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Nonpropositional Intellectualism

John Bengson and Marc A. Moffett

> Understanding is a part of knowing how.
> GILBERT RYLE, *The Concept of Mind*

THERE ARE MANY things we know how to do: cycle, play chess, do a headstand, tell the truth, assess arguments for validity, and so on. On one hand, such knowledge how seems to be *practical*—unlike mere knowledge that, which can be possessed even by incompetent, impractical "fools". On the other hand, knowledge how seems to be a genuinely *cognitive*, even if not a ratiocinative or discursive, achievement—unlike mere abilities or dispositions to behavior, which can be enjoyed even by mindless entities or automata, such as simple machines and plants.[1] The goal of this chapter is to develop a view of knowledge how that has the resources to account for its simultaneously practical and cognitive character.

Section 1 begins to make room for this view by distinguishing between two debates about knowledge how: a debate about the *grounds* of knowledge how versus a debate about what knowledge how really *is*. Section 2 argues that the grounds of knowledge how must be intellectualist. Section 3 maintains that, nevertheless, there remains a substantive connection between knowledge how and action (although this connection does not motivate anti-intellectualism). Subsequently, section 4 explores the possibility that knowledge how is an objectual, rather than propositional, state or attitude. Finally, section 5 advances a view we call *objectualist intellectualism*: to know how to act is to understand a way of so acting, where such objectual understanding involves grasping a (possibly implicit) conception that is poised to guide the successful, intentional performance of such an act—hence, to possess a cognitive state with a distinctively practical character.

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1. Cf. Ryle (1945, 8) and Descartes (1637/1984, part V), respectively. These two observations are not meant to prejudge the relation between knowing how and knowing that. We use 'cognitive' in a traditional sense that opposes the cognitive to the sensory. Thus, for example, even Ryle allowed that knowledge how is a "*cognitive* disposition" (1949, 44), which is not possessed by, e.g., unintelligent parrots, "louts" (1949, 32), and "fools" (1945, 8); as discussed later, he simply denied that knowledge how is a *propositional* (intellectual, representational) affair.

1. Two Debates

Is knowing how to perform (execute) some action or behavior φ a matter of having certain propositional attitudes regarding φ, or is it instead a matter of having a certain type of power—for instance, ability or disposition—to φ? This question can be understood as dividing "intellectualists" and "anti-intellectualists" about knowing how:[2]

Intellectualism
x knows how to φ in virtue of *x*'s having some propositional attitude(s) regarding φ-ing.[3]
Anti-intellectualism
x knows how to φ in virtue of *x*'s having some power—some ability or disposition—to φ, rather than propositional attitudes.[4]

Here we find disagreement about the *grounds* of knowing how to φ—that is, disagreement regarding that in virtue of which one knows how to φ, when one does.[5]

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2. To our knowledge, the use of the term *intellectualist* as a label for a view of knowledge how is due to Ryle (1945). These theses about knowing how to φ (hereafter, simply 'knowing how') may be understood as specific instances of more general views about the nature of mind and action; see the state of play chapter in this book for further discussion.

3. Throughout, the 'in virtue of' locution should be understood as invoking a relation of partial or full grounding (asymmetric determination or dependence), not mere necessitation or supervenience (see, e.g., Kim 1974, 1994; Fine 1995; Correia 2005, chs. 3–4; and Schaffer 2009a). Thus the intellectualist claims that knowledge how to φ is grounded in propositional attitudes regarding φ-ing—plus, perhaps, facts about the mode in which one entertains the relevant propositions (Stanley and Williamson 2001) or facts about one's conceptual situation (Bengson and Moffett [BM] 2007; see also §5.1). See note 7 for a characterization of propositional attitudes.

4. We will understand a power to be a feature of agents typically expressed by a modal auxiliary such as 'can', 'could', or 'would'. We will concentrate on abilities and dispositions.

5. Although theorists standardly focus on these intellectualist and anti-intellectualist end points, there are other possible views. For example, a *primitivist* view holds that knowledge how is not grounded in any further state, whether a propositional attitude or power or anything else. It is also worth mentioning two hybrid strategies: a *conjunctivist* view holds that knowledge how is grounded *both* in propositional attitude(s) regarding φ-ing *and* in an ability or disposition to φ (cf. Carr 1979); a *disjunctivist* view holds that knowledge how is grounded *either* in some propositional attitude(s) regarding φ-ing *or* in an ability or disposition to φ (cf. Williams 2008). To the extent that they hold that knowledge how is at least partially grounded in propositional attitudes, conjunctivism and disjunctivism qualify as versions of intellectualism. Later we argue that having the ability or disposition to φ is neither necessary nor sufficient for knowing how to φ (see §2), yet knowing how need not be primitive (see §5). If those arguments are correct, they undercut conjunctivism, disjunctivism, and primitivism, respectively. As far as we can tell, all other plausible alternatives are susceptible to similar arguments. Consequently,

A second, distinct but closely related debate concerns the *nature* of knowing how to φ (or, if you prefer, what it *is*: its analysis, definition, or essence). Suppose that

x knows how to φ

where *x* is an agent and φ is some action or behavior. Here it seems that *x* stands in some relation—a *knowing* or *knowing-how* relation—to something else—φ or *how to* φ.[6] We can then ask, first, what is the relation? Second, what is the second relatum or the object of the relation (i.e., that to which *x* is related in knowing how to φ)? The orthodox answers to these questions can be formulated as follows:

Propositionalism
The relation is a propositional attitude relation (e.g., a *knowing-that* relation), and the second relatum is a proposition (e.g., an answer or set of answers to the question of how to φ).[7]
Dispositionalism
The relation is a behavioral-dispositional relation (e.g., a *being-able-to* relation), and the second relatum is an action-type or some other nonpropositional item (e.g., φ-ing itself).

This second debate is not focused on that in virtue of which one knows how to φ, when one does. Rather, the disagreement concerns the *nature* of knowing how: it is disagreement about what knowing how to φ really *is*. What is the relation, and what is the second relatum?

Traditionally, propositionalism and dispositionalism have gone hand-in-hand with intellectualism and anti-intellectualism, respectively. But an intellectualist

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because it greatly simplifies the presentation of the material, we will follow tradition in focusing on the indicated end points.

6. Introducing the second debate in terms of relations need not prejudge any substantive questions. We can—and sometimes will—speak in terms of states (the state of knowledge or knowledge-how) or attitudes (the attitude of knowledge or knowledge-how).

7. We will understand a propositional attitude to be a truth-evaluable, possibly externalistically individuated mental state that relates a subject to a proposition, where a proposition is that which is or may be the semantic value of a full indicative sentence. Propositionalists reduce knowing how to such a propositional attitude (or at least a "species" of propositional attitude; Stanley and Williamson 2001, 433–434). Incidentally, the relation expressed by 'knowledge that' attributions is arguably a relation to facts, rather than propositions (Moffett 2003); it is a *factual* attitude. Nevertheless, for ease of exposition we will ignore this subtlety and use the term 'propositional attitude' so as to include such factual attitudes.

need not accept propositionalism, and an anti-intellectualist need not accept dispositionalism. The two debates (however they are labeled) are conceptually distinct.[8]

Thus one might accept anti-intellectualism, thereby holding that one knows how to φ in virtue of having the ability (or disposition) to φ, but reject dispositionalism, thereby denying that knowing how to φ is *reducible* to such ability. For instance, one might hold that knowledge how to φ is a *non-behavioral-dispositional*, *objectual relation* between a subject and an item—a method or way of φ-ing, say—that one has in virtue of having an *ability to* φ. On this view, knowing how to φ is grounded in an ability to φ. But importantly, it is not reducible to such ability. Such a view combines anti-intellectualism with a nondispositionalist view of the nature of knowing how.

Alternatively, one might accept intellectualism, thereby holding that one knows how to φ in virtue of having some propositional attitude regarding φ-ing, but reject propositionalism, thereby denying that knowing how to φ is *reducible* to a propositional attitude. For instance, one might hold that knowledge how to φ is a *nonpropositional*, *objectual relation* between a subject and an item—a method or way of φ-ing, say—that one has in virtue of having a certain *propositional attitude regarding φ-ing*. On this view, knowing how to φ is grounded in a propositional attitude regarding φ-ing. But importantly, it is not reducible to a propositional attitude. Such a view combines intellectualism with a nonpropositionalist view of the nature of knowing how.

These scenarios are possible because of the availability of the following—admittedly heterodox—alternative to propositionalism and dispositionalism:

> *Objectualism*
> The relation is a nonpropositional, non-behavioral-dispositional objectual attitude relation (e.g., a *knowledge-of* relation), and the relatum is a nonpropositional item (e.g., a way of φ-ing).[9]

8. There are clear precedents for the type of two-debate framework suggested here; see note 11. Both debates about knowing how may be distinguished from debates about skill, expertise, intelligent action, and the semitechnical cognitive scientific notion of "procedural knowledge"—none of which can innocently be assumed to be equivalent with, or bear some other substantive connection to, knowing how. It simply muddies the waters to attempt to collapse these debates (cf. Glick forthcoming). This places a limitation on some otherwise interesting recent discussions of empirical work on expertise and procedural knowledge by Bzdak (2008), Wallis (2008), Adams (2009, §2), Young (2009), and Devitt (forthcoming-a).

9. Later we will refine this thesis and explore its credentials. For now, this statement of the view suffices to get the main idea on the table.

The upshot is that the debate between intellectualists and anti-intellectualists over what is involved in knowing how to φ is to some extent separable from the debate over whether knowing how is reducible to or a "species" of (or "consists" in) knowing that.[10]

One virtue of this way of mapping the philosophical landscape is that it enables the formulation of views that do not make sense within a one-debate framework.[11] This two-debate framework also has the potential to clarify various disagreements about knowing how and, perhaps, create the conceptual space necessary to move the discussion forward. In particular, it makes room for comparatively sophisticated positions that might capture what is all too often felt to be missing in their more orthodox counterparts. For example, no extant theory has seemed capable of respecting all three of the following attractive but prima facie incompatible theses about knowing how:

i. Knowing how is not merely a kind of knowing that.
ii. Knowing how is practical: it bears a substantive connection to action.
iii. Knowing how is a cognitive achievement: its status as a piece of practical *knowledge* is not merely coincidental.

To the extent that *propositionalist* versions of intellectualism take knowing how to be a mere "grasp of true propositions," they have a tendency to do violence to—or render mysterious—(i) and (ii).[12] Yet, insofar as *anti-intellectualist* theses

10. One might worry that we are doing an injustice to the fact that the arch-anti-intellectualist Ryle, who in some sense began the discussion, was concerned to undermine the thesis that knowing how is a propositional attitude or relation. However, we should not forget that Ryle's explicit aim was to dispel the "paramechanical hypothesis" of internal mental causes, which he viewed as a product of the "myth" of "hidden" mental "phantasms" that "take place 'in the head'" (see Ryle 1945 and 1949, chs. 1–2), a "doctrine" that is wholly preserved in our (relation-neutral) formulation of intellectualism.

11. Versions of this sort of two-debate framework show up in a variety of metaphysical contexts. For instance, in the philosophy of time, state-of-the-art B-theories of time may accept that tensed propositions/facts are *grounded* in tenseless ones and that time itself is a tenseless, space-like dimension (debate one), though tensed propositions/facts cannot be *reduced* to tenseless ones (debate two). Another familiar example occurs in contemporary philosophy of mind, where one now finds a framework that enables the formulation of "nonreductive physicalism" or a primitive supervenience thesis, according to which the mental is *grounded* in the physical (debate one), though it is not the case that the mental is *reducible* to the physical (debate two). These positions are analogous to nonpropositional intellectualism: knowledge how is *grounded* in propositional attitudes, though it is not the case that knowledge how is *reducible* to a propositional attitude.

12. The quoted expression is Ryle's (1949, 26). Propositionalist intellectualism is treated sympathetically by Stanley and Williamson (2001), Braun (2006, ch. 12), Brogaard (2009, ch. 6), and

narrowly tie knowing how to mere behavioral-dispositional states or powers, they have a tendency to falter on—or render mysterious—(iii).[13] By contrast, as we shall see, the combination of *objectualism* and *intellectualism* provides a natural way of simultaneously accommodating each of (i)–(iii). In our view, this is reason to take the view seriously. (Additional reasons will be advanced later.)

Our aim in this chapter is to further explore this view, which we call *objectualist intellectualism*. One knows how to φ, when one does, in virtue of having certain propositional attitudes regarding φ-ing.[14] But knowledge how to φ is not itself a propositional attitude, nor is it an ability or disposition. Rather, it is a certain kind of objectual attitude. (Likewise, perhaps, for other kinds of knowledge-*wh*—though, for lack of space, here we can do no more than gesture in §4.1 at this extension.)

Later, we suggest reasons for preferring objectualism to both dispositionalism and propositionalism. This discussion should be of interest to intellectualists and anti-intellectualists alike, for as we have illustrated, objectualism is compatible with both intellectualism and anti-intellectualism. However, although objectualism is consistent with anti-intellectualism, we believe that it is best combined with intellectualism. Accordingly, before proceeding to the discussion of objectualism, we first explain one of the main reasons we think that an intellectualist framework is to be preferred.

2. *A Structural Flaw in Anti-Intellectualism*

Endorsement of anti-intellectualism is sometimes based on a pretheoretical conviction that knowing how to do things just is a matter of having an ability or disposition to do them.[15] This section aims to articulate, in a systematic way, a

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Stanley (2011, forthcoming-a), among others. Some versions of propositionalism attempt to accommodate (i) and (ii). Nevertheless, in our estimation, these attempted resolutions are neither intuitively compelling nor particularly natural approaches to the problem. See §§3–5.

13. Anti-intellectualism is treated sympathetically by Ryle (1945, 1949), Brandom (1994, 23), Hawley (2003), Noë (2005), Setiya (2009), Wiggins (2009), Devitt (forthcoming a, ch. 14), and Hornsby (1980, ch. 3), among others. Anti-intellectualists often explicitly acknowledge (iii) (see, e.g., Setiya 2009, 405). But behavioral-dispositional states or powers alone are not in our view able to provide a satisfactory treatment. See §2 for critical discussion.

14. Objectualist intellectualism thus fits nicely with the plausible thought that many objectual attitudes bear a tight relation—tighter than supervenience—to propositional attitudes, even though they are not reducible to propositional attitudes. Cf. Crane (2001, 113–114), Szabó (2003), Forbes (2006, ch. 4), Montague (2007), and Bengson, Grube, and Korman (2011, §2.1).

15. Such conviction is sometimes motivated by perceived defects in the intellectualist position, which we aspire to avoid (see §§3–5; cf. BMW 2009 and the state of play essay in this book).

series of worries about this type of view. The intention is to make clear why we find anti-intellectualist approaches unconvincing *in outline*, not simply in detail. This discussion will, at the same time, indicate why we find intellectualism so attractive.

We will approach anti-intellectualism by examining necessary conditions, and then sufficient conditions, for knowledge how in terms of abilities or dispositions. Consider, first, the claim that knowing how to φ requires an ability or disposition to φ. No doubt some abilities are necessary for knowing how (e.g., the ability to think, breathe, or apply concepts). What is distinctive of anti-intellectualism is its commitment to the thesis that knowing how requires the *corresponding* ability or disposition.[16] Focusing on ability, the claim is that:

> [AI_N] Having the ability to φ, or having had the ability to φ at some time in the past,[17] is necessary for knowing how to φ.

This claim might seem difficult to deny. Yet it appears that some people, such as coaches and instructors, know how to do what they are not able, and have never been able, to do themselves. Consider, for example:[18]

But it is also sometimes asserted without any argument whatsoever. Strangely, it is often simply assumed that knowing how is an ability, or vice versa—or that 'knows how to' is obviously ambiguous and that one of its standard meanings is equivalent to a meaning of 'is able to' (Hintikka 1975, 11; Carr 1981a, 54). For example, Hetherington (2006, 74) asserts without argument that when "you have an ability—in that sense, you know how." Not only is such an assumption dialectically problematic but also it is open to the counterexamples in this section. (The point is significant for Hetherington's discussion in particular because, among other things, it reveals a loophole in his modified regress argument against intellectualism (cf. Williams 2008, §3): because knowing how cannot innocently be assumed to be an ability, the intellectualist may say that when one applies or otherwise exercises one's propositional attitudes, one is *able*—but need not thereby *know how*—to do so, thus avoiding regress. See the state of play essay in this book for related discussion.) At any rate, we have argued elsewhere (BM 2007, §2) that 'knows how to' is not ambiguous in the manner suggested, though our discussion here does not depend on that argument.

16. Among other things, this means that Noë's (2005, 285–286) modified regress argument, which aims to show that some abilities are necessary for knowing that (namely, the ability to apply concepts to objects) on pain of regress, does not motivate anti-intellectualism about knowing how.

17. We include this clause even though we regard past ability as a red herring. Consider an adult human Alpha and his Davidsonesque swampman counterpart Omega, who comes into being at a given time *t*. Presumably, if Alpha knows how to swim at *t*, then so does Omega. But Omega lacks causal-historical connections to abilities Alpha possessed prior to *t* (since Omega, ex hypothesi, has no past at all!). This example highlights why we would not want to account for knowing how in historical terms.

18. An example of this sort is suggested by Stanley and Williamson (2001, 416), who in turn credit Jeff King. We articulate the particular version in the text in Bengson, Moffett, and

> *Ski Instructor*. Pat has been a ski instructor for twenty years, teaching people how to do complex ski stunts. He is in high demand as an instructor, since he is considered to be the best at what he does. Although an accomplished skier, he has never been able to do the stunts himself. Nonetheless, over the years he has taught many people how to do them well. In fact, a number of his students have won medals in international competitions and competed in the Olympic games.

Pat knows how to do the stunts.[19] But he is not able, and has never been able, to do them.

It might be suggested in response that Pat does not know how *to* do the stunts; rather, he simply knows how *one* does the stunts.[20] No doubt this distinction between knowledge how *one* φ-s and knowledge how *to* φ—the *one-to distinction*—is important. However, this distinction does not support [AI_N], for these two kinds of knowledge-how often come apart in a way that is insensitive to the absence or presence of the corresponding ability. This can be seen by reflecting on pairs of cases with the following structure:

Wright [BMW] (2009, §2), which reports the results of a study in which the vast majority of ordinary English speakers judged that the subject in the example both knows how and is unable. See also the examples given by, e.g., Ware (1973, §3), Craig (1990, 158), and Snowdon (2003, §3). We believe that there is an important difference between this type of case and cases involving subjects who are merely unable to act *right now* or *for a spell* (see BM 2007, n. 5); such subjects may simply suffer from an interference in what Honoré (1964, 463; cf. Maier 2010, §1) dubs 'particular' ability (cf. finks, masks, etc.).

19. Suppose a novice ski jumper were to enter the ski lodge and say, "My goal is to learn how to do ski stunts. Who here knows how to do them?" An employee may then reply, while pointing to Pat, "He does." Notice also that it would be more than a little odd for Pat (or the employee) to tell students that Pat does not know how to do the stunts, but he will teach them how to do the stunts anyway.

20. Or that he merely knows how the stunts *are done*, *what it takes* to do the stunts, and so forth. Cf. Noë (2005, 284 n. 4) and Hetherington (2006, 71 n. 2 and §11). Such a distinction is marked by, e.g., Hornsby (1980, 84) and emphasized in §1 of BMW (2009).

Incidentally, it should be plain that Pat does not merely know how the stunts are taught, or how to teach the stunts. Clearly, there is more going on here than that, as evidenced by the considerations in note 19 and the text that follows. Furthermore, as discussed in §3, Pat is in a state that is potentially action-guiding: it could guide someone in the intentional execution of the stunts, even if it does not actually do so for Pat. An adequate treatment must explain this fact about the state that Pat enjoys (vis-à-vis, e.g., the state that Albert, introduced later, has). A natural explanation is that Pat (but not, e.g., Albert) knows how to do the stunts, and knowledge how to do the stunts is potentially action-guiding in this sense. This explanation would be unavailable if we were to adopt the anti-intellectualist position under discussion.

Case A	**Case B**
A knows how one φ-s.	B knows how one φ-s.
A is not able to φ.	B is not able to φ.
A knows how to φ.	*B does not know how to φ.*

To illustrate, contrast Pat with Albert, an unathletic (nonskiing) scientist who studies the mechanics of skiing, including but not limited to the mechanics of complicated ski stunts. As a result of his theoretical studies, Albert knows how *one* does the stunts (namely, by contracting such-and-such muscles in such-and-such ways). Suppose that Pat, too, knows the mechanics of the ski stunts he teaches his students (he studies them in his spare time). Then Pat and Albert both know how one does the stunts; neither is able to do the stunts. *But plainly a significant difference remains*: only Pat knows how to do the stunts. Indeed, even though Pat cannot do them, he grasps the stunts in a way that Albert, who only knows the theory, does not.[21] Thus the one-to distinction cannot help anti-intellectualism answer the challenge posed by *Ski Instructor*.[22]

This challenge does not rely on a single, isolated case. There appear to be many further counterexamples to [AI_N]. One might know how to run a marathon without being able to (because one has severe asthma). One might know how to dunk a basketball without being able to do so (because one is too short). Or one might know how to sink a very long but perfectly straight putt without being able to do so (because such putts are, in fact, extremely difficult). And so on.

Might all such examples be accommodated by acknowledging the obvious truth that sometimes there are internal or external impediments to action? When those impediments are removed, the thought goes, we see that one who knows how to φ is in fact able to φ.[23] Anti-intellectualists attracted to this response may

21. Perhaps made possible by Pat's skiing experience, this not-purely-theoretical grasp is arguably part of what *enables* Pat to teach the stunts to Olympic-caliber students. For this and other reasons, although one might attempt to evade the point in the text by denying that such grasp is properly described in the terminology of 'knowing how to act' it should be clear that the difference between Pat and Albert is not merely terminological but theoretically (e.g., explanatorily) important (cf. note 20). One of the goals of a theory of practical knowledge should be to explicate the nature of this difference. This is our project in §§3–5.

22. In conversation, native German speakers have reported that the one-to distinction goes unmarked in German. They inform us that although they themselves see the difference between Pat and the scientist, all that can be said is that both Pat and the scientist have *wissen wie* and neither has *können*. This illustrates one of the difficulties of drawing substantive philosophical conclusions from cross-linguistic data (cf. Craig 1990, 151–152; Rumfitt 2003; and Stanley 2011).

23. Cf. Noë's (2005, §2) discussion of enabling conditions. Of course, we must beware of trivialities: for example, *x* knows how to φ only if *x* is able to φ when conditions are such that *x* is able

be tempted by Katherine Hawley's (2003) interesting suggestion that, even if the ability to φ is not quite necessary for knowing how to φ, as demonstrated by *Ski Instructor* and various other examples, counterfactual success at φ-ing under normal (ordinary, etc.) conditions is. Call this the *counterfactual success thesis*:

> *Counterfactual Success Thesis*
> *x* knows how to φ only if: if *x* tried to φ under normal conditions, *x* would succeed at φ-ing.[24]

Anti-intellectualists could then hold that [AI_N] is to be understood as equivalent to the counterfactual success thesis.[25]

However, it is not clear that the counterfactual success thesis handles the problem. There need not be anything abnormal (extraordinary, etc.) about the conditions in which ski instructor Pat finds himself, yet he does not successfully do the stunts when he tries. Of course, one might remove the 'under normal conditions' clause in order to arrive at an ordinary counterfactual, whose truth is to be assessed by considering whether *x* succeeds in φ-ing when she tries to φ in "nearby" or "similar" worlds. While this revision might accommodate Pat, the following case indicates that the basic problem remains:

> *Pi*. Louis, a competent mathematician, knows how to find the n^{th} numeral, for any numeral *n*, in the decimal expansion of π. He knows the algorithm and knows how to apply it in a given case. However, because of principled computational limitations, Louis (like all ordinary human beings) is unable to find the 10^{46} numeral in the decimal expansion of π.

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to φ, i.e., when all internal and external impediments to ability are removed. What is needed is a nontrivializing, informative condition that does not simply offer a promissory note that there is some such condition.

24. Hawley (2003, 23) includes the 'under normal conditions' clause (cf. Ryle 1949, 130) partly in order to avoid counterexamples: "The appearance of a counterexample can arise whenever a subject's circumstances are not ordinary circumstances for a given task." However, as we shall see, counterexamples remain. (And they do so even if we weaken the consequent to '*x* would *usually succeed* at φ-ing,' as Williams (2008, §8 emphasis added) suggests.)

25. The issues are not quite as straightforward as this might suggest, however. There is reason to worry whether this thesis alone would be enough to secure a form of anti-intellectualism, for it leaves the question of *what makes it true* that the counterfactual holds unanswered. If the counterfactual is grounded in propositional attitudes, then the counterfactual success thesis supports intellectualism rather than anti-intellectualism. Consequently, the counterfactual success thesis is consistent with intellectualism and so cannot, by itself, decide the debate. We shall set this issue aside here, though we do think it constitutes a significant challenge to counterfactual versions of anti-intellectualism.

Notice that conditions would have to be extremely *abnormal* for Louis to succeed in finding the 10^{46} numeral in the decimal expansion of π when he tries: he would have to be superhuman, as it were. Presumably, then, we need to consider *very* "distant" or "dissimilar" worlds to locate one in which Louis succeeds in his attempt. In this world, and presumably all others even remotely like it, Louis cannot reasonably hope to succeed in finding the 10^{46} numeral in the decimal expansion of π when he tries. His inability is pervasive. Yet he still knows how to find it. So the counterfactual success thesis—with or without the 'under normal conditions' clause—is false. Call this *the problem of pervasive inability* for the anti-intellectualist thesis that an ability to act is necessary for knowing how to act.

Turn now to the thesis that the ability to act is *sufficient* for knowledge how to act. Since it is implausible that unreliable ability is sufficient for knowing how (as demonstrated by cases of "accidental success"),[26] we focus on a moderately restricted version of the anti-intellectualist sufficient condition for knowing how:

[AI_S] Being reliably able to φ is sufficient for knowing how to φ.

Now consider the following example:

> *Salchow*. Irina, who is a novice figure skater, decides to try a complex jump called the salchow. When one performs a salchow, one takes off from the *back inside* edge of one skate and lands on the *back outside* edge of the opposite skate after one or more rotations in the air. Irina, however, is seriously mistaken about how to perform a salchow. She believes incorrectly that the way to perform a salchow is to take off from the *front outside* edge of one skate, jump in the air, spin, and land on the *front inside* edge of the other skate. However, Irina has a severe neurological abnormality that makes her act in ways that differ dramatically from how she actually thinks she is acting. So despite the fact that she is seriously mistaken about how to perform a salchow, whenever she actually attempts to do a salchow (in accordance with her misconceptions), the abnormality causes Irina to unknowingly perform the correct sequence of moves, and so she ends up successfully performing a salchow. Although what she is doing and what she thinks she is doing come apart, she fails to notice the mismatch.

26. See, e.g., Ryle (1949, 45–46 and 130), Ware (1973, 161), Carr (1979, 407), Ginet (1975, 6–8), Chomsky (1988, 9ff.), Craig (1990, 159), Hawley (2003, §6), Snowdon (2003, §3), BM (2007, 46), Williams (2008, §2), and BMW (2009, §3).

In this case, it is clear that Irina is reliably able to do a salchow. However, because of her confusions regarding how to execute the move, she cannot be said to know how to do a salchow.

One might propose the following impure (intentional or mentalistic) version of the anti-intellectualist's reliable-ability-is-sufficient thesis in an attempt to circumvent the problem posed by *Salchow*:

[AI_S*] Being reliably able to *intentionally* φ is sufficient for knowing how to φ.

This thesis is endorsed even by propositionalist-intellectualists Jason Stanley and Timothy Williamson (2001) and Stanley (2011); the latter explicitly holds that it avoids the challenge posed by *Salchow*.[27]

However, we believe that a restriction to intentional action is no help. This can be seen by considering complex actions constituted by sequences of simpler actions or steps, such that to be reliably able to execute the complex action, one need only be reliably able to execute each of the steps. Let φ be such a complex action. Suppose that φ-ing requires completing four steps, but at the outset, *x* is unaware of this fact: at the outset, *x* is aware only of step one, which *x* is reliably able to intentionally execute. As a matter of fact, after intentionally executing step one, step two will be painfully obvious, and *x* will intentionally do it. In fact, step two is an intentional action that *x* does regularly, and thus *x* possesses a reliable ability to intentionally execute it. And so on for each of the last two steps. So at the outset, *x* is reliably able to intentionally perform each step, and thus reliably able to intentionally φ, though *x* does not at the outset know how to φ—contrary to [AI_S*].

This recipe yields concrete examples such as the following:

Kytoon. Chris forms the desire to build a kytoon—a lighter-than-air kite that may, like a balloon, be filled with gas (e.g., hydrogen, hot air, or helium).

27. *Salchow* is from BM (2007, 46); it reappears in BMW (2009). Brogaard (chapter 6) suggests that it would be "odd" for a bystander to describe Irina as reliably able to do a salchow even though she does not know how to do one; we provide an explanation of such oddity in BM (2007) and BMW (2009) in terms of a gap between the epistemic grounds for know-how attributions and the metaphysical basis for know-how. Stanley (2011, 218) approves of the example but adds that "Bengson, Moffett, and Wright take Irina to be intentionally performing the Salchow when she performs it." This attribution is mistaken: BMW (2009) do not mention intentional action, and the view of intentional action sketched in BM (2007, §4) as tied to understanding, which Irina lacks, may, perhaps, be taken to imply just the opposite. That said, our argument here does not turn on whether Irina intentionally performs a salchow. The connection between knowing how and reliable ability to intentional action proposed by [AI_S*] is critically examined next.

> She has never built a kite before, let alone a kytoon. But she is very good with her hands and thus is confident in her ability to make one. Seeking information about how to build a kytoon, information she currently lacks, Chris goes online and performs a Google search for "building a kytoon." She finds a Web site with instructions. The instructions are long, but she is able to understand and follow each step with a modest amount of effort. Over the course of the next few days, she succeeds in executing the steps. The result of her efforts is her own personal kytoon, which she then proceeds to learn to fly.

At the time of her initial decision to seek further information, Chris does not yet know how to build a kytoon. Indeed, it is easy to imagine her worrying about whether she will locate any usable directions, anxiously hoping that she will. Still, although the information Chris possesses at the time of her initial decision to seek further information is, by itself, inadequate to build a kytoon, there is a clear sense in which her situation is not hopeless. Her current information state, coupled with the information she will encounter once she performs a Google search, will together be sufficient to reliably build a kytoon. Consequently, Chris is, at the time of her decision, reliably able to build a kytoon—which is plainly an intentional action of Chris's. So at the time of her initial decision, Chris is reliably able to intentionally φ (build a kytoon), but at the time of her initial decision, she does not know how to φ (build a kytoon).[28]

Cases like this are not uncommon. But they refute [AI_S*], since they show that it is possible to have the reliable ability to intentionally φ without knowing how to φ. This possibility is realized in those cases when one's reliable ability is ignorant, that is, not accompanied by an adequate grasp of the relevant action. Call the problem posed by such cases the *problem of ignorant reliability* for the anti-intellectualist thesis that ability is sufficient for knowing how.

We take the foregoing considerations to identify a serious difficulty for anti-intellectualism. The difficulty is not (or not merely) that (a) anti-intellectualism, by focusing solely on the presence or absence of abilities or dispositions, neglects important nonbehavioral features of—and corresponding

28. That Chris requires further information emphasizes the point that Chris does not *at the outset* know how to build a kytoon. Otherwise, subjects would know how to do many things they clearly do not know how to do. For example, my current information state and the mass of information (blueprints, guides, etc.) that I will encounter when I later do extensive research on the Internet are together sufficient to reliably and intentionally build and fly a zeppelin. But sadly, it is not now the case that I know how to build and fly a zeppelin: this is, after all, why I need to do the research. Setiya (2009, 404) offers another type of counterexample to [AI_S*], involving defusing a bomb.

similarities and differences between—the practical, epistemic situation of the subjects in the preceding cases. Nor is the difficulty (wholly or merely) that (b) the anti-intellectualist faces the as-yet-unanswered challenge of having to "refine" her view—that is, to clarify or specify the relevant type of ability or disposition to φ—to successfully dispel, or navigate between, the problem of pervasive inability and the problem of ignorant reliability. While these are indeed difficulties facing anti-intellectualism, they do not exhaust the challenge posed by these problems. What the problems of pervasive inability and ignorant reliability seem to show is that (c) there is a *structural flaw* in the anti-intellectualist position. In short, the two problems push anti-intellectualism in opposite directions. The problem of pervasive inability counsels us to *weaken* the ability condition: we must require *less* than a reliable ability to φ, since a reliable ability to φ is not necessary for knowledge how to φ. But the problem of ignorant reliability counsels us to *strengthen* the ability condition: we must require *more* than a reliable ability to φ, since a reliable ability to φ is not sufficient for knowledge how to φ. In light of this internal conflict, we submit that the prospects of a consistent anti-intellectualist thesis that succeeds in reaching its intended destination are not good.[29]

Yet in our view the mistake is not simply attempting to consistently maintain both the necessity and sufficiency of ability for knowledge how. The mistake goes deeper and can be traced to (d) the misguided project of trying to force knowledge how, which is *cognitive* (recall (iii) from §1), into the mold of a mere power, which is *behavioral-dispositional*. Simply put, anti-intellectualist theories are looking in the wrong place. A subject's knowledge how is not narrowly tied to her abilities or dispositions to behavior (her powers); rather, when one knows how, one has an adequate, though not purely theoretical, grasp of the relevant activity—as illustrated by *Ski Instructor* and *Pi*, in which such grasp (and thus knowledge how) is present, and reinforced by *Salchow* and *Kytoon*, in which such grasp (and thus knowledge how) is absent. Our project in the remainder of this chapter is to explicate the nature of this grasp.

3. *The Practical Character of Knowledge How to φ*

The rejection of anti-intellectualism does not license dismissal of intuitions motivating the anti-intellectualist position. Indeed, our understanding of knowledge how would be severely impoverished were we to fail to acknowledge a crucial

29. To the extent that our argument in this section identifies a structural flaw in a style of theory, it does not commit a "counterexample fallacy" (this label is due to Bonevac, Dever, and Sosa forthcoming).

insight behind anti-intellectualism, namely, that knowledge how bears a substantive metaphysical connection to action.[30] Getting this connection right is one of the most significant challenges facing any theorist concerned with the nature of mind and its relation to action.

One hypothesis is that knowledge how to φ is (predicative 'is', here and later) a state such that if one is in (has) that state, then one successfully φ-s. That is:

[I] Knowledge how to φ is a state σ such that: if *x* is in σ, then *x* φ-s.

But merely knowing how to act in a certain way need not entail that one does in fact act in that way, so the hypothesized connection is far too strong. We might weaken the connection as follows:

[II] Knowledge how to φ is a state σ such that: if *x* is in σ, then *x* is able or disposed to φ.

However, this is equivalent to [AI_N], which as we have already seen is also too strong: recalling *Ski Instructor*, knowing how to act in a certain way need not entail that one is able or disposed to act in that way. A still weaker connection is the counterfactual success thesis, which is equivalent to:

[III] Knowledge how to φ is a state σ such that: if *x* is in σ, then (if *x* were to try to φ under normal conditions, *x* would φ).

But as we have seen, even this is too strong.

Still, there is something to the idea that knowledge how implies a certain kind of potential or possibility for successful action. Thus, for example, the fact that one knows how to φ does seem to imply that one is in a state such that it is possible for someone in that state to successfully φ. That is:

[IV] Knowledge how to φ is a state σ such that: if *x* is in σ, then it is possible for there to be some *y* such that *y* is in σ and *y* φ-s (where *y* may but need not be identical to *x*).

30. We discuss *epistemological* lessons to be learned from certain anti-intellectualist intuitions in BMW (2009, 397–398): for example, the information that *x* is able to φ often provides prima facie evidence that *x* knows how to φ, and vice versa (cf. Craig 1990, 160). The substantive *metaphysical* connection between knowledge how and action discussed in this section might help to explain such epistemological connections.

Although this is indeed a necessary truth, it lacks the substance required to illuminate the relation between knowledge how and action. After all, nearly every state satisfies the indicated condition, including states—such as Irina's state in *Salchow*, the state of having long hair, and so forth—that are accidentally or fortuitously correlated with successful action. What is needed is a more substantive principle that helps to distinguish knowing how from these other states by providing some insight into the nature of its connection to the possibility of success.

An attractive suggestion is that knowledge how is potentially action-guiding in the sense that it is a state that *can guide successful, intentional action*. That is, the individual's exercise of that state could underlie and explain intentional action, even if it does not in fact do so for any given individual on any given occasion. For example, recalling Pat in *Ski Instructor*, if a ski instructor knows how to do ski stunts, then even if he or she cannot do—and thus never does—them, it remains possible that there be someone in the same state who successfully and intentionally does the stunts, and does so on the basis of exercising that very state: in this way, the ski instructor's state (his or her know-how) is such that it *can* guide the intentional execution of the stunts, even if it does not actually do so for him or her. Similarly, recalling Louis in *Pi*, if a competent mathematician knows how to find the 10^{46} numeral in the decimal expansion of π, then he is in a state such that someone—perhaps not himself, given principled computational limitations—in that state could successfully and intentionally find it, and do so on the basis of exercising that very state: in this way, the competent mathematician's state (her know-how) is such that it *can* guide the intentional calculation of the 10^{46} numeral in the decimal expansion of π, even if it does not actually do so for her.

By contrast, a novice skater confused about the way to do a salchow is not in a state such that some individual in that state could successfully and intentionally do a salchow on the basis of exercising that very state: she lacks a state the exercise of which could underlie and explain the successful and intentional execution of a salchow—no state that carries sufficient information, as it were, to guide the successful and intentional execution of a salchow.[31] Similarly, a subject, like Chris, lacking sufficient information about the way to build a kytoon is not in a state

31. Might one perform a salchow on the basis of exercising a composite state consisting of an incorrect belief and neurological abnormality? Such an abnormality, being wholly "subpersonal," cannot be exercised by the individual (either intentionally or subintentionally), even when coupled with a belief. Moreover, the incorrect belief does not carry the information required to guide one to the completion of a salchow. Indeed, someone who acted on the basis of exercising that very state—someone whose intentional action was guided by such a belief—would not successfully and intentionally do a salchow, but an entirely different jump (or nothing properly classified as a jump at all, but rather, say, a mere movement). So Irina in *Salchow* is not in a state that satisfies [V] below.

such that some individual in that state could successfully and intentionally build a kytoon on the basis of exercising that very state: such a subject does not then possess any state that could underlie and explain the successful and intentional building of a kytoon—no state that carries sufficient information, as it were, to guide the successful and intentional construction of a kytoon.

In light of this, we propose the following connection between knowledge how and action:

> [V] Knowledge how to φ is a state σ such that: if *x* is in σ, then it is possible for there to be some individual *y* such that *y*'s exercise of σ underlies and explains *y*'s successfully and intentionally φ-ing—that is, σ *guides y* in successfully, intentionally φ-ing.[32]

This connection—an *action-guidingness* connection—is extremely plausible. Although it is weaker than the connection proposed by anti-intellectualism, it is substantive for all that.[33] This is significant for three reasons. First, [V] looks to be a perfect candidate for the source—or inspiration—of the classification of knowledge how as *practical*. Second, to the extent that [V] is consistent with intellectualism, as it appears to be (see §5), the implication is that even intellectualism can explain this classification. Third, and perhaps most important, absent a reason to think that [V] is still not yet substantive enough, stronger connections between knowledge how and action must be regarded as superfluous, in which case anti-intellectualist proposals remain unmotivated by reflection on the practical character of knowledge how.

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32. Four points of clarification. First, *y*'s exercise of σ must be the explainer (not simply an element in, or enabler of, a complete explanation) of *y*'s intentionally and successfully φ-ing. Second, as we understand the notion, for an individual to exercise a state is for the individual to act upon that state—for her to bring it to bear on subsequent action, perhaps intentionally or subintentionally. Third, the relevant worlds may be restricted in various ways, though we will not pursue these restrictions here. Fourth, [V] identifies a property of knowledge how, rather than a set of necessary and sufficient conditions for the presence of knowledge how. The aim is to identify a substantive necessary connection between knowledge how and action; we do not think that an action-based sufficient condition for knowledge how is available (recall §2), for reasons—centering on the type of *conception* required for knowledge how—that will feature in §5.

33. It is weaker in that it does not require a subject who knows how to φ to possess a power to φ; it requires only that there be *some* subject who does. Notice that [V] makes good sense of the plausible idea that knowing how persists beyond internal or external impediments to a subject's action (recall note 23). But it also reveals that this idea does not motivate anti-intellectualism. Rather, we need to recognize that the impediments might run so deep as to force us to look into modal space, to another subject. These points help to explain intuitions that drive anti-intellectualism (e.g., that knowing how cannot be wholly divorced from ability) without thereby capitulating to anti-intellectualism.

It is natural to wonder what accounts for the connection between knowledge how and action expressed by [V]. Here we encounter the following question, which we will refer to as the 'action-guiding question':

> *What could or must knowledge how be if it is such that if one has it, then one is in a state that can, but may not in fact, guide successful, intentional action?*

An adequate theory of knowing how must supply an answer to this question.

We shall approach an answer in two steps. Recall that in §1 we distinguished between two orthodox views of the nature of knowing how: propositionalism and dispositionalism. The arguments advanced in §2 serve as reasons to reject dispositionalism. If one can know how to φ without being able or disposed to φ—as indicated by examples such as *Ski Instructor* and *Pi*—then it would seem to follow that the relevant *knowing* or *knowing-how* relation cannot be a mere behavioral-dispositional relation (e.g., the *being-able-to* relation). This is reason enough to set dispositionalism aside. Within a traditional framework, this would motivate the attempt to seek a propositionalist explanation of [V]. But we have seen that there is another option, namely, objectualism. In the next section, §4, we sketch a few reasons to pursue this alternative. That is step one. In §5, we take step two: we explain how an objectualist view of the nature of knowing how to φ might account for a variety of heretofore unexplained features of knowledge how, including the substantive connection between knowledge how and action expressed by [V].

4. *From Propositionalism to Objectualism*

4.1 The Uniformity of Knowledge-*wh*

It has been suggested that the uniformity of so-called knowledge-*wh* strongly favors propositionalism over rival approaches. Consider the similarities between (1) and the constructions in (2)–(4):

1. *x* knows how to φ.
2. *x* knows where to φ.
3. *x* knows why to φ.
4. *x* knows when to φ.

Does 'knows' pick out the same relation in each of (1)–(4)? The availability of the following coordination constructions suggests so:[34]

34. Suggests, but does not entail: while we find the results of such 'coordination tests' plausible in this case, they are not conclusive. To illustrate, take a simple argument for propositionalism,

5. Martin knows how and why to raise money for Obama's campaign.
6. Martin knows where to meet and how to get there.
7. Martin knows when and how to castle (referring to chess).

In each of (1)–(4), *x* in some sense *knows* that which is designated by the complement clause ('how/where/why/when to do it'). In this respect, at least, these various instances of knowledge-*wh* seem to be uniform.

(A more theoretical reason for adopting this uniformity thesis derives from an influential argument form due to Noam Chomsky [1970], which Edwin Williams [1991] dubs "target syntax" and "target semantics" arguments; see also Goldberg 2006, 23ff.). Generalizing somewhat, this form of argument says that if two surface forms *A* and *B* pattern in similar ways with respect to their syntactic and semantic behavior, then ceteris paribus both are generated from some underlying form *C*. Applied to the present context, 'knowledge how' and the other *wh*-constructions behave similarly with respect to their surface syntactic and semantic behavior (see, e.g., Lahiri 2002); so, ceteris paribus, 'knowledge how' attributions are generated from an underlying form that is identical to the underlying form from which the other *wh*-constructions are generated.)

Stanley (2011, 208) has argued that this uniformity thesis provides the basis for "a powerful argument in favor of the conclusion that our ordinary folk notion of knowing-how is a species of propositional knowledge," as the propositionalist maintains.[35] For (2)–(4) "involve the ascription of propositional

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namely, that it is possible to conjoin 'knowledge how' and 'knowledge that' constructions (as in Stanley and Williamson's [2001, 430–431] example, 'John knows that bicycle accidents can happen and also how to avoid them in most cases'); so 'how'-complements in the former constructions, like 'that'-complements in the latter constructions, denote propositions, and 'knows' in both constructions denotes a relation between subjects and those propositions. This is too quick. As is well known, 'that'-complements can be conjoined with complements that denote vastly different types of entity, including propositions, properties, and objects (Sag et al. 1985): consider, e.g., 'John knows that bicycle accidents happen and the best strategies for avoiding them'. For relevant discussion, see Roberts (2009, §1.3) and Ginzburg (chapter 9).

35. Cf. Snowdon (2003, 6–8). Stanley (2011, 208) writes: "It is a common assumption . . . that sentences involving constructions like 'know where + infinitive,' 'know when + infinitive,' 'know why + infinitive,' etc. all can be defined in terms of propositional knowledge. But given that ascriptions of knowing-how in English look so similar to such ascriptions, it is hard to see how they could ascribe a different kind of mental state. This provides a powerful argument in favor of the conclusion that our ordinary folk notion of knowing-how is a species of propositional knowledge." And again (221): "Different views of the semantics of embedded questions all agree that the constructions [in (1)–(4)] call for the same analysis. Since [(2)–(4)] uncontroversially involve the ascription of propositional knowledge, these analyses all agree that [(1)] does as well." But as we will see, nonpropositionalists can accept uniformity: a general objectualist approach is available. (Arguably, Ryle [1949, 146] himself was aware of the indicated coordinations and sought to preserve uniformity through a general dispositionalist approach to all knowledge-*wh*.)

knowledge"; consequently, to preserve uniformity, we must conclude that (1) also ascribes "a relation that holds between a person and a proposition" (226).

But we need not accept propositionalism to preserve the uniformity of knowledge-*wh*. Specifically, an objectualist can easily accommodate the observation that 'knows' picks out the same relation in each of (1)–(4): in all of these cases, one stands in a *knowing* relation to the *nonpropositional* item denoted by the complement clause, for example, a way (1), a location (2), a reason (3), or a time (4).[36] Hence an objectualist may offer the following "paraphrases":

1*. *x* knows the way (in which) to φ.
2*. *x* knows the location (at which) to φ.
3*. *x* knows the reason (for which) to φ.
4*. *x* knows the time (at which) to φ.

There is nothing particularly spooky about such objectual knowledge. Just as one can genuinely know a proof (e.g., Gödel's incompleteness theorem), a route (e.g., the way to the train station), or a person (e.g., one's partner), one can also know a method or way of acting, a place or location, a reason, or a time—and, we might say, know it *as such*.[37] Later, we consider how we should understand the relevant type of objectual knowledge, theoretically speaking. (Spoiler: it is not *mere* objectual knowledge or "knowledge-by-acquaintance." Rather, it is a kind of *understanding*.) For now, it suffices to observe that an objectualist approach defuses this "powerful argument" for propositionalism.

4.2 What Is the Intuitive Meaning of '*x* knows how to φ'?

Propositionalism asserts that knowing how to φ is a relation to a proposition, for example, the proposition that some way *w* is a way of φ-ing.[38] This view appears to

36. 'Where to φ' seems to, in some way, be about places, that is, the place to φ. 'Why to φ' seems to, in some way, be about reasons, that is, the reason to φ. 'When to φ' seems to, in some way, be about times, that is, the time to φ. And 'how to φ' seems to, in some way, be about the way or method in which to φ.

37. Forbes (2000) offers a detailed treatment of the as-such modifier, which we will simply use as an (often implicit) placeholder until our own, alternative conceptions-based approach in §5. At any rate, familiar linguistic machinery may be employed to distinguish between various readings of these sentences and to model the appropriate granularity.

38. There are a variety of ways to implement propositionalism. For example, the propositionalist can but need not quantify over propositions. Brogaard (2009, §3) and Kallestrup (2009, n. 2) offer reasons for propositionalists to prefer such quantification (cf. Schaffer 2009b, §1.3).

get knowledge how attributions wrong, descriptively speaking. Consider, for instance, Stanley's (2011, 209–210) claim that "it is fairly uncontroversial, and indeed intuitively obvious, that" the sentence

8. John knows how to find coffee in New York.

"has a reading synonymous" with the sentence

9. For some way *w*, John knows that he can find coffee in New York in way *w*.

We find it neither "uncontroversial" nor "intuitively obvious" that (8) and (9) have a reading on which they are *synonymous* or even rough paraphrases of one another. Nor do many prominent linguists (see, e.g., Ginzburg and Sag 2000 and Roberts 2009).[39] In any event, surely it is not the pretheoretical thing to say. If anything, the pretheoretical stance is that they are *not* synonymous.[40]

Compare:

10. John knows the way to find coffee in New York.

To the extent that we can provide a pretheoretical paraphrase of (8), presumably it is (10) or something thereabouts rather than (9).[41] It is not unnatural to speak of a subject who knows how to φ as knowing the way to φ and to speak of a subject who does not know how to φ as not knowing the way to φ. Interestingly, this is what is predicted by the objectualist view that knowledge how to φ is an objectual

39. Stanley and Williamson (2001, 440 emphasis added) are simply wrong when they claim that their treatment—exemplified by (9)—of the syntax and semantics of attributions of knowledge how "is *the* account entailed by current theories about the syntax and semantics of the relevant constructions." There are many different theories consistent with many different accounts. See, e.g., Ginzburg (chapter 9) and Michaelis (chapter 11).

40. Just consider the relative popularity of anti-intellectualism and the observation (i) from §1: intuitively, knowing how is *not* a kind of knowing that. We are not alone in this assessment; for example, Soteriou (2008, 480) writes in a similar vein, "Many, I think, share the intuition that there is something unsatisfactory in assimilating know how to straightforward propositional knowledge." At any rate, in our view, claims of synonymy are not to be taken lightly. Semantics is a delicate enterprise, and we theorists must be careful not to abuse or be overhasty with ordinary language or get carried away with currently fashionable linguistic theories.

41. Cf. Ware (1973, 157): "I would suggest that 'knowing how' means something very like 'knowing the way.' Knowing how I do it and knowing how to do it is the same as knowing the way I do it and knowing the way to do it." In (9) and certain statements that follow, we have spoken of 'the way,' though it may be more accurate to speak of 'a way.'

attitude that relates a subject (e.g., John) and a way of φ-ing (e.g., the way to find coffee in New York): in knowing how to φ, *x* knows the way to φ.[42]

In support of this suggestion, notice that objectualism also tracks the way we are inclined to speak about the cases discussed in §2:

11. Pat knows the correct way of doing the stunts (hence he can teach them).
12. Louis knows the way to find the numeral (since he knows the algorithm).
13. Irina does not know the way to do a salchow (because she is too confused).
14. Chris does not at the time of her decision to seek further information about kytoon-building know the way to build a kytoon (since she lacks sufficient information).

This may be taken as evidence in favor of an objectualist approach: for *x* to know how to φ is, roughly, for *x* to stand in a *knowing* relation to *a way of φ-ing*.

4.3 The Relation and the Relatum

An objectualist approach might be further motivated by reflecting on various features of what is known when one knows how to φ, namely, *how to* φ. Interestingly, this entity—how to φ—seems to behave more like a nonpropositional item than a proposition. For example, if it were a proposition, then presumably it could be said to be true or false—that is, it could be attributed the property of being true or the property of being false. But compare the following:

15. Michael knows that *w* is a way to swim; so it must be true.
16. ? Michael knows how to swim; so it must be true.[43]
17. ? Michael knows a way to swim; so it must be true.

42. One might object that from a linguistic point of view, 'how to find coffee in New York' is in this case an embedded question (a "real interrogative"), not a free relative, and thus it must express a proposition rather than a way of acting (as such). However, it is not clear to what extent the *metaphysical* distinction between propositions and ways of acting currently at issue corresponds to the *linguistic* distinction between embedded questions and free relatives. In work in progress, we develop an account of the syntax and semantics of *wh*-constructions consistent with these sorts of distinctions. See also the syntactic and semantic approaches developed by Ginzburg (chapter 9) and Michaelis (chapter 11).

43. On the proposal endorsed by Schaffer (2007, 2009b), *x* knows how to φ iff K*xpQ*, where *Q* is an indirect question regarding φ-ing and *p* is the answer to *Q*. To the extent that a question is the salient entity to which Michael is related when he knows how to swim, and questions cannot be true, this view might predict the oddity of (16). However, such a proposal looks to also predict that the following should be acceptable: ? 'Michael knows how to swim; it is easily answered'. It has been suggested to us that *Q* is for some reason unavailable to be the referent of 'it'. One might then expect *p* (an answer to *Q*) to be available instead, but it is not (recall 16). An appeal to type shifting is no help: ? 'Michael knows how to swim; it is nonempty.'

Other propositional predicates such as 'is possible' and 'is necessary' are similar. This disconfirms the prediction favorable to propositionalism while lending favor to objectualism (a way of acting can be neither true nor false, for example).

One might be tempted to think that, regardless, 'how to φ' in '*x* knows how to φ' must pick out a proposition because the question 'How to φ?' expresses a proposition with interrogative force. There is arguably a precedent (beyond familiar applications of Frege's context principle) for the objectualist's reluctance to bow to such temptation. Consider, for example,

18. Martin sees Lucy run.

This plausibly expresses an objectual relation between a subject (Martin) and a nonpropositional item—viz., an event (Lucy running)—even though the declarative sentence 'Lucy runs' expresses a proposition.[44]

Now turn to the relation that one stands in to what is known when one knows how to φ. This relation seems to behave more like an objectual knowledge relation than a propositional knowledge relation. First, if it were a simple propositional knowledge relation, then presumably it would not be gradable. Thus the following, for example, sounds bad:

19. ? Rebecca knows that swimming is a sport far better than Michael does.

By contrast, the relation picked out by 'knows' in '*x* knows how to φ' is gradable.[45] Thus the following sound just fine:

20. Rebecca knows how to swim far better than Michael does.
21. Rebecca knows how to swim far better than she knows how to dive.

Second, if the relation picked out by 'knows' in '*x* knows how to φ' were a simple propositional knowledge relation, then we should expect it to be

44. Cf. Crane (2009).

45. Cf. Ryle (1949, 59), Sgaravatti and Zardini (2008, §6), and Roberts (2009, §1.4). See Stanley (forthcoming-b, 33–34) for an attempt to give a propositionalist treatment of such gradability, but that account does not accommodate the possibility of comparing or grading the knowledge itself, not simply what is known. We often say that one *really* knows how, knows *quite well* how, knows *well enough* how, only *kind* (*sort*) *of* knows how, and so forth. These observations, together with the availability of a salient scale (namely, degree of mastery broadly construed), substantiates the gradability of knowing how.

possible to be as it were bumped up to certainty. Thus the following, for example, sounds fine:

22. Rebecca knows that swimming is a sport—in fact, she's certain of it!

But the relation picked out by 'knows' in '*x* knows how to φ' cannot be bumped up to certainty. Thus the following sounds bad:

23. ? Rebecca knows how to swim—in fact, she's certain of it!

Presumably this is because, whereas propositional knowledge (knowing that) bumps up to certainty, knowing how bumps up to *mastery*:

24. Rebecca knows how to swim—in fact, she's mastered it!

Compare the following objectualist paraphrase:

25. Rebecca knows a way to swim—in fact, she's mastered it!

In contrast to propositionalism, then, an objectualist approach fits the data.

A related point concerns the matter of justification.[46] There is something odd about the following exchange:

26. a. Martin knows how to get to the airport.
    b. ? Hmm . . . is he really justified in believing that?

Compare the following equally odd exchange:

27. a. Martin knows the way to the airport.
    b. ? Hmm . . . is he really justified in believing that?

Here we find that an objectualist paraphrase nicely preserves the oddity of the exchange. A propositionalist paraphrase, by contrast, unacceptably relieves the exchange of its oddity:

28. a. Martin knows that following E-470 is the way to the airport.
    b. Hmm . . . is he really justified in believing that?

46. Cf. Ryle (1949, 28) and Glick (forthcoming, §4).

This is another respect in which an objectualist approach has its advantages.[47]

5. *Objectualist Intellectualism*

To this point, we have argued that although knowledge how to φ is not merely a behavioral-dispositional state (§2), it is nevertheless fundamentally practical: knowledge how to φ is a state σ such that if *x* is in σ, then it is possible for there to be some *y* such that σ guides *y* in successfully and intentionally φ-ing (§3). We have also articulated the following objectualist hypothesis: for *x* to know how to φ is, roughly, for *x* to stand in a *knowing* relation to *a way of φ-ing* (§4). This section aims to improve on this pretheoretical statement of the objectualist position by articulating an account of the relation, as well as ways of acting, which locates the position in an intellectualist setting.

5.1 Understanding

There is reason to think that the type of knowledge in question involves a bit of sophistication, as it were. A natural starting point is the observation, suggested by the discussion in §§4.2–3, that it is at least as strong as objectual knowledge of—or familiarity or acquaintance with—a way of acting: as in (10)–(14), to know how to φ involves knowing the way to φ. On reflection, it is hard to see how the necessity of such *objectual* knowledge for knowing how has so often been suppressed or overlooked (by intellectualists and anti-intellectualists alike). Perhaps it has been hidden from view by its near-triviality: plainly, one could not know how to φ but fail to know any way of φ-ing.[48]

But objectual knowledge of a way of acting is not alone sufficient for knowing how. As it happens, making swimming motions is a way of escaping avalanches. A competent swimmer from the tropics who has never heard of or encountered snow or avalanches can have objectual knowledge of—be familiar or acquainted with—this particular way of acting (namely, making swimming motions), but if

47. The discussion in this section suggests that although objectualism is a metaphysical (not specifically linguistic) thesis, broadly linguistic considerations might be adduced on its behalf. This is important insofar as it is widely thought that linguistic considerations clearly favor propositionalism.

48. We recognize that knowing-*x* (e.g., knowing a way of acting) may differ from knowledge-*of* (e.g., knowledge *of* a way of acting). For ease of exposition, we use 'knowing a way' and 'knowledge of a way' interchangeably, though it should be kept in mind that, where they diverge, we always have in mind the former.

she has no conception of snow or avalanches, then she cannot know how to escape avalanches. Call this example *Swimmer*.[49]

Examples like *Swimmer* show that one fails to know how to φ if one *lacks* a conception of a way of φ-ing. Another route to a failure of knowledge how to φ is to have an *incorrect* conception of way of φ-ing. Recall Irina in *Salchow*. She is mistaken about the way to do a salchow (she conceives of a certain sequence of movements as constituting a way of doing a salchow when they do not) and hence does not know how to do one.[50] Yet a third route to a failure of knowledge how to φ is to have an *incomplete* conception of a way of φ-ing. Recall Chris in *Kytoon*. She lacks sufficient information about the way to build a kytoon (this is why she performs a Google search) and hence does not know how to build one. Irina's conception is incorrect; Chris's conception is incomplete.

A fourth route to a failure of knowledge how to φ is to harbor *conceptual confusion* that prevents reasonable mastery of the concepts in one's conception of a way of φ-ing. Suppose that Irina corrects her mistaken conception of a way of doing a salchow by memorizing her coach's instructions. So she now believes correctly that to do a salchow, one takes off from the back inside edge of one skate and lands on the back outside edge of the opposite skate after one or more rotations in the air. However, she is—á la Tyler Burge's (1979) arthritis patient—deeply confused about certain concepts, specifically, the concepts *back outside edge* and *back inside edge*. In particular, she takes her back outside edge to be her front inside edge and her back inside edge to be her front outside edge. As a result, Irina fails to grasp—that is, lacks reasonable mastery of the concepts in—her otherwise correct and complete conception of a way to do a salchow (failure that would result in substantive mishaps or errors if she were to try to do a salchow or attempt to teach someone else to do a salchow) and hence does not know how to do one. Call this example *Modified Salchow*.[51]

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49. This example is inspired by Hawley's (2003) very nice avalanche case, developed in BMW (2009, §3).

50. Markie (2006, 126) also argues that a mistaken conception undermines knowledge how. He offers his example in the context of a discussion of learning and practicing complex intentional actions: "Suppose that, in learning to ride a bike, I start with a mistaken conception of correct bicycling. I think that correct bicycling requires moving as slowly as possible with a good bit of wobbling and weaving. The experience of moving very slowly and wobbly becomes a correct-bicycling experience; that of moving at all quickly or steadily an incorrect-bicycling one. I end up not really knowing how to ride."

51. The point of this example is twofold. First, a correct belief—even a knowledgeable belief, contra Stanley and Williamson (2001)—about the way to φ (or that *w* is a way to φ) is not sufficient for knowing how to φ. Second, simply having a correct and complete conception of a way to φ is likewise not enough; one must *grasp* that conception (i.e., have reasonable mastery of the concepts in that conception). A related example is given in BM (2007), which discusses

To summarize:

A1. *x* does not know how to φ if *x* lacks a conception of a way of φ-ing.

A2. *x* does not know how to φ if *x* has an incorrect conception of a way of φ-ing.

A3. *x* does not know how to φ if *x* has an incomplete conception of a way of φ-ing.

A4. *x* does not know how to φ if *x* fails to grasp a correct and complete conception of a way of φ-ing (i.e., lacks reasonable mastery of the concepts in such a conception).

Therefore,

A5. Grasping a correct and complete conception of a way of φ-ing is necessary for knowing how to φ.[52]

Moreover, as we have seen, it is a near-triviality that:

A6. Objectual knowledge of (familiarity or acquaintance with) a way of φ-ing is necessary for knowing how to φ.

So we have identified two necessary conditions for knowing how to φ. But as indicated by examples such as *Ski Instructor* and *Pi* (to which we return in a moment), these conditions are also jointly sufficient. Thus:

A7. Having objectual knowledge of a way *w* of φ-ing while grasping a correct and complete conception of *w* is necessary and sufficient for knowing how to φ.

We believe that this is the key to understanding knowledge how. As we shall see, it provides the basis for explaining, among other things, why knowledge how to φ (i) is distinct from propositional knowledge, (ii) bears a substantive connection to action, and (iii) is a genuinely cognitive achievement.

It is worth pausing for a moment to reflect on the complex objectual state or attitude invoked in (A7), namely, an objectual knowledge of a way of acting, together with an objectual grasp of a correct and complete conception of that way. Obviously, this complex objectual attitude is more demanding than mere objectual knowledge of

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the relevant notion of grasping—that is, reasonable conceptual mastery—and, more generally, the role of concept possession in knowledge how.

52. One might worry that this cannot be right because it overintellectualizes knowing how and delivers the wrong verdict about simple-minded creatures who know how while lacking the requisite conceptions and conceptual sophistication. We respond to both objections in BMW (2009): this condition does not overintellectualize knowing how, and it does not wrongly exclude simple-minded creatures.

(familiarity or acquaintance with) a way of acting by itself, since grasping a correct and complete conception of a way of acting involves conceiving of that way in an appropriate manner—conceiving of it *as such* (with reasonable conceptual mastery). So the type of objectual attitude at issue is quite robust. In fact, it is natural to think of it as a kind of *understanding*, specifically, an *objectual understanding* of a way of acting:[53]

> Having an objectual understanding of *w* (where *w* is a way of φ-ing) = having objectual knowledge of *w* while grasping a correct and complete conception of *w*.[54]

The view of knowing how to φ that emerges from this line of reasoning is a version of intellectualism because an understanding of a way, while not reducible to or a species of propositional attitude, is partially *grounded* in propositional attitudes. This can be seen from examples, such as those described previously, involving absent, incorrect, or incomplete conceptions. The problem in each case ultimately can be traced to a problem in certain of one's propositional attitudes or to the absence thereof. The competent swimmer in *Swimmer* does not have any nontrivial propositional attitudes about avalanches (she has never heard of or encountered them); as a result, she lacks any conception of avalanches (including a conception of a way to escape them) and hence fails to know how. Irina in *Salchow* has mistaken beliefs about the way to do a salchow; as a result, she has an incorrect conception of this way and hence does not know how to do one. Chris in *Kytoon* is unaware of certain key facts about the way to build a kytoon; as a result, she has an incomplete conception of this way and hence does not know how to build one. Irina in *Modified Salchow* is deeply confused about the concepts *back outside edge* and *back inside edge*, which confusion looks to imply the absence of certain key propositional attitudes;[55] as a result of her confusion, she fails to grasp a correct and

53. The importance of understanding to knowing how is suggested by Ryle (1949, 41ff.), Dreyfus (1992, 3), Hawley (2003, 28), and Noë (2005, 283). We believe that the considerations in §2 reveal the inadequacy of a behavioral-dispositional or successful-action-based treatment of such understanding. For ease of exposition, we will use 'understanding a way' and 'having an understanding of a way' interchangeably, though it should be kept in mind that, where they diverge, we always have in mind the former.

54. Such understanding is a kind of knowledge, but, as emphasized in the text, it is neither propositional knowledge nor mere objectual knowledge (acquaintance, familiarity) alone: rather, it is *objectual-knowledge-of-a-way-of-φ-ing-as-such-with-reasonable-conceptual-mastery*.

55. Which propositional attitudes? If Bealer's (1998) analysis of conceptual understanding in terms of intuitions is correct, some of the relevant attitudes will be intuitions. If Peacocke's (2008) most recent analysis of conceptual understanding is correct, some of the relevant attitudes will be states of tacit propositional knowledge. And so forth. However, the basic idea expressed in this paragraph is that to fix a subject's propositional attitudes *plus the subject's conceptual situation* is to fix their knowledge how.

complete conception of a way of doing a salchow and hence, as in *Salchow*, does not know how to do one. If these defects were not present, then the subjects would know how to perform their respective actions. Recall Pat in *Ski Instructor*: although he has never been able to do the stunts, he has an impressive understanding of their correct execution; as a result, he grasps an adequate conception of the way to do the stunts and hence knows how to do them. (In fact, it is his understanding of a way to do the stunts that enables him to teach Olympic-caliber students how to do them.) Likewise, although Louis in *Pi* is unable to find the 10^{46} numeral in the decimal expansion of π, he grasps the algorithm; as a result, he has an understanding of the way and hence knows how. And so on: the absence or presence of knowledge how is a matter of the absence or presence of a certain kind of understanding (not ability or disposition to behavior), and this ultimately can be traced to the absence or presence of some defectiveness in one's overall propositional attitudes (plus conceptual understanding).[56]

The result is an intellectualist view according to which knowledge how to φ is an objectual attitude or state grounded in (possibly tacit) propositional attitudes, though it is not itself reducible to or a species of propositional attitude. We call this *objectualist intellectualism*:

Objectualist Intellectualism
To know how to φ is to stand in an objectual *understanding* relation to *a way w of φ-ing*,

where such understanding consists in objectual knowledge of *w* together with an objectual grasp of (having reasonable mastery of the concepts in) a correct and complete conception of *w*.

What remains is to clarify this thesis and articulate its virtues.

5.2 Conceptions and Ways

We begin by unpacking the notion of a *conception*, a type of phenomenon that a number of psychologists and philosophers have independently argued is indis-

56. In BM (2007, §4), we suggested that the relevant propositional attitude must be knowledge that *w* is a way to φ. However, this perspective is not obligatory; the present approach introduces additional flexibility. As we observed in §1, what is crucial to intellectualism is that knowledge how to φ be grounded in *some propositional attitude or other* regarding φ-ing (see also BMW 2009, n. 3 and especially the state of play essay in this book). Such flexibility allows our intellectualist position to accommodate the alleged cases of knowing how without knowing that discussed by Cath (chapter 5), though we ourselves are not fully convinced by those cases.

pensable in psychological explanation.[57, 58] In general, one's conception of some δ is how one conceives or thinks, or is somehow inclined to think, of δ.[59] Such conceptions have the virtue of being not only theoretically useful but also exceedingly familiar. We have conceptions of ourselves, of our environment, of motion (Newton's conception of motion differed from Aristotle's), of higher education, of the proper scope of government, of truth, and of a way of doing a salchow. These conceptions can be accurate or inaccurate, orthodox or unorthodox, liberal or conservative, ambitious or naïve, widespread or idiosyncratic, and explicit or implicit (nonconscious, nondiscursive). They can evolve and change, influence behavior, and affect our well-being.

While there no doubt are interesting differences between these particular conceptions, we find it plausible that these and other conceptions—that is, conceptions in general—possess the following properties:[60]

Nonfactivity: A conception of δ can be incorrect (mistaken).
Nonexhaustiveness: A conception of δ can be incomplete.

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57. See, for example, the seminal work in psychology on schemata and scripts by Anderson (1977), Schank and Abelson (1977), and Rumelhart (1980). Conceptions and their kin (e.g., stereotypes, views, perspectives, "frames", and "files") have also been invoked in the philosophies of language, action, mind, and fiction; see, for example, Putnam (1975), Brand (1982, 1984, ch. 8), Bratman (1987), Woodfield (1991, §2), Jackson (1998, 31), Peacocke (1998, 2003, 2008, ch. 4), Gendler (2000), Burge (2003, 383ff.), Wiggins (2001), and Gupta (2006, 76ff.). One need not endorse the details of any of these approaches to appreciate the explanatory significance of conceptions.

58. There is an ambiguity in the term 'conception', as in the term 'belief', that can be brought out by considering the difference between *one's having a conception*, which is a mental state or attitude of an individual, and *the conception that one has*, which is a content that might not be had or possessed by any individual at all. Context should serve to disambiguate.

59. As this suggests, conceptions (the attitudes) are not identical to beliefs—at least not outright beliefs—or collections thereof (though they may supervene on beliefs and their kin). Still, as we will see, conceptions resemble beliefs in several respects.

60. It is worth emphasizing the difference between conceptions (the contents), on one hand, and concepts (the nonmentalistic entities), on the other (cf. Higginbotham 1998). One way to see the difference is by noticing that two individuals can possess the very same *concept* of δ, although they do not have the same *conception* of δ. This is illustrated by the patient and doctor in Burge's (1979) famous arthritis example (with respect to their shared concept *arthritis*, however different their conceptions may be), as well as the neuroanatomist and child we describe later (with respect to their shared concept *ear wiggling*, however different their conceptions may be). Conceptions are also distinct from propositions: while the latter are the semantic values of full indicative sentences and canonically introduced by 'that'-clauses, the former are canonically introduced by 'as'- and 'by'-clauses such as 'by contracting the auricular muscles'. We develop a broadly nonreductive theory of conceptions, and propose a general analysis of understanding in terms of conceptions, in work in progress.

Diversity: There can be many distinct conceptions of δ.
Fine-grainedness: Necessarily equivalent conceptions need not be identical.
Nonarticulatedness: A conception of δ can be wholly or partly demonstrative.
Nonovertness: An individual can have a conception of δ either implicitly or explicitly.
Publicity: x and y ($x \neq y$) can share one and the same conception of δ.
Nonexclusivity: x can simultaneously have two or more distinct conceptions of δ.

Nonfactivity is illustrated by Irina's conception in *Salchow*, which is incorrect. Nonexhaustiveness is illustrated by Chris's conception in *Kytoon*, which is incomplete. Diversity can be illustrated by considering a neuroanatomist and a child who have differing conceptions of the same way of wiggling their ears, namely, contracting the auricular muscles: whereas the neuroanatomist's conception of this way is the academic and articulated conception *by contracting the auricular muscles*, the child's conception of this way is the casual and unarticulated conception *by doing this to these parts of my body*. The child's demonstrative conception also illustrates nonarticulatedness and nonovertness.[61] The neuroanatomist's conception also illustrates publicity and nonexclusivity: another neuroanatomist might share the same conception and also possess a second, demonstrative conception akin to the child's. Fine-grainedness might be illustrated by the competent swimmer's conception in *Swimmer*: even if her conception of a way of making swimming motions were necessarily coextensive with a conception of a way of escaping avalanches (it is probably not), these conceptions still would not be one and the same.

Ways of acting—or the subclass of such ways relevant here—are *methods*. We take methods to be constituted by a (possibly ordered, possibly singleton) sequence of action types, the execution of which is an act.[62] Methods or ways of acting exhibit several features corresponding to those possessed by conceptions:

61. See BM (2007, §4) for further discussion of ear wiggling and the role of demonstrative concepts in knowledge how.

62. While some ways (e.g., impulsively) may be properties of token events, as Stanley and Williamson (2001, 427) suggest, the subclass of ways relevant here, namely, methods, are *not* properties of token events. Nor are methods sets of instructions or regulative propositions: instructions simply *describe* or *command* ways of acting; regulative propositions *represent* or *state* ways of acting; neither are themselves ways of acting.

Diversity: There can be many distinct ways of φ-ing.
Publicity: x and y ($x \neq y$) can φ in one and the same way.
Nonexclusivity: x can simultaneously perform two or more distinct ways of φ-ing.

However, conceptions and ways of acting do not share all of the same features. By contrast with conceptions, ways of acting have the following properties:

Factivity: A way of φ-ing is in fact a way of φ-ing; that is, w is a way of φ-ing only if it is possible that some individual φ-s in way w.[63]
Exhaustiveness: A way of φ-ing must be complete; that is, w is a way of φ-ing only if by acting in way w, one φ-s.
Coarse-grainedness: Necessarily equivalent ways of φ-ing are identical.

Ways of acting differ from conceptions in at least these three respects.

Correct and complete conceptions of ways of acting are related to ways of acting in several ways (beyond the trivial relation *being a correct and complete conception of*).[64] One important relation can be stated once we have the notion of a *guiding conception*:

[GC] ξ is a guiding conception for an action φ for an individual x if ξ is for x a conception of a way of φ-ing and, in attempting to φ, x tries to at least implicitly make x's behavior conform to ξ.[65]

The relation is this:

[R] A conception ξ of a way w of φ-ing is correct and complete only if it is possible for ξ to be some individual's guiding conception in φ-ing in way w.

As we shall see, conceptions and ways of acting and the relations therein play an important role in objectualist intellectualism's explanation of the simultaneously practical and cognitive character of knowledge how.

63. Consider: there is no way to square the circle. Cf. Sgaravatti and Zardini (2008, 233–235).

64. For instance, on certain views of analysis (or elucidation), if ξ is a correct and complete conception of a way w of φ-ing, then ξ is an analysis (or elucidation) of w.

65. See BM (2007, §4). As we observed there, guiding conceptions obey the following *exclusion principle*: For any particular attempt α to φ, and for any candidate conceptions ξ and ξ* of ways of φ-ing ($\xi \neq \xi^*$), if in the course of α, ξ is x's guiding conception, then ξ* is not.

5.3 Virtues

Objectualist intellectualism has several theoretical virtues. First, by refusing to identify knowledge how to φ with any kind of ability or disposition (power), it avoids the problems of pervasive inability and ignorant reliability. Second, it explains why the relation picked out by 'knows' in '*x* knows how to φ' is gradable, cannot be bumped up to certainty, and renders justification inapplicable: objectual understanding is gradable, cannot be bumped up to certainty, and renders justification inapplicable. Third, as we have seen, it correctly classifies examples of knowing how (or the absence thereof), for instance, *Ski Instructor*, *Pi*, *Salchow*, *Kytoon*, *Swimmer*, and *Modified Salchow*, among others.[66]

Perhaps the most significant virtue of objectualist intellectualism is its capacity to preserve—and, in fact, explain—the three attractive but prima facie incompatible theses listed in §1. First, if knowing how is a nonpropositional, objectual attitude, knowing how is not merely a kind of knowing that. Second, understanding a way of φ-ing (i.e., having reasonable mastery of the concepts in a correct and complete conception of a way of φ-ing) is plainly a nontrivial cognitive state. So objectualist intellectualism makes it easy to see why knowing how is a cognitive achievement. Third, a correct and complete conception of a way of φ-ing is a state that carries sufficient information, as it were, to guide the successful and intentional completion of φ (even if it does not do so for any given individual on any given occasion). Hence knowledge how bears a substantive connection to action.[67]

We can render this objectualist intellectualist treatment of the practical character of knowing how a bit more precise by walking through the steps leading from the nature of conceptions and ways to action-guidingness (where 'CC($\xi w \varphi$)' stands for 'a conception ξ of a way *w* of φ-ing is correct and complete'):[68]

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66. Another virtue is that it promises to answer Schaffer's (2007; 2009b §1.2) convergence argument. If we accept Schaffer's judgments of material inequivalence, we must acknowledge the need for conceptions that discriminate properly. See, in particular, Schaffer's (2009b, 479) discussion of proper discrimination.

67. These points also yield an explanation of the one-to distinction discussed in §2: knowledge how *to* φ, but not knowledge how *one* φ-s (or how φ-ing *is done*, *what it takes* to φ, and so forth), requires an objectual grasp of a conception of a way to φ that could guide the successful and intentional completion of φ. This explanation is a further significant virtue. By way of contrast, Stanley and Williamson's (2001) propositionalism—to cite just one example—appears to be unable to explain the one-to distinction, which it basically collapses.

68. In an interesting discussion of what he labels the "directive" character of knowing how, Kumar (2011, §5) objects that our intellectualist view cannot account for the connection between knowing how and action. But insofar as the objection targets our notion of an ability-based concept, a notion that we invoked to an entirely different end (see BM 2007, §3), the objection misunderstands this aspect of our view. It is the notion of *grasping a correct and complete conception of a*

B1. CC($\xi w\varphi$) only if it is possible for ξ to be some individual x's conception of w and, in attempting to φ, x tries to at least implicitly make x's behavior conform to ξ. (From [GC] and [R])
B2. x tries to at least implicitly make x's behavior conform to a conception ξ of a way of φ-ing in attempting to φ only if x exercises ξ in attempting to φ. (Premise)
B3. So CC($\xi w\varphi$) only if it is possible for ξ to be some individual x's conception of w and x exercises ξ in attempting to φ. (From B1 and B2)
B4. If CC($\xi w\varphi$), then w is a way of φ-ing. (Triviality)
B5. So if CC($\xi w\varphi$), then it is possible that some individual φ-s in way w. (From B4 and factivity of ways of acting)
B6. So CC($\xi w\varphi$) only if: it is possible that some individual φ-s in way w, and it is possible that some individual exercises ξ in attempting to φ. (From B5 and B3)
B7. If it is possible that some individual φ-s in way w and it is possible that some individual exercises a correct and complete conception of w in attempting to φ, then it is possible that some individual successfully and intentionally φ-s in way w by exercising ξ. (Premise)
B8. So CC($\xi w\varphi$) only if it is possible for there to be some individual x such that x successfully and intentionally φ-s in way w by exercising ξ. (From B6 and B7)
B9. If x successfully and intentionally φ-s in way w by exercising ξ, then x's exercise of ξ underlies and explains x's successfully and intentionally φ-ing—that is, ξ guides x in successfully, intentionally φ-ing. (Premise)
B10. So CC($\xi w\varphi$) only if it is possible for there to be some individual x such that x's exercise of ξ underlies and explains x's successfully and intentionally φ-ing—that is, ξ guides x in successfully, intentionally φ-ing. (From B8 and B9)

It follows that if knowledge how to φ involves a CC($\xi w\varphi$)—a correct and complete conception of a way of acting—then [V] is true. In this way, objectualist intellectualism, which says that knowing how involves an objectual grasp of just such a conception, has the virtue of answering the action-guiding question. Thus it explains the substantive connection between knowledge how and action expressed in [V]: knowledge how to φ is a state σ such that: if x is in σ, then it is possible for there to be some y such that y's exercise of σ underlies and explains y's successfully and intentionally φ-ing—that is, σ guides y in successfully, intentionally φ-ing.

way of acting (i.e., understanding a way) that explains the connection expressed in principle [V] (as suggested in BM 2007, 53, and made explicit presently).

Objectualist intellectualism offers a unique perspective on the intersection of mind and action—wherein lies teaching, learning, practicing, and other intentional-cum-epistemic phenomena that evince the simultaneously practical and cognitive character of knowledge how. This perspective enables us to escape a false dichotomy between the identification of knowing how with either propositional attitudes or powers. Knowledge how is the property of neither fools nor automata but the achievement of those who *understand*. Thus we can begin to appreciate the idea that knowledge how to act is a form of *practical knowledge*: a cognitive state, distinct from propositional knowledge, that can guide intentional action.[69]

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