Formal Objects and the Argument from Knowledge

Jessica Leech

1 Introduction

In everyday life we come across all sorts of objects: tables, chairs, trees, sandwiches, and so on. Philosophers often make reference to and talk about other kinds of objects which do not seem so familiar: propositions, facts, states of affairs, properties, classes, concepts and so on. Across a number of works,[1] Mulligan describes these as *formal objects* and discusses, amongst other things, why we should think that there are such things. In this paper, my aim is to explore Mulligan's "argument from knowledge" for the existence of certain formal objects, namely, facts or obtaining states of affairs. First, I will present the argument, and consider its strengths and weaknesses. Second, I will consider whether the same kind of argument can be used to argue for the existence of other kinds of formal objects. Finally, I will consider whether this tells us anything about the nature of formal objects, what these things all have in common to be labeled together in this way.

A preliminary clarification is in order. The terms "proposition", "state of affairs" and "fact" are often confused, with different philosophers using them to mean different things in different places. In this paper, I will understand a *proposition* to be something that can be believed, understood or thought, composed of concepts, which may or may not be true. I will understand a *state of affairs* to be a complex of worldly things—objects, properties, states etc.—which may or may not obtain. A *fact* is sometimes taken to be a true proposition, sometimes an obtaining state of affairs, sometimes a *sui generis* entity. Mulligan inclines towards the second option, so in this paper I will understand a *fact* to be an obtaining state of affairs. Note that this ties facts and states of affairs closely together: any argument for the existence of facts will serve as an argument for the existence of states of affairs (or at least obtaining ones), and any argument for the existence of states of affairs will go some way to providing an argument for the existence of facts (as long as the argument yields some *obtaining* states of affairs).

[1] Mulligan (2006a,b, 2007)

2 Other Arguments for Formal Objects

One of the most well-known arguments for the existence of facts is the *truthmaker argument*.[2] In brief, the argument runs something like this.

1. There are truths.
2. For any given truth, there must be something that makes it true, i.e. a truthmaker.
3. The best candidate for playing the role of a truthmaker is a fact.
4. Therefore, there are facts.

As long as we agree that there are some things which are true, we should agree that there are facts to make those things true.

In fact, I have overstated the argument. As it stands, this argument includes a principle of *truthmaker maximalism*, i.e. that *every* truth has a truthmaker. This is a highly controversial principle for a number of reasons. For example, there are certain truths which it is not clear require their own truthmaker, such as necessary truths, logical truths, or true conditionals. There is also the worry that this strong truthmaker principle will yield an over-abundance of facts, clogging up our ontology. If our interest is only in arguing that some facts exist, then the argument would achieve this just as well by taking a weaker premise, that for *some* truths, there must be something to make it true. This more restricted principle allows us to ignore the more controversial cases, and promises to yield fewer facts into our ontology.

I am not going to consider the truthmaker argument in detail in this paper. But it is worth noting that as an argument for the existence of *formal objects*, it may not be of much help. The argument is premised on there being *truths*. One must therefore be able to say *what those truths are*, i.e. what the truth-bearers are. If you think they are something like propositions, then the existence of facts, one kind of formal object, is premised on the existence of another kind of formal object, propositions. This is not a problem for someone whose interest is only in states of affairs and facts, who already accepts propositions. But it fails to tell us anything interesting about how we can be sure that there are any formal objects. We only learn that (perhaps) the existence of one kind of formal object entails the existence of another. Furthermore, there are going to be other objections to the argument. For example, there are candidates other than formal objects to play the role of truth-bearers, such as concrete utterances, beliefs, thoughts understood as mental entities, and so forth.

The truthmaker argument looks at some things in the world, truth bearers, and asks why they have a certain (formal) property, truth. Mulligan's

[2] See Armstrong (2004, 1997).

strategy is different. He asks instead what the nature of *intentionality* can tell us about formal objects. The distinctive feature of intentional states, acts or activities is that they are supposed to be *about* something. Examples include, but are not limited to, belief, judgment, knowledge, desire, fear, hate and admiration. There is a division in intentional states and acts between those that can "miss their mark" or get things wrong, and those that are always correct. So, for example, beliefs can turn out to be false, and we can fear things which pose no threat, but something like *knowledge* is different. If we know that p, then p is true. We can never turn out to have "false knowledge"; that would be, for example, a false belief that we know that p, or something similar, not *knowledge*. There are two points to be highlighted here. First, Mulligan argues that intentional states such as belief do not give us a reason to believe in facts or states of affairs. Second, that an account of intentional states and activities that can miss their mark in terms of *correctness conditions* relies on a prior commitment to the existence of formal objects which itself needs justification.

First, then, can the nature of intentional states which can go wrong provide an argument for the existence of formal objects? Take, for example, belief. One can give an account of how belief can miss its mark in terms of a satisfaction condition.

> A simplified version of Searle's account of the satisfaction conditions for belief is that a belief that p is satisfied only if p. (Mulligan, 2007, p. 207)

This makes no appeal to formal objects. However, an alternative approach is to give an account of how belief can miss its mark in terms of a correctness condition. It looks as though correctness conditions for intentional states do make reference to formal objects. For example,

> If S believes that p, then S correctly believes that p only if the proposition that p is true/ the state of affairs that p obtains/ the fact that p exists.

This looks promising, but one can object that the reference to formal objects here is superfluous. We can simply say:

> If S believes that p, then S correctly believes that p only if p

Independent of other philosophical reasons, there is no need to add to this simple schema. For example, the following instance is well-formed.

> If Sam believes that Sally is silly, then Sam correctly believes that Sally is silly only if Sally is silly.

Reference to formal objects in an account of non-factive intentional states and acts can be eliminated, at least in the case of belief and judgment

(see Mulligan (2007, §2)). It does not look like an account of this kind of intentionality is going to justify a belief in the existence of formal objects.

The second point is that, not only does an account of these kinds of intentional states and acts not provide an argument for the existence of formal objects, such an account in terms of correctness conditions seems instead to make an appeal to the existence of formal objects. Here are some of Mulligan's examples of putative correctness conditions for some intentional states and acts: psychological reports on the left, putative correctness conditions on the right.

x desires to F	x ought to F
x values y	y is valuable
x admires y	y is admirable
x regrets that p	It is regrettable that p
x prefers y to z	y is better than z
x judges (believes) that p	The state of affairs that p obtains
	The proposition that p is true

(See Mulligan (2007, p. 207).)
Each of these correctness conditions 'refer to formal objects (propositions, states of affairs) or are dominated by formal predicates or functors (truth, obtaining, value, ought, probability)' (Mulligan, 2007, p. 209). Hence, one objection that can be raised against this approach by the skeptic about formal objects, standardly the nominalist, is to claim that formal objects and formal properties do not exist, and so the approach must fail.

So what now?

> How should a friend of correctness conditions react to the many different objections I lumped together under the claim that correctness conditions are problematic? To the objections that there are no propositions or states of affairs, no values and no norms? ... To the claim that correctness conditions for judgment and belief can be given without mentioning states of affairs or propositions? (Mulligan, 2007, p. 212)

Mulligan proposes to consider an account of the other kind of intentionality, the kind that is always correct. The paradigm case of this kind of intentionality is *knowledge*.

> A philosopher who intends to provide a philosophy of intentionality and thinks that an account of the intentionality of attitudes, acts and states which can miss their mark can be given in terms of correctness conditions must in any case provide a complementary account of the intentionality of knowledge. Suppose that a plausible account of the intentionality of knowledge could be

> shown to entail that there are facts, values, norms, probabilities etc.. Were that the case our philosopher would be able to kill two birds with one stone. He would have an account of the two main types of intentionality and his account of the intentionality of knowledge would give him the very best of reasons for holding that correctness conditions are unproblematic. (Mulligan, 2007, p. 212)

3 The Argument from Knowledge

First, we need to set in place two distinctions between different kinds of knowledge. Mulligan notes that knowledge can be *episodic* or *non-episodic*, *propositional* or *non-propositional*. Our familiar standard *knowledge that p* is classed as non-episodic propositional knowledge. It is a constant state or disposition of knowing that p. There is also the episodic and propositional *coming to know that p*, which is properly expressed by the German phrase "erkennen, dass p", and less-properly expressed by the English phrase "to apprehend that p". We can understand apprehension that p as marking the beginning of knowledge that p.[3] Non-episodic non-propositional knowledge is acquaintance with an object, i.e. knowing x. Episodic non-propositional knowledge is becoming acquainted with an object, and again can be understood as marking the beginning of the non-episodic state of being acquainted with x.

The argument from knowledge appears in at least two places, Mulligan (2006b) and Mulligan (2007), with some slight differences, but this is what I take to be the general form.

1. There is non-episodic, propositional knowledge, i.e. *knowledge that p*.
2. The beginning of knowledge that p is marked by episodic, propositional knowledge.
3. There is episodic, propositional knowledge, i.e. *apprehension that p*.
4. The best account of apprehension that p includes *identification* of things.
5. The best candidates for the things which are identified in apprehension that p are formal objects.
6. Therefore, there are formal objects.

[3] One might object that in the case of innate knowledge that p, there is no coming to know that p, one always knows it. If one finds this point compelling, the following discussion can simply be restricted to cover cases of knowledge that p which *do* begin with episodic knowledge. As long as there are such cases, then the argument can still run through.

The most important step to understand is the introduction of *identification*. Mulligan begins by discussing the non-propositional case, of coming to know an object. As with the propositional case, episodic knowledge is taken to mark the beginning of non-episodic knowledge. So what account should be given of the episodic case? Take the example of coming to know an object through seeing the object. Is it sufficient for the object merely to appear in one's visual field? No. Just because my eye is cast over a scene including a particular rock, R, does not mean that I become acquainted with R. Most importantly, *I would not know R if I saw it again.* There has to be more to knowing something (i.e. knowing some thing) than having come across it. In coming to know the thing one must *identify* it. Continuing knowledge of the thing can then be understood as at least the ability to *reidentify* the object. The beginning of being able to reidentify an object is the initial identification of it.

> If x comes to be visually acquainted with y, then x sees y at t_1 and then at t_2 and sees y at t_2 *as the same object.* (Mulligan, 2007, p. 215)

In cognitive science this ability to identify and track objects is known as *object constancy.* Mulligan tells us a little more about identification.

> Identification is a mental act which has correctness conditions: x correctly identifies y and z only if $y = z$. Such identification may but need not take the form of a judgement. Simple seeing has no correctness conditions; it is an intentional relation we stand in to things and processes. Coming to be visually acquainted with something has no correctness conditions either. But it involves identification, which does have correctness conditions. (Mulligan, 2007, p. 215)

To clarify then: visual acquaintance is not identification, but it does involve identification. Visual acquaintance does not have correctness conditions—as a kind of knowledge, it is one of the kinds of intentionality which cannot get things wrong—but identification, which is involved in acquaintance, does have correctness conditions. Sometimes identification is a judgment of identity, but it need not be. An additional detail is that Mulligan claims that what we 'simply see' in the visual field, and the objects of visual acquaintance, are different.

> What we simply see are substances, states, processes and events. Episodic visual acquaintance is acquaintance with objects and properties. It is based on a relation to substances, states, processes and events. (Mulligan, 2007, p. 215)

This point will become important later on.

So, acquaintance of an object involves identification. Mulligan's suggestion is that apprehension that p analogously involves identification. When we come to (propositionally) know something, we identify something. Now, we might try to present this kind of account of knowledge without making reference to any formal object, as in the case of the account of belief above.

> S apprehends that p only if S 'sees' p and S 'sees' q and S correctly identifies p and q.

(Where $p = q$.) The problem is that this account is ill-formed. The letters 'p' and 'q' are placeholders for a sentence expressing a proposition, they are not names of things which could be identified. See what happens if we flesh this out with an example.

> Sam apprehends that Sally is silly only if Sam 'sees' Sally is silly and Sam 'sees' Sally is silly and Sam correctly identifies Sally is silly and Sally is silly.

Things are just as bad if we try to frame the identication between that-clauses, i.e.

> Sam apprehends that Sally is silly only if Sam 'sees' that Sally is silly and Sam 'sees' that Sally is silly and Sam correctly identifies that Sally is silly and that Sally is silly.

To properly be able to express identity, we need to add a locution such as 'the proposition (that)' or 'the state of affairs (that)' or 'the fact (that)'.

> S apprehends that p only if S 'sees' the fact that p and S 'sees' the fact that q and S correctly identifies the fact that p and the fact that q.

(Where the fact that p = the fact that q.) This account of apprehension that p requires that someone who apprehends that p, comes to know that p, makes an identification of a fact. This might be across time (as with the visual acquaintance example), i.e.

> S apprehends that p only if S 'sees' the fact that p at t_1 and S 'sees' the fact that p again at t_2 and S correctly identifies the fact that p at t_2 as the same fact.

This might also be through different media, i.e. S correctly identifies the fact S has just seen with the fact that S is wondering about.

> S apprehends that p only if S 'sees' the fact that p and S 'wonders about' the fact that p and S correctly identifies the fact that p about which S is wondering as the same fact.

At first glance, this view might seem strange, but in fact, it seems to account for the "eureka" moment we have when we come to know something new. Sometimes we find ourselves thinking about facts, but not knowing which fact we are thinking about. For example, I might be wondering what the capital city of Oman is. I am representing the fact descriptively, but I am not yet able to identify the fact. I then google "capital city Oman" and read the fact that Muscat is the capital city of Oman". 'Aha!' I say to myself, '*that* is the fact I was thinking about.' I have identified the fact I was thinking about with the fact I just read. I have apprehended the fact that Muscat is the capital city of Oman. It is perhaps worth noting that other going accounts of knowledge don't really seem to account for the phenomenology of coming to know something. For example, if I form a belief that tracks the truth, it is not clear how this would give me a "eureka" feeling.

Clarifying the notion of identification should make it clear how the argument from knowledge works. We assume that there is propositional knowledge. Either we can simply assume that there is apprehension that p, or we can take an extra step and assume that there is knowledge that p, and argue that knowledge that p requires apprehension that p to get started. Then, the best account of apprehension that p, it is argued, involves identification. But any formulation of this view is ill-formed unless reference is made to formal objects. Reference to formal objects is taken to be ontologically committing. So on the assumption that there is propositional knowledge, we conclude that there exist formal objects. What those formal objects are will depend upon whether you think the best candidates for knowledge are true propositions, obtaining states of affairs, or facts. This looks a lot like the question above concerning whether facts are true propositions, obtaining states of affairs, or *sui generis*. One could leave this open, but assuming that facts are obtaining states of affairs, this argument can be taken to conclude that states of affairs exist.

One objection which Mulligan anticipates to the identification theory of knowledge is the following.

> The identification theory of apprehension has implications which not all philosophers will find equally acceptable. For example, that to apprehend that p by inferring validly from known premises to p involves going through the inference at least twice. And, another example, that coming to know that p through testimony requires a double-take. (Mulligan, 2007, p. 216)

However, I think Mulligan is unfair to his own view here. As I understand it, this view of apprehension requires that two presentations of a fact be identified as the same fact. In Mulligan (2007), the view is presented in terms of facts seen at different times, i.e.

> Sam identifies the fact that Maria is sad, which he perceives at t_1, and the fact that Maria is sad, which he perceives at t_2. (2007, p. 216)

However, in another paper, the view is presented simply in terms of identification between facts presented differently, i.e.

> x identifies the obtaining state of affairs that Sam is smiling, *which x sees*, with the obtaining state of affairs that Sam is smiling, *which x represents*. (2006b, p. 39, my emphasis)

The requirement that we go through the same procedure *twice* to apprehend that p in certain cases, such as in proof or testimony, seems only to apply if we adhere to the more restrictive account whereby facts must be identified *across time*. If apprehension can also occur when facts are identified across different media, then we can avoid the unacceptable implications. For example, in the case of inferring validly from known premises to p, apprehension might involve identification of the fact that p, which occurs as the conclusion of the inference, as the fact that p, which was represented as a question in the example sheet. There is no need to do the work twice. Likewise, in the case of testimony, apprehension might involve identification of the fact that p, which a reliable witness testified to, as the fact that p, which the policeman represented as potentially important. No double-takes. Not only does this more permissive understanding of the view avoid difficult implications, but this is also the view which I have argued gets the phenomenology of learning right.

Another objection anticipated by Mulligan is that the realist metaphysician will not be interested in an argument from knowledge.

> Although no ontology should be incompatible with epistemology, a realist metaphysician will not attach much importance to an argument for facts from knowledge or from any other mind-dependent phenomenon. (Mulligan, 2006b, p. 31)

The realist metaphysician is interested in the fundamental furniture of the world, say, and we shouldn't expect what we know and how we come to know it to tell us about fundamental reality—we might miss out a part of reality which is unknowable, or which is distorted by our knowing it. Mulligan's response is to argue that facts are not ontologically fundamental. If they are not fundamental, then the realist cannot complain that an argument based on knowledge is inappropriate insofar as it is inappropriate for discovering the nature of fundamental reality. Mulligan also notes that if one does not take facts to be ontologically fundamental, then this takes some of the bite out of accepting truthmaker maximalism (cf. section 2). If facts are not ontologically fundamental, then one cannot complain that the principle

that every truth has a fact for a truthmaker clogs up one's (fundamental) ontology.

I am not going to assess Mulligan's arguments for facts being non-fundamental here. Rather, I want to draw attention to a similarity between this view and the view about visual acquaintance which will become important later. Recall, Mulligan takes the things in the world which impinge on our (visual) senses to be substances, states, processes and events, but he takes the things with which we may become visually acquainted to be objects and properties. Likewise, although we apprehend *facts*, these are not ontologically fundamental. What is (at least more) ontologically fundamental (than facts) seem to be objects (Sam), substances (Sam), events (Sam's jump), states (Sam's sadness) and so on.

> ... the following are all plausible:
>
> 47. Sam makes the state of affairs that Sam exists obtain
> 48. Sam's sadness makes the state of affairs that Sam is sad obtain
> 49. Sam's jump makes the state of affairs that Sam jumps obtain
> 50. Sam's jump over the fence makes the state of affairs that Sam jumps over the fence obtain

Just as in the case of visual acquaintance, the things we identify (objects and properties) are less fundamental than whatever we are related to in order to elicit this response (processes, states, etc.), so in the case of propositional apprehension the things we identify (facts/obtaining states of affairs) are less fundamental than whatever we are related to in order to elicit this response (objects? states?, etc.). I will return to this point and its consequences for the nature of formal objects below.

4 Extending the Argument

So far I have presented Mulligan's argument from knowledge for the existence of one kind of formal object, namely facts (or obtaining states of affairs). What I want to consider now is whether this kind of argument, from the nature of a kind of intentional state to the existence of a kind of formal object, can be extended to formal objects other than facts. If it can, what does this tell us about formal objects?

This is the rough general form of the argument from knowledge.

1. There is some (factive) intentional state (IS).
2. In order for IS to occur, it must begin with a related (factive) intentional episode (IE).

3. Therefore, there is IE (from 1,2).

4. The best account of IE involves the identification of some things.

5. The best candidates for identification in IE are a certain kind of formal object (FO).

6. Therefore, there are FOs (from 3, 4, 5).

An argument for the existence of facts or (obtaining) states of affairs took IS to be non-episodic propositional knowledge that p, IE to be episodic propositional knowledge, or apprehension that p, and FO to be facts or obtainings states of affairs. Can we flesh-out this general argument form to yield arguments for the existence of other kinds of formal objects?

Mulligan (2007) goes some way towards doing so in his discussion of knowledge of value. Mulligan does not give us an analogous argument for the existence of value, but he does give us an analogous account of knowledge of value. In knowledge of value we encouter or "feel" a value, and we come to know that value when we are able to identify it with (as) another value felt elsewhere.

> "Feel" in the sentence "Maria felt the injustice of the situation" is veridical. If Maria felt the injustice of the situation, then the situation was unjust. If she is struck by the beauty of the building, it is beautiful. Maria's indignation is a reaction either to a felt disvalue, the injustice of the situation or to a merely apparently felt value. In the latter case she is the victim of an illusion. Her admiration of the elegance of Giorgio's gait is a reaction to a felt, positive value or it is a reaction to an apparently felt value. (2007, p. 224)

> Is feeling value an exception to the principle that all knowledge involves identification? No. ... Aesthetic experience is perhaps the clearest example of the phenomenon of continuously feeling the same value as the same under different modes of presentation. Just as we distinguished between simple seeing and episodic visual acquaintance, so too, we should distinguish between (a) feeling value which is no form of knowledge but rather the analogue of simple seeing and perception and (b) the case where feeling value does constitute knowledge because it involves identification. (2007, p. 224)

Maria knows injustice in seeing the situation only if she not only minimally experienced the injustice, but felt and identified it. Perhaps Maria saw some injustice last week, or perhaps Maria read about injustice in her politics class. She is now properly acquainted with that value. Mulligan concludes the discussion with the following general view.

> If x favours y, then x feels the value of y or x merely seems to feel the value of y or x believes y to be valuable.

How could this view be used in an argument for the existence of values as formal objects? With only a little deviation from the general form, such an argument might go something like this.

1. It is sometimes the case that x values y, for some subject x, and some entity y.
2. If x values y, then x feels the value of y or x merely seems to feel the value of y or x believes y to be valuable.
3. Sometimes x feels the value of y (FV).
4. The best account of FV involves the identification of some things.
5. The best candidates for identification in FV are values.
6. Therefore, there are values.

The crucial factive intentional state here is *feeling the value of y*. Then, it is argued, the best account of this involves identification of values.

The disjunction in (2) opens up the argument to a challenge. What if all cases of valuing are covered by mere feeling of value or mere belief of value? The argument assumes, in other words, that the correctness conditions of valuing are at least sometimes met, i.e. in some cases where x values y, y is indeed valuable, and x is able to feel that value—y is not *merely* seemingly valuable or *merely* believed to be valuable. If this assumption turned out to be false, then one would need to provide some kind of error theory: why do we value things when we are never correct in doing so? Assuming that we are sometimes correct in our valuing avoids having to answer this kind of question.

Furthermore, note that at this stage the existence of value has not yet been established, only that valuing is sometimes correct. What makes a valuation correct is still open. This is addressed in the later stages of the argument, in claiming that correct valuing involves feeling a value, and in making the same kind of distinction we made in the case of simple seeing vs. visual acquaintance. It is not enough for a value to appear unacknowledged in the subject's sphere of experience for a value to be felt, the value must be identified.

To get into a deep analysis of this particular view of knowledge of value would involve too great a digression. Instead, I want to sketch some other potential arguments for formal objects. First, what about the case of *knowing one's own mind*. If I know anything at all, surely I know the contents

of my own thoughts?[4] The following principle seems plausible:

> (In at least some cases) if x thinks that p, then x knows the content of that thought.[5]

But what is the definition description "the content of that thought" referring to? An ill-formed version of the principle would be

> (In at least some cases) if x thinks that p, then x knows that p.

If we read "x knows that p" as meaning that x has propositional knowledge that p, this is completely wrong. Just thinking a thought that p does not imply knowledge that p ! The knowledge here is intended to be non-propositional: acquaintance of a thing, a content, not a fact. But read this way, the principle is ill-formed. As Mulligan is often at pains to point out, the expression "that p" is not a well-formed referring expression. In order to make the principle work, a qualifying phrase needs to be added, such as in 'the fact that p' or 'the proposition that p'. Of the candidates for playing this role, a proposition is arguably the most appropriate kind of thing for "p" to be. So we end up with

> (In at least some cases) if x thinks that p, then x knows the proposition that p.

Once we have knowledge of an object, then the same kind of account can be run. Such knowledge requires identification, and the best candidate here is a formal object, a proposition.

Let's translate this line of reasoning into a version of the argument from knowledge.

1. There is some (factive) intentional state: knowledge of the content of one's own thoughts (KT).
2. In order for KT to occur, it must begin with a related (factive) intentional episode (EKT).
3. Therefore, there is EKT (from 1,2).
4. The best account of EKT involves the identification of some things.
5. The best candidates for identification in EKT are a certain kind of formal object: propositions.

[4]Some externalists about content might disagree. For example, they might argue that if I was unwittingly on twin Earth and I thought to myself "This is a nice glass of water", I would not know that the content of my thought was in fact "This is a nice glass of XYZ". If one finds these arguments persuasive, the following can be restricted to thoughts which are not about natural kinds, or other things vulnerable to the externalist view.

[5]Note here, "thinking that p" is just meant as entertaining the thought that p, not as believing that p.

6. Therefore, there are propositions (from 3, 4, 5).

This leaves open what propositions *are*. One may go on to give further arguments, for example, for the claim that the things we think must be able to be shared and thought by others (see, e.g., Frege (1956)).

The general strategy here is to take as one's factive intentional state a certain kind of knowledge. Given an identification account of knowledge, the next step is to consider whether formal objects might be involved in the identification in this kind of knowledge, and if so, what kind. I have suggested that arguments could be developed for the claims that knowledge of value involves identification of values, and that knowledge of one's own thoughts involves identification of propositions. Other prospects for these arguments might include: knowledge of similarity and identification of properties; mathematical knowledge and identification of mathematical objects such as sets and numbers; grammatical knowledge and identification of grammatical structures; semantic knowledge (knowledge of the meanings of words) and identification of the meanings of words; and so on. To properly assess this strategy would involve a wholesale evaluation of this kind of theory of knowledge and the notion of identification. This is a task for elsewhere. My present aim is to consider how this account can be used and extended in the context of the argument from knowledge.

5 The Nature of Formal Objects

So far I have looked at Mulligan's argument from knowledge for the existence of facts, and sketched how it might be extended to provide arguments for the existence of other kinds of formal objects. Can this line of investigation tell us any more about what formal objects are? There are two salient points to bear in mind. *First*, we have arguments from the existence of *intentionality* to the existence of these special objects. *Second*, the realist objection to this kind of argument was addressed by Mulligan (in the case of facts) by arguing that those formal objects are not fundamental.

What seems to be emerging is the following picture. The fundamental furniture of the world is made up of substances, states, processes and events. But what we are able to have knowledge of are other things, such as properties, values, propositions and facts or states of affairs. Our best reason for believing that these latter things exist comes from knowledge and intentionality: the best account of knowledge requires the existence of these formal objects. A natural question to ask is: why does an account of intentionality yield arguments for the existence of formal objects, especially when this would not be appropriate in the case of ontologically fundamental entities? The natural conclusion to draw here is that formal objects are not only not ontologically fundamental, but that this is explained if we understand formal objects as being dependent upon intentional states.

If there were no visual perceivers, would there be objects, or only substances and states etc.? If there were no epistemic agents, would there be facts? If there were no thinkers, would there be propositions? Mulligan likens the status of formal objects to social entities.

> According to such a metaphysician, there are propositions, facts, properties and relations but these entities are not ontologically basic. After all, there are social entities but social entities are not ontologically fundamental. (Mulligan, 2006b, p. 44)

There exist entities such as 1 euro coins, football teams, nuclear families, public limited companies, and so on. But these are not the kinds of things which make up the fundamental furniture of the world. Arguably, social entities such as money, teams, families and businesses ontologically depend upon some kind of creatures capable of social interaction. The view which one can take from Mulligan's work on formal objects and the argument from knowledge is that there do exist formal objects, such as facts and values, but that these are ontologically dependent entities. Furthermore, they depend upon certain forms of intentionality, and hence creatures capable of intentionality.

Is this line of thought pulling us into dangerously anti-realist waters? This depends upon how you understand what realism is. What does it take to be "realist" about Fs? Does one need to count Fs as ontologically fundamental? This looks to be a particularly strong form of realism. A more moderate realist about Fs will merely require that Fs exist, taking the view that lots of things exist without being ontologically fundamental. Yes, there may be relations of ontological dependence between things, and those will be very interesting to the metaphysician, but just because something is not ontologically fundamental is no reason to say it's not real. These are deep issues which I cannot explore here, but I will take it to be a plausible version of realism about Fs that Fs can be counted as real if they are ontologically dependent on something, as long as it is correct to say that there are Fs.

One might then worry about the kinds of things Fs are ontologically dependent *on*. For example, one might get nervous if Fs depend upon anything resembling a mental entity. Should this count as anti-realism about Fs? Well, as long as Fs still *exist*, and are not mere figments of the imagination or the like, then it would seem not. There is a difference between, for example, saying that an F only exists as long as it is currently being thought about, and saying that if there were no thinkers, there would be no Fs. The conclusion of the argument from knowledge is that *there are facts*. The proposed interpretation of the details of the view is that facts ontologically depend upon creatures capable of intentionality. This is not to say that a fact does not exist if no one currently knows it. This kind of view can then explain (a) why facts are not ontologically fundamental—it is

because they ontologically depend upon intentional creatures—and (b) why the argument from knowledge is successful.

Mulligan (2006b) leaves us with the following picture of the different levels of reality, with the ontological level being ontologically fundamental.

Logical level: propositions, concepts

Logico-ontological level: objects, properties, relations, facts

Ontological level: space-time, things, states, processes, and kinds thereof

He asks the questions: 'How are the ontologically fundamental and the ontologically non-fundamental related to one another? How is the logico-ontological level related to the ontological level?' He suggests, for example, that states of affairs depend in some way on objects, for example, that Sam makes the state of affairs that Sam exists obtain (see above). My proposal helps to answer these questions. One might say that the higher levels depend upon the lower levels, but only in the presence of creatures capable of intentionality. So, for example, a condition on the Atlantic Ocean making the state of affairs that the Atlantic ocean exists obtain is that there is intentionality. Without intentional creatures there would be things, states and processes etc.,—there would be the Atlantic Ocean—but there would be no logical or logico-ontological entities to be known, seen, understood, thought, recognized and so on—there would be no state of affairs that the Atlantic Ocean exists.

6 Conclusion

In various places, Mulligan has discussed the argument from knowledge for the existence of facts, a certain kind of formal object. In this paper I have tried to consider two questions: can this kind of argument be extended to other kinds of formal object, and if so, what does this tell us about the nature of formal objects? I have sketched how, given an identification account of knowledge, the argument can be extended to argue for the existence of things such as values and propositions. Mulligan makes his argument more palatable to the realist by arguing that facts, and other formal objects, are not ontologically fundamental. This, together with the argument from knowledge, suggests that formal objects are to be understood as things which are ontologically dependent upon intentionality and hence on creatures capable of having intentional states and performing intentional acts.[6]

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