On Behalf of Understanding: A Reply to Khalifa

Abstract: In “On the Role of Understanding” Kareem Khalifa argues for the superiority of explanatory understanding over understanding brought about by things other than explanations. In this essay I draw attention to a class of examples of understanding brought about by means other than explanations such that no explanation could have plausibly brought about equally impressive (much less strictly superior) understanding. The examples will turn on the fact that understanding is often produced in a way that is intimately bound up with the development of an ability or skill and that explanations, by contrast, are ill-equipped to imbue such skills in their recipients.

In “On the Role of Understanding” Kareem Khalifa argues for the superiority of explanatory understanding over understanding brought about by things other than explanations. He does so by going through a set of examples of such non-explanatory understanding put forward by Peter Lipton and arguing that, in each case, there is an explanation which would have produced strictly superior understanding. In this essay I draw attention to another class of examples of understanding brought about by means other than explanations such that no explanation could have plausibly brought about equally impressive (much less strictly superior) understanding. The examples will turn on the fact that understanding is often produced in a way that is intimately bound up with the development of an ability or skill and that explanations, by contrast, are ill-equipped to imbue such skills in their recipients. Explanations trade in propositions, information, and knowledge, whereas understanding often requires more than that. More specifically, I will argue that some understanding is such that possessing it requires either more than mere knowledge, or else knowledge of a particular type not readily furnished by explanations.

In §1, I present an example—understanding inflation—of non-explanatory understanding that could not be equaled, much less improved upon, by receipt of a good explanation. In §2 I look at possible responses to this example. First, I look at Khalifa’s own response to the worry that understanding might require more than knowledge, and argue that this reply is insufficient. In §3 I consider more general replies to the concern that explanations do not provide the right kind of cognitive benefit to suffice for all understanding. I argue that explanations are only suited to provide knowledge-that whereas, if the cognitive benefit of understanding can be exhausted by knowledge-that at all, it is knowledge-that presented in a particular way not suitable for explanations. Thus Khalifa’s Explanatory Idealism—the position that all understanding aspires to the condition of explanatory understanding—is shown to be overly generalized.

§1 Understanding Inflation

Khalifa’s general claim is that, whenever understanding is attained via means other than an explanation, there was greater understanding to be had from proper explanatory understanding. Specifically:
In this section, I give a counter-example to SET.

Consider Ben. Ben would like to set monetary policy for the Federal Reserve that will spur growth while keeping up the value of the dollar. In order to do so, he needs to understand why inflation is at the level it is, and why it responds in certain ways to different forms of monetary stimulus. Inflation, however, is an immensely complicated macroeconomic phenomenon. While there are many textbook explanations of particular factors that go into determining inflation, understanding and predicting inflation requires a great deal of learning from experience. In addition to being able to identify relevant causal factors, Ben must gain proficiency with a set of complex models, so that he can manipulate them in productive and ideally novel ways.¹

I claim that, at the end of his rise to mastery, Ben understands macroeconomics and inflation quite well. This claim is not only about the proper use of the term ‘understands’, which, most would agree, is properly deployed here. The claim is the deeper one that he is in basically the same type of mental state as other understanders considered in the literature, for example those who understand an event in virtue of possessing knowledge of its causes. Ben has managed a particular cognitive achievement—a mastery of some subject matter or aspect of the world, not radically different from the way Newton understood planetary motion. Moreover, he understands inflation better than someone who can merely recite a host of textbook macroeconomic explanations. A full defense of the existence and depth of Ben’s understanding depends on one’s full account, so for now I take it largely as an intuitive datum.

A word is necessary on the type of understanding Ben possesses. At first blush, it might resemble understanding how, as when we say that “Darwin understands how to stuff animals”, which understanding Khalifa explicitly rules out of his discussion (p.163). Ben’s understanding is, however, in important ways akin to more paradigmatic instances of understanding why. There is a feature of the world, and Ben’s understanding involves coming to see why the world has that feature. In principle there is an explanation of why the world is that way though, I will argue, Ben could not have come to possess the understanding he does by acquiring any such explanation. Thus it seems fair to class Ben’s understanding as the sort of cognitive achievement to which SET should apply. (On the other hand, Khalifa also refers to the sort of understanding with which he is concerned as that which would “answer an explanation-seeking question”. By that criterion Ben’s understanding might not qualify, as, I will argue, his ability to manipulate models is partially constitutive of the understanding while not being an answer to a question of any kind. However, since the point of this paper is that there can be understanding that is not best

¹ For detailed discussion of the importance of model manipulation to economic understanding, see Boumans (2009) and Lenhard (2009).
brought about via explanations, restricting our scope to only explanation-providing understanding would render Khalifa’s point trivial.)

Assuming Ben understands, however, it is not plausible that any amount of explaining could have brought him to that state of understanding, much less a strictly superior state. Part of his understanding involves the ability to utilize models, which ability can only be brought about by actual scientific practice. And there is no account of explanation on which simply engaging in practice constitutes receiving an explanation.

One might be tempted to think that, while human beings actually do attain understanding of macroeconomic phenomena by engaging in particular sorts of practices, they could in principle have attained such understanding via receipt of some explanation. However, there are two reasons to think that it would have been impossible for Ben to come to possess all the cognitive benefits he does by virtue of receiving an explanation.

The first reason we should not say that Ben could have acquired his understanding by means of receiving an explanation is that such an explanation would not have been tractable for an actual human cognizer like Ben. The explanation in question would have to encompass every relevant macroeconomic fact about inflation. Such an explanation would, as a result, be staggeringly complex, and beyond the abilities of normal humans. On Khalifa’s framework, the problem lies with his assumption that if S gained understanding via non-explanatory way w then S* could have gained all the cognitive benefits S possesses via coming to know some explanation (169-70)—if the explanation is complicated enough, there might well not be an S* who will garner anything from it but confusion.

The second reason we should not say that Ben could have acquired his understanding by means of receiving an explanation is that his understanding is partially constituted by his possessing certain abilities. If he could not manipulate the macroeconomic models at his disposal, it would not be plausible to suppose that he really understood why inflation is at the value it is. The relation of his ability to his understanding is not merely evidential—that part of what it is to possess proper macroeconomic understanding is being able to work with macroeconomic models. This ability is properly thought of as a cognitive benefit Ben possesses, yet it is one that explanations—being merely informational—could not possibly provide.

In conclusion, SET, considered in full generality, is false. There are occasions when non-explanatory understanding genuinely surpasses (or is at least disjoint from) any corresponding explanatory understanding. In the next section I explore where Khalifa’s argument missteps.

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2 For accounts of understanding that explore this link between understanding and ability, see De Regt & Dieks (2005), discussed in the next section, or Wilkenfeld (2013).
Putting aside tractability concerns, the critical feature of Ben’s case puts his understanding outside the reach of explanation is that it is intimately bound up with his abilities. That understanding would require such abilities is not a new idea (it is most prominently defended by De Regt and Dieks (2005)). One way of cashing out this idea is that understanding requires more than mere knowledge. While, for reasons that will be explored presently, this conclusion is a bit over-hasty, the general point that traditional knowledge is insufficient for understanding will prove basically accurate. Khalifa’s argument, however, presupposes that understanding can always be cashed out in terms of knowing that p (without any further refinement regarding how p is known.)

Khalifa’s briefly considers the possibility that knowledge might not be sufficient for understanding:

…knowledge of correct explanations might be insufficient for understanding (de Regt [2009a], [2009b]; Grimm [2010]; Pritchard [2010]). For instance, students often come to know correct explanations through rote memorization without understanding. However, this overlooks the fact that understanding comes in degrees, such that these students have some understanding, even if more understanding is in the offing. On the Liptonian framework we are adopting, this greater understanding amounts to knowledge of, for example, further causal or theoretical details, more and better explanations, and so on.

--Khalifa (2013, p. 166)

The problem with this response is that, if one is taking seriously the objection that knowledge is insufficient for understanding, Khalifa’s reply that the greater understanding can be effected by possession of more knowledge becomes seriously question-begging. In de Regt’s framework, for example, while greater understanding can arise from receiving a more complete explanation, it can also arise from production of a more intelligible theory, which is (roughly) a theory that is useful for qualitative calculations. Intelligibility, like inflation-understanding, is thus a function of ability. There is no obvious way in which any amount of increased propositional knowledge would yield better understanding along that axis.

The central trouble for Khalifa is that knowledge is a fundamentally intellectual relationship we bear to propositions, whereas understanding seems to at least sometimes have a non-intellectual component pertaining to how we interact with the world. At least within the boundaries of even the most capable humans’ capacities, piling ever more propositional knowledge will not make a master economist; hence, there is some sense of understanding in which it cannot be garnered by mere knowledge of explanations, and hence it is not the case that understanding gleaned from explanations is always strictly superior to understanding gained in other ways.

There are three obvious replies to this argument. The first is to try to intellectualize understanding of economics, such that explanatory knowledge would always at least suffice for such understanding. The second involves ways to de-intellectualize knowledge, by appeal to an

3 Elsewhere [citation omitted] I argue that traditional knowledge is unnecessary for understanding as well.
inferentialist theory of concept mastery, a fundamentally distinct form of knowing-how, or by appeal to a view that attempts to collapse knowing-how to knowing that. The final reply would be to limit Khalifa’s SET to a more limited domain of understanding. I will argue against each of these replies in turn.

§3 Objections on Behalf of Khalifa, and Replies

Objection 1: One can understand inflation just as well without possessing any particular model-manipulating abilities. Thus, it is still possible that all understanding of inflation is really just knowledge of particular inflation-oriented explanations.

Reply 1: I have admittedly little to say in response to this objection, except to point out how radical it is. Recall that SET asserted that the understanding gained actually practicing with models is supposed to be a proper subset of the understanding gained via a good explanation. Thus the objector is here committed to the claim that not only is understanding gained in other ways somehow as good or as complete as understanding gained from practice, but that the former fully encompasses the latter. There is on this view no cognitive benefit that the theorist capable of model manipulation possesses (with respect to inflation) that someone who cannot manipulate models lacks. This just seems false to our experience of learning about things like inflation and other complex phenomena.

Objection 2: The knowledge garnered from explanations always suffices for all understanding. While understanding does involve abilities that outstrip there mere epistemic grasping of propositions, knowledge is also a robust state that requires those abilities already.

Reply: There are three different reasons to suppose that knowledge might require a certain degree of ability or competence. As each merits a different reply, we will look at each in turn.

Objection 2.1: All knowledge involves grasping the proposition known, which in turn requires competence with the concepts deployed in that proposition. But one grasps a concept only when one can successfully deploy it in inference. Since being able to successfully deploy a concept in inference is an ability, all knowledge presupposes a certain degree of ability.

Reply 2.1: Even granting the controversial account of conceptual competence, the objection does not show that knowing a proposition suffices for the sort of ability required to be deemed an understander. The problem is that the ability in question—the ability to deploy concepts in making inferences—is just too limited to account for the sorts of skills required for (at least one way of) understanding inflation. This mismatch is to be expected—it would be extremely surprising if all there was to understanding inflation was entailed by knowledge of some linguistic theory.
Objection 2.2 There is a category of knowledge—knowing-how—that plausibly does require some degree of practical ability. Thus, it is possible for knowledge to suffice for understanding.

Reply 2.2 This objection would be to the point, if the argument were over whether knowledge generally sufficed for all understanding. However, what is being argued in this paper is that the sort of knowledge furnished by explanations does not suffice for all understanding. The problem with this objection is that on no account of explanations are they in the business of producing knowledge-how. Explanations typically present propositions, facts, or arguments—e.g. that the explanandum was to be expected (Hempel 1965), or that it was caused by such-and-such (e.g. Salmon 1984 or Woodward 2003), or that it was produced by a certain mechanism (e.g. Bechtel 2008), or that it can be derived from so-and-so in a way that somehow maximizes cognitive economy (Friedman 1974, Kitcher 1989). The pragmatic accounts of Bas Van Fraassen (1980) and Peter Achinstein (1983), which give a more prominent role to the function explanations serve, still treat explanations as bits of information that would enable one to answer appropriate questions. Even more liberal accounts of explanation, which require them to only be representational (Wilkenfeld M.S.), still retain the characterization of explanations as essentially and solely information providing. If there is a dichotomy between knowing-how and knowing-that, then explanations provide only knowledge-that. If the objector is right that some understanders of inflation manifest knowledge-how, it still seems that explanations will not be the right sort of thing to bring about that kind of understanding.

Objection 2.3: Understanding at least sometimes involves knowledge-how, and explanations do provide knowledge-that, but it is wrong to think of knowledge-how and knowledge-that as wholly separate categories. Stanley & Williamson (2001) argue that knowledge-how is really just a species of knowledge-that.

Reply 2.3: Granted that explanations provide knowledge-that and that, on this view, even the most practically oriented understanding only requires a particular species of knowledge that, we still face the question of whether the sort of knowledge-that provided by explanations is of the right species. According to Stanley & Williamson, what differentiates knowledge-how as a species of knowledge-that is that it is presented in a “practical mode of presentation” (2001, p. 429). That is, there is something about the way in which one knows the relevant propositions such that knowing them in that way involves certain aptitudes. Just as I know the proposition that it is raining on Daniel differently when I know that it is about me rather than about Daniel (even supposing I am Daniel), I know the proposition that w is a way to ski differently when it actually guides me in the right sort of way when I am skiing.

The concern with objection 2.3 is the same as the concern with objection 2.2—explanations just do not seem to have the resources to provide the sort of knowledge that at least
some understanding requires. Whereas before the concern was that explanations provided the wrong sort of knowledge—knowledge-that instead of knowledge-how—the present concern is that they provide the right sort of knowledge in the wrong sort of way—under a normal mode of presentation as opposed to a particularly practical mode of presentation. This reply is admittedly not-decisive—one could contend that, while there is nothing in the machinery of any extant account of explanation that would account for how it can present relevant information in a practical mode of presentation, there is nonetheless nothing in such accounts that prohibit information from being so presented. At the least though I take the burden to be shifted back to Khalifa to account for how explanations provide knowledge under the relevant mode of presentation.

Objection 3: Granted SET does not apply to a skilled economist’s understanding of inflation. Though SET was phrased in full generality, it only really applies to some more limited domain of scientific interest.

Reply: Even if successful, this response already carves out an important role for explanation-free-understanding. To the extent that epistemologists are concerned with the nature of understanding, it radically restructures what it is we should take understanding to be. Rather than a mere pale imitation of explanation, understanding is at least in some domains an important cognitive achievement in its own right.

Nevertheless, there is reason to doubt that SET can be fruitfully restricted in the way suggested. The question is largely empirical (though with an admittedly normative dimension)—to what extent does understanding in the sciences require the sort of ability that cannot be inculcated by even the best explanations? An examination of this question is beyond the scope of this essay. Plausibly even understanding in mathematics, which in some sense seems the science most removed from practical interaction with the world, requires ability to construct proofs or perform complex calculations. One strongly suspects that scientists at the top of their field are in many ways akin to master economists, who understand why the world is a certain way in virtue of being able to do certain things.

Perhaps the most natural restriction Khalifa could apply to SET to propositional understanding. It is not clear this will work—if Stanley & Williamson are correct then even our understanding of inflation (or skiing) might be propositional. However, the broader point is that whatever restriction Khalifa places on SET, it places a burden on him to show that SET still applies to an important subclass of understanding; if the class of cases to which SET applies is uninteresting, then SET reveals little about the general nature of understanding.
§4 Conclusion

Understanding is, at least sometimes, a matter of ability. Explanations, by contrast, are vehicles of information. Even on the view (Stanley and Williamson’s) that most closely identifies the practical with the informational, there is still a difference between information as presented in explanations and as it would be needed to serve as the basis for a practical understanding of the subject matter. Therefore, understanding will sometimes involves cognitive benefits that could not have been inculcated by receipt of a good explanation. Therefore, barring further argument, there is no reason to suppose that explanation is the ideal to which all understanding aspires. And therefore, finally, understanding deserves study and attention in its own right as (at least possibly) a legitimate cognitive achievement to be sought after.
References


