

IS KNOWLEDGE OF ESSENCE THE BASIS OF MODAL KNOWLEDGE?

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Abstract: E. J. Lowe offers an account of modal knowledge that involves two primary theses. First, the basis of modal knowledge is essential knowledge, and the source of essential knowledge is grasp of essence. Second, all empirical knowledge ultimately depends on some modal knowledge. This article assesses Lowe's account and defends four conclusions. First, there is a tension in Lowe's account of grasp of essence; it wavers between an undemanding version, which holds that grasp of essence requires no more than our ordinary understanding of propositions, and a more demanding version, which holds that it requires rational insight into necessary relationships between essences. Second, both versions face serious challenges. Third, Lowe's account of knowledge of essence does not provide a basis for modal knowledge. Fourth, Lowe's supporting argument for his second thesis contains two significant gaps and the principles necessary to close the gaps reveal further tensions in his epistemological views.

Over the course of three important articles, E. J. Lowe offers the most sustained attempt in the literature to develop an epistemology of essence—that is, an account of how one can know the essence of something.¹ His epistemological account is developed within a metaphysical framework, whose central feature is a commitment to *serious* essentialism as opposed to *ersatz* essentialism. Ersatz essentialism attempts to characterize essence in terms of necessity and possibility. Serious essentialism reverses the order of explanation; it attempts to characterize the modal notions in terms of essence, where the essence of some entity, *E*, is *what E is*.

Lowe's development and defense of his epistemology of essence is situated in the broader context of providing an account of modal knowledge. The account has a positive and a negative component. The positive component involves two theses. First, the basis of modal knowledge is essential knowledge, and the source of essential knowledge is grasp of essence. Second, all empirical knowledge ultimately depends on some modal knowledge.

¹ Hale 2015 offers an alternative account. I address Hale's account in Casullo 2020b and Casullo 2020a.

This thesis underwrites the further contention that there is no pure empirical knowledge. The negative component consists in a critical evaluation and rejection of alternative accounts of modal knowledge, including those that appeal to intuition, conceptual analysis, conceivability, and counterfactual reasoning.²

My goal is to assess the positive component of Lowe's account of modal knowledge. I defend four conclusions. First, there is a tension in Lowe's account of grasp of essence; it wavers between an undemanding version, which holds that grasp of essence requires no more than our ordinary understanding of propositions, and a more demanding version, which holds that it requires rational insight into necessary relationships between essences. Second, both versions face serious challenges. The former provides, at most, a necessary condition for knowing a real definition but not a sufficient condition. The latter faces a familiar explanatory challenge. Third, Lowe's account of knowledge of essence does not provide a basis for modal knowledge. Here Lowe fails to distinguish between knowing *p*, where *p* is an essential truth, and knowing that *p* is an essential truth. He provides an account of only the former, but an account of the latter is necessary to explain modal knowledge. Fourth, Lowe's supporting argument for his second thesis contains two significant gaps and the principles necessary to close the gaps reveal further tensions in his epistemological views.

1 An Unresolved Tension

In "Two Notions of Being," hereafter referred to as 'TN,' [Lowe \(2008, 23\)](#) raises the question: Does metaphysics have distinctive methods of inquiry? Since he maintains that metaphysical knowledge is knowledge of a mind-independent reality, this question reduces to the question: How do we acquire knowledge of what is necessary or what is merely possible? Focusing on a putative example of such knowledge, knowledge that no two material bodies of the same kind can occupy the same place at the same time, he (33) maintains that such knowledge "requires a grasp of, or rational insight into, certain necessary relationships between the identities of bodies, places and times—and thus . . . insight into their *natures* or *essences*."

There are two major themes in Lowe's TN account of the modal knowledge characteristic of metaphysics: (1) modal knowledge is based on, or derives from, essential knowledge, and (2) essential knowledge requires

²I agree with Lowe's negative assessment of accounts of modal knowledge that appeal to intuition, conceptual analysis, conceivability, and counterfactual reasoning. See [Casullo 2012a, 2012b, 2012c](#).

rational insight into necessary relationships between essences.³ More generally Lowe (34) maintains that “Metaphysical thought and reasoning . . . are *sui generis* and irreducible.”

Lowe returns to the issue of modal knowledge in his 2012 publication “What Is the Source of Our Knowledge of Modal Truths?,” hereafter referred to as ‘KMT.’ Here he makes two significant modifications to his earlier view. First, he introduces the notion of real definition to provide a serious essentialist explanation of essence, along with the companion epistemological view that grasp of real definition is the primary source of modal knowledge. Second, he appears to reject his earlier view that modal knowledge requires rational insight.

Following Fine (1994), Lowe distinguishes between verbal definition, which is definition of a word, and real definition, which is definition of a thing. A real definition of an entity, *E*, provides a perspicuous statement of *E*’s essence or what *E* is. Lowe (2012, 935) offers the following example, taken from Spinoza:

(C1) A circle is the locus of a point moving continuously in a plane at a fixed distance from a given point.

(C1), according to Lowe, tells us *what a circle is*.

To sharpen the difference between the serious and ersatz explanations of essence, Lowe (936) introduces two characterizations of an ellipse:

(E1) An ellipse is the locus of a point moving continuously in a plane in such a fashion that the sum of the distances between it and two other fixed points remains constant.

(E2) An ellipse is the closed curve of intersection between a cone and a plane cutting it at an oblique angle to its axis greater than that of the cone’s side.

Both (E1) and (E2) identify necessary properties of ellipses, but only (E1) captures the essence of an ellipse. (E2) fails to capture the essence of an ellipse, according to Lowe (936–937), because “It characterizes an ellipse in terms that are *extrinsic to its nature* as the particular kind of geometrical figure that it is.”

This example allows Lowe (938–939) to highlight a critical asymmetry between essential truths and necessary truths:

Now, any *essential* truth is *ipso facto* a *metaphysically necessary* truth, although not vice versa: there can be metaphysically necessary truths that are not essential truths—understanding an essential truth to be a truth concerning the essence of some entity.

³ Lowe is not explicit about the ontological status of the relata of the necessary relationships in question. It is natural to think of them as entities of some kind, but Lowe denies that essences are entities.

(E1) is both an essential truth and a metaphysically necessary truth since it characterizes an ellipse in terms of its essence. (E2), however, is a metaphysically necessary truth, but not an essential truth, since it characterizes an ellipse in terms extrinsic to its nature.

With this explanation of the serious essentialist notion of essence in terms of real definition in place, Lowe (944) goes on to offer the following account of modal knowledge:

Given that metaphysical modality is grounded in essence, we *can* have knowledge of metaphysical modality, provided we can have knowledge of essence. Can we? Most assuredly we can. We have already seen this in the case of geometrical figures, such as an ellipse. Knowing an entity's essence is simply knowing *what that entity is*.

There are two central claims in the account. The first is that knowledge of essence is epistemologically prior to knowledge of modality. Knowledge of modality is based on, or derives from, knowledge of essence. The second is that knowing an entity's essence is knowing what that entity is. Since a real definition provides a perspicuous statement of what an entity is, knowledge of essence is knowledge of real definition. Here Lowe (946) maintains:

All that grasping an essence amounts to, on my view, is understanding a real definition, that is, understanding a special kind of proposition. To know what a circle is, for instance, I need to understand that a circle is the locus of a point moving continuously in a plane at a fixed distance from a given point.

The source of the requisite knowledge of essence is understanding a real definition.

Lowe (946) goes on to highlight an important difference between his account of grasping an essence and a competing account, according to which grasping an essence is a kind of knowledge by acquaintance with a special kind of entity, the essence of the thing in question. Here Lowe raises the question: What mental faculty is involved in such acquaintance? In response, he (946) argues:

If appeal is instead made to some special intellectual faculty of rational 'insight,' with essences as its special object, then one is open to the charge of anti-naturalistic obscurantism. My own account of what it is to grasp an essence appeals only to an intellectual ability that, by any account we must already be acknowledged to possess: the ability to understand at least some propositions, including those that express real definitions.

This passage is striking for two reasons. First, it appears to repudiate his earlier account of knowledge of essence, where grasp of essence is

understood in terms of rational insight into certain necessary relationships between essences. Second, it also appears to repudiate his earlier view that metaphysical thought and reasoning are *sui generis* and irreducible. Hence, there is a significant tension between Lowe's earlier TN account of knowledge of essence and his later KMT account.

Lowe's third article addressing epistemological issues, "Grasp of Essence versus Intuitions: An Unequal Contest," hereafter referred to as 'GE,' breaks little new ground. For our purposes, its most significant feature is that it offers no resolution of the tension between Lowe's two accounts of grasp of essence. Instead, he appears to endorse both accounts, failing to recognize the tension between them.

When rejecting the view that intuitions provide evidence for metaphysical claims, Lowe (2014, 256–257) contrasts mastery of concepts with grasp of essence:

Our 'intuitions,' particularly as revealed by aptly constructed thought experiments, may indeed cast interesting light on some of our concepts but they are not and cannot be reliable guides to mind-independent truths of essence. A rational being must no doubt possess *some* suitable mental capacity enabling it to attain knowledge of such truths, if indeed it does so—call it 'rational insight,' if you will—but the exercise of this capacity cannot consist in the eliciting of intuitions and reflections on them. . . . Rather this kind of judgement, properly exercised, must be thought of as having an inherent and autonomous . . . power to reveal mind-independent truths of essence.

Here Lowe echoes the two features of the source of modal knowledge that he highlighted in TN: modal knowledge requires rational insight, which is an autonomous rational capacity.

However, when presenting his own account of the source modal knowledge, Lowe (266) reverts to the theme introduced in KMT, which downplays the worry that grasp of essence requires a distinctive rational capacity:

My proposed solution to the problem of modal knowledge . . . is that we can do so because this kind of knowledge is ultimately grounded in a special kind of *understanding*: the kind of understanding that is involved in grasping a real definition. A real definition, recall, is just a *proposition* of a special kind and, hence, the claim that we can understand at least some real definitions is no more problematic than the more general claim, which is surely incontestable, that we can, at least sometimes, *understand propositions*.

Although he acknowledges that the understanding that is involved in grasping a real definition is *special* and that real definitions are propositions

of a *special* kind, he nevertheless maintains that the claim that we can understand at least some real definitions is no more problematic than the more general claim that we can understand at least some propositions.

For Lowe, knowledge of essence derives from grasp of essence. There is, however, a tension in his account of grasp of essence. The TN account maintains that grasp of essence requires rational insight, which is a distinctive and autonomous rational capacity. The KMT account denies that view and maintains, instead, that grasp of essence requires only the uncontroversial capacity to understand propositions. GE endorses both accounts, leaving unresolved the tension between them. Hence, Lowe does not offer a univocal answer to the question: What is the source of our knowledge of essence (and, a fortiori, modality)?

2 Evaluation of Lowe's Two Accounts

In this section, I evaluate Lowe's two accounts of knowledge of essence. I argue that both fail. Lowe's KMT account in terms of understanding a real definition is faced with a dilemma: either it is false or incomplete. Lowe can appeal to the TN account to address the second horn of the dilemma. The TN account, however, faces a familiar explanatory challenge.

Lowe's (2012, 946) KMT account of knowing an entity's essence introduces a tight connection between three notions: grasping an essence, knowing what something is, and understanding a real definition:

According to my account of essence, essences are not entities. This means that grasping an essence—knowing what something is—is not, by my account, a kind of *knowledge by acquaintance* of a special kind of entity, the thing in question's essence. All that grasping an essence amounts to, on my view, is *understanding a real definition*, that is, understanding a special kind of proposition.

Lowe's account of knowing an entity's essence consists of two claims. First, grasping an essence is knowing what something is. Second, grasping an essence amounts to understanding a real definition. Since grasping an essence is knowing what something is and grasping an essence amounts to understanding a real definition, knowing what something is amounts to understanding a real definition. Hence, for Lowe, understanding a real definition entails knowing it.

For Lowe, a real definition is a proposition. It is uncontroversial that knowing some proposition, *p*, entails believing *p*, and that believing *p* entails understanding *p*. Hence, it is uncontroversial that knowing a real definition entails understanding that real definition. Lowe, however, thinks that, in the case of real definition, the relationship is stronger. He maintains that understanding a real definition entails knowing that real definition. But, in the uncontroversial sense of understanding a proposition—the sense

in which it refers to an intellectual ability that we must acknowledge that we possess—understanding p is not, in general, sufficient for believing p , let alone for knowing p . A student who has mastered the basics of geometry might understand—for example, (E2)—but remain agnostic as to whether it is true and, as a consequence, not believe (E2). Moreover, even if the student believes (E2), the student may not know it since the student might believe it for bad reasons.

Lowe's KMT account faces a dilemma. Either it maintains that understanding p is, in general, sufficient for knowing p or it maintains that real definition is a special case, for which understanding p is sufficient for knowing p . If the former, then the account is false: understanding p is not, in general, sufficient for knowing p . If the latter, then the account is incomplete. Lowe must explain why the case of real definition is special. Lowe not only fails to explain why real definition is a special case, he does not even acknowledge the need to do so. Hence, the KMT account is either false or incomplete.⁴

There is a response to the dilemma available to Lowe. Although it is not true, in general, that understanding p entails knowing p , some proponents of the *a priori* maintain that there are special cases in which understanding p is sufficient for knowing p . Chisholm (1977, 41) is the most articulate proponent of such a view:

If we say an *a priori* proposition is one such that, “once you understand it then you see that it is true,” then we must take the term “understand” in a somewhat rigid sense. You couldn't be said to “understand” a proposition, in the sense intended, unless you can grasp *what* it is for that proposition to be true. The properties or attributes that the proposition implies—those that would be instantiated if the proposition were true—must be properties or attributes that you can grasp.

⁴ Vaidya (2010) offers a theory of modal knowledge, inspired by Lowe's theory, which bases modal knowledge on objectual understanding of essence and maintains that we acquire such understanding via the Variation-In-Imagination (VIM) model. Vaidya's (VIM) model of objectual understanding of essence, however, cannot be employed to respond to the dilemma faced by Lowe's KMT account. Lowe maintains that understanding a real definition is the source of modal knowledge. But, on Vaidya's (831–832) theory, objectual understanding of essence is not the source of modal knowledge; it is a background condition necessary for the proper functioning of the source of modal knowledge, which is conceivability or inconceivability:

Basic modal epistemology supplies an objectual understanding of the essence of things that is necessary for the proper functioning of mental operations that provide justified modal knowledge in non-basic modal epistemology. Without an objectual understanding of essence of x one cannot arrive at a possibility or necessity claim concerning x via conceivability or inconceivability.

Chisholm maintains that there are special cases in which understanding p is sufficient for knowing p . In these cases, the expression ‘understanding p ’ must be taken in a narrow sense, which requires grasping the properties that p implies. To complete the account, Chisholm must provide some explanation of why understanding a proposition in the narrow sense is sufficient for knowing it. Chisholm’s explanation involves two key processes.

Consider the proposition that necessarily everything is such that if it is red then it is not blue. Chisholm maintains that one can know this proposition via a four stage process. The first two involve perceiving particular red objects and particular blue objects and, via a process of abstraction, coming to grasp the properties of being red and being blue. Grasping the properties of being red and being blue, however, is not sufficient for knowing the proposition in question. Chisholm (38) completes the account as follows:

3. There is the intuitive apprehension of certain relations holding between properties—in the one case apprehension of the fact that being red excludes being blue, . . .
4. Once we have acquired this intuitive knowledge, then, *ipso facto*, we also know the truth of reason expressed by “Necessarily, everything is such that if it is red then it is not blue”. . .

Chisholm’s account of knowledge of necessary truths, when fully articulated, involves two key processes: the process of abstracting properties and the process of intuitively apprehending relations between them. The first is necessary to understand the proposition; the second is necessary to know it.

Chisholm’s articulation of the processes involved in knowing a necessary proposition reveals that his initial characterization of an a priori proposition as one such that once you understand it then you see that it is true is inaccurate. Understanding an a priori proposition is not sufficient for knowing it. Understanding a proposition involves grasping the properties implied by that proposition. To know the proposition, one must also intuitively apprehend relations between them. Understanding a proposition puts one in a position to apprehend relations between the properties implied by that proposition. But to know the proposition, one must take the additional step of reflecting on those properties and apprehending the relations between them. Hence, the traditional view is more perspicuously characterized as maintaining that, in the case of basic a priori propositions, understanding p (in the narrow sense) entails being in a position to know that p .

There are two striking similarities between Chisholm’s account and Lowe’s TN account. Both appeal to a cognitive capacity to grasp or apprehend necessary relations between identities or properties, and both maintain that this capacity is the source of modal knowledge. The similarities suggest that Chisholm’s model can be adapted to provide a response to the dilemma faced by Lowe’s KMT account. The response concedes that it is not in

general true that understanding a proposition is sufficient for knowing it. It maintains, however, that there are special cases in which understanding a proposition puts one in a position to know it. In such cases, the expression ‘understanding a proposition’ must be taken in a narrow sense, which requires grasping the essences of the entities involved in that proposition. Grasping the essences of the entities involved in that proposition puts one in a position to have rational insight into necessary relations between those essences. The resulting account aligns with Lowe’s (2008, 33) TN contention that knowledge that no two material bodies of the same kind can occupy the same place at the same time “requires a grasp of, or rational insight into, certain necessary relationships between the identities of bodies, places and times—and thus . . . insight into their *natures* or *essences*.” Moreover, it also has the virtue of resolving the tension between Lowe’s two accounts of grasp of essence.⁵

The resulting account of knowledge of essence (and, a fortiori, knowledge of modality) faces a new challenge. Critics of accounts of a priori knowledge that appeal to rational insight frequently charge that such accounts are mysterious or obscure. Here I will present one version of that charge which directly challenges Lowe’s TN account of knowledge of essence.

BonJour offers an account of knowledge of necessary truths that conforms to the general outlines of Chisholm’s account. He (2005, 100) begins with a list of propositions which includes, in addition to mathematical and logical propositions, the proposition that no surface can be uniformly red and uniformly blue at the same time, and claims

anyone who understands and thinks carefully about each of these propositions will be able to see or grasp immediately that it must be true, that it is true in any possible world or situation. . . . The central rationalist thesis I am defending is that this sort of seeing or grasping constitutes, other things being equal, a good, indeed overwhelmingly compelling, reason for thinking that the claim in question is true. . .

Devitt (2005, 106), however, challenges BonJour’s contention:

Yet there is a consideration against this thesis: the whole idea of the *a priori* seems deeply obscure. *What is it* for a belief to be justified *a priori*? What is the nature of this non-empirical method of justification? Without satisfactory answers the *a priori* is left mysterious.

⁵ Oderberg (2007) offers an account of knowledge of essence that employs features of Chisholm’s account. He maintains that a thing’s essence is given by its genus and specific difference, which are universals, and that we come to know universals through a process of abstraction that begins with the perception of particular objects. Lowe (2010) rejects Oderberg’s account of essence as “deeply problematic.”

Devitt (114) further articulates the obscurity charge as an explanatory challenge:

What non-experiential link to reality could support insights into its necessary character? There is a high correlation between the logical facts of the world and our beliefs about those facts which can only be explained by supposing that there are connections between those beliefs and facts. If those connections are not via experience, they do indeed seem occult.

Rational insight is a source of knowledge of necessary truths only if beliefs formed on that basis are likely to be true. The explanatory challenge is to explain the reliability of rational insight. What explains the fact that beliefs about the necessary features of the world that are formed on the basis of rational insight so accurately reflect the necessary features of the world? In the absence of such an explanation, the claim that rational insight is a source of knowledge of necessary truths is obscure.⁶

3 Deriving Modal Knowledge from Essential Knowledge

In [Section 1](#) and [Section 2](#), I argued that Lowe offers two different accounts of the source of our knowledge of essence and that both face serious challenges. Let us assume that Lowe can reconcile the two accounts and address the challenges that they face. There remains a glaring gap in his account of modal knowledge.

Lowe maintains that we have knowledge of modality because modality is grounded in essence and we have knowledge of essence. Here two questions arise: What is knowledge of essence? How is modal knowledge derived from knowledge of essence?

Lowe's (2012, 944) response to the first question is straightforward: "Knowing an entity's essence is simply knowing *what that entity is*." He (946) illustrates his view using the following geometrical example:

All that grasping an essence amounts to, on my view, is understanding a real definition, that is, understanding a special kind of proposition. To know what a circle is, for instance, I need to understand that a circle is the locus of a point moving continuously in a plane at a fixed distance from a given point.

Knowing an entity's essence is knowing its real definition.

Lowe (938-939) provides his most perspicuous answer to the second question in the following passage:

⁶ For a broader discussion of naturalistic challenges to a priori knowledge, see [Casullo 2003](#), 128-146.

If we can truly affirm that it is part of the essence of some entity, *E*, that *p* is the case, then *p* is an essential truth and so a metaphysically necessary truth. Thus, for example, it is part of the essence of a certain ellipse, *E*, that its foci are a certain distance apart, whence it follows that it is metaphysically necessary that *E*'s foci are that distance apart.

The transition from knowledge of essence to knowledge of modality is mediated by the following principle:

(MP) If *p* is an essential truth then *p* is a metaphysically necessary truth.

Hence, for Lowe, one who knows that *p* is an essential truth is in a position to know that *p* is a necessary truth via the mediating principle (MP).

Using Lowe's example of an ellipse, we can now expose the crucial gap in his account. To know the essence of an ellipse is to know its real definition:

(E1) An ellipse is the locus of a point moving continuously in a plane in such a fashion that the sum of the distances between it and two other fixed points remains constant.

However, knowing (E1) is not sufficient to know

(NE1) It is necessarily true that an ellipse is the locus of a point moving continuously in a plane in such a fashion that the sum of the distances between it and two other fixed points remains constant.

To know (NE1), one must know that (E1) is an essential truth—i.e., one must know that

(EE1) It is true in virtue of the essence of ellipse that an ellipse is the locus of a point moving continuously in a plane in such a fashion that the sum of the distances between it and two other fixed points remains constant.

(E1) and (EE1) are clearly different. Moreover, and more importantly, knowing (E1) does not entail knowing (EE1). One can know (E1) but not know (EE1). Hence, even if Lowe succeeds in offering an account of knowing (E1)—that is, an account of knowing the essence of ellipse—he has not provided an account of knowing that (E1) is an essential truth—that is, of knowing (EE1). But it is knowing (EE1), not knowing (E1), that provides the basis for modal knowledge—that is, for knowing that (E1) is a necessary truth. So Lowe fails to address, let alone answer, the basic question that needs to be addressed in order to provide an essence-based account of modal knowledge. He fails to recognize the difference between providing an account of knowing that *p*, where *p* is an essential truth, as opposed to knowing that *p* is an essential truth.

Tahko's reconstruction of Lowe's account of modal knowledge faces the same problem. He (2017, 31–33) tells us that:

Lowe's understanding of essence follows a familiar neo-Aristotelian line, whereby the essence of an entity is expressed by its *real definition*. . . . The core of Lowe's modal rationalism is the process of *understanding*, the ability to grasp essences, and it is this process that we must explicate in order to assess Lowe's theory. This is best done via a detailed study of the examples that Lowe presents. . . . Lowe's most detailed examples concern the real definitions of a circle and an ellipse:

- (C1) A circle is the locus of a point moving continuously in a plane at a fixed distance from a given point. . . .
- (E1) An ellipse is the locus of a point moving continuously in a plane in such a fashion that the sum of the distances between it and two other fixed points remains constant.

According to Tahko, the core of Lowe's theory is an account of the ability to grasp essences via the process of understanding real definitions such as (C1) and (E1). Hence, Lowe's modal rationalism, as understood by Tahko, provides (at most) an account of knowledge of real definitions such as (C1) and (E1).⁷

Tahko (34), however, offers the following summary of Lowe's account of modal knowledge:

1. We know that the essence of x is expressed by proposition p (which states the real definition of x).
2. If we know that p expresses the essence of x , then p is metaphysically necessary.
3. We know that p is metaphysically necessary.

According to premise (2), knowledge that p is metaphysically necessary is based on, or derived from, knowledge that p expresses the essence of x . However, to know, for example, that the essence of ellipse is expressed by (E1) is to know that

- (EE1) It is true in virtue of the essence of ellipse that an ellipse is the locus of a point moving continuously in a plane in such a fashion that the sum of the distances between it and two other fixed points remains constant.

But Tahko's reconstruction of Lowe's account of modal knowledge does not provide an account of how we know that (E1) is true in virtue of the

⁷ Tahko (2017, 35, n. 4) notes that "Lowe himself does not distinguish understanding and knowledge," and remarks that this failure "may introduce further problems." He does not, however, articulate the problems introduced by this failure, let alone address them, which leaves his reconstruction of Lowe's account open to the dilemma presented in Section 2.

essence of ellipse—that is, it does not provide an account of knowledge of (EE1). It provides only an account of knowledge of (E1). Hence, like Lowe, Tahko overlooks the key question that must be addressed by an essentialist in order to provide an essence-based account of modal knowledge.

Lowe's failure to distinguish between knowing that p , where p is an essential truth, and knowing that p is an essential truth exposes a gap in his account of modal knowledge. On his account, knowledge that (NE1) is based on knowledge that (EE1), and not on knowledge that (E1). More generally, on Lowe's account, (KN) is based on (KE), and not on (KT):

- (KN) Knowing that p is necessarily true or, alternatively, that p is a necessary truth.
- (KE) Knowing that p is essentially true or, alternatively, that p is an essential truth.
- (KT) Knowing that p , where p is an essential truth.

Lowe, however, says nothing about how one comes to know that p is an essential truth as opposed to knowing that p , where p is an essential truth. As a consequence, Lowe has completely overlooked the question that he must address to provide an essence-based account of modal knowledge.

Horvath (2014) argues that there is a second gap in Lowe's account of modal knowledge. He contends that to know (KN) on the basis of (KE), one must know the mediating principle (MP), but Lowe offers no explanation of how we know (MP). Although I am sympathetic to Horvath's argument, it raises a broader epistemological issue that he does not address: the requirements of inferential knowledge. Does knowing A on the basis of inference from B require knowing the principle that mediates the transition?⁸ Tahko (2017, 34–35) maintains that Lowe's account is not open to Horvath's argument since (MP) is assumed in Fine's (1994) account of the relationship between essence and modality, and Horvath grants Fine's account for purposes of his argument. Tahko's response, however, conflates two questions: Is (MP) true? How do we know (MP)? The truth of (MP) is assumed in Fine's account, and Horvath does grant the truth of (MP) for the purposes of his argument against Lowe. Horvath's contention is that Lowe's failure to address the second question creates the gap in his account of modal knowledge. Tahko's response does not address that failure.

⁸ Fumerton (1995, 67) distinguishes between inferential internalism and inferential externalism, and maintains that, according to the former, "in order for me to be justified in believing P on the basis of E , I must be justified in believing that E makes P probable." As the label suggests, inferential internalism is widely rejected by externalists such as Goldman (1979). Hence, addressing Horvath's argument requires addressing two questions: What are Lowe's broader epistemological commitments? Are those commitments defensible? As far as I am aware, Lowe never addresses the first question and, as a consequence, any response to the second would be speculative.

4 Radical Rationalism

Lowe defends a striking thesis regarding modal knowledge:

(MK) All a posteriori knowledge depends on a priori modal knowledge.

(MK) is striking because it entails a form of radical rationalism:

(RR) There is no purely empirical knowledge.

My goal is to articulate Lowe's defense of (RR) and to show that it rests on two widely rejected epistemic principles. Moreover, Lowe's commitment to them reveals further tensions in his epistemological views.

Lowe's clearest statement and defense of (MK) occurs in GE. Here he (2014, 257) contends:

A key point to be recognized here is that no actual matter of fact can be established solely by a posteriori means and without at least an implicit reliance on modal truths which can be established only by a priori means. In this sense, there can be no such thing as purely empirical knowledge—and this is why metaphysical inquiry is indispensable to natural science.

Lowe's (258) supporting argument is based on the (modal) logical principle that what is actual is possible:

It might be supposed that an epistemic implication of this [principle] is that the securest way to establish that something is possible is simply to establish that it is actually the case, and hence that at least some possibilities can be established purely by appeal to empirical evidence. . . . However, that would be a mistake. For the implication of the logical principle in question is that the *possibility* of something's being the case is a *logically necessary condition*—a *pre-requisite*—of its actually being the case. Hence, empirical evidence can qualify as evidence that something, *p*, is *actually* the case only on condition that *p* is at least *possibly* the case. This should be obvious on reflection.⁹

Lowe (259) explicitly draws out what he takes to be the leading epistemological implication of his argument:

⁹ In TN, Lowe (2008, 24) maintains that it is a widely held presumption “that *experience* can, at least sometimes, provide us—directly and unaided—with knowledge of what is actual . . .” He (26) quickly rejects this presumption, offering a truncated version of the GE argument: “*It cannot*. For empirical evidence can only be evidence for what is (genuinely) *possible* and so cannot reveal something to be *actual* save on condition that it is possible.” Lowe does not address the issue in KMT.

What emerges from these observations is that, in the epistemic domain, knowledge of what is possible *precedes and underpins* knowledge of what is actual and that—since empirical evidence can embrace only what is actual—knowledge of what is possible must draw on evidence or reasoning of another kind and hence be a priori in nature.

Hence, according to Lowe, (MK) is a consequence of the modal logical principle that whatever is actual is possible.

Lowe's argument is difficult to assess since it is compressed. It can be recast as follows:

- (P1) Possibly *p* is a logically necessary condition for actually *p*.
- (C1) Therefore, *E* is empirical evidence that actually *p* only if possibly *p*.
- (C2) Therefore, one knows actually *p* on the basis of empirical evidence *E* only if one knows possibly *p*.

There are three problems with the argument. First, it contains two significant gaps. Second, the obvious candidate principles for closing the gaps are widely rejected. Third, both principles are at odds with Lowe's other epistemological commitments.

Lowe draws an epistemological conclusion about the nature of evidence, (C1), from a (modal) logical premise, (P1). In the absence of some intermediary principle about the requirements of evidence, the argument is incomplete. Moreover, to derive (C2) from (C1), Lowe needs a second intermediary principle about the requirements of knowing on the basis of evidence.

The obvious candidate to close the first gap is (P2):

- (P2) If *A* entails *B*, then *E* is evidence that *A* only if *B*.

(P2), however, is widely rejected by contemporary epistemologists since it entails a version of infallibilism: one cannot have evidence for a false proposition.¹⁰ Moreover, it also appears to be incompatible with Lowe's (258) contention that "in metaphysics, as in natural science, we should be committed fallibilists." Lowe, however, does not articulate the version of fallibilism that he endorses.

The obvious candidate to close the second gap is (P3):

- (P3) If *A* entails *B*, then *S* knows *A* on the basis of evidence *E* only if *S* knows, antecedently and independently of knowing *A*, that *B*.

(P3), however, is also widely rejected since it has sceptical consequences.¹¹ It entails that, to know that I have hands on the basis of my apparent

¹⁰ For example, in his classic article, Gettier (1963) assumes that it is possible to have strong evidence for a false proposition.

¹¹ See, for example, Pryor 2000.

perceptual experiences, I must know, antecedently and independently of knowing that I have hands, that I am not a handless brain in a vat. Given the assumption that the only basic source of evidence for beliefs about the external world is experience, such knowledge is not possible. Moreover, (P3) is incompatible with Lowe's claim that essential knowledge is the basis of modal knowledge. According to Lowe, (EE1) entails (NE1):

(EE1) It is true in virtue of the essence of ellipse that an ellipse is the locus of a point moving continuously in a plane in such a fashion that the sum of the distances between it and two other fixed points remains constant.

(NE1) It is necessarily true that an ellipse is the locus of a point moving continuously in a plane in such a fashion that the sum of the distances between it and two other fixed points remains constant.

But (P3) entails that one knows (EE1) on the basis of grasping the essence of ellipse only if one knows, antecedently and independently of knowing (EE1), that (NN1). Hence, modal knowledge precedes and underpins essential knowledge.

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