual ‘Gettier’ cases, of justified true belief that are not knowledge, do not show that someone does not know something merely in virtue of having justified true belief, either in a particular case, or quite generally (Gettier 1963). Knowledge might hold entirely in virtue of justified true belief, despite Gettier cases. When “is” stands for the dependence relation, or constitution, as it often does,⁵ then we can say that Gettier cases do not show that justified true belief is not knowledge! This is a consequence of distinguishing epistemic/non-epistemic dependence from necessitation—that is, what makes for knowledge need not suffice for knowledge.⁶

This is not just a minor point about Gettier, because much epistemology in the last half a century has been pursued as a self-consciously post-Gettier project. But if the dependence approach is correct, a mistake was made in the diagnosis of the Gettier examples, which was to see them as telling us about what the nature of knowledge is. The post-Gettier project of searching for necessary and sufficient conditions, even when that project was conceived as a ‘naturalized’ one, and even if the relevant conditions were allowed to be ‘external’ ones, was nevertheless infected with the root mistaken idea that the pursuit of necessary and sufficient conditions illuminates the nature of knowledge. As I pointed out, that would make being a member of the knowledge set into what knowledge is, because it is necessary and sufficient for knowledge. We might I suppose grudgingly concede that Gettier cases show that justified true belief is not necessary and sufficient for knowledge. But that negative thesis does not invite more interesting negative theses, and it does not encourage the pursuit of necessary and sufficient conditions as a way of understanding knowledge. Even though being a member of the knowledge set is indeed necessary and sufficient for knowledge, that is completely unenlightening and does not

⁴ Another example might be a priori knowledge. Perhaps a priori knowledge does not depend on perceptual experience even though if we had no perceptual experience we would not have a priori knowledge.

⁵ Consider what is called ‘reduction’. Philosophers often want to say that X reduces to Y (water to H₂O for example). This is supposed to be an asymmetrical relation, but it is one that is often expressed by saying that water ‘is’ H₂O despite the asymmetry of the relation, which proves that it is not identity.

⁶ For similarly thoughts see Chudnuff 2011. Thanks to a referee for alerting me this paper.

satisfy any thirst to understand knowledge. Hence it is not the case that the necessary and sufficient conditions project should be pursued alongside the dependence project. The necessary and sufficient conditions project was a complete mistake and the only thing to do with it is to jettison it, not accommodate it.

(B) *Transitivity*:

There are quite a few important formal issues over both dependence and the grounding relation; and the issues deserve more discussion than I can give here. (Those bearing on ‘grounding’ have been dealt with extensively in Correia and Schnieder 2012; see also Rodriguez-Pereyra 2016.) Of these formal issues concerning dependence, transitivity, or rather the lack of it, seems to me to be a very important issue, with ramifications in epistemology and elsewhere. It is intuitive that epistemic properties depend (wholly or in part) on mental states, but it is far from intuitive that epistemic properties depend (wholly or in part) on neural states, even if mental states depend (wholly or in part) on neural states. This, in my view, is a plausible counter-example to the transitivity of the dependence relation.⁷ Of course if dependence were cashed out in modal terms, then the relation would obviously be transitive (since the inclusion relation between sets of possible worlds is transitive). But one of the corollaries of resisting that reduction is that transitivity does not follow trivially, and indeed its main rationale drops away. Once one abandons the reduction there should be no presumption in favor of transitivity.

One way to retain transitivity in the face of this example would be to claim that the two dependence relations are not of the same kind. If they are of the same kind, transitivity fails. If not, it may hold. In order for the transivist and the intransivist to have a meaningful debate, they need to agree on a way of categorizing kinds of dependence relations so that we can tell when we do and when we do not have dependence relations of the same kind. The dependence of norms on mind and the dependence of mind on matter seem to be of the same kind, and there is no reason to think that they are different in such a way that transitivity is preserved. The dependence relations certainly seem similar. For example, there are no formal differences between these dependence relations. I have not proved this here. But it is clear that the onus of proof lies with those who think that the two dependence relations are different (as Fine thinks) rather than merely having different *relata* (as I think). Intransitivism is the most plausible default view.

<<<???transition awkward. Rephrase first two sentences.??>>>

It is plausible that transitivity holds within categories. But it may fail where we go across categories. For example, if A is morally good because B is morally good, and B is morally good because C is morally good, then A is morally good because C is morally good. And it is plausible that if A is known because B is known, and B is known because C is known, then A is known because C is known. Agreed. That does not show that it is plausible that if x has knowledge or is good, because of certain of x’s mental states, and those mental states hold because of x’s brain states, then x has knowledge or is good

⁷ Jonathan Schaffer has questioned the transitivity of grounding in Schaffer 2010; but his examples are quite different from the one that I raise here.

because of x's brain states (see further Zangwill 2013b).

(C) *Epistemic Non-factualism:*

When I introduced epistemic/non-epistemic dependence, I assumed the reality of epistemic properties such as someone's having knowledge or being justified in believing something or being wise. I assumed that these are real properties of a person that she has in virtue of having psychological or other states and standing in relations. This means that I am tacitly rejecting epistemic non-factualism. On Hartry Field's view, there are no epistemic properties to depend on anything (Field 2009). His view is analogous to expressivist non-factualist views in moral philosophy. Nevertheless, even such a non-factualist needs a *surrogate* of epistemic/non-epistemic dependence, in the way that Simon Blackburn tries to explain and justify our commitment to moral supervenience (Blackburn 1985). An epistemic non-factualist needs to explain and justify our operating with the principle of epistemic/non-epistemic dependence in our epistemic thought. Although epistemic non-factualism is a negative metaphysical doctrine, in its most plausible versions, it strives not to be revisionary about actual epistemic thought. For a non-factualist, there are no epistemic facts to depend on other facts; but we speak and think as if there are, and that needs to be explained, and we speak and think as if epistemic/non-epistemic dependence obtains, and that also needs to be explained. In fact there are strong arguments against epistemic non-factualism; in particular a self-refutation argument can be run against it. (I pursue this in Zangwill 2010, section VII.). But assuming that non-factualism is not self-defeating, it needs to try to respect our commitment to epistemic/non-epistemic dependence. So epistemic/non-epistemic dependence is still important for a non-factualist view.

§2. Non-Defeaters??? as Makers?

§2.1 Dependence and Non-Defeaters???

Thus far I have described the distinction between the making and the necessitation of epistemic facts, and I have pointed to some consequences of the distinction. However, how could we argue that not being defeated is not a maker of knowledge against someone who claimed that it was? (See Lehrer and Paxton 1979, for example.)

In many cases, having a perceptual experience (with content *p*) is part of what makes for knowledge (that *p*). An example of a defeater, which I have already mentioned, would be that one's experience is a product of having taken a hallucinogenic drug. If so, one does not know.⁸ The question is whether, in a normal case, where I have *not* taken a hallucinogenic drug, that negative fact is part of makes for perceptual knowledge.

A strong view—which is not necessary for this paper but which I think plausible—is that non-defeat is never a knowledge-maker. That is, for any case of knowledge, and for any possible defeater of it, not being defeated in that way is always merely a necessary

⁸ So if there were such a thing as epistemic logic, it would have to be non-monotonic.

condition for knowledge and never a knowledge-maker. A weaker view, which is at issue here, is that for any case of knowledge, there are some non-defeaters that are necessary conditions but not makers for that knowledge.

§2.2 A Metaphysical Argument

In favor of the strong view there is the following metaphysical argument, which draws on a general distinction between positive and negative facts. There are positive facts and there are negative facts, and they are different. The makers of positive facts (that on which they depend) must be other positive facts. While negative facts may be necessary conditions of positive facts they cannot be among their makers. For example, the fact that something is blue may have makers, but no negative fact such as its not being orange, nor not being any disjunction of color properties, can ever be a maker of a thing's being blue—even though lacking that negative property (or disjunction of negative properties) is a necessary condition of being blue. Even possessing an infinite disjunction of all the other colors apart from some specific shade of blue does not make a thing that shade of blue. It obviously does not suffice for it. For God and numbers instantiate the complex negative disjunctive property without being blue. But it is also plausible that not having the disjunctive property does not, even in part, make for blueness. Being blue is a positive state of a thing and no amount of negativity by itself can generate it.

Knowledge seems similar. The fact that someone knows something is a positive fact. So positive facts must be the makers of knowledge. Any non-defeat property, like not having taken a hallucinogenic drug, is a negative property; so it does not make for knowledge. And no conjunction or disjunction of negative properties of a person could be a maker for positively having knowledge.

<<<It is consistent with this that there can be positive facts that defeat a defeater, such as having taken an antidote for a hallucinogenic drug, which is a necessary condition but not a knowledge-maker. Such cases show that not all merely necessary conditions of knowing are negative. Defeater defeaters may be positive. But this is consistent with knowledge only having positive makers. It does not help to show that non-defeat is a maker of knowledge. That view need not deny that there are some positive necessary conditions that are not makers.>>>Move to footnote.>>>

I like this metaphysical argument; but it does presuppose a not uncontroversial metaphysical view of negative properties. I think the general metaphysical view is plausible and defensible, and I have pursued the matter elsewhere (see Zangwill 2011), but not everyone accepts it.

<<from here??>>

Furthermore, there is the problem that sometimes we know negative facts; and in those cases the negative fact itself is a knowledge-maker.⁹ I have said that belief and fact are among the makers of knowledge. So some negative facts must be among the makers of

⁹ Thanks to a referee for raising this objection.

knowledge of negative facts. This means that the strong claim that negative facts are never among the makers of knowledge is false. That leaves open the claim that *non-defeaters* are never knowledge-makers. Nevertheless the case for that claim cannot be merely that non-defeat facts are negative facts—for some negative facts *are* makers of knowledge. The claim about non-defeat still has some intuitive plausibility, but we have not yet found a rationale for it. Is there some way that we can somehow negotiate the case of negative knowledge? One thing that could be said is that knowledge of a negative fact is not a purely positive state but is a hybrid state. On this view, while knowledge of positive facts only has positive makers, knowledge of negative facts has both positive and negative makers. Even so, we have lost the rationale for claiming that non-defeat is never a maker.

§2.3 Do Our Epistemic Practices Favor Negative Makers?

Another??? way to try to argue that non-defeat is not a maker for epistemic facts is to appeal to our practices of epistemic attribution.

In the case of causal judgments, we isolate causal factors, which are parts of the total cause, depending on our interests. Call ‘egalitarians’ those who do not discriminate makers from necessitators. Egalitarians might say: why not hold a similar pragmatic view of knowledge attributions? The view would be that we select parts of the knowledge-maker that interest us. We should concede that we sometimes select part of the total maker of knowledge because of our interests. The question is whether, whatever our interests, the whole that is the full maker, includes non-defeat facts.

It is true that we sometimes take non-defeat into account in attributing knowledge. So it might be argued that we do not discriminate between makers and non-defeaters in knowledge-attribution. If so, the practice of knowledge-attribution does not vindicate the non-maker status of non-defeaters. But this argument confuses the epistemology of epistemology with the metaphysics of epistemology. The fact that we need to take something into account in attributing knowledge does not show that it is part of what makes for knowledge. But how to show that it is not?

Another??? argument would be that if we compare one person who knows something with another person who does not know the same thing, it might be that what is a maker in one case is defeated in the other case. Hence, it might be argued that not being defeated partly explains why there is knowledge in the first case, unlike the second. But even though one person *lacks* knowledge due to the defeat property being instantiated, and even though the difference between the two is the instantiation or lack of instantiation of the defeat property, it does not follow that what makes for knowledge, in the successful case, is the lack of defeat. Compare: X is 7 foot tall, and Y is 5 foot tall. That explains why X is taller than Y. But that difference between X and Y is not part of what it is for X to be 7 foot tall. Similarly, what makes for knowledge in one case might be defeated in some other case, but that is another case and does not bear on what makes for knowledge in the first case.¹⁰

It might be said that a detective might come to know who did the crime by ruling out

¹⁰ Jonathan Dancy relentlessly objects to this form of argument in Dancy 1995 and 2004.

suspects, which is something negative. But the action of ruling out suspects is a positive maker. Similarly, the fact that someone *believes* that her knowledge is not defeated may be a knowledge-maker; but, again, that it is a positive fact about a person. In that case, it is not non-defeat that is doing the epistemic work but beliefs about non-defeat. It is true that *failing* to rule out suspects might be a maker for *lacking* knowledge. That is a negative non-epistemic fact that makes for a negative epistemic fact. We are interested in negative non-epistemic makers for positive epistemic facts.

But to argue against these arguments is not to give a positive argument to the effect that non-defeaters are not knowledge-makers.

<<<12-13 dialectic hard to follow??>>>

§2.4 Epistemic Practices and the Appeal to Non-defeat

Another??? argument is that if non-defeat were a maker, it would be common to find cases where knowledge is attributed just on the basis of non-defeat, by itself, in the way that we do sometimes say that someone knows something happened in virtue of having a certain visual experience. But we do not. We can put the point in terms of explanation. We cannot explain why someone knows solely by citing the fact that no hallucinogenic drugs were taken or that no identical twins were in the library that day. <<to here??>> (There is a contrast in this respect with causation since we might well say that the purple skin marks were due to the lack of vitamin C.) By contrast, having a visual experience is part of knowing, and a positive part of knowing, which is why we may explain why someone knows by reference to her visual experience. Of course there is more to knowing than having a visual experience. But having a visual experience may be part of knowing. By contract, we do not attribute knowledge solely on the basis of non-defeat facts. That seems to show that, however it might be with the general metaphysics of negative facts, in epistemology, we do not take non-defeat negative facts to be makers of positive epistemic facts. If non-defeat negative properties were knowledge-makers, then they should often figure *by themselves* in our attributive practice in the way that positive factors alone often do. We often attribute knowledge on the basis of positive characteristics and we never, or almost never, do so on the basis of negative non-defeat facts alone. If negative non-defeat facts were among the makers of positive epistemic properties, that would be mysterious. It seems, then, that common sense attributive practice assumes that non-defeat properties are not makers of epistemic properties, at least in the way that many positive facts are. Folk epistemological practice discriminates against non-defeat, and a pragmatic story does not explain that away. Hence we do not take non-defeat properties to be makers for the instantiation of positive epistemic properties.

Perhaps we can imagine a scenario in which we might want to explain and attribute knowledge by non-defeat. However, for this we would need an unusual case in which defeat is the norm. For example, imagine that barn examples were the norm in the countryside. There are many clusters of fake barns with one real barn near the middle. But one cluster of barns is of only real barns. Then might we not explain the fact that someone knows she is looking at a barn, when she is looking at a real barn in the middle of an

unusual rare cluster of only real barns, by saying that her knowledge is not defeated, as it in most other cases? I concede that we might *say* that. Even so, what is the knowledge-maker in such a case? Whatever it is—perception, causation, reliability etc.—it is *still* intuitive that non-defeat is not a knowledge-maker. So this unusual case does not derail the argument that if non-defeat properties were makers, we would expect it to be common in actual knowledge ascriptions to appeal to non-defeat. In fact either we never do, or we do only in very unusual cases, such as a non-fake barn case in a largely fake-barn context, and even then, non-defeat does not seem to be a maker.

It might be objected that it is also true that we usually do not bother to mention belief and fact even though they are both knowledge-makers.¹¹ A pragmatic explanation beckons here, like our not mentioning the presence of oxygen when we explain why a match being struck caused a flame. We usually assume the presence of oxygen as an obvious background condition in giving such an explanation. Why is non-defeat in knowledge ascriptions not like that? It is true that we hardly ever mention beliefs and facts in knowledge attributions even though they are makers and not mere necessitators<<wrong word>>. But this is because they are too obvious to mention, just as we do not mention the presence of oxygen when explaining why a match lighted by saying that it had been struck. But how to show that? The argument was that we do not mention non-defeat and we do mention perception, memory etc. because we mention makers and do not mention non-makers. But belief and fact are makers, not merely necessitators<<wrong word>>, yet we do not mention them. If we say that it is because they are *obviously* makers that it is not interesting to mention them, then we need to be able to distinguish cases where we do not mention because they are too obvious to be interesting, from cases where we do not mention some fact because it is only a necessary condition (what Dancy would call an ‘enabler’). Without that distinction it could be that we do not mention non-defeat because it is an uninteresting obvious maker.

It *could* be that we do not mention non-defeat for the same reason that we do not mention belief and fact. But is it not obvious that there is a difference? One attempt to bring out the difference would be to point out that although both non-defeat and belief/fact give us counterfactuals with respect to knowledge that p, the belief that p and the fact that p each ‘count in favor’ of knowledge (in Dancy’s terms), whereas non-defeat does not. What is ‘counting in favor’? Let us take it to imply, at least, increasing the probability of knowledge. Believing that p, or it being a fact that p, as opposed to not believing that p, or it not being a fact that p, make knowledge that p more likely. But instantiating a non-defeat property does not make knowledge that p more likely. The fact that the number 7 instantiates some non-defeat property does not raise the probability that it knows something. (There is no probability of that.) Non-defeat lacks knowledge-efficacy in both cases. <<Referee not like. Favourers. Raising probability?>>

But to say this is to return to a metaphysical argument.

2.5 ??Another Metaphysical Argument

¹¹ Thanks also to a referee for this objection.

There is something intuitively appealing about the idea that negative facts cannot be makers of positive facts, such as someone knowing something. But then we noted the problem of knowledge of negative facts. It is not that negative facts cannot be makers at all. Perhaps negative facts can be the makers of other negative facts, for example, someone's being ignorant. Nevertheless, there is something particular about not-being defeated that makes it an unlikely candidate for being a maker of the positive fact of knowledge.

I believe that we can appeal to what I call the 'atomism of causal powers' (Zangwill 2011). By itself non-defeat has got nothing to do with knowledge. This is illustrated by the case of numbers, which instantiate non-defeat properties but do not and cannot know anything. (Radical skepticism about numerical epistemology is the right view; numbers do not and cannot know anything.) Non-defeat must combine with something positive. This contrasts with knowledge-makers like having perceptual experiences, which by themselves 'favor' knowledge (to use Dancy's word), in the probabilistic sense. The atomism of powers that counts against non-defeat facts being makers of knowledge. And this is so even if negative facts count in favor of knowledge in the case of knowledge of negative facts, and even if being defeated can be a maker of ignorance.

Suppose it were asked 'Why is this act wrong?' The reply cannot be 'Well, it was not done to benefit starving children'. Only when stapled to a positive fact does a negative non-defeat fact have any explanatory role. (Maybe the number 7 also did not aim to feed starving children; but the number 7 did nothing wrong.) Similarly with non-defeat in epistemology. Only when negative facts, such as lacking hallucinations, or Tom being twinless, are stapled to positive facts, such as having certain experiences, can a negative non-defeat fact play an explanatory role with respect to knowledge. By itself non-defeat is not an ingredient in knowledge, as the case of the number 7 shows. Contrast the role of negative facts when we know negative facts. There the negative fact is by itself an ingredient in knowledge; it is partly constitutive of knowledge. To be that, it need not be conjoined with, positive facts.

Another?? metaphysical point is this: while we should not deny that negative facts, objects and events can be causes, ??there is a difference from positive causes<<English>>. In most case of positive causation, apart from some very basic physical causation, there is a *mechanism* in virtue of which the causal relation obtains (see Machamer, Darden and Craver 2000). For example, there is a molecular explanation of why a toaster exploded.¹² What exactly is? Let us take a mechanism to be either some intervening causal link between cause and effect or something in virtue of which the causal relation obtains. To illustrate: suppose we ask *why* a particular sheep is white. The answer is not that all sheep are white, even though that entails it. The thought is that some mechanism must be at work explaining the whiteness of this sheep. The universal fact is not even part of that explanation. What we need is something that makes the particular sheep white. We need

¹² That is the reason we embrace an ideal of universal causal closure, which implies that there are no toasters that simply explode for no reason (Lycan 1987). This may not apply at the fundamental level.

something similar in the case of knowledge.

We should accept negative causation; and if so I even think that we should accept *negative causal chains*. But I balk at negative mechanisms. For example, there is a whole series of causal stages linking an inactive lifeguard with a drowning swimmer. There is a negative causal chain connecting the life-guard inactivity with the drowning swimmer. The life guard's not diving into the water would be one link in the negative causal chain. But there is no mechanism mediating this negative causal connection. There would have to be too many of them, for one thing. Negative causality is ok; negative mechanisms are not. Jonathan Schaffer has convincingly argued that absences and negative facts can be part of mechanisms (Schaffer 2004). For example, the mechanism of a gun's trigger combines positive with negative facts. But this mechanism is a combination of positive and negative facts. But an *entirely* negative mechanism mediating positive facts seems incomprehensible. Are there an indeterminate number of negative mechanisms corresponding to the indefinite number of non-defeaters for any causal relation? Superman's not showing up may, in some sense, be part of the explanation of some event such as an egg breaking after having been dropped. Similarly Batman's going on vacation may explain a surge in the crime rate in Gotham city. But unlike the gun trigger case, there is no mechanism in virtue of which Superman's absence contributes to the breaking of the egg or Batman's vacation contributes to the crime surge. Similarly a positive knowledge-maker holds in virtue of something, such as a visual experience; and there is more to be said about how the visual experience mediates between the fact and the belief when the person has knowledge. There are mechanisms of perception, and memory. But there are no mechanisms corresponding to the limitless number of negative facts, in particular non-defeat facts, which are necessary for a case of knowledge.

The exception to this are negative facts in cases of knowledge of negative facts. But this is an unusual case where the negative fact stands in a close metaphysical relation to a positive fact, which *does* stand in explanatory relation to our belief in the negative fact. For instance, we believe that something is not blue because we believe that it is red. In this case there is no need of a negative mechanism. I take it that we know negative facts by knowing positive facts and inferring the negative facts. This case is more like the case of the gun trigger.

What is the argumentative step from mechanisms to makers? There is no mechanism corresponding to non-defeat. So it is not a maker of knowledge. But perception *is* part of a mechanism mediating belief and fact. That is why it is a maker. (Non-defeat is hardly like gravity in Newtonian mechanics, where there is no mechanism needed before the force is basic in the universe.) So non-defeat lacks the maker status of perception.

I conclude that the absence of defeaters is not a knowledge-maker. The absence of hallucination or evidence of hallucination is not a maker of knowledge like the presence a visual experiences. In a case where we think that someone knows something happened partly because she had certain visual experiences, the fact that she had the visual experience is not on an equal status with any or all the uncountable factors, which we have not even thought of, without which she would not know. If making were necessitating then they would be on a par. But they are not. If so, having a certain visual experience is part of

what makes for knowledge in a way that non-defeat is not. The necessitarian view of making erases this difference. The view is too egalitarian. Necessitarians are egalitarians, and that is what is wrong with them.

Note that the arguments of this section support the strong claim that not being defeated is *never* a maker. However, this paper only requires the weaker claim that not all non-defeat properties are part of the overall knowledge-maker. We might in principle allow that some non-defeat properties are makers, so long as the conjunction of *all* of them is not a necessary part of a whole that is not just a sufficient condition but also a knowledge-maker (compare Mackie 1965).

Note also that since non-defeat is not a knowledge-maker, despite being a necessary condition for knowledge, the idea of contingent epistemic/non-epistemic dependence is vindicated.

§3. Multiple Realization

§3.1 Multiple Realization and Dependence

Let us now turn to consider the impact of the dependence/necessitation distinction on a number of issues in epistemology. Probably the most far-reaching consequence of foregrounding epistemic/non-epistemic dependence arises from the possibility and actuality of what in the philosophy of mind is called ‘multiple realization’. The principle of epistemic/non-epistemic dependence means that where there is knowledge, there is a knowledge-maker—but there is no reason to expect a common kind of knowledge-maker in different cases. Just as one act may be bad in virtue of offending rights and another may be bad in virtue of causing needless pain and another in virtue of betraying a family loyalty, so different cases of knowledge need not have a similar kind of knowledge-maker. I take multiple realization to conjoin the positive idea that one kind of fact depends on another, with the negative idea that the first kind of fact may depend on many different facts of the second kind.¹³ Much epistemology, by contrast, assumes a reductionist understanding of the knowledge-making relation, so that all cases of knowledge are thought to have a similar kind of knowledge-maker. (See for example Audi 1988, chapter 7.)

This is unwarranted, or at least unargued. It is manifest in the way that counter-examples are supposed to function where we are examining the idea that some X makes for knowledge, and then a case is cited of something which is knowledge but not X; this is supposed to show that the original case was not knowledge in virtue of being X. To take one example of many, Paul Moser writes: “Knowledge is not just true belief. Some true beliefs are supported merely by lucky guesswork and they are not knowledge” (Moser 2002, p. 4). But perhaps some other true beliefs are knowledge. Why generalize from the

¹³ This notion of ‘multiple realization’ does not imply a commitment to identities between epistemic properties and second-order causal properties.

lucky guess case? This ubiquitous move is predicated on the denial of multiple realization. It could be, for example, that one case of knowledge holds in virtue of being formed by a reliable process while another holds in virtue of being justified. They might even have the same or similar contents despite being known in different *ways*, in the sense of being knowledge in virtue of different knowledge-makers.

Epistemologists sometimes allow that knowledge may have varied 'sources', such as perception, testimony, introspection, memory, reason (Audi 1988). Is this the acceptance of multiple realization? No, for the idea is usually that there is one feature that always makes for knowledge, such as reliability or justification, and then the sources—perception, testimony, introspection, memory and reason—are various ways that a belief has that feature—being reliably formed or justified or whatever. It is assumed that there is one common feature in virtue of which these are all sources of knowledge.

Is there nothing general we can say about what knowledge depends on? There seems to be no objection to the standard view that the belief that *p* and the fact that *p* are always *part* of what makes for the knowledge that *p* in every case.¹⁴ In standard epistemology, belief and fact are thought to be necessary conditions but not sufficient conditions of knowledge, since there are some examples of belief and fact that are not knowledge. But this way of looking at things, or proceeding, or arguing, is questionable. What we can say is that in *many cases*, belief and fact are not all that makes for knowledge. Epistemology may be conceived in part as the quest for a more complete knowledge-maker in those cases, even if we do not conceive of that as the quest for sufficient conditions for knowledge in every case. Consider the common question: what else suffices for the knowledge that *p* besides the true belief that *p*? Let us rephrase that in the light of the idea of epistemic/non-epistemic dependence and replacing facts for truth: what else does knowledge depend on besides belief and fact? But this question is objectionable if it assumes that there is a general answer. Although in *many cases* it is true that more is needed for knowledge beside belief and fact, it is possible that in *some cases*, belief and fact are all that knowledge depends on. Knowledge of Wittgensteinian 'hinge' propositions—such as that there is an external world—are not implausible candidates (Wittgenstein 1967). The fact that the knowledge-maker includes more than belief and fact in *some cases* does not show that there are not some *other cases* where belief and fact *exhaust* the knowledge-maker. I am not asserting that people know hinge propositions merely in virtue of belief and fact, just that the fact that knowledge of non-hinge propositions requires more than belief and fact, does not establish that knowledge of hinge propositions requires more. Whether there are indeed some cases of knowledge that depend only on belief and fact is controversial. My view happens to be negative on this question, but that is not important here. What is important is that whether or not there are such cases cannot be assumed on the basis of a generalization from *other cases* where more is needed. Epistemology textbooks very often argue in such a manner. But given multiple realization, the argument is fallacious.

¹⁴ I speak of facts rather than truth for reasons I give in Zangwill 2013c.

§3.2 Multiple Realization and Particularism?

How diverse can the epistemic makers be? Some might worry that we are simply left with a list of knowledge-makers with no unifying principle. But the claim that some reduction, some unifying principle, must be forthcoming needs defence. If that is thought to be just part of epistemology, then epistemology needs a skeptical voice, paralleling Bernard Williams' skepticism about the ambitions of moral theory (Williams 1985). The claim that there is always more theoretical understanding to be had is a dubious one, and certainly one in need of considerable defence. A different worry might be that multiple realization plus a radically diverse view of the realizers of knowledge threatens knowledge of knowledge. In principle, yes it does. But so long as knowledge has its typical role, which can be multiply instantiated in non-epistemic facts, we can have knowledge of knowledge by knowing that typical role. If knowledge had no typical role, then it would indeed be difficult to know.

Does embracing multiple realization mean that I am an epistemic 'particularist' in the sense of Jonathan Dancy (Dancy 1981, 2004)? Much of what I have said about dependence and necessity coincides with things that Jonathan Dancy has said, following Michael Stocker (Stocker 1970). However, I am not here embracing particularism. Crucial to *that* position is that what may be a maker of a normative fact in one case may be a maker of the negation of that normative fact in another case. I am not committed to this strong position. It does not follow from multiple realization. Multiple realization is the view that similar normative facts may have very different non-normative makers. That is, there are many different kinds of non-epistemic makers for any kind of epistemic fact. Normative particularism, by contrast, is the view that non-normative facts may vary in the normative properties that they contribute to making. According to the idea of multiple realization that there are no norm-to-non-norm generalizations, whereas according to the idea of particularism there are no non-norm-to-norm generalizations. For example, it could be that lying is always *pro tanto* wrong, and perceptual experience always supplies *pro tanto* justification for belief, although there are other ways to do wrong and other ways for a belief to be justified. So multiple realization does not entail particularism. Furthermore my view that the knowledge-maker always includes belief and fact could not be less particularist. I endorse Dancy's views on 'favoring', 'resultance' and 'enablers', but not particularism.¹⁵ <<terminology?? Particularism vs holism>>

§3.3 Hybrid Skepticism and Multiple Realization

Consider some standard arguments for *hybrid* skeptical views, views that combine

¹⁵ For our concerns, little turns on whether or not knowledge is a 'mental state'—something discussed by Timothy Williamson (Williamson 2000). The issue we are interested in is the dependence of knowledge, mental state or not, on non-knowledge states. Williamson's view may be that knowledge does not have belief as a *part*, which might be true but not very interesting if mereological notions do not apply to epistemic or mental states. If, however, the thesis is that having knowledge never *depends* in part on having a belief, then it is false.

dogmatism with skepticism. According to such views, we know ordinary facts, such as that we are sitting on a chair, but we do not know that we are not dreaming, or not a brain in a vat, or not deluded by an evil demon. (Prominent examples are Fred Dretske or Robert Nozick (Dretske 1970, 1981, Nozick 1981).) Such views are committed to denying epistemic closure: one can know one but not the other, despite knowing that one entails the other. Let us put to one side the *plausibility* of these views in order to consider the *arguments* for them.

The standard argument for the hybrid view is that a person is said to know one but not the other because there is some non-epistemic property, which is the knowledge-maker of one case but not the other. For instance, perhaps ‘tracking’ conditions hold in one case but not the other. But this argument flouts the multiple realization point. The non-epistemic knowledge-maker envisaged by hybridists varies with different theories but the basic strategy is common: there is a knowledge-maker that holds in the case of the belief that I am sitting on a chair but not in the case of the belief that I am not dreaming. But, given multiple realization, what makes us know in one case may be very different from what makes us know in another case, despite the fact that what we know in the two cases stands in an entailment relation, and we know that. Consider this parallel argument: act A is good in virtue of being a case of a promise-keeping, but act B is not a case of promise-keeping, so it is not good. We should protest: No!—Act B may be good by being a loyal act or by being a helping act; there are other ways to be morally good. Similarly, there are many ways to be epistemically good. The fact that the belief that I am not dreaming lacks the non-epistemic property in virtue of which we know that I am sitting in a chair does not show that the belief that I am not dreaming does not have *other* non-epistemic properties that make it knowledge. This is not to say that the hybrid view is incorrect. The point is that this common form of argument for hybridism is fallacious because it overlooks multiple realization.

§3.4 An Argument for Multiple Realization

To point out that epistemologists often assume the opposite of multiple realization in their pursuit of necessary and sufficient conditions, or when they argue for various positions, is not to offer a positive argument in favor of multiple realization. What can be positively said in favor of multiple realization? Why believe it?

In the philosophy of mind in the 1970s and 1980s, philosophers argued for multiple realization from the *causal role* of mental states. It was said that that role could be discharged by a variety of physical states. Therefore, they concluded, there are a variety of kinds of physical states in which mental states can be realized. It is similar with knowledge. We can argue that the role of knowledge is such that a variety of non-epistemic states can discharge that role. Hence knowledge can be realized in diverse non-epistemic states. What, then, is the role of knowledge? One common role, I suggest, is that knowledge makes its possessor ‘reliable’ in the sense that she tends to believe truths and avoid falsehoods; roughly the person tends to believe p rather than $\sim p$ when p , and the person tends to believe $\sim p$ rather than p when $\sim p$. In cases where we merely have true belief and do

not know, we are not reliable in other similar cases. But if we know, we are reliable in other similar cases. Of course, many have thought that reliability, either in this sense, or in the sense of having beliefs that are formed by reliable processes, is what knowledge *is* (Goldman 1986); but I propose instead that reliability is a standard *role* of knowledge. We are reliable *in virtue of knowledge*; they are not the same thing. Perhaps knowledge does not universally have that role. But in many cases we are reliable because we know. We can know without being reliable (for example in hinge proposition cases, or in flukey cases) and yet, when we are reliable, it is usually because we know. The argument from this point is that we may be reliable in different ways: in virtue of being justified, in virtue of causal relations between beliefs and facts, in virtue of a conjunction of these, in virtue of constitutive and essentialist relation in other cases (Zangwill 2013a), and so on. Hence it is plausible that epistemic properties are multiply realizable.

§4. Beyond Knowledge

§4.1 Other Epistemic Properties

The foregoing is the main argument of this paper. In this last section I want to show how the above points concerning knowledge apply equally to other epistemic phenomena. I survey these points briskly. I shall not defend each claim in detail but explore the issues in the light of the preceding argument.

Consider justification. First, *dependence*: if someone is justified in believing that *p* then it must be in virtue of something. Something must make her justified. There are different views about what supplies justification—perhaps the existence of other beliefs or experiences, perhaps coherence with other mental states, perhaps something to which we have so-called ‘access’, or perhaps the reliability of belief-forming processes. This is a substantive issue. But something makes a belief justified if it is. Second, *the dependence/sufficiency distinction*: the justification-makers (or ‘justifiers’) need not *suffice* for justification. Something may be a justification-maker for a belief even though there are many possible defeaters such that, if one of them were instantiated, the belief would not be justified. And third, *multiple realization*: beliefs may be justified in different ways—perhaps by experience, by coherence with other beliefs, by being self-evident, and so on. We should not assume a uniform kind of justification-maker across different cases of justified belief.

The same goes for other epistemic notions: if a person is intelligent, for example, then something must make her intelligent; but what makes her intelligent may not suffice for intelligence; and there are different ways to be intelligent. This last was perhaps the point of some criticisms of “I.Q.” testing. Intelligence can take different forms and can be manifest in different ways. Hence standardized tests for intelligence are likely only to test limited kinds of intelligence and exclude others. That is why having just one kind of test is politically charged.

§4.2 Epistemic Structure

How are epistemic properties related to each other? Is there a dependency relation among different epistemic properties? For example, what is the structural relation between knowledge and justification? One view would be that having knowledge depends on in part on justification, and that justification-makers do not include knowledge. Another view would be that being justified holds partly in virtue of knowing, and that knowledge-makers do not include justification. (William Alston argues that they need not in Alston 1989.) However, multiple realization is important here, once again. Both views are too dogmatic. Some knowledge-makers include justification while others do not. And some justification-makers include knowledge and others do not. In *many* cases, it is clear that knowledge-makers include being justified. (Many of Lawrence Bonjour's Clairvoyance cases are like this (Bonjour 1985, chapter 3); the 'Norman' case is the exception.) In those cases, knowledge holds partly in virtue of justification (that is, *x* knows that *p* partly in virtue of *x*'s being justified in believing *p*). In some cases of knowledge the maker is justified true belief, in other cases it is reliably formed true belief, and in yet other cases it is justified *and* reliably formed true belief. There may be cases of non-justified but reliably formed true belief, and of unreliably formed but justified true belief that are cases of knowledge. They are knowledge, but in a different ways.

§4.3 Coherence

One epistemic fact may depend in part on another, but at some point there must be non-epistemic properties. Epistemic facts may be structured—they may depend on each other. But at some point they must hold in virtue of non-epistemic facts. There must be non-epistemic makers of epistemic facts.

This might be thought to be controversial in that it begs the question against coherentism in epistemology. But this is not the case. Suppose that the epistemic structure bottoms out in a conjunction of one item of knowledge and one item of justified belief, and each of these epistemic facts depends on the other. This is consistent with epistemic/non-epistemic dependence. Compare two people who are married: each is the spouse of the other; these two properties are mutually dependent even though being married, the status both share, depends on various social facts. In the same way, knowledge and justification may mutually depend on support each other in some cases and perhaps neither would be what it is without the other. Nevertheless both epistemic facts and any epistemic facts that they generate in concert, and perhaps only in concert, must depend on non-epistemic properties of the beliefs. Thus the principle of epistemic/non-epistemic dependence is compatible with a quite strong coherentist conception of the mutual dependence of epistemic facts.

Is not the dependence relation asymmetrical? Epistemic/non-epistemic dependence is non-symmetrical but not asymmetrical. It allows that there can be mutual dependence among epistemic facts. Similarly, perhaps rights and duties are inter-dependent, even

though both must bottom-out in non-moral properties that make for a marriage of rights and duties.

Other epistemic properties may be involved in an epistemic structure. A belief might be justified partly in virtue of a person being intelligent or she might be intelligent partly in virtue of being disposed to form justified beliefs. Or justification and intelligence might be mutual dependent. Nevertheless, there must be a non-epistemic basis for being justified *and* being intelligent, even if they work together and a person cannot be justified without being intelligent and vice versa.

If coherentism is more than this, if it is an assertion of non-dependence, then matters are different. That view would be no more plausible than the view that goodness depends on obligation, which depends on rightness, and so on forever—there being nothing non-normative in virtue of which any of these hold. Such a view is as unintuitive in epistemology as it is in moral philosophy. Furthermore, given the *role* of knowledge, there must, in each case of knowledge, be something non-epistemic that discharges that role. The inter-relation of normative facts is one thing, their non-dependence is another.

§Coda: Further Issues

Epistemology needs dependence. Without it, epistemology is confined to a modal framework in which to pose its questions, which is either plainly unsatisfactory or at least overly limiting. (In my view, few interesting philosophical issues can be posed in a modal framework.) There is of course a great deal more to be said about knowledge-, justification- and intelligence-makers. These are issues for what we might call ‘substantive’ epistemology. For example, we might wonder exactly what the *link* is between belief and fact which makes for knowledge in many cases. We might wonder whether, in many cases, justification depends in part on experiential states. And perhaps intelligence depends in part on certain imaginative capacities. As I have indicated, once we recognize the principle of epistemic/non-epistemic dependence, we can raise the issue of how different epistemic facts inter-relate: the question of epistemic structure can be investigated. Furthermore we can raise issues about skepticism in this framework. *Are* there any positive epistemic fact-makers (see Zangwill 2016)? Although there might be both positive and negative epistemic/non-epistemic dependence relations, there might be no non-epistemic facts that generate positive epistemic facts, while there are natural facts that generate negative epistemic facts—so we do not know, are not justified, and are not intelligent. What is the relation between positive and negative epistemic properties and their makers? There are also issues about closure to be addressed. At its most general and simple: can a maker of a positive epistemic fact entail (and be known to entail) a maker of a negative epistemic fact? However, that there must *be* epistemic/non-epistemic dependence relations is a matter of a different order from these substantive questions. I have tried to isolate that relation, distinguish it from other relations and note what it does and does not entail. In particular, we should insist on the distinction between dependence and necessitation, and on the compatibility of epistemic/non-epistemic dependence with multiple realization. This has many interesting consequences, only some of which I have

explored here. Foregrounding the principle of epistemic/non-epistemic dependence transforms the way we think and argue about a number of central epistemological questions. On the negative side, many arguments in epistemology are subverted. More positively, once we are liberated from the necessary and sufficient conditions project, many fruitful paths for epistemological investigation open up. *

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