Practical Knowledge and Abilities
by
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Abstract

The thesis is an exploration of the relations between know-how, abilities, and ordinary knowledge of facts. It is shown that there is a distinctively practical sort of know-how and a corresponding interpretation of ‘S knows how to φ’, and that this special sort of know-how, while possessing representational content, is not simply ordinary knowledge-that. The view rests on a novel distinction between two interpretations of the Intellectualist slogan, familiar from the work of Gilbert Ryle, that know-how is a kind of knowledge-that. The distinction allows us to clarify the issues that are at stake in the debate and see the possibility of a position that combines aspects of both Intellectualism and anti-Intellectualism. An entailment from know-how to a certain sort of ability is defended, and it is shown that the present view preserves the possibility of appealing to know-how to block Frank Jackson’s “knowledge argument” against physicalism.

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1 Introduction

I think it is intuitively obvious that know-how is a special kind of knowledge, in contrast to ordinary knowledge of where George Bush lives or knowledge that Portland is rainy. I think it is intuitively obvious, for example, that my knowing how to swim does not consist in my having ordinary knowledge of facts about swimming. Many other philosophers and laypeople I have spoken with also find these things obvious. But in the tradition of a good portion of philosophy, I will be devoting my efforts here to defending what already seems obvious.

There are several reasons for my defense of the obvious. The first is that even if a claim seems obvious, thinking about it carefully can often reveal that the issues are less clear than one initially thought. Indeed, sometimes it turns out to be unclear what the “obvious” claim is supposed to be. This has turned out to be true of claims about know-how. My goal in writing this thesis was to get clearer about know-how and related issues, and I hope my work will show others, whether or not they share my initial intuitions, that those issues are complex and interesting.

A second reason for my defense is that not even the obvious can win the approval of all philosophers. The hold-outs force us to face arguments against what we thought was obvious, and we must evaluate whether the argument or our original intuition stands up better under careful consideration. I think that strong intuitions deserve defense, but that philosophical
arguments can in principle outweigh such intuitions if they are suitably compelling and if no equally compelling counter-arguments can be provided. To get at the truth about know-how, then, we need to go beyond prima facie intuitions and explore the arguments.

A third reason for exploring the status of intuitive claims about know-how is that doing so sheds light on a variety of other issues such as ordinary propositional knowledge, intelligence, actions and abilities, and semantics for embedded questions and modal expressions. And furthermore, the nature of know-how and these other phenomena are relevant to big issues elsewhere in philosophy. They bear, for instance, on how we might block Frank Jackson's famous "knowledge argument" against physicalism. Gaining a better understanding of know-how helps us address far-reaching philosophical issues.

My discussion will proceed as follows. In section 2, I try to find a clear and precise statement of Intellectualism, the view that, roughly, some know-how is not special, but rather consists in ordinary knowledge of facts. I note that there are multiple kinds of know-how, and dub the kind that is of concern to the anti-Intellectualist practical knowledge or practical know-how. In section 3, I lay further foundations for evaluating Intellectualism by explaining one standard view of the semantics of knowledge-wh attributions, e.g. ‘John knows where…’, ‘John knows why…’, or ‘John knows who…’. This is necessary to allow us to understand the central strategy of Intellectualism, the strategy of treating attributions of know-how on analogy with other cases in which ‘knows’ is complemented by an embedded question. The basic idea is simple: Where Q is an embedded question, ‘S knows Q’ is true iff S knows a relevant answer (or every such answer) to Q.

The argument for treating know-how attributions like other attributions of knowledge-wh is set out in sections 3.2 and 3.3, and the remainder of section 3 is devoted to exploring various options for responding to that argument. The argument is essentially a more linguistically detailed version of this: Since there are no reasons from within contemporary syntactic theory or semantic theories of embedded questions for distinguishing ‘S knows how to φ’ from other knowledge-wh attributions that attribute ordinary knowledge of facts, know-how is also just
a kind of ordinary knowledge of facts. A large portion of my evaluation of this argument is concerned with a source of data with the potential to undermine its central claim: linguistic constructions other than 'knows how', 'knows when', etc. Most centrally, in section 3.6, I discuss constructions in languages other than English that indicate that practical knowledge really is a special kind of knowledge. In these languages, practical know-how, rather than any other kind of knowledge-wh, is attributed with linguistically distinctive means.

Section 4 contains an elaboration and further evaluation of Intellectualism. In 4.1, I attempt to be more explicit on what proposition is supposed to be known when someone knows how to do something. The central question is how to interpret the infinitival construction in the wh-complement. Intuitively, and as is commonly noted in the linguistic literature, constructions like 'where to φ' or 'for x to φ' are interpreted as containing some sort of modality. I note that intuitive judgments about possession of know-how can most straightforwardly be accommodated by treating the modality as the modality expressed in claims like 'S can φ'. In section 4.2, I consider an alternative way to accommodate the judgments by appealing to Jason Stanley and Timothy Williamson's "practical modes of presentation" (PMPs). I offer some reasons to be skeptical of the explanatory utility of PMPs and skeptical that appealing to PMPs preserves the spirit of the Intellectualist position.

In section 4.3 I show that practical know-how lacks various properties possessed by paradigm cases of knowledge-that — it is independent of justificatory considerations, for instance, and is not generally available to higher cognitive processes like conscious reasoning and verbal expression. An analysis of practical know-how in terms of knowledge-that appears to impose requirements that are too strong. But, I argue in section 5.1, we cannot straightforwardly conclude that Intellectualism is false. We must distinguish two versions of Intellectualism, Weak (WI) and Strong (SI). The difference is in which properties we take to be essential to the notion of knowledge-that used in the analysis of know-how. The considerations in section 4.3 show that practical know-how is not knowledge-that of a sort that fits the traditional conception, so that (SI) is false, but this is compatible with all know-how being a
kind of knowledge with propositional content.

In the remainder of section 5, I endorse (WI) on grounds that it is the most straightforward way to accommodate both the data in favor of know-how being special and the appealing simplicity of treating know-how attributions on analogy with other attributions of knowledge-wh. It captures senses in which both the Intellectualist and the anti-Intellectualist have insights to offer. I argue for a form of (WI) on which practical knowledge is linguistically manifested in an ambiguity in ‘knows’, and on which know-how entails a certain kind of ability. In supporting the latter aspect of the view, I connect the context-sensitivity of modal expressions with the context-sensitivity of ability attributions and account for a variety of putative counterexamples to my view.

In the final section of the dissertation, I illustrate how our conclusions about know-how bear on the ability response to Jackson’s knowledge argument. The critical elements of the argument and response are clarified by our distinction between (WI) and (SI), and we see that the falsity of (SI) is sufficient to block Jackson’s anti-physicalist conclusion — (WI) need not be false for the ability response to be effective.

## 2 Characterizing Intellectualism

Gilbert Ryle (1946) and (1949) introduced the term ‘Intellectualism’ to refer to a view that, in his opinion, overemphasized the role of ordinary knowledge of facts in an account of intelligent behavior. It not immediately clear, however, what the defining thesis of Intellectualism is supposed to be. The project of this chapter is to distinguish a number of Intellectualist theses and consider the relationships among them.

### 2.1 ‘Know-how’

In contemporary literature, Intellectualism is usually taken to be the following claim:
(1) Know-how is a kind of knowledge-that.

'Know-how' is a familiar term of ordinary language. We commonly say things like 'Fixing a bicycle takes a lot of know-how'. But there are two issues worth raising about the use of 'know-how' in (1). First is the question of whether Intellectualism is supposed to be a thesis as narrowly focussed as (1). Is the view only about know-how, or is it also (or solely) supposed to concern abilities, skills, or intelligent behavior? These notions, along with a number of others, are employed throughout the literature. Ryle, for instance, focusses mainly on the notions of intelligence and intelligent behavior. Although the relevant chapter of *The Concept of Mind* is titled 'Knowing How and Knowing That', his initial statement of his thesis suggests that know-how was less important to his discussion than contemporary discussions would lead one to believe.

The main object of this chapter is to show that there are many activities which directly display qualities of mind, yet are neither themselves intellectual operations nor yet effects of intellectual operations. Intelligent practice is not a step-child of theory. On the contrary theorising is one practice amongst others and is itself intelligently or stupidly conducted. [...] It is important to correct from the start the intellectualist doctrine which tries to define intelligence in terms of the apprehension of truths, instead of the apprehension of truths in terms of intelligence. (1949: 26)

Besides 'know-how', 'ability', 'skill', and 'practice', Ryle appeals to a variety of other terms to help him characterize and criticize Intellectualism. A quick survey yields 'competence', 'capacity', 'habit', 'bent', 'disposition', 'performance', 'procedure', 'operation', 'task', and 'exercise'. There is correspondingly a variety of theses that we can extract from Ryle's discussion to characterize Intellectualism. Two of the more prominent ones are these:

(2) To be intelligent is to apprehend certain truths.
(3) "Whenever an agent [φs] intelligently, his [φing] is preceded and steered by another internal act of considering a regulative proposition appropriate to [φing]" (1949: 31).

Ryle is not always clear about the relationships among these and other theses. For an illustration of this point, it is worthwhile to look at one of the first occurrences of a know-how locution in Ryle’s book. He writes:

When a person is described by one or other of the intelligence-epithets such as ‘shrewd’ or ‘silly’, ‘prudent’ or ‘imprudent’, the description imputes to him not the knowledge, or ignorance, of this or that truth, but the ability, or inability, to do certain sorts of things. Theorists have been so preoccupied with the task of investigating the nature, the source, and the credentials of the theories that we adopt that they have for the most part ignored the question what it is for someone to know how to perform tasks. In ordinary life, on the contrary, as well as in the special business of teaching, we are much more concerned with people’s competences than with their cognitive repertoires, with the operations than with the truths that they learn. Indeed, even when we are concerned with their intellectual excellences and deficiencies, we are interested less in the stocks of truths that they acquire and retain than in their capacities to find out truths for themselves and their ability to organize and exploit them, when discovered. Often we deplore a person’s ignorance of some fact only because we deplore the stupidity of which his ignorance is a consequence. (1949: 27).

Note that ‘know how’ occurs immediately after the mention of abilities, though there has been no argument provided for the identification of know-how with ability, and there is no suggestion that the topic is being changed. Indeed, the first sentence states a distinction between knowledge of truths and abilities, and the second sentence is supposed to note that theorists have ignored everything on one side of that distinction. Ryle thus holds (4):
Know-how is an ability.

Mixed in the same paragraph are references to the performance of tasks, competences, capacities, and operations. It seems that for Ryle it is completely natural to assume that the correct account of these aspects of our lives goes along with the correct account of know-how. I think this assumption is not simply a reflection of Ryle’s peculiar philosophical disposition — when explaining Intellectualism to non-philosophical acquaintances, they frequently express skepticism that know-how is just ordinary knowledge of facts on the grounds that having know-how is just having an ability or skill. Perhaps that bit of folk-philosophy is mistaken (see section 5 below for an argument that it is not), but regardless, the temptation to equate know-how with abilities, skills, competences, etc. suggests to me that an argument that resolved (1) while leaving the status of these other notions unaddressed would fail to engage with an important strand in anti-Intellectualist thinking. My discussion in following sections will explore the connection between know-how some of these other notions.

A second question about the use of ‘know-how’ in (1) is whether the thesis is intended to be about all know-how or only some know-how. Is the Intellectualist’s claim that all know-how is knowledge-that or the claim that some know-how is knowledge-that? Jason Stanley and Timothy Williamson (hereafter, S&W) clearly hope to establish the former (2001: 444). Jaako Hintikka, by contrast, claims that there are two uses of know-how attributions, one of which, “the skill sense”, cannot be analyzed as knowledge-that (1975: 14). So while S&W and Hintikka are all standardly considered Intellectualists, the former hold (5) while the latter only holds (6).

(5) All know-how is a kind of knowledge-that.

(6) Some know-how is a kind of knowledge-that.

On the anti-Intellectualist side, the authors who explicitly say something about the distinction between (5) and (6) agree that the former is the thesis of primary interest. For instance, see
Sgaravatti and Zardini (2008) and Lihoreau (2008). I suspect that other anti-Intellectualists would similarly be satisfied with establishing that some know-how is not a kind of knowledge—that, at least so long as the kind of know-how in question was the kind at issue in standard examples used to motivate anti-Intellectualism. Some cases of know-how are clearly not the sort of interest, as when ‘S knows how to φ’ has a deontic interpretation on which it conveys something like ‘S knows which way he ought to φ’. Such a reading seems to me available in a context in which what is under discussion is explicitly what one ought to do: “Are you sure you understand which way you’re supposed to swim in the race tomorrow? It’s the most important race of the year.” “Don’t worry, I know how to swim: do the crawl with the special new kick technique you instructed me on.” In the same spirit, D.G. Brown offers “The janitor knows how to arrange the tables” (1970: 228), and S&W offer “Hannah knows how to ride a bicycle in New York City (namely carefully)” (2001: 425, fn. 23).

As S&W admit (2001: 425), the deontic interpretation is not the reading of know-how attributions of interest to the anti-Intellectualist. There is a more obvious and more interesting interpretation, the one we can point to by noting that even if one should wear a helmet when riding a bicycle, a person who does not know that fact can still know how to ride a bicycle. Further examples are probably not necessary to provide the flavor of a non-deontic reading, but just for good measure, take an ordinary context in which Damien is invited to go swimming. If he sincerely responds “Sorry, I don’t know how to swim”, he cannot be proven a liar by interrogation as to whether he knows that one is supposed to swim in such-and-such way. Of course, highlighting a non-deontic interpretation of know-how attributions is not yet to explain how this reading should be understood — that issue will be discussed throughout the remainder of this dissertation. But it will be useful to have a term for the kind of non-deontic know-how that anti-Intellectualists intend to highlight. We can refer to it as practical knowledge or practical know-how.

I would like to draw attention to a point here about what it would be for there to be multiple kinds of know-how. I have been discussing the existence of multiple readings or in-
terpretations of ‘S knows how to φ’, but this way of talking suggests that there is an ambiguity in the meaning of such sentences. This is not the only way to understand the idea that there are multiple kinds of know-how. For a helpful comparison: it was an empirical discovery that there are two sorts of memory, working memory and long-term memory. But there are not two readings of ‘S remembers that p’ — the sentence is not ambiguous as to whether working memory or long-term memory is at issue. The semantics of ‘remember’ carves mental states up more coarsely than that. More generally, there is no bar to our language carving out a category that, on philosophical or empirical inspection (or even commonsense reflection), turns out to admit of more fine-grained distinctions. In fact, this is a totally normal characteristic of everyday terms. ‘Furniture’, for instance, applies to items that can be naturally grouped into sub-categories (tables, sofas, etc.). There are many kinds of furniture, though ‘furniture’ does not in any standard sense have multiple interpretations.

If we were being particularly wary of use/mention errors, we would actually never use the claim that there are multiple kinds of know-how to say that know-how attributions (attributions using ‘knows’ with a complement ‘how...’) are ambiguous. If a term or locution is ambiguous, like ‘bank’ or ‘fan’, any occurrence of it has a particular interpretation. ‘John has many fans’ may mean that there are many people who (roughly) are admirers of John, or that there are many air-circulation devices that John owns, but we cannot use the sentence to mean that there are many things satisfying the disjunction of being an admirer of John or being an air-circulation device owned by John. An analogous point holds for ‘There are two kinds of fans’ — if we are being careful, we should use this either to mean that there are two kinds of admirers or to mean that there are two kinds of air-circulation devices. We should not use it to express the fact that ‘fan’ can pick out either of the two sorts of thing. It seems, however, that ordinary language is more forgiving than philosophers are, so that we can felicitously claim ‘There are two kinds of fans: admirers and air-circulation devices’. Speaking in this looser way also offers the convenience of not having to explicitly refer to lexical items, so I propose to follow the vulgar: I intend to use talk of kinds of know-how in the loose,
more encompassing ordinary-language way. The way I will write, ‘there are multiple kinds of know-how’ may be made true by the existence of multiple interpretations of know-how locutions, but it does not require the latter. It may also be made true by know-how being like furniture or memory — ambiguity is not required to say that couches are a kind of furniture and working memory is a kind of memory.

Another cautionary point is that the claim that there are multiple kinds of know-how should not be taken as equivalent to the claim that know-how (or the ‘knows’ in ‘knows how’\(^1\)) is disjunctive. Terms like ‘furniture’ and ‘remember’ are similarly not disjunctive, at least not as I think the latter term is ordinarily used. Philosophers call ‘jade’ disjunctive because its extension forms a less natural category than either of the two categories of stone that comprise it, jadeite and nephrite. Jadeite and nephrite are natural-kind terms, well-behaved terms that have as their extensions some naturally delineated chunks of reality, but jade is not a natural-kind term. Perhaps it was intended to be, but later investigation revealed that while all bits of jade share some superficial characteristics, nature’s joints are to be found at a lower level. ‘Furniture’ and ‘remember’ are not like this. For one thing, they are not terms intended to pick out a category naturally delineated in terms of underlying physical or chemical structure, so they are not terms that have failed to secure the sort of extension intended for them. Furthermore, the categories of chairs and tables are natural in some sense appropriate to artifacts, but so is the category of furniture, so there is no problem of naturalness. Similarly, cognitive science has found some natural categories of remembering corresponding to working memory and long-term memory, but these are both kinds of remembering, and the latter, broader category is natural in a certain sense appropriate to folk-psychological notions (in contrast to, e.g., remembering-or-doubting).

I claimed earlier that there are deontic and non-deontic interpretations of ‘S knows how to φ’. We can now make a more general and cautious claim on the same basis: there are multiple kinds of know-how. And I want to interpret (5) and (6) so as to take account of the

\(^1\)I do not know that there is a clear philosophical consensus on whether ‘disjunctive’ applies to terms, properties, sets, or all of the above. I will mix uses with the assumption that nothing important hangs on it.
fact that there are multiple kinds of know-how, perhaps but not necessarily multiple interpretations of know-how locutions. If practical know-how is not a kind of knowledge-that while deontic know-how is, then (6) is true but (5) false. If each kind of know-how is not a kind of knowledge-that, then both theses are false. I will spend some time in sections 3 and 4 addressing these theses, but will only turn to more specific claims about interpretations of ‘S knows how to ϕ’ in section 5.2

2.2 ‘Knowledge-that’

‘Knowledge-that’ is a philosopher’s term. Laypeople do not say ‘Einstein had a lot of knowledge-that’, or ‘Written language allows knowledge-that to be passed down through generations.’ This is even clearer with the term ‘propositional knowledge’, which is often used in place of ‘knowledge-that’ to state the thesis of Intellectualism. Nevertheless, laypeople obviously talk about knowledge regularly when they use sentences of the form ‘S knows that p’. The term ‘knowledge-that’ is simply a device to talk about that sort of knowledge while opposing it with acquaintance-knowledge (John knows Bill) and without assuming that know-how is included in the category. So, given that ‘knowledge-that’ refers to the sort of knowledge familiar from everyday talk, it may seem that we do not need to worry about explicating the use of the phrase in statements of Intellectualism.

For much of my discussion, I will simply appeal to that intuitive understanding of ‘knowledge-that’. But eventually (section 5), we will see the need for clarification. As a warm-up for that discussion, I at least want to provide a preliminary indication of some non-equivalent ways in which ‘knowledge-that’ might be explained.

(7) Knowledge-that is knowledge with a proposition as a relatum.

(8) Knowledge-that is knowledge attributable with a sentence of the form ‘S knows that p’.
These definitions are both prima facie reasonable, but they are not equivalent and neither is fully satisfactory. If some propositions are ineffable but knowable, then some knowledge satisfies (7) but not (8). If philosophical orthodoxy is mistaken in thinking that ‘S knows that p’ attributes to S a relation to a proposition, then (8) might be satisfied even if (7) is not. Of course, all participants in the debate over Intellectualism have assumed that ‘S knows that p’ attributes a kind of knowledge with a proposition as a relatum, so it may seem that (7) is unproblematic. But I want to be as clear as possible on what exactly is at stake in the debate over Intellectualism. If it turned out that ‘S knows that p’ did not express a relation to a proposition, philosophers would not for that reason abandon the question of whether Intellectualism were true. They might still want to know whether know-how were a sub-type of the type of knowledge we attribute with ‘S knows that p’, whatever the correct analysis of the latter.

But (8) is not totally adequate either. In particular, it would be good to abstract away from the question of ineffability. One way to do so is to say that on the most natural way of categorizing kinds of knowledge, effability is not a category-defining characteristic. Knowledge may be ineffable but still be knowledge of the same kind as the knowledge that is attributable with ‘S knows that p’. For instance, ‘S knows that p’ might be given Russell’s analysis as a relation between individuals and objects and properties, and knowledge that was ineffable might be an instance of the same relation.

So how do we explicate ‘knowledge-that’? Do we need to? I will not answer these questions now, but when we return to them in section 5 and, briefly, section 3.8, it will be useful to have kept them in mind.

2.3 ‘...is a kind of...’

The Intellectualist theses we have considered appeal to the locution ‘is a kind of’. How should one go about establishing or refuting such theses? Philosophers are used to evaluat-

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2 As has been argued by, e.g., Friederike Moltmann (2003), following Russell (1918).
ing theses that state necessary or sufficient conditions, and several have suggested to me in conversation that Intellectualism can be stated in those terms, so it is worthwhile investigating whether a thesis like (5) can be restated as a conditional or biconditional. On their face, claims of the form ‘Fs are a kind of G’ state a necessary condition on Fs. Thus, (9-a) seems to be captured fairly well by (9-b).

(9)  

a. Dogs are a kind of mammal.

b. $\forall x (x \text{ is a dog} \rightarrow x \text{ is a mammal}).$

But of course, the form of (9-b) is not really helpful for stating the thesis of Intellectualism. A strict parallel would force us to write as if there were things that were know-how and knowledge-that, an unfamiliar way of speaking that would make it no easier to evaluate the thesis.

(10) $\forall x (x \text{ is know-how} \rightarrow x \text{ is knowledge-that}).$

We can state a thesis that sounds a bit more natural by quantifying over states of knowledge, but the resulting thesis, like (10), seems to me to offer no hygienic advance over (5).

(11) $\forall x (x \text{ is a state of know-how} \rightarrow x \text{ is a state of knowledge-that}).$

A natural alternative idea is to quantify over knowers, stating a condition on anyone who knows how to do something. The easiest way to attempt this is to focus on one paradigm sort of know-how, knowledge how to swim, say, taking Intellectualism per se to be a generalization of the schema. A first try at a formulation is the following:

(12) $\exists p \Box \forall x (x \text{ knows how to swim} \rightarrow x \text{ knows } p).$

This is inadequate, since even if (12) were sufficient for Intellectualism (about knowing how to swim), Intellectualists should avoid such a strong claim. For suppose that in other worlds,
the facts relevant to swimming are different. In world \( w \), say, all the liquids in which one can swim have a different viscosity, requiring substantively different swimming techniques than are required in the actual world. If one tries to move one's limbs at familiar speeds, the resistance will be so great that one will quickly be exhausted. To avoid drowning, one's movements must be carried out much more slowly than in the actual world. On one Intellectualist view, all competent swimmers in \( w \) know propositions about the technique to be used to swim in conditions like those in \( w \). And actual swimmers know different propositions, propositions about the technique to be used in the actual world. Since it ought to be compatible with Intellectualism that agents who know how to swim at different worlds know different propositions about swimming technique, it seems that the wide-scope existential quantifier in (12) must be moved inward.

(13) \( \Box \exists p \forall x \ (x \text{ knows how to swim} \rightarrow x \text{ knows } p) \).

But the resulting thesis is still too strong to be taken as a defining thesis of Intellectualism, facing a problem that afflicts (12) as well. An Intellectualist might maintain that an agent \( x \)'s knowledge how to swim should be understood in terms of \( x \)'s knowledge of a certain sort of proposition about \( x \) — perhaps, as on S&W's view, discussed below, the proposition that such-and-such is a way for \( x \) to swim. On this view, even in a single world \( w \) there is no proposition about swimming technique known by all those who know (in \( w \)) how to swim. So (13) must be weakened even more. We might try (14):

(14) \( \Box \forall x \exists p \ (x \text{ knows how to swim} \rightarrow x \text{ knows } p) \).

But this weakens the thesis too much, for setting aside questions about the existence of propositions, this formula is equivalent to (15):

(15) \( \Box \forall x \ (x \text{ knows how to swim} \rightarrow \exists p \ x \text{ knows } p) \).
And, plausibly, everyone knows some fact or other. An anti-Intellectualist can agree with that. And not even that much is necessary to verify (15) — we do not need to agree that everyone knows some fact or other, just that everyone intelligent enough to know how to swim does. And the latter does not amount to the claim that knowledge how to swim is knowledge of some fact, so we have not yet found a proper characterization of Intellectualism in terms of necessary conditions for know-how.

There is a natural move to try at this point. We can build into our thesis some restrictions on the relevant proposition. Suppose we simply add to (15) a specification of what proposition is known by agents who know how to swim. Let us suppose that the proposition is what would be expressed by an explanation of how to swim (we could think of this as a set of instructions for swimming or an answer to the question of how to swim), and we can put the revised thesis as follows.

(16) $\Box \forall x (x \text{ knows how to swim} \rightarrow \exists p (p \text{ explains how to swim} \& x \text{ knows } p)).$

Is this thesis an adequate statement of Intellectualism? No, and the reason why not brings out an important point. Consider the following view, with which (16) is logically compatible:

(17) $\Box \forall x (x \text{ knows how to swim} \rightarrow \exists p (p \text{ explains how to swim} \& x \text{ knows } p \& x \text{ is able to swim in the way explained by } p)).$

On a view like (17), know-how requires propositional knowledge, but it also requires an ability. So is it a form of Intellectualism or of anti-Intellectualism? One might say that according to (17), know-how is a kind of propositional knowledge: propositional knowledge that is accompanied by a related ability. Or: According to (17), know-how is a kind of ability: an ability to implement a certain set of instructions one knows. Which of these ways of understanding (17) is right, or are both right? Neither, I think — (17) simply does not say whether or not knowledge how to swim is an ability or a bit of propositional knowledge.

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It may be useful to compare the following (crude) theses about other mental states:

(18)   a. $\Box \forall p \forall x (x \text{ wishes } p \rightarrow (x \text{ believes } \neg p \& x \text{ would prefer } p \text{ to } \neg p))$.

   b. $\Box \forall p \forall x (x \text{ knows } p \rightarrow (x \text{ believes } p \& x \text{ has warrant for believing } p \& p \text{ is true}))$.

Suppose someone claimed that wishing were a kind of belief, and someone else claimed that it were a kind of preference (or pro-attitude more generally). If pressed to takes sides, which one should we take? I would say that it is more plausible that wishing is a kind of preference, though it also seems plausible that wishing requires a belief that the wished-for proposition does not obtain. Compare a dispute between someone who claims that knowledge of a proposition is a kind of belief and someone who claims that knowledge of a proposition is a kind of warrant-possession. If pressed to take sides, I would say that the former certainly seems more plausible, though knowledge of a proposition also seems to require warrant.

So what is the relationship between claims identifying a mental state with a kind of belief and claims like (18-a) and (18-b)? For both wishing and knowing, a certain belief is claimed to be a necessary condition. But the two theses could be paired with distinct claims about whether the relevant state is a kind of belief. This brings out the point about (17): It does not take a stand on the intuitive question of Intellectualism, whether know-how is a kind of knowledge-that. Generalizing the point, theses that state necessary conditions for knowing how to do something do not provide us the tools we need to capture Intellectualism more precisely than with its intuitive formulation.

Summing up so far: it initially seemed plausible that Intellectualism could be stated more precisely as a necessary condition on knowing how to do something. To say that dogs are a kind of mammal just seems to amount to this: Being a mammal is a necessary condition for being a dog. But exploring theses of this sort has not turned out to yield a helpful and adequate version of Intellectualism. It might be thought that the problem could be rectified by appealing to a statement of necessary and sufficient conditions for knowing how to do
something. But this strategy does not yet resolve the central problem. For the points about (18-a) and (18-b) apply equally to (19-a) and (19-b):

(19) 
  a. $\Box \forall p \forall x (x \text{ wishes } p \iff (x \text{ believes } \neg p \& x \text{ would prefer } p \text{ to } \neg p))$.
  b. $\Box \forall p \forall x (x \text{ knows } p \iff (x \text{ believes } p \& x \text{ has warrant for believing } p \& p \text{ is } \text{ true}))$.

Thesis (19-a) does not tell us whether wishing is a kind of belief or a kind of preference, and (19-b) does not tell us whether knowledge of a proposition is a kind of belief or a kind of warrant-possession. As far as I can see, necessary and sufficient conditions only provide a case for a such a claim when only one phenomenon appears on the right-hand side of the biconditional. Witness (20):

(20) $\Box \forall p \forall x (x \text{ is certain of proposition } p \iff x \text{ believes } p \text{ to degree } 1)$.

Whether or not (20) is a good account of certainty, its truth would make a compelling case for the claim that certainty is a kind of belief. But it is not so easy to get an adequate statement of Intellectualism. An obviously inadequate (because obviously false) thesis is this:

(21) $\Box \forall x (x \text{ knows how to swim } \iff \exists p x \text{ knows } p)$.

There are people who know some facts without knowing how to swim. Now that we are working with a biconditional, a more natural attempt would be to shift the existential quantifier back to an intermediate position.

(22) $\Box \forall x \exists p (x \text{ knows how to swim } \iff x \text{ knows } p)$.

But this still faces a problem like one discussed above. An anti-Intellectualist might assume, as is plausible, that (necessarily) everyone intelligent enough to know how to swim knows

\footnote{This is not equivalent, since $\exists p (Kxp \rightarrow Fx)$ does not entail $(\exists p Kxp) \rightarrow Fx.$}
some fact or other and further, that (necessarily) no one who does not know how to swim is omniscient. That is, everyone who does not know how to swim is such that there is some fact that they do not know. These two assumptions do not entail Intellectualism, but they entail that for any individual x, we can pick a proposition p such that ‘x knows how to swim’ matches in truth-value with ‘x knows p’ — if x knows how to swim, just pick a random proposition that x knows, and if x does not know how to swim, just pick a random proposition that x does not know. So (22) is logically compatible with anti-Intellectualism.

Recall that we cannot strengthen the thesis by swapping the universal and existential quantifiers, since Intellectualists such as S&W deny that everyone who knows how to swim thereby knows the same proposition. What we can do is to combine the biconditional strategy with the strategy attempted just before — we restrict the relevant proposition. This can be done in two ways. First, using the wider-scope existential as in (22):

\[(23) \quad \Box \forall x \exists p \, (p \text{ explains how to swim} \& \, (x \text{ knows how to swim} \leftrightarrow x \text{ knows } p)).\]

This avoids the problem for (22), although questions remain about what sorts of propositions the Intellectualist should be restricting herself to in (23). Suppose that the relevant propositions include the proposition that simply instructs one to swim by doing the back-stroke, or even more uninformatively, to swim by moving one’s body appropriately. An anti-Intellectualist could hold, I think, that everyone who knows how to swim knows that moving one’s body appropriately is how to do it, though there should be little doubt that the latter is not what the know-how consists in. So the left-to-right direction of (23) is plausibly compatible with anti-Intellectualism. Now suppose that the relevant class of propositions also includes propositions that no one knows. Perhaps a complete description in fundamental physical terms of a way of swimming would provide such an unknown proposition. So for any x who does not know how to swim, the anti-Intellectualist could hold that there is a proposition explaining how to swim that x does not know. It follows that the right-to-left direction of (23) is compatible with anti-Intellectualism, and hence that the whole thesis does
not suffice to characterize Intellectualism.

Of course, the argument just given made liberal assumptions about what counts as a proposition that explains how to swim. Or, more generally, it made liberal assumptions about what kinds of propositions the Intellectualist would restrict herself to in a thesis like (23). Perhaps there is some way of filling in the thesis that is informative, sufficiently strong to count as a form of Intellectualism, and defensible (see the discussion of S&W’s view below). But we might just as well shift back to the narrowest reading of the existential quantifier now that we are using a biconditional and a restriction on the relevant propositions.

(24) \( \Box \forall x (x \text{ knows how to swim} \leftrightarrow \exists p (p \text{ explains how to swim} \& x \text{ knows } p)) \).

Is this thesis obviously false in the way that (21) is? That is, is it obvious that there are people who know propositions that explain how to swim without knowing how to swim, or people who know how to swim without knowing any propositions that explain how to swim? This raises part of the problem raised for (23). There are people who do not know how to swim, but know that one way to swim is by doing the backstroke. But this refutes (24) only if the propositions that explain how to swim include the proposition that one way to swim is by doing the backstroke. The big question, then, is what the propositions are that the Intellectualist wants to appeal to. A hygienic version of her view could be represented schematically as follows:

(25) \( \forall \phi \Box \forall x (x \text{ knows how to } \phi \leftrightarrow \exists p (Fp \& x \text{ knows } p)) \).

It is difficult to say what sort of \( F \) would make (25) into a clearly Intellectualist position. One thing that would not do would be to take Intellectualism itself to be the thesis that there is some \( F \) that makes (25) true. For suppose that \( F \) is the property of being the proposition that \( 1+1=2 \) in a world where \( x \) knows how to swim, or the property of being the proposition that \( 1+1=2 \) in a world where \( x \) is able to swim.\(^5\) \( F \) must apply only to appropriate propositions,

\(^5\)Thanks here to Steve Yablo.
but I think we cannot go much further than to say that an appropriate proposition is one of the sort suggested above, one that explains how to swim or answers the question of how to swim. Perhaps a recognizably Intellectualist position could appeal to some other sort of proposition, but I do not at present have a way to clearly specify the possible range of such propositions. At any rate, to defend her view, the Intellectualist ought to provide a property $F$ in a sufficiently explicit way so as to demonstrate that her version of (25) does not fall to one of the objections presented above. In the following section, I will explore one attempt to do that.

I want to emphasize that the difficulty in finding a totally precise, defining thesis of Intellectualism does not mean that there is nothing to the original, intuitive statement of the view. It only means there are some limits to how simple we can make our project of determining what does or does not count as evidence against Intellectualism. It is valuable, I think, to have seen the difficulty in hygienically defining Intellectualism, for two reasons: First, we have seen a preview of the sort of counterexamples that might be posed to Intellectualism, preparing us for more in-depth discussion below. Second, we have been given reason for a healthy caution about which theses really amount to forms of Intellectualism, a caution that will be reinforced in section 5 below when we discover that there are more important distinctions to be made among candidate Intellectualist theses.

3 Knowledge-wh attributions

As we will see later, the most prominent account of the semantics of ‘S knows how to $\phi$’ is parasitic on an account of other constructions in which ‘knows’ is followed by an embedded question, a complement that begins with a question-word, e.g. ‘how Bill swims’, ‘when to take his medicine’, ‘why John went to Montana’, ‘where the car accident happened’. Thus it will be worthwhile to spend some time exploring these less controversial attributions of knowledge.
3.1 Semantics for knowledge-wh attributions

(26) Bill knows when Gladys exercises.

Suppose that Gladys exercises at 7am. Then the following view is plausible: (26) is true iff Bill knows that Gladys exercises at 7am. The orthodox view in linguistics is that this, in one or another spelled-out form, is the correct account of knowledge-wh in general. The rough idea dates back 50 years to work by philosopher C.L. Hamblin (1958), though advances in syntax and semantics have led to sophisticated linguistic analyses.

I will sketch one variation on the analysis of knowledge-wh in terms of knowledge-that, following the account presented by S&W. One aspect of the view consists of syntactic claims. The complement of ‘knows’ in (26) is a clause of the following general form: \([\text{when}_i \ [\text{Gladys exercises } t_i]]\), where \(t_i\) is a trace left by the movement of ‘when’ from its original position in the structure \([\text{Gladys exercises when}]]\). The latter structure clearly resembles structures of the form \([\text{Gladys exercises at 7am}]\) or \([\text{Gladys exercises at 8am}]\), where the relevant specification of time has been replaced by the temporal question-word ‘when’.

If we think of a question as a request to be supplied with a proposition as answer, it is natural to think of the structure of a question as revealing what sort of proposition is being requested. The question-word helps the speaker formulate a sort of fill-in-the-blank sentence for the audience. In \([\text{Gladys exercises when}]]\), ‘when’ indicates: (a) The location of the blank that a questioner would like the audience to fill in, and (b) that the audience should replace the blank with a specification of a time. We thus have a straightforward prediction of what should count as an answer to ‘When does Gladys exercise?’. It should be something of the form ‘Gladys exercises at \(t\)’. Now, if we ask what communicative purpose could be served by a sentence in which a question is embedded under a knowledge-verb, there is only one obvious proposal: Such a sentence indicates that an individual possesses the information that the question would be used to request — the individual knows the answer to the question. This suggestive line of thought shows how a very basic look at the syntax of wh-complements,
together with some crude pragmatic ideas, suffices to motivate a view of knowledge-wh in the spirit of Hamblin.

A slightly more formal explanation of the meanings of knowledge-wh attributions is obtained by taking the wh-complement to denote the set of propositions that would count as answers to the embedded question. So \([\text{when}_t [\text{Gladys exercises}_t]]\) might denote \{that Gladys exercises at 7am, that Gladys exercises at 8am, \ldots \}. ‘Knows’ then takes an individual and this set as its arguments and delivers truth iff the individual knows a true member of the set. Or, in some contexts, \textit{all} true members of the set — see Groenendijk and Stokhof (1997) for discussion of “mention-some” versus “mention-all” readings of knowledge-wh attributions.

It is worth noting that one does not know when Gladys exercises simply by knowing the proposition that Gladys exercises when she exercises. Similarly, in almost every context it would be wrong to say that one knew when Gladys exercised if one only knew that Gladys exercised when she was awake. This illustrates that there are either restrictions on what propositions go into the set denoted by the wh-complement or restrictions built into the knowledge-verb. S&W’s discussion suggests the latter course: John knows that Gladys exercises when she is awake, but he does not know when Gladys exercises unless he knows a \textit{contextually relevant} proposition of the form ‘Gladys exercises at t’. This complication in the account will make some trouble for us later, but I will set it aside for the moment.

Consider now knowledge-wh attributions with complements headed by ‘how’ instead of by ‘when’.

\[27\] Bill knows how Gladys exercises.

It is straightforward to extend the view explained so far to handle this sentence. The question ‘How does Gladys exercise?’ conveys a request to be supplied with a proposition such as that Gladys exercises by jogging, that Gladys exercises by lifting weights, or perhaps that Gladys exercises diligently. The set denoted by \([\text{how}_t [\text{Gladys exercises}_t]]\) then denotes a set of
propositions of the form ‘Gladys exercises in way w’, where ‘in way w’ is to be replaced by an adverb or adverbial phrase that describes Gladys’ exercising, and (27) is true iff Bill knows a (contextually relevant) proposition in that set.

Slightly more complex are examples in which the wh-complement is an infinitival clause, as in (28):

(28) Bill knows when to exercise.

As S&W explain, the infinitival clauses of the sort above have two distinctive features. First, they contain no overt subject. Second, they contain no tense. S&W offer tools to accommodate both features. First, they cite the common view in linguistics that there is a silent subject, PRO, present in (28). PRO, like a pronoun, picks up its semantic value from the subject of the matrix clause, in this case ‘Bill’. This explains the intuitive sense that in sentences like ‘Bill wants to go to the party’, it is Bill himself that must go to the party for Bill’s desire to be satisfied — the sentence is better represented as [Billi [wants [PROi to go to the party]]]. In other constructions, PRO sometimes seems to have an ‘arbitrary’ reading like the pronoun ‘one’, but I will follow S&W in assuming that sentences like (28) involve the anaphoric interpretation of PRO.

Second, S&W explain that infinitival constructions should be understood in terms of some sort of modality.

So, infinitives appear to have at least two different kinds of readings. On the first reading, they express deontic modality. In this case, a use of ‘to F’ expresses something like ‘ought to F’. On the second reading, they express some kind of possibility. On this reading, a use of ‘to F’ expresses something like ‘can F’.

(2001: 424)

According to S&W, then, we should expect [PRO to exercise] to express something like ‘he should exercise’ or ‘he can exercise’. Putting this together with the general strategy
above for embedded questions, we should expect \([\text{when}_1 [\text{PRO to exercise}_1]]\) to denote a set of propositions of one of the following sorts: (a) \{that he should exercise before eating, that he should exercise in the morning, \ldots\}, or (b) \{that he can exercise before eating, that he can exercise in the morning, \ldots\}. And (28) would be true iff Bill knows a proposition in the relevant set.

Which set is the one at issue in a standard use of (28)? To my ear, (28) sounds much more like the deontic reading — Bill knows when he should exercise, not when he can exercise. But the ‘can’ interpretation of infinitival constructions is made plausible by other examples. It is prominent in non-attitudinal contexts like the following:

\[(29)\]
\begin{enumerate}
\item One way to travel is by taking a bus.
\item I need something to stir the soup with.
\end{enumerate}

These sentences intuitively express something like ‘One way one can travel is by taking a bus’ and ‘I need something that I can stir this soup with’. The ‘can’ reading of infinitives also appears in some knowledge-wh attributions. S&W give the following example (2001: 425):

\[(30)\] Johns know where to find an Italian newspaper.

On a standard use, this would seem to mean that John knows that he (or that one) can find an Italian newspaper at such-and-such place. We will discuss the modality of the infinitival construction in more detail in section 4.1, but for now, we have the elements we need to proceed to examine an Intellectualist account of know-how attributions.

### 3.2 The analogy with know-how attributions

Before looking at what the most plausible set of propositions would be to take as the denotation of ‘how to swim’, we should first think about how one might provide a general argument for Intellectualism on the basis of the considerations in the preceding section. S&W and
Stanley (Forthcoming) spend quite a bit of time discussing the semantics of knowledge-wh attributions other than know-how attributions, so it seems that they must take their analyses of the former to provide some argument or motivation for their analysis of the latter. What could their reasoning be? A fairly uncharitable reading, though one that unites the arguments in the papers just mentioned and papers by Paul Snowdon (2003) and D.G. Brown (1970), would be this: ‘S knows how to φ’ attributes knowledge-that because all other attitude attributions with wh-complements attribute knowledge-that.

But why is anyone supposed to be convinced by that ‘because’? Anti-Intellectualists never maintained that knowledge-that did not include knowledge of when Gladys exercises or knowledge of where to buy an Italian newspaper, so if there is an objection to their view coming from considerations about these sorts of knowledge-wh, there must be more premises in play.

The most obvious suggestion is that there is an implicit appeal to the following principle of linguistic methodology: All else being equal, give similar constructions similar analyses. If ‘S knows how to φ’ counts as similar in the relevant sense to ‘S knows when to φ’ and ‘S knows how Gladys φs’, then, if all else is equal, we should analyze ‘S knows how to φ’ along the lines sketched in the preceding section. The anti-Intellectualist will protest here that all else is not equal, or that the relevant constructions are not similar in the relevant sense. These claims must be supported, and I will surveys some ways to do so below. For now, we may simply observe that S&W and Stanley’s strategy, if correctly characterized as above, requires that there not be good reasons to give ‘S knows how to φ’ special treatment among the class of knowledge-wh attributions.

3.3 A linguistic argument for Intellectualism

We can put the Intellectualist’s strategy in the form of a more explicit argument that makes clear the respects in which ‘S knows how to φ’ is supposed to be similar to other attributions of knowledge-wh, and that thereby makes clear the options the anti-Intellectualist
has for objecting to the assimilation. I will represent this reasoning as proceeding in two stages, focussing on a single example of know-how, practical knowledge of how to swim, for simplicity. First, we argue that ‘how to swim’ denotes a set of propositions.

(SW1) In ‘S knows how Bill swims’, ‘how Bill swims’ denotes a set of propositions (viz., $\{p \mid \exists w \text{ such that } p = \text{ that Bill swims in way } w\}$).

(SW2) In ‘S knows where to swim’, ‘where to swim’ denotes a set of propositions (viz., $\{p \mid \exists y \text{ such that } p = \text{ that } y \text{ is a place for } S \text{ to swim}\}$).

(SW3) ‘S knows how to swim’ has the same wh-complementizer, ‘how’, as in ‘S knows how Bill swims’, and contains the same infinitival clause in its wh-complement, ‘to swim’, as in ‘S knows where to swim’.

(SW4) So, in ‘S knows how to swim’, ‘how to swim’ denotes a set of propositions.

We might think of the inference to (SW4) as relying on the intuitive syntactic similarities between ‘how to swim’ and the pair of ‘where to swim’ and ‘how Bill swims’. But we could also fill out the reasoning a bit by saying that were ‘how to swim’ to denote something other than a set of propositions, it would have to do so in virtue of having constituents that combined to yield this other denotation. But the constituents of ‘how to swim’ are just ‘how’ and the infinitival clause, and (SW1) and (SW2) show that neither’s presence alone is sufficient for a wh-complement to denote something besides a set of propositions.

Next, we extend a simple formal semantic treatment from ‘knows how Bill swims’ and ‘knows where to swim’ to ‘knows how to swim’.

(SW5) In ‘S knows how Bill swims’ and in ‘S knows where to swim’, ‘knows’ denotes a relation satisfied by S and a set of propositions $P$ iff for some proposition $q$ that is a true member of $P$, S knows $q$.\(^6\)

\(^6\)I ignore the point, mentioned above, that we must place restrictions on the propositions that are candidates for verifying attributions of knowledge-wh.
(SW6) In ‘S knows how to swim’, ‘knows’ denotes a relation satisfied by S and a set of propositions \( P \) iff for some \( q \) that is a true member of \( P \), S knows \( q \).

(SW7) For someone to know how to do something is just for them to know a proposition of a certain sort.

Premise (SW6) draws support from both (SW4) and (SW5). Assuming (SW4), ‘how to swim’ denotes a set of propositions, so however ‘knows’ gets analyzed, it must express some relation to the relevant set. The obvious thing to do is follow the pattern established by (SW5). The conclusion simply relies on the fact that, in (SW6), the truth conditions of ‘S knows how to swim’ are that S knows \( q \), where \( q \) is a proposition of a certain sort. The truth-conditions of sentences using ‘knows how to’ are then taken to tell us what it is to know how to do something.

3.4 Possible responses to the linguistic argument

Is there a good way to object to the Intellectualist line of argument above? If we grant premise (SW1), we are left with the following options for rejecting the argument.

(a) Deny (SW2), objecting to the analysis of infinitival wh-complements.

(b) Deny (SW3), objecting to the assumption that ‘knows how to swim’ contains the same elements as are contained in other wh-complements like ‘knows where to swim’ and ‘knows how Bill swims’.

(c) Reject the inference from (SW1)-(SW3) to (SW4).

(d) Reject the inference from (SW4) and (SW5) to (SW6).

(e) Reject the inference from (SW6) to (SW7).

It is not easy to see how one could pursue strategy (e). In order to clear the conceptual space for such a move, one would have to sever the connection between the biconditional of
a theorist’s compositional semantic analysis and the correct thesis about what it is to have a certain property. I will not discuss this idea any further, though I think the strategy in question is conceivable and therefore worth including on our list. In what follows I will focus only on (a)-(d).

Let us consider first (a), which does not look particularly promising. There may be a number of complaints to be raised about the syntactic analysis on which premise (SW2) rests, complaints about whether the analysis has the sort of orthodoxy and plausibility necessary to take philosophical hostages. But even though prominent linguists disagree about, for instance, the interpretation (or even existence — see (Hornstein 1999)) of PRO, that does little to support the anti-Intellectualist’s view that knowing how to do something is special. We would need some consideration relevant specifically to ‘knows how to φ’, not to infinitival wh-complements in general. For further relevant discussion, see section 3.8.

Next, a brief word about strategy (b). To take this line, one might object to (SW3) by trying to treat ‘how’ as part of the constituent ‘knows how’, rather than as part of a wh-complement, and treating ‘to swim’ as a bare infinitive. But ‘knows how’ does not look like a constituent:

(31) A: What does he know?
    B: How to swim.

(32) A: *What does he know how?
    B: To swim.

Alternatively, one might claim that ‘how’ in ‘knows how to swim’ is a different lexical item than the ‘how’ in ‘knows how Bill swims’. The claim seems rather implausible and unmotivated, so I will not elaborate on it, but I have no conclusive reason to rule out its viability.

Strategy (c) warrants some consideration. The brief argument sketched above to get us from (SW1)-(SW3) to (SW4) was the following: Given that ‘how to swim’ contains elements
whose behavior in other wh-complements contributes to those complements denoting sets of propositions, they should, when combined, continue to make the same contributions to determining a denotation. So ‘how to swim’ should denote the same sort of thing, a set of propositions, as ‘where to swim’ and ‘how Bill swims’. One could resist this inference by accepting (SW3) but arguing that ‘how to swim’ contains some syntactic structure or lexical item in addition to the material it shares with the other two complements. Suppose, for example, that there is an operator that abstracts over PRO and results in the whole complement denoting something of semantic type \((e, \langle st, t \rangle)\) instead of \(\langle st, t \rangle\).

This strategy is closely tied to strategy (d), and could be taken on as a way to motivate the rejection of the inference to (SW6). One could also pursue (d) without objecting to premise (SW4), a tactic that would amount to admitting that the complement of ‘knows’ denotes a set of propositions while simultaneously denying that ‘knows’ denotes a relation of knowledge between thinkers and propositions in the relevant set. One could hold instead that ‘knows’ denotes a relation between thinkers and the sets of propositions themselves, not their members. (Again, see section 3.8.) But let us focus on (c) a bit longer.

### 3.5 Strategy (c): Special treatment and the conjunction test

S&W offer two considerations that are supposed to discourage us from strategies like (c) that would require us to apply some special treatment to ‘knows how to \(\phi\)’ that would not apply to ‘knows how Bill \(\phi\)’s’ or ‘knows where to \(\phi\)’. The first consideration is supposed to directly refute the claim that ‘knows’ has a different semantics or different sort of complement in ‘knows how to \(\phi\)’. It appeals to the possibility of conjoining attributions of knowledge-how and knowledge-that as in (33).

(33) John knows both that his mother hates facial twitches and how to make them. (2001: 431)
The idea is that such a sentence would be ungrammatical if the ‘know how to’ construction required a different interpretation than the ‘know that’ construction. The jarring effect of simultaneously invoking two interpretations of the same linguistic material (a device known as “syllepsis”) can be seen clearly in (34):

(34) *Roger Clemens walked one mile in the morning and two batters during the game.

Here the speaker would be attempting to use ‘walked’ in two different ways simultaneously, and the result is an anomalous sentence. A longer-winded version is needed: Roger Clemens walked one mile in the morning and walked two batters during the game.

If the claim of a special interpretation of ‘knows’ in ‘knows how to’ were correct, then according to S&W, (33) ought to sound like (34). But there are several worries for the conjunction test. First, while it may be useful as a heuristic, is not wholly reliable. To illustrate with a germane example, ‘knows’ is ambiguous between the sense in which one knows an individual and the sense in which one knows a fact. So if the test is wholly reliable, the following example must be ungrammatical. But it is not.

(35) John knows each first-year linguist, each philosopher, and who’s dating whom.

In fact, I find it superior to S&W’s example, which sounds marginal to me (and to others, I gather, e.g. Rumfitt (2003)). But we can set aside the dubious grammatical status of S&W’s conjunction. As linguist Craige Roberts (2009) writes, “the argument from conjunction is not a strong one”. For one thing, even according to Groenendijk and Stokhof’s classic work, ‘that’-complements and embedded questions have denotations of different semantic types. Furthermore, “It has long been acknowledged in the linguistic literature, and discussed in detail in Sag et al. (1985), that both that-complements and infinitival questions can be conjoined with NPs.” Roberts provides examples including the following, which I agree sound grammatical:
(36)  a. We asked her how to get home and several similar questions.
   b. Mary knows where to find the safe and the combination to the lock on it.
   c. His answer and how he pronounced it both surprised me.

Roberts acknowledges that one might object to the data by arguing that the apparent NPs in examples like the ones above are really concealed questions. So, for instance, (36-b) really means 'Mary knows where to find the safe and what the combination is to the lock on it'. Roberts declines to comment further, but I think there are two points to note. First, to defend the conjunction test, one would have to argue that the concealed-question strategy works for every example like the ones in (36), and that is a claim too bold to simply be taken as a premise in an argument for Intellectualism. Second, the strategy does not even seem plausible for some of the examples above. ‘John knows each first-year linguist’ does not seem to me to admit of a concealed-question reading. At the least, the reading on which John is acquainted with each first-year linguist is strongly preferred. And (36-a) also does not seem easily accommodated. What could the concealed-question reading possibly be? ‘We asked her how to get home and what several similar questions were’? This reading is impossible. ‘We asked her how to get home and what the answers were to several similar questions’? This reading is less obviously incorrect, but still does not seem very plausible. ‘What is the answer to the question of how I can get home?’ does not express the same question as ‘How can I get home?’ for at least the following reason: The former question but not the latter presupposes that the question ‘How can I get home?’ has a unique answer. As an alternative attempt to paraphrase (36-a), one could try ‘We asked her how to get home and what an answer was to several similar questions’. This still seems an unnatural paraphrase, and unlike (36-a) itself, it has a reading on which the questioner was presupposing that the several questions shared an answer.

Another worry about the conjunction test applies specifically to the strategy of Stanley (Forthcoming). On his view, as well as on the views of many other authors, ‘knows’ does not in fact have the same semantics in ‘S knows that p’ as it does in knowledge-wh attributions.
In ‘S knows how to φ’, the verb “relates persons, possible worlds, and embedded question semantic values, which are functions from worlds to properties”, not people and propositions. The relation it expresses can then be given further analysis in terms of the ordinary propositional relation, but the fact remains that the semantic value of ‘knows’ is completely different in ‘S knows that p’ and ‘S knows wh...’.

So if Stanley’s view is to be sustained, it must be that (a) the conjunction test refutes the claim that ‘knows’ attributes propositional knowledge in ‘S knows that p’ and non-propositional knowledge in ‘S knows how to φ’, since (33) is grammatical, but (b) the conjunction test does not refute the claim that ‘knows’ expresses a relation to a proposition in ‘S knows that p’ and a relation to worlds and functions from worlds to properties (i.e. to non-propositional entities) in ‘S knows how to φ’, even though (33) is grammatical.

It seems that Stanley must think that even if two verb-forms semantically express relations to distinct sorts of entities, they will pass the conjunction test if one can be analyzed in terms of the other. But consider some other examples:

(37) a. John ate the cake, and Bill, the ice cream.
    b. *John ate, and Bill, the ice cream.
    c. John laughed Mary off the dance floor, and Bill, Mary off the stage.
    d. *John laughed, and Bill, Mary off the stage.

The intransitive use of ‘ate’ is presumably analyzable in terms of the transitive use, and the transitive use of ‘laughed’ is presumably analyzable in terms of the intransitive use. The following is at least as plausible as any reductive analysis of knowledge-wh in terms of knowledge-that: x eats iff x eats something. Even if there are details to quibble about, an English speaker need not learn two distinct verbs in order to grasp both uses of ‘laugh’, or both uses of ‘eat’. So it seems that either we have another indication of the unreliability

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7 Or perhaps, something in a sufficiently large quantity, as determined by the context. Normally, if John intentionally ingests a spoonful of sugar shortly before dinnertime, one could not say ‘John ate’. But in a food shortage in which everyone's meals consisted solely of one spoonful of sugar, one could say that.
of the conjunction test, or the test refutes Stanley’s own view, since, following the pattern of (37), it should predict that if Stanley’s view is correct, (33) is ungrammatical. Given the Roberts-style examples above, the conservative conclusion is to take the present observations as reinforcing the unreliability of the conjunction test.

One final worry about the conjunction test arises from the possibility (defended below) that ‘knows’ is ambiguous, so that on one reading of ‘S knows how to φ’, the sentence attributes ordinary propositional knowledge to S, while on another reading, it attributes a special, practical sort of knowledge. In that case, we would expect there to be a grammatical reading of sentences like (33). Given this grammatical reading, we can expect the results of the conjunction test to be unclear. For consider the following:

(38) John set his alarm and his cup on the table.

Is this sentence grammatical? It seems so — it says that John’s alarm and cup were placed by John on the table. But there is an interpretation of ‘John set his alarm’ on which ‘set’ does not mean the same as ‘placed’. On that interpretation of ‘set’, one cannot set a cup on the table. So there should be an ungrammatical reading of (38). It seems to me that there is, but it is difficult to hear this reading. Charity pushes one to interpret the sentence in the grammatical way. The point for sentences like (33) is that the same effect may be interfering with our judgments there. This would explain why some speakers find (33) acceptable, while other feel uneasy about it — it may take some effort to interpret the sentence in a way that renders it grammatically deviant.

While we have now seen some problems with the conjunction test, they have been problems with false negatives. Ungrammaticality does not always result when we run the test on verb-forms with distinct semantic values. But in the cases we have looked at so far, every time the test does produce an ungrammatical sentence, the relevant verb does indeed have multiple semantic values. In testing other verbs, I have not found any false positives.
(39) a. *John caught a fish by the pond and a cold from his wife.
   b. *John set his alarm for 7am and his cup on the table.
   c. *John filed his toenails and the forms to get his passport.

I conclude that a negative result in S&W’s conjunction test is at best a heuristic for inferring an absence of multiple interpretations, but that a positive result offers good support for the presence of an ambiguity. Since S&W’s use of the test against strategy (c) was of the former sort, it does not provide a strong objection. If independently motivated, therefore, one could reasonably try to block argument (SW1)-(SW7) by giving a special semantic analysis to ‘knows’ or to the complement clause in ‘S knows how to φ’.

3.6 Strategies (c) and (e): Truth-value judgments and cross-linguistic evidence

The second tactic S&W employ against the special-treatment strategy is to emphasize that there “is no basis in structure” for distinguishing ‘knows how Bill rides a bicycle’ from knowledge attributions containing ‘why’-complements, ‘where’-complements, and so on (2001: 419). And similarly, there is no relevant syntactic difference between ‘knows how Bill rides a bicycle’ and ‘knows how to ride a bicycle’. Without a syntactic difference, there is no basis for a semantic difference, so ‘knows how to ride a bicycle’ should be given the usual analysis in terms of knowing a proposition.

There is an obvious rejoinder. Even if there are no considerations internal to contemporary syntactic theory of English for singling out ‘knows how to φ’, those are not the only considerations one could marshal. Motivation for hypotheses about the semantically relevant structure of a sentence can come from above. In fact, this mode of inference is illustrated even by S&W’s account of know-how. Their account has a feature completely unmotivated by the structure of the sentences in question — based only on judgments of truth-values of various sentences, they require for know-how that one’s knowledge be under a “practical mode
of presentation" (see below for discussion). The point here is that judgments about sen-
tences containing ‘knows how to’ might reveal important facts about the sentences’ seman-
tics, and comparing such judgments with the results of testing sentences containing ‘knows that’, ‘knows where’, etc. might indicate important semantic differences. The argument that “there is no basis in structure” for a distinction is therefore not a strong one.8

The point just made, besides being relevant to strategy (c), also bears on strategy (e). One
version of (e) would be to argue that the ‘knows’ verb required to make premise (SW6) true
does not mean the same as the ‘knows’ we use in ordinary ‘knows that’ attributions. The
Intellectualist might respond with the claim that there is no basis in contemporary linguistic
theories of English to support the ambiguity, but the import of that claim is significantly
deflated once we recognize that considerations in favor of an ambiguity might come in from
elsewhere. If such considerations do come in, so much the worse for a linguistic theory that
has ignored those considerations.

What sort of considerations might there be in favor of strategies (c) and (e), the strategies
on which ‘S knows how to φ’ are given a special semantic treatment? Note that the anti-
Intellectualist is interested primarily in knowledge of how to do things, and is interested in
the English locution ‘knows how to’ only insofar as it can shed light on know-how itself. One
might be pushed by this observation to look for evidence in other languages that contradicts
the syntactic and formal semantic claims appealed to in the argument above. Ian Rumfitt
(2003) has done just this, providing data from various languages. For instance, in Russian,
Rumfitt points out, completely distinct psychological verbs — umet’ and znat’ — are used for
know-how and for knowledge of facts or answers to questions. One uses znat’ in saying that
one knows that one must swim and in saying that one knows why to vote for Putin, but one
uses umet’ to say that one knows how to swim. A similar distinction occurs with the verb for

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8Stanley makes a similar argument in his more recent paper: “All the intellectualist must show is that what-
ever complications exist for the semantics of embedded questions, the nature of PRO and the interpretation
of infinitives do not entail that (6) [a know-how attribution] should be given a distinct analysis than (5) and
(7) [other knowledge-wh attributions].” The mistake is in ignoring the fact that truth-value judgments could
themselves motivate one’s analysis of know-how attributions.
learning — *nauchit'sya* for learning how to swim and *uznat’* for learning how Trotsky died. Not only does Russian have these distinctions in verbs, but the know-how and learn-how verbs can only be complemented by infinitival phrases, not by a ‘chtó’-clause (like English’s ‘that’-clause) or an embedded question (Rumfitt 2003: 164).

So there is an obvious inference we might draw from the Russian data. Given the distinction in verbs, we can infer that there really is something special about know-how. Its special status is marked by dedicated verbs that translate ‘knows how to’ and ‘learns how to’, while there are no special verbs for other kinds of knowledge-wh or learning-wh. This conclusion is reinforced by Rumfitt’s data from Latin, Greek, and French, each of which have special constructions for attributing know-how. In French, for instance, one attributes the knowledge of how to do something with ‘savoir’ plus an infinitive verb form, not with an embedded question.

(40)  
Il sait nager.  
He knows to-swim  
He knows how to swim.

(41)  
Jean sait conduire une voiture.  
Jean knows to-drive a car.  
Jean knows how to drive a car.

Rumfitt notes that one can add ‘comment’, the French equivalent of ‘how’, after ‘savoir’, but the result is semantically distinct. (42), he says, means something like “Jean has solved the problem of getting to drive a car”, or “Jean knows in what particular manner to drive a car”.

(42)  
Jean sait comment conduire une voiture.

Several informants have confirmed this for me, one glossing (42) as “Jean knows how a car is driven” — the use of the passive in the gloss may be worth further thought.

In the face of Rumfitt’s data, it has been suggested that the know-how attributions in the languages just discussed have, despite surface appearances, embedded questions as comple-
ments (Stanley 2005), (Forthcoming). However, the claim is unlikely given the following considerations. As is well-known, wh-phrases (embedded questions included) are islands — it is ungrammatical to move terms out of them. To see what this means, suppose Hannah loves Alva’s dog. We can say:

(43) a. Hannah loves what?
    b. What does Hannah love?
    c. Alva’s dog is what Hannah loves.

But suppose Hannah gets compliments when she’s walking Alva’s dog. We can say (44-a), but not (44-b) or (44-c).

(44) a. Hannah gets compliments when she’s walking what?
    b. *What does Hannah get compliments when she’s walking?
    c. *Alva’s dog is what Hannah gets compliments when she’s walking.

So if all attributions of know-how in French contained embedded wh-phrases, there would be a uniform pattern of movement possibilities. Whether or not the word ‘comment’ were visible on the surface, it would be ungrammatical to move a term out of the phrase following ‘savoir’. However, this is not borne out, as movement is possible out of ‘savoir’+infinitive, but impossible out of ‘savoir comment’+infinitive. 10

(45) a. Qu’est-ce que Jean sait construire?
       What-is-it that Jean knows to-build?
       What does Jean know how to build?

    b. *Qu’est-ce que Jean sait comment construire?
       What-is-it that Jean knows how to-build?

For further discussion of Stanley’s strategy, see section 5.2.

Thanks to Valentine Hacquard and Bernadette Rouyer for judgments.
(46)  a. Qu’est-ce que Jean sait faire?
      What-is-it that Jean knows to-do?
      What does Jean know how to do?

        b. *Qu’est-ce que Jean sait comment faire?
           What-is-it that Jean knows how to-do?
           ??

Similar data from Russian ought to be collected, but Rumfitt’s observations already seem quite solid.

I began the discussion of non-English locutions with the thought that they might have as equal claim to reveal the nature of know-how as ‘S knows how to φ’ does, so that they might provide us with valuable evidence about our subject matter. But we might now take the above discussion as a cue to reconsider the analyses of English. Perhaps the truth is exactly the opposite of what Stanley suggests: Rather than French having a hidden wh-complementizer, maybe English has a fake wh-complementizer. (This would bring us back to strategy (b).) I think following up on this thought a bit is worthwhile. While the results are ultimately unhelpful for anti-Intellectualists, they are interesting, and our discussion will be an opportunity to correct some mistakes in the literature.

3.7 Island effects and wh-complements in English

Consider the pattern of movement possibilities that results from applying the test of island constraints to English constructions.

(47)  a. Hannah knows how she can ride a bicycle.

        b. *What does Hannah know how she can ride?

        c. *A bicycle is what Hannah knows how she can ride.

(48)  a. Hannah knows how Bill rides a bicycle.

11 So far I have gathered data from only one informant, but she reported that Russian features the same pattern as French and English.
b. *What does Hannah know how Bill rides?
c. *A bicycle is what Hannah knows how Bill rides.

Now compare the above examples to the results of testing the crucial case, the case that, according to the Intellectualist argument, has no significant differences from the others.

(49) a. Hannah knows how to ride a bicycle.
b. What does Hannah know how to ride?
c. A bicycle is what Hannah knows how to ride.

These sentences are totally natural, a result in tension with the view that the correct linguistic analysis of 'knows how to' ascriptions parallels other ascriptions of knowledge-wh.\(^\text{12}\) One might reply that that the difference in grammaticality between (49-b)/(49-c) and (47-b)/(47-c) or (48-b)/(48-c) could somehow be accounted for by the fact that (49) contains a phonologically null pronoun, whereas the others have an overt pronoun ('she' or 'Bill'). If a peculiarity of PRO-constructions licensed movement out of what would otherwise be islands, then one could escape the conclusion that 'knowing how' is special. What would be special would just be constructions with PRO. (At least, in English. Notice that the present view would leave the French data and their parallel to English unexplained.) However, this hypothesis is refuted by (50), in which the pronoun is null but movement is unacceptable.

(50) a. Hannah knows why to ride a bicycle. (E.g., to avoid traffic jams and get some exercise.)
b. *What does Hannah know why to ride?
c. *A bicycle is what Jean knows why to ride.

These data look like a vindication of the otherwise implausible thought that 'how' in 'knows how to $\phi$' is a fake wh-complementizer, so that 'how to $\phi$' is not really an embedded question.

\(^{12}\)One might worry that 'how' simply tends to produce weaker islands than other wh-words. But all I need is the contrast between (48-b) and (47-b), both of which contain 'how'.

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However, Jason Stanley, who reports having independently noted data like the above (p.c., 3/7/08), resists the conclusion that there is any problem for Intellectualism here.

In his (Forthcoming), Stanley makes two claims. First, that complements of know-how constructions really are scope islands, contrary to the appearance in (49). Second, that the apparent scope properties of ‘knows how to’ also occur in ‘wonders how to φ’, ‘asks how to φ’, and ‘figure out how to φ’. Stanley is incorrect in his first claim, and while the upshot of his second claim is correct, his discussion requires elaboration.

Regarding (49) and (50), Stanley offers the following pair to show that know-how constructions are scope islands:

(51)   *John knows how to climb a mountain. It is over there.

(52)   John plans to climb a mountain. It is over there.

The claim is that there is no de re reading of “a mountain” in (51), in constrast to a construction like (52). However, I find (51) perfectly acceptable. More importantly, there are obvious de re readings of the following:

(53)   a. John knows how to climb every mountain in the area.
       b. John knows how to climb many mountains in this range.
       c. John knows how to climb exactly two mountains.
       d. John knows how to climb at least one mountain.

For instance, (53-d) naturally invites the question ‘Which one?’, and can be followed up with ‘It is over there’. The only other evidence Stanley provides for the claim that ‘knows how to φ’ is an island is that Google returned far fewer results in a search for ‘How many do you know how to’ than for ‘How many do you want to’ (21 vs. over 18,000). But this is of little relevance, since the following is obviously grammatical and easily interpretable:

(54)   How many mountains around here do you know how to climb?
So ‘knows how to φ’ does not appear to be a scope island after all, just as I argued above.

Stanley’s treatment of the second issue rests on the observation that the following are perfectly grammatical:

(55) What does John wonder how to do?

(56) What did John ask how to do?

Stanley assumes that ‘wonder’ and ‘ask’ are relations to propositions, and hence that the special scope properties of ‘knows how to φ’, granting for the sake of argument that they are genuine, do nothing to show that know-how is not propositional. But the examples do not show what Stanley takes them to, since ‘wonder’ and ‘ask’ do not express relations to propositions. It simply makes no sense to think of a proposition being the thing that John was wondering or asking — one does not wonder or ask a proposition. And this is not just a matter of it being ungrammatical to say ‘John wonders that p’ or a matter of there being no reading of ‘John asks that p’ equivalent to (56). It is perfectly grammatical to say ‘John was wondering that’, where ‘that’ is a demonstrative, but the following is still nonsense:

(57) A: I told John that w was a way for him to ski.
               B: Ah, good. #He was wondering that.

Similarly:

(58) A: I told John that w was a way for him to ski.
               B: Ah, good. #He was asking that.

A related point is made by the following.

(59) A: What does John wonder?
               B: How to ski.
B: #That w is a way for him to ski.

(60) A: What did John ask?
B: How to ski.
B: #That w is a way for him to ski.

Since these constructions that allow movement out of their wh-complements are constructions which do not express relations to propositions, the fact that such movement is also permitted in 'knows how to φ' appears to undermine the very position Stanley takes himself to be defending. It would suggest that know-how is not propositional either. The pattern of evidence is more complex than that, however, since movement is also permitted in other constructions like the following, the first of which is noted by Stanley:

(61) a. What did John figure out how to do?
   b. What did John teach you how to do?

If we assume that 'figure out' and 'teach' always express relations to propositions, then (61) indicates that while it is constructions of the form V + 'how to φ' that possess special movement properties, expressing a non-propositional relation is not necessary to explain those movement properties. That it is not sufficient either is shown by the following.

    b. *What does Hannah wonder why Gladys does?

(63) A: What does Hannah wonder?
    B: Why Gladys exercises.
    B: #That Gladys exercises in order to lose weight.

(64) a. Hannah asked when to stop by for a visit.
    b. *What did Hannah ask when to do?
‘Wonders’ and ‘asks’ are not relations to propositions regardless of what sort of wh-complement they have, but usual island effects appear in some such constructions. So constructions that express non-propositional relations may fail to resemble ‘knows how to \( \phi \)’ in island effects.

We have shown that, as Stanley concluded, island properties of ‘knows how to \( \phi \)’ do not show that the construction attributes a relation to a proposition. But we have not yet directly answered the question of whether ‘knows how to \( \phi \)’ does attribute a relation to a proposition. We have seen that ‘wonder’ and ‘ask’ must be semantically analyzed as relating people to question-denotations, so considerations of uniformity suggest that we do the same for any verb with an embedded question as complement. So we should treat ‘figure out how to \( \phi \)’, ‘ask why Gladys \( \phi \)’, and ‘knows how to \( \phi \)’ as all relating people to question-denotations. If desired, we can provide further reductive analyses to explain, e.g., that one figures out a question-denotation iff one figures out a certain proposition. But whether to provide a similar reduction for other verbs would require philosophical debate on a case-by-case basis. Such a reduction appears impossible for ‘wonders’ and ‘asks’, but what about ‘knows’ + wh, for which there is the familiar counterpart ‘knows that’ construction?

3.8 Non-propositionality for knowledge-wh in general

Jonathan Schaffer (2007) has argued that knowledge-wh cannot be analyzed as a relation to a proposition. Suppose John is quite capable of visually distinguishing George Bush from Dick Cheney, though he cannot easily distinguish George Bush from Will Ferrell, a George Bush impersonator. John is watching television and sees George Bush delivering a speech. Schaffer endorses the intuitive judgments that (JS1) is true while (JS2) is false.

(JS1) John knows whether Bush or Cheney is on TV. (True)
(JS2)  John knows whether Bush or Ferrell is on TV. (False)

But if knowing-whether consists in knowing the proposition that answers the ‘whether’-question, then since Bush is on television, both (JS1) and (JS2) are true iff John knows that Bush is on TV. This is inconsistent with the divergent judgments, so Schaffer rejects the supposition that knowing-whether consists in knowing the proposition that answers the ‘whether’-question. He generalizes the resulting view to all knowledge-wh.

Schaffer’s view is that knowledge-wh is a three-place relation to proposition and a question-denotation, though he does not give any argument for including a proposition as a relatum rather than simply treating knowledge-wh as a relation to a question-denotation. Doing the latter is supported by the point above about uniformity with verbs like ‘wonder’ and ‘ask’, so I take Schaffer’s argument, if sound, to be an argument for treating knowledge-wh as a two-place relation to a question-denotation. There is a further aspect of Schaffer’s view that I reject — he concludes that not only knowledge-wh but also ‘S knows that p’ has a question as a relatum. The argument for that claim, however, rests on the conjunction test discussed earlier, which I do not find persuasive, so I take the upshot of Schaffer’s data to be restricted to knowledge-wh.13

Is Schaffer’s argument sound? There are worries that turn on the exact semantic analysis of knowledge-wh, but Schaffer answers some of these in his (2009), and the argument remains plausible in my view. So what does it show about know-how? It does not show that know-how has special features that distinguish it from other sorts of knowledge-wh, but it does show that the correct semantic analysis of knowledge-wh, including know-how, should treat it as a relation to a question-denotation, not a proposition. Is this conclusion inconsistent with Intellectualism? Not intuitively, but it is worth looking at the theses we carefully distinguished earlier.

13 The data may extend to figuring-out-wh, explaining-wh, or other similar constructions, but discussion of this would take us too far afield.
Thesis (25), our best regimentation of Intellectualism, is a quantified biconditional thesis with ‘x knows p’ on the right-hand side. For some appropriate replacement of ‘F’, it entails that John knows how to swim iff for some proposition p such that F(p), John knows p. Schaffer’s argument shows that this consequence of (25) is false. For consider the parallel claim about knowing-wh: John knows whether Bush or Ferrell is on TV iff for some proposition p such that F(p), John knows p. Suppose ‘F’ is replaced with the most plausible candidate property, the property of answering the question of whether Bush or Ferrell is on TV. Then we have the consequence that John knows whether Bush or Ferrell is on TV iff he knows a proposition that answers the question of whether Bush or Ferrell is on TV. But we also have the consequence that John knows whether Bush or Cheney is on TV iff he knows a proposition that answers the question of whether Bush or Cheney is on TV. But since Bush is on TV, this makes knowing whether Bush or Ferrell is on TV materially equivalent to knowing whether Bush or Cheney is on TV, which provides a reductio of a knowing-whether analog to (25). If the analog is false because knowledge-wh is irreducibly a relation to a question-denotation, then unless know-how and not other knowledge-wh is a relation to a proposition, (25) is false for the same reason. Thus if we took (25) to be our standard statement of Intellectualism, then, unintuitively, Schaffer’s view would be inconsistent with Intellectualism.

This provides further reason to be skeptical that a formal construal of Intellectualism along the lines explored in section 2 will be helpful. What we want is a thesis that concerns the relationship between know-how and knowledge of the kind we attribute with ‘S knows that p’, but we do not want to assume that the latter expresses a relation to a proposition. I had already suggested as much (in section 2.2), since even if ‘S knows that p’ were not a relation to a proposition but had a Russellian analysis instead, the debate over Intellectualism would not seem to be resolved. Schaffer’s position reinforces this conclusion — even if know-how is non-propositional and ‘S knows that p’ is propositional, that does not mean that the two are of different kinds in the relevant respect. We may not want to define the relevant kinds in terms of propositionality. Know-how might have none of the features anti-Intellectualists
have attributed to it and have used to motivate their position, and might instead share crucial properties with knowledge-that. See section 5.1 below for a detailed discussion of these features, which provides an illustration of how to distinguish kinds of knowledge without using the propositionality of their relata to do so.

3.9 Learning-to and learning-how-to

Although data regarding island effects and wh-complements turned out not to reveal anything about knowing how to do things, the datum remains that know-how is singled out in some languages to receive its own dedicated verb or linguistic construction. So there is some purely linguistic data to indicate that know-how is special in some respect. It would reinforce the case if we could find some similar evidence from English, for instance, if English had a distinction that paralleled the French distinction between ‘savoir comment faire’ and ‘savoir faire’.

There is, in fact, an English construction in which ‘knows’ is complemented by an infinitival phrase without a wh-complementizer.

(66) John knows to swim for exercise.

However, ‘knows to φ’ does not express the same thing as ‘savoir faire’. Rather than attributing the sort of know-how of interest to anti-Intellectualists, it seems to attribute knowledge of some deontic proposition. Suppose that John’s doctor has advised him to get some exercise, but that John is worried about injuring himself while exercising. His doctor, who considers swimming to be a quite safe way of exercising, instructs John to swim, and John correctly takes him to be a reliable source. In this situation, (66) could be used to report what John has come to know. A rough paraphrase might be ‘John knows that he should swim for exercise’. ¹⁴

¹⁴There is one other construction involving ‘knows’ that is of some interest, in which the verb is complemented simply by a term designating an activity or action. Such sentences may be familiar from a 1989-1990 ad campaign starring multi-talented athlete Bo Jackson: “Bo knows baseball. Bo knows football.” To say that x knows V-ing is not to say that x possesses a distinctively practical sort of knowledge about V-ing, but it is unclear exactly what kind of knowledge is required. The construction’s form suggests acquaintance knowledge,
Now, although (66) does not provide the data point that an anti-Intellectualist might want, we need not look far. For we can note that English possesses two ‘learns’ locution. We can say both of the following:

\[(67)\]
\[\begin{align}
    \text{a. } & \text{John learned how to swim.} \\
    \text{b. } & \text{John learned to swim.}
\end{align}\]

On one reading, the latter is not particularly relevant, since it expresses that John has acquired knowledge of the sort attributed by (66). To bring out this deontic reading, consider again the situation in which John’s doctor has instructed him to swim. But the deontic reading is clearly not the most natural reading of (67-b), and the one that will more likely have occurred to the reader is much more interesting. On this latter interpretation, (67-b) expresses something more like (67-a). But there is a distinction between the two claims.\(^{15}\)

If one reads an instructional book about swimming, one might (at least in an unusual context) be described as having learned *how* to swim. But one has not learn to swim. Or suppose John, who is extremely clumsy, has been reading about mountaineering this week, and has memorized the instructions for tying a clove-hitch. In response to the question “What did you do this week?”, it would be false for John to reply with “I learned to tie clove-hitches”, though true to reply with “I learned *how* to tie clove-hitches”. Normally, the latter would suggest the former, but there is no entailment. Compare the following two exchanges.

\[(68)\]
\[\text{J: I learned how to tie a clove-hitch today.} \]
\[\text{Q: Oh, can you show me how?} \]
\[\text{J: Well, I don’t know if I can actually do it — I’ve never tried.} \]

\[(69)\]
\[\text{J: I learned to tie clove-hitches today.} \]

\[^{15}\text{Stanley (Forthcoming) has independently noticed these two locutions, but mistakenly claims that there is no difference in usage between them.}\]
Q: Oh, can you show me how?
J: Well, I don’t know if I can actually do it — I’ve never tried.

John’s response in (69) seems to me markedly worse than in (68), revealing that ‘learned to’ is stronger than ‘learned how to’. The point is reinforced by contrasting (70-a) and (70-b).

(70) a. #I haven’t learned how to swim yet, but I’ve learned how to do it.
b. I haven’t learn to swim yet, but I’ve learned how to do it.

The second sentence is not contradictory, even if in normal contexts one would assume that someone who has learned how to swim has learned to swim. The former sentence is contradictory.

The distinction I am pointing out, which has somehow been missed in the literature thus far, bears on know-how in a simple way: If there is a distinction between kinds of learning, then we can expect a similar distinction between kinds of knowledge. Learning is to knowing as acquiring is to having, so to know whatever one learns by learning to $\phi$ is not just to know what one learns by learning how to $\phi$. If this is right, then it is a mere accident that the surface grammar of ‘knows how’ does not provide a way to make this distinction explicitly. And recall: That it is an accident is supported by the cross-linguistic data highlighted by Rumfitt. ‘Savoir’+infinitive versus ‘savoir comment’+infinitive is a distinction we would expect, paralleling the difference between ‘learn to’ and ‘learn how to’.

We have now seen reason to think that there is a kind of know-how that is special enough to warrant distinctive linguistic locutions. This kind of know-how stands out from other knowledge-wh, none of which receives its own special locution in English or any other language I am aware of. This casts considerable doubt on an attempt to draw weighty philosophical conclusions about know-how through comparison with ‘knows when’, ‘knows where’, and so on. It also provides a motivation for responses (c) and (d) to the linguistic argument for Intellectualism. We will pursue this at length in section 5.2.
Our new project for the moment is to learn more about the kind of know-how corresponding to 'learns to', 'savoir faire', etc. A case for Intellectualism might still be made if all the features of this practical sort of know-how can be explained in terms of ordinary knowledge of facts. Perhaps this know-how is special, a special kind of knowledge-that. It would be knowledge-that nonetheless. Before looking in detail at this possibility, I want to more carefully explore the sort of interpretation of 'S knows how to φ' that an Intellectualist might suggest.

4 Intellectualism and ordinary knowledge-that

4.1 More on infinitival modality

We have seen analyses of ‘S knows how Bill swims’ and of ‘S knows where to swim’, and we have seen an argument that since these attribute knowledge-that, so does ‘S knows how to swim’. But we have not yet been totally clear on what proposition is supposed to be known when someone has practical knowledge of how to swim. The most detailed recent proposal is that of S&W, so I will focus on their view in what follows.

Recall that infinitival constructions are generally thought to admit of two interpretations. One, a deontic interpretation, we have already set aside. As S&W say, on the other reading of infinitives, “they express some kind of possibility. On this reading, a use of ‘to F’ expresses something like ‘can F’” (2001: 424). As for the other elements of [how [PRO to φ t]], we have said that ‘how’ indicates that the propositions in the denoted set are propositions about ways of φing, and we have said that PRO can be thought of as a silent counterpart of ‘he’ or ‘she’.

Putting these parts together, S&W’s account tells us that on the relevant interpretation of [how [PRO to φ t]], it denotes a set of propositions of the following sort: \{ that he can φ in way w₁, that he can φ in way w₂, ... \}. Adding to our account of knowledge-wh that there are some contextual restrictions on which propositions suffice for knowledge-wh (we want to
rule out, for instance, the proposition that S can φ by φing), we have the result that ‘S knows how to φ’ is true iff S knows one of the contextually relevant propositions in that set.

Interestingly, this result is not what S&W go on to endorse. Instead, they make two notable moves without comment. First, they suspend the use of ‘can’, despite having just noted in the passage quoted above that infinitives admit of a ‘can’ reading. Instead of ‘can’, they turn to ‘could’ (2001: 425). Second, they then quickly suspend the use of ‘could’. Instead of ‘S could φ in way w’, they begin exclusively using ‘w is a way for S to φ’. But they give no argument in support of this substitution. Perhaps they think that none is needed.

But, first of all, it is rather obscure what it means to say that w is a way for S to φ. Why not say that S can φ in way w or S could φ in way w? The shift from their initial and more intuitive gloss of the infinitive’s modality should be motivated by some argument and accompanied by some explanation of how the new locution differs. S&W provide none. Second, and more importantly, ‘for S to φ’ simply contains, rather than explains, the infinitival construction that a semantics for know-how attributions ought to explain. If we are to be convinced that Intellectualism is correct, we should be given an explicit characterization of what propositions one knows when one knows how to do something. If no propositions can be found knowledge of which plausibly constitutes knowledge how to φ, the case for Intellectualism will be left rather unconvincing. So if there is some modality involved in the propositions alleged to be what one knows in knowing how to φ, the account must spell out what that modality is rather than hide it in a new construction.

Though S&W do not provide an explanation of what their preferred gloss of the for-infinitival construction is supposed to amount to, I have suggested that it should be understood in terms of the original glosses with the modals ‘can’ or ‘could’. I think this is intuitive, but tellingly, it is also an uncontroversial view in the linguistic literature. Hackl and Nissenbaum (2003) for instance open their paper on for-infinitivals by noting that they admit of two interpretations, one corresponding to ‘should’ and one corresponding to ‘could’. Given the authoritative status with which S&W regard standard views in linguistics, I assume that
they do not have their own unorthodox theory of the constructions in question.

They do provide one citation when first shifting to the locution they prefer. But consulting the passage the point to, from D.G. Brown’s paper, we only find further reason to stick with ‘can’ or ‘could’: To know how to V is “to know of some course of action only that it is a way of V-ing, that is to say a way in which one can V, or in which it is possible to V. It is to know of it only that by doing that thing one can V” (1970: 240, emphasis is Brown’s). Like S&W, Brown uses ‘is a way of V-ing’, but he obviously thinks this is to be explained in terms of a way one can V.

Another odd effect of moving to ‘w is a way for x to’ is that it distorts the form one would naturally expect for a sentence stating an answer to the question of how to φ. Recall that the structure is [how [PRO to φ t]], where ‘how’ is moved from the position marked with ‘t’. Before movement, the structure is [PRO to φ how]. As suggested earlier, an intuitive way to think about such question-constructions is to think of the question-word as marking the blank that should be filled in in an appropriate answer. Given our assumptions about PRO and the infinitive, appropriate answers to the question of how to φ should thus be of the following sort: x can/could φ in way w. Why front ‘w’? The natural gloss leaves w where the question-word originates — the natural answer to ‘How does Bill φ?’ is not ‘w is the way Bill φs’, but ‘Bill φs in way w’ (as in ‘Bill swims by doing the backstroke’). Likewise, the natural answer to the question of how to φ should be something of the form ‘...φ in way w.’

Furthermore, the S&W gloss cannot be extended to the construction ‘John knows to swim for exercise’ — it would be nice if the most accurate gloss of the infinitival complement in that sentence could be the same as the gloss in ‘how to swim’. (I briefly discussing knowing-to-φ again in section 3.9.)

It is hard to see what reason S&W might have had for shifting to the for-locution in the first place. But once we take note of the unwarranted shift, we see that the very theories S&W appeal to predict that ‘S knows how to φ’ has a reading on which it entails that S can φ. As I will discuss later, they must avoid the latter if their objections to Ryle’s account of know-
how are to stand up — they claim that “As Ginet and others have pointed out, ascriptions of knowledge-how do not even entail ascriptions of the corresponding abilities” (2001: 416). And there is obviously a close connection between abilities and ‘can’. Independent of this connection, we can make a few observations about the correct understanding of the infinitive in ‘how to φ’.

It will not do to say that the modality of the relevant sense of ‘can’ or ‘could’ is merely logical, metaphysical, or nomological possibility. Suppose that for me to know how to fly would just be for me to know that it is logically possible that I fly in a certain contextually relevant way. Well, I could fly in all sort of ways, as far as logical possibility goes, and I know that. What might be a contextually salient way of flying? Perhaps by flapping one’s appendages. Or by doing this [demonstrating by moving my arms as if I were flying]. If the atmosphere and the laws of physics were quite different, I would fly by doing this. I know that, but I do not know how to fly. I also don’t know how to run a mile in three minutes, but it is compatible with the laws of nature that I should have run a mile in three minutes by having incredible strength and endurance and exerting full effort. And I know that.

S&W provide their own counterexample to their proposal: S knows that that [demonstrating a passing bicycle-rider’s way of riding] is a way for her to ride a bicycle, but she does not know how to ride a bicycle. Suppose we gloss this as: She could ride a bicycle by doing that. The result, even if stronger than logical or metaphysical possibility, is still inadequate. Perhaps S&W have been simply not looked hard enough, and perhaps some other proposition of the form ‘I could ride a bicycle in way w’, with the modal interpreted in the same way, suffices for me to know how to ride a bicycle. Well, perhaps, but that claim is not particularly pre-theoretically plausible, nor does it appear plausible in light of the fact that no Intellectualist has ever suggested a decent substitute proposition of that sort.

This pushes us toward the idea that the sort of modality involved in the infinitival constructions in know-how claims really must be glossed with ‘can’. For doing so lets us avoid the counterexamples just discussed. If I know that I can φ in a certain way, then it is true that
I can \( \phi \) in that way, and hence true that I can \( \phi \). If I cannot fly, it is false that I can fly in way \( w \) and hence false that I know that I can fly in way \( w \), and hence false that I know how to fly. Similarly for running a mile in three minutes and for bicycle riding.

S&W suggest a different way of defending Intellectualism from the straightforward counterexamples above. In the next section, I will discuss their strategy and explain why it does not present an adequate alternative to using ‘can’ in the account of the propositions knowledge of which is supposed to constitute know-how.

### 4.2 Practical modes of presentation

In response to the objection that someone might know that \( \text{that is a way for her to ride a bicycle} \) without knowing how to ride a bicycle, S&W introduce a further component to their analysis. Someone knows how to ride a bicycle iff for some contextually relevant way \( w \), she knows that \( w \) is a way for her to ride a bicycle, and knows it under a practical mode of presentation (hereafter, PMP).

I will offer a few criticisms of PMPs, but the first is fairly obvious. Weak interpretations of the modality of infinitival constructions faced counterexamples that could be avoided by understanding the modality in terms of ‘can’. S&W reject this gloss, and when their proposal in terms of \( \text{for} \) faces the same counterexamples, they try to avoid them by bringing in PMPs. We should obviously be suspicious that this is just a covert way of sneaking ‘can’ back into the analysis of know-how under another name. Others have also worried that PMPs sneak something distinctly anti-Intellectualist into the analysis of know-how — see, for instance, John Koethe (2002), Sgaravatti and Zardini (2008), and Rosefeldt (2004). But the worry takes on a new aspect in light of the linguistic considerations in favor of analyzing infinitival modality with ‘can’.

Ideally, we would use S&W’s explanation of PMPs to assess their assumption that knowing a proposition under a PMP does not entail that the individual can perform the relevant action. Unfortunately, we are told very little about PMPs, and given only minimal elaboration.
by Stanley (Forthcoming). We are supposed to think of them on analogy with first-personal
types of presentation, as being associated with certain distinctive dispositional properties,
but as being nonetheless just one way to know a proposition.

We are not even given the materials to determine whether PMPs suffice to allow Intellec-
tualism to escape the counterexamples discussed in the section above. Take our bicyclist S
who knows that *that* is a way for her to ride a bicycle. Why does she not know how to ride
a bicycle? It is far from obvious that she needs only to entertain the proposition under a dif-
ferent mode of presentation, so to show that PMPs solve the problem, S&W need to explain
how. It seems instead that they simply take PMPs to be whatever bridges the gap between
their original account and an account that provides sufficient conditions for know-how. There
are actually two questions here that we need answers to: (a) Are there such things as PMPs?
(b) Do PMPs allow Intellectualism to avoid the counterexamples above? And we are given
justification for a positive answer to neither. Alva Noë (2005) puts the worry here particularly
bluntly: S&W’s reasoning seems to be that since Intellectualism is true, and since Intellectu-
alism would be refuted by counterexamples unless PMPs solved the problem, PMPs do solve
the problem. This is unsatisfactory.

Another worry, or perhaps simply a puzzling aspect of S&W’s Intellectualism, is that
the PMP requirement for know-how is totally unmotivated by any syntactic data. In their
arguments against giving know-how any special semantic treatment, they object that there “is
no basis in structure” for doing so (2001: 419). If that objection carries any weight, it carries
equal weight against the claim that know-how requires a PMP. For how does that requirement
come to be imposed? There appears to be no element in the structure of ‘S knows how to
φ’ that is responsible. The complementizer ‘how’ and the constituent [PRO to φ to] appear in
other constructions that do not attribute knowledge under a practical mode of presentation.
(Consider ‘S knows how Bill swims’ and ‘S knows why to swim’.)

Similarly, S&W say that their view “is just that the standard linguistic account of the
syntax and semantics of embedded questions is correct” (2001: 431), and the first benefit of
their view that they cite is that “it is the account entailed by current theories about the the
syntax and semantics of the relevant constructions” (2001: 440). But their account appeals
in a crucial way to machinery that is no part of current theories of the syntax and semantics
of knowledge-wh. I take this to indicate that S&W are more comfortable than they otherwise
appear with the strategy of using truth-value judgments to drive one’s philosophical theorizing
in ways independent of any syntactic data.

The fact that the PMP requirement for know-how contravenes the spirit of the rest of
S&W’s theory does not mean that it should be rejected. But unless it accommodates the
intuitions that motivate its introduction, it will have little to recommend it. Nor does the
lack of explanation of how PMPs work show that no such explanation could be given. But
there are even better reasons to be skeptical, namely that PMPs do not seem to be modes of
presentation at all.

The amnesiac Rudolph Lingens is lost in the Stanford library, and is unable to find the
way out despite having read a complete biography of himself, including the fact that Rudolph
Lingens is standing in east wing of the Stanford library. If Lingens knows the proposition
that Lingens is in the east wing, why can he not get out of the library? One intuitive answer
is that he is not thinking about Lingens in the right way. If he thought that Lingens was
in the east wing while thinking of himself as Lingens, then he would know where he was
(and thereby which direction the exit was). The notion of thinking of a person as oneself is
supposed to be captured by the notion of a first-personal or de se mode of presentation. (See
John Perry (2000) and David Lewis (1979).) Modes of presentation are ways of thinking
about individuals or entertaining facts.

In this case Lingens has a problem with self-identification as well as self-location in
space. The two are easily separable, of course. Someone in Cambridge might be thinking
that Cambridge was cold, but leave his home coatless because he was thinking that “here”
was Pasadena. Or, in another of Perry’s cases, he might know that his meeting was at noon
but remain in his office at noon, thinking that “now” was 11:00. Again, the intuitive motiva-
tion for saying that there is a special mode of presentation missing in these cases is just that while each individual knows that the relevant property holds of the place or time in question, he seems to be failing in one respect: he is not thinking about the place in the “here”-way or the time in the “now”-way.

Now, if PMPs are to be motivated by analogy with other modes of presentation, we would expect an absence of know-how to be intuitively explicable in a way parallel to the explanation of ignorance of one’s identity or location in time or space. But we do not find this. Bill knows how to wiggle his ears, while Nina does not. But Nina knows that contracting such and such muscles repeatedly is a way for her to wiggle her ears, and she knows that that [demonstrating Bill’s ear-wiggling] is a way for her to wiggle her ears. What is Nina missing? According to S&W’s theory, the problem is just that Nina is not thinking in the right way about the relevant way of wiggling — if she thought in a different way about that way of wiggling, she and Bill would both know how to wiggle their ears. This claim simply has no plausibility at all.

Perhaps Intellectualists could let PMPs be something quite different from other modes of presentation. They could say that when one knows under a PMP that \( w \) is way for her to \( \varphi \), this is not a matter of her thinking about \( w \) or \( \varphi \)ing in the right way. Perhaps a PMP should not be understood as a way of thinking something at all. But then what is it? We know that it is a way in which one can be related by knowledge to a proposition, that being so related suffices for know-how, and that being so related involves some connections to some dispositions. But this is not a theory.

To reinforce the point that PMPs must be better explained and justified in order to play any role theory of know-how, I now want to introduce an analogy. The orthodox view on acquaintance-knowledge, the sort of knowledge we attribute by saying ‘John knows Bill’, is that it is non-propositional. However, we might entertain the following view: \( x \) knows \( y \) iff \( x \) knows that \( y \) exists, and knows it under a mode of presentation of acquaintance (AMP).

It might be objected that most people know that George Bush exists, but very few people know George Bush. However, this objection can be blocked by asserting that one can only
know that George Bush exists under an AMP by meeting George Bush in person, talking to him on the phone, or something similar. In this way AMPs resemble certain demonstrative modes of presentation: to think that *that* guy is tall, it is not sufficient to think that George Bush is tall, even if that guy is George Bush. Or to think that *this* guy [on the other end of the phone] is loud, it is not sufficient to think that George Bush is loud, even if this guy is George Bush. Similarly, most people simply have not encountered Bush in the right circumstances to allow them to know that he exists under an AMP.

It might be further objected that some people know George Bush but do not know that George Bush exists — John, for instance, met Bush but was introduced to him by a prankster who told him “This is Vladimir Putin”. Having never heard of Bush, John cannot be said to know that George Bush exists, although he knows Bush. Again, AMPs would allow us to block the objection. Anyone who has met Bush knows under some modes of presentation but not others that Bush exists. The fact that they would not assent to ‘George Bush exists’ is independent of whether they know the proposition the sentence expresses under an AMP.

I suspect that no philosopher will be convinced by the above account, despite the fact that AMPs are portrayed as analogous in various respects to other modes of presentation. The proposal above about acquaintance knowledge is completely unconvincing because we have no intuitive grip on what is to think that someone exists under a mode of presentation of acquaintance, and because questions like the following are left unanswered: Why can all and only people who know Bush think that Bush exists under an AMP? Why aren’t AMPs simply a way to illicitly rely on the traditional idea about acquaintance-knowledge — that knowing an individual involves having participated in some fairly direct causal interaction with that individual — while eliminating any relevance for the alleged propositional aspect of the knowledge? Why is the proposal an explanation of the intuitions that motivate the two objections above, rather than simply a label for whatever might provide such an explanation? These questions resemble salient questions about PMPs, helping to highlight the worries about an account of know-how that relies on the latter.
I will offer further criticisms of PMPs in the following section, after reviewing some characteristic features of knowledge-that.

4.3 Characteristic features of ordinary knowledge-that

In this section, I will argue that Intellectualist analyses of know-how imposes requirements that are too strong. My strategy will be to point to notable characteristics of the kind of knowledge possessed in cases where we say ‘S knows that p’, showing that there is a kind of know-how that lacks those features. Some of these features will seem more central to knowledge-that than others, and it will likely occur to the reader that know-how might simply be an atypical kind of knowledge-that. Such a view will be discussed thoroughly later.

Let us start with a paradigm case of the sort of knowledge that anti-Intellectualists have had in mind: An individual S has, through trial and error but no formal instruction, come to know how to ski. Her knowledge might lack any number of features that are prominent in standard cases we discuss under the heading “knowledge-that”. First, despite having normal linguistic abilities and normal introspective access, S might be unable to state what she knows with a self-report of the form ‘I know that...’ or by asserting the content of her knowledge. Suppose someone claims to know how to swim and an interlocutor replies “Oh, what is it that you know? Because I’d like to know how to swim, too.” The average person would probably simply be baffled, but even a brave Intellectualist could at best muster up something that would not at all seem to amount to their knowledge of how to swim. Perhaps they could offer something like “To swim, you use your arms and legs to push downward on the water, propelling yourself upward to prevent yourself from sinking.” Intuition is strong that knowledge of this is not what knowledge how to swim consists in.

This looks like the worry discussed earlier about the sufficiency of Intellectualist analyses, but the important point now is the contrast with other sorts of knowledge. Generally, a sincere, reflective speaker who knows that p and has normal linguistic abilities will be disposed to verbally acknowledge that p. Consider other kinds of knowledge-wh. If someone asserts that
they know who killed JFK and an interlocutor asks “Oh, what is it that you know?”, it would be bizarre if no answer of the form ‘... killed JFK’ could be provided. There is an expectation that the knower will be capable of putting her knowledge into sentential form, and in fact we would ordinarily use an inability to do so as evidence that the individual did not in fact know who killed JFK. Similarly for knowing where the president lives, knowing why the sky is blue, and so on. But for much know-how, the opposite is true. Knowing how to ski, knowing how to write good poetry, knowing how to wiggle one’s ears, knowing how to speak French — an inability to express such knowledge sententially is to be expected.

It might be noted that sometimes knowledge-that is only expressible using indexicals. For instance, pointing to a color sample, “My car is that color” (Stanley Forthcoming). Or I might know that the meeting starts now without being able to state anything of the form ‘The meeting starts at ... o’clock’. It might then be objected that the above disanalogy between knowledge-that and know-how disappears when we allow that know-how might only be expressible using indexicals. There are a couple of powerful reasons to reject this objection. First, appealing to indexicals does not actually eliminate the disanalogy. S&W highlight claims of the form ‘That is a way for me to swim’ (2001: 426), asserting that such claims are ways of expressing what one knows when one knows how to swim. But this is refuted by the fact that S could know any such fact without having anything like the knowledge that she actually possesses. Just by watching other swimmers in action, S can come to know that that is a way for her to swim (or that she could swim like that), but such learning can take place before S learns how to swim herself. This bring us to a second reason for rejecting the appeal to indexicals. It is brought out by the following considerations.

Any instance x of swimming exemplifies indefinitely many ways of swimming. By abstracting away from more of fewer features of x, one can get more or less specific ways of swimming. For instance, we can suppose that x is an instance of moving one’s right arm with greater force than one’s left arm, of doing the backstroke, of taking a breath every fifth arm stroke, of reaching 29 inches past one’s head with each arm stroke, of swimming at 2pm, of
swimming in Lake Winnipesaukee at 2pm on October 2, 2006, of moving S’s arms and legs, and so on. One way of swimming, w*, is to swim in a way that has all the features of x. But w* is so specific that it is would be false for an observer to demonstrate w* and assert of it that it was a way for them to swim (or a way that they could swim). Hence an observer could not possibly express their knowledge how to swim by demonstrating w*.

Many combinations of features of x would amount to something that was not a way for a given observer to swim. For given the great number of features of x, there are a great number of combinations of those features that one could be demonstrating in asserting ‘that is a way for me to swim’, and a great many of those combinations include properties that could not be exemplified by a given observer. Other combinations are too general: Let w+ be swimming by moving one’s body appropriately. Knowing that w+ is a way for one to swim does not suffice for knowing how to swim. So there are restrictions from two sides: Some ways of swimming are too specific, and others too general. But to think that that is a way for her to swim, S must grasp some particular proposition with particular truth-conditions. This requires that S’s thought determine that there be some ways of swimming that count as swimming like that and other that do not. S’s demonstrative must correspond to some categorization in thought of various ways of swimming. The only way I can see that S could conceptually single out a way of swimming that was neither too general nor too specific would be in terms of particular features of instance x. S must think that way w with such-and-such features is a way for her to swim. But this means that use of the demonstrative to express a thought presupposes that S can identify particular features of x such that a way w that possesses those features is a way for S to swim, and such that S’s knowledge how to swim consists in S’s knowledge that such a way is a way for S to swim. So if S claims to know how to swim and she is able to express the proposition knowledge of which constitutes her know-how by saying ‘that is a way for me to swim’, she ought to be able to answer when asked “What is a way for you to swim? What features of x are you pointing to?” Moreover, her answer ought to make it plausible that her know-how really does consist in her knowledge
that the relevant way is a way for her to swim. I can think of no answer that would satisfy this requirement, and Intellectualists have not made a persuasive case that there is one.

The objection to Intellectualism I have been defending is that possession of knowledge-that, but not knowledge-how, can be shown absent when the subject is unable to state the proposition that she supposedly knows. But there is a closely related point that is simply about ineffability. No one else, including the philosophical theorist, is able to state a proposition that plausibly constitutes someone’s knowledge how to swim. The Intellectualist ought to tell us what features of x are had by the way w that he demonstrates when he claims to explicate S’s know-how by saying “S knows that that is a way for her to swim”. The theorists have no excuse for not providing some account of these features, since we have shown above that it ought to be possible for those features to be characterized. But it is far from obvious what combination of features could go into a way w that would suffice in an Intellectualist’s account of know-how. Until this worry is addressed, indexicals do not offer a sufficient response to the objection that know-how is not linguistically expressible — it has simply not been made plausible that “S knows that that is a way for her to swim” really does attribute knowledge sufficient for knowing how to swim.

The points about linguistic expression are connected to more general observations about one’s access to one’s know-how. The latter observations are made most clearly by Charles Wallis who, like Adams (Forthcoming) and Bzdak (2008), appeals to cognitive science to evaluate Intellectualism. The first cases that Wallis highlights involve the know-how possessed by experts at various tasks. He argues that extensive investigation in cognitive science and artificial intelligence has shown that experts can often not determine how they perform the tasks that they are experts at. A standard example is the master chess player. The rules and heuristics that correctly characterize the master’s chess-playing can be as difficult for the player to identify as for others who want to understand his techniques. That is part of why it took years of research to create a computer program that could compete with the best chess players in the world. The more general point here, independent of experts, is that it is ex-
tremely difficult to determine the procedures we ourselves use to perform various tasks. It is not just that I cannot put into words my knowledge how to swim — that is simply a result of the fact that I cannot put into conscious thought propositions that capture my knowledge. If I could do the latter, I do not see why there would be any obstacle to the former.

The point about a lack of access to know-how is reinforced by cases of amnesia. Wallis, Adams, and Bzdak all note that in severe cases of anterograde amnesia, patients can learn how to perform a task or solve a puzzle without retaining any memory of having even encountered the task or puzzle let alone any memory that such-and-such is the correct strategy. These patients have such severe impairments that any information that passes out of working memory becomes unavailable. Famously, such patients have been told about the death of a loved one, and after becoming extremely distraught, they promptly forget about it only to suffer the same shock and sorrow the next time they are told. Such patients can eventually come to know how to knit, say, or solve the Tower of Hanoi puzzle, but since they cannot remember anything about these tasks, known propositions about them are certainly not available to any higher cognitive operations (to “central executive functioning”).

The data from cases of amnesia have provided much of the justification for the long-standing view in psychology that procedural memory or knowledge is not a kind of declarative memory or knowledge. Very roughly, the former is the sort of information-storage involved in the acquisition and retention of skills (both perceptual-motor skills and more purely cognitive skills like pattern-recognition and problem-solving — see Wallis and Adams) while the latter is the sort of information storage involved in acquiring and retaining knowledge of facts such as that Portland is rainy. Paradigm cases of procedural and declarative knowledge map onto paradigm cases of know-how and ordinary knowledge-that, respectively, and indeed some well-known articles in the cognitive science literature have explicitly equated the categories. Take, for instance, a piece from Science titled “Preserved learning and pattern-analyzing skill in amnesia: Dissociation of knowing how and knowing that” (Cohen and Squire 1980).
As Wallis and Adams both emphasize, neurological evidence from studies of memory impairment strongly indicates that the exercise of procedural knowledge and of various sorts of know-how involves brain areas dissociable from the hippocampus and medial or inferior temporal lobe, the brain areas associated with declarative knowledge. But more abstract characteristics have also been thought to separate procedural from declarative knowledge. For instance, procedural knowledge may be acquired gradually and often cannot be acquired all at once, while declarative can only be acquired all at once. Adams compares learning to ride a bicycle with learning that Jim is 12 years old. Bill may have spent a month learning to ride a bicycle, and he could not (by any normal means, at least) have gained that know-how in an instant. In contrast, it makes no sense to imagine Bill spending a month learning that Jim is 12 years old. Bill may have spent a month trying to find out how old Jim was, but he was not learning the answer that whole time. He learned the answer in just a moment, when he finally found Jim's birth certificate.

There are other ways of distinguishing procedural from declarative knowledge that may be relevant to Intellectualism, for instance whether they are "rigid" or "plastic" in their application (whether the knowledge can easily be transferred to new domains and applied to new tasks), but I will not discuss them at length. The general lesson is that from a scientific point of view it is a well-supported empirical hypothesis that there are two sorts of knowledge, one more practical and skill-related and one more closely tied to ordinary knowledge of facts. Wallis draws the moral that even if an agent has the latter sort of knowledge, it need not be “causally operant in the manifestation of [knowledge-how]”, contrary to Intellectualist claims that one’s knowledge of facts plays some crucial role in the exercise of know-how (see S&W and Ginet (1975)).

I now want to turn back to the general question of cognitive access to know-how to make another pertinent observation: Some kinds of know-how are unavailable to play a role in reasoning. In usual cases where someone knows that a is red, he will, on learning that if a is red then b is green, be able to infer that b is green. Or if he knows that a is colored red and
learns that b is colored red, he will be able to infer that a and b are the same color. Analogous claims do not hold in typical cases of know-how, even if know-how does have propositional content. Suppose that S knows how to turn a bicycle and that S’s knowledge how to turn a bicycle is propositional. The relevant proposition would be something like: One can turn a bicycle in such-and-such way. Now suppose that one can turn a motorcycle in such-and-such way, too. Whether S learns to ride a motorcycle in that way or is merely told that one can turn a motorcycle in that way, this will be insufficient to allow S to infer that one can turn a motorcycle and a bicycle in the same way. In fact, if S were attempting to infer something about the similarities between bicycling and motorcycle riding, many of the beliefs about the dynamics of bicycling that S appealed to would probably be false. One physicist writes, “Almost everyone can ride a bicycle, yet apparently no one knows how they do it” (Jones 1970).16

Nothing hangs on the sort of proposition I have chosen — knowledge how to ride a bicycle simply appears incapable of interacting with other knowledge in familiar patterns of reasoning. Similarly for other cases of know-how. I know how to wiggle my ears, and according to the Intellectualist, this knowledge consists in knowledge that I can wiggle my ears by doing such-and-such (or knowledge that such-and-such is a way for me to wiggle my ears). So we would expect me to be able to use the following sort of premise to draw the following sort of conclusion:

(71)  (P) Doing such-and-such prevents atrophy of muscles that move the face and scalp.
       (C) So, I can wiggle my ears in a way that prevents atrophy of muscles that move the face and scalp.

But I can think of no replacement for ‘such-and-such’ that would make the inference one that I was capable of carrying out while being an even remotely plausible candidate for constituting my know-how. Even though I know how to wiggle my ears, I cannot employ in reasoning any

16Thanks to Richard Holton for the reference. Notice how different the quote would have sounded if it had read “Almost everyone can ride a bicycle, yet apparently no one knows how to do it.”
knowledge of the form “I can wiggle my ears by doing such-and-such” apart from, e.g., the knowledge that I can wiggle my ears by moving some muscles somewhere near my ears. (In response, the Intellectualist would probably try to appeal to indexicals — see the discussion above for my rebuttal of this strategy.)

Many of the observations above have been leading us toward a rather bold objection to Intellectualism: Some know-how is possessed in the absence of belief in an appropriate proposition, so the know-how cannot consist in ordinary knowledge of such a proposition. Acquisition of know-how in cases of amnesia, inability to express one’s knowledge, and inability to employ one’s knowledge in reasoning are all prima facie evidence that one’s knowledge is not knowledge of a proposition one believes. There is another reason to draw the same conclusion: People often believe propositions that falsely characterize the ways they do things. On everything from bicycle-riding (see (Jones 1970)) to baseball-catching (see (Shaffer and McBeath 2005)), we believe that we can perform the task in a certain way when in fact we do not and cannot. Wallis reports that trained clinicians, for instance, believe that certain judgment methods are the ways to make clinical judgments, and believe that those methods are the very ones that they in fact employ. However, those beliefs turn out to be mostly false — the clinicians know how make the clinical judgments, but they believe false propositions about methods for making judgments, not the true ones that would guide their behavior if Intellectualism were true.

Wallis also notes that the literature on heuristics for problem-solving shows that we are often quite wrong in our beliefs about how to solve various puzzles, even when we have learned to solve those very problems ourselves. Likewise, we are often quite wrong in our beliefs about how to arrive at reliable judgments on everyday matters. To take an example Wallis does not discuss, when we judge someone’s age based on the appearance of his or her face, we rely on numerous visible features that the typical person would believe that one could not or ought not rely on. For instance, one might naturally believe that one cannot correctly do the following: Attribute greater age to someone who has a fatter face, thinner lips, and
more coloration of the skin. I, for one, had supposed that older faces were more gaunt and pale rather than more fat and colored. But the features listed are some of the reliable cues that people in fact rely on in exercising their knowledge of how to estimate age from visual appearance (Bruce and Young 1998: ch. 3).

So in perfectly ordinary cases of know-how, false propositions fit everyday criteria for what people believe about how to do things, while the Intellectualist’s propositions do not fit those criteria. The most straightforward conclusion to draw is that know-how does not require belief. Ryle suggested as much in his pioneering work, but the evidence he offered was somewhat dubious. In his (1949), he remarks that we cannot say that someone believes how, but it is not obvious that our conclusion follows from this observation. The problem may be purely grammatical, as S&W have suggested. If the problem is grammatical, though, it is not as superficial as the inability of ‘believes’ to take embedded questions as complements (Stanley and Williamson 2001). Consider the following, which is perfectly felicitious:

(72)  A: John knows that Obama will win.
     B: Yeah, he wouldn’t believe that if it weren’t true.

In contrast, the following dialogue sounds terrible.

(73)  A: John knows how to ride a bicycle.
     B: *Yeah, he wouldn’t believe that if it weren’t true.

Since the belief attribution in this dialogue is syntactically identical to the one in the previous dialogue but the two belief attributions differ in acceptability, Ryle’s observation is not explained by claiming that ‘believes’ cannot take a wh-complement.

Furthermore, as has somehow escaped notice in the literature thus far, ‘believe’ can be complemented by an embedded question (though not by ‘how to...’) in some constructions:

(74)  a. I could hardly believe how quickly the beer disappeared.
b. I could hardly believe what Jane wore to the party.
c. *I could hardly believe how to swim.

The grammatical examples of this sort are clearly related to other question-embedding constructions, and are not to be explained away as loose ways of expressing something else. They seem to fit the general pattern of analysis for knowledge-wh attributions: (74-a) is what I might say to express that I could hardly believe that the beer disappeared as quickly as it did, and (74-b) is what I might say to express that I could hardly believe that Jane wore the outfit she did.

The anomalous status of (74-c) might seem of great interest to the anti-Intellectualist, but that sentence is paralleled by the following cases involving infinitival embedded questions:

(75)  
   a. *I could hardly believe when to exercise.
   b. *John could hardly believe why to wear a life-preserver.
   c. *She could hardly believe where to buy a house.

It remains a mystery to me why these would be ungrammatical while (75-b) and (75-c) are not. In sum, although we have drawn the same conclusion as Ryle, the data he appealed to were more complex than he thought, and sorting them out would require a significant detour that I will not pursue here.

One final note about know-how and belief: The Intellectualist may insist that while our conclusion is right about ordinary belief, there is another kind of belief such that people who know how to φ do have that kind of belief in the right propositions about φing. I am not wholly opposed to the claim, but it is of little threat to anti-Intellectualists, since the points above are about our everyday notion of belief.

Now that we have discussed belief, we should turn to another aspect of the traditional conception of knowledge-that: justification. When someone claims to know how to swim, it just does not make sense to ask about the grounds for her knowledge (1949: 28). Intuitively,
in questioning whether Diane knows how to swim, questions like “Does she have sufficient justification?” do not seem applicable. Even if this is not totally obvious, the point can be supported by an argument that appeals to the notion of learning to do something. Whether Diane has acquired any justified beliefs about swimming is intuitively irrelevant to whether she has learned to swim — so long as Diane has acquired sufficient skill at swimming, the question is resolved. Now, we can validly infer from the fact that Diane has learned to swim that Diane has learned how to swim. I, at least, cannot imagine a case in which the former is true but the latter false. Next, we can observe that there appears to be no room to deny that, since Diane has learned how to swim (and has not lost any knowledge since then), she knows how to swim. It is hard to even understand the opposite claim, as it would force us to sever the natural connection between learning and acquiring knowledge. So, since Diane’s learning to swim is independent of justificatory considerations, but entails the acquisition of knowledge how to swim, the latter is also independent of justificatory considerations.

If know-how could be Gettiered, then the conclusion here would be wrong. S&W provide a relevant case, but I doubt Ryle would be convinced: An aspiring pilot is training on a flight simulator. Someone attempts to thwart his efforts by scrambling the code for the flight simulation program, but by sheer coincidence the simulator behaves exactly as normal. The trainee leaves the simulator with the ability to fly, but does he know how to fly? It seems perfectly reasonable to me to say that he does, even setting aside the argument given above. A casual perusal of the literature reveals quite a bit of agreement on this point. See, for instance, (Poston Forthcoming) and examples and arguments in (Cath 2009b).

Another reason to doubt that know-how is a kind of knowledge—that is brought out by the following line of thought. No one can know that p unless she is capable of judging that p, and she is capable of that judgment only if she possesses relevant concepts. Perhaps it is unclear what it is to possess a concept, but whatever it is, it provides a way to distinguish between

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17I should note that different notions of justification deserve individual discussion that I cannot provide here. For instance, Hawley (2003) claims that knowledge how to φ requires warrant, but means that the nearby worlds in which one φs must be ones in which the φing is not accidental or lucky. It is not obvious how to map such a view, or any view on which warrant is understood externalistically, onto the discussion here.
the cognitive powers of various individuals. Some individuals are able to have occurrent thoughts about telemarking, a type of skiing, and others cannot. But an individual who lacks the concepts of telemark skiing and alpine skiing, possessing only the general concept of skiing, may nevertheless know how to telemark. The point, just to be clear, is not about knowledge attributions. It is a point about know-how itself. Knowing how to telemark ski does not seem to require one to possess all of the concepts necessary to grasp the proposition that, say, \( w \) is a way for \( x \) to telemark ski. On this basis, the anti-Intellectualist could claim that know-how is, in a certain sense, non-conceptual.

The point here connects with my earlier observations about the thoughts one might express by saying “\textit{that} is a way for me to \( \phi \)”. Anyone who can telemark is in a position to say “this is a way for me to do \textit{this}”, but that does not mean that anyone who can telemark expresses a thought about telemarking by uttering that sentence. To do so, one must be aware of the features that distinguish that form of skiing from other activities. If one does not know basic facts such as that in “this” activity, one’s heel is able to lift off of the ski, then one is not thinking about telemarking as opposed to alpine skiing. And one might know how to telemark ski without understanding that its distinguishing features include one’s heel being free. In fact, one might learn to telemark without realizing that one’s heels were able to lift off the ski — on mild slopes, one may keep one’s heels on one’s skis.

Another reason to doubt that the concept-requirement of knowledge-that applies to know-how comes from our earlier observations about the difference between someone who knows how to wiggle his ears and someone who does not. Suppose we grant that Bill knows that \textit{that} [pointing at me as I wiggle my ears] is a way for him to wiggle his ears. He still does not know how to wiggle his ears, so what is the difference between us? The difference is clearly not that I am thinking in the right way about the relevant way of wiggling while Bill is not. In fact, I may not have any thoughts at all about any way of ear-wiggling — I just do it in the way that other people mindlessly fidget by tapping their fingers. So why think that I must have a concept of a way of ear-wiggling that is the concept of the way I wiggle my
ears? It seems unlikely that I do, given that I have no idea what means one takes to wiggle one’s ears. In absence of any good argument to the contrary, I think it reasonable to think that some know-how is independent of concept-possession.

One final piece of evidence for the non-conceptual nature of some know-how, as well as for the general claim that know-how does not require knowledge-that, comes from facts about animals. Wallis notes that it is quite obvious that animals are not merely physically able to perform various tasks, but know how to perform those tasks. A rat may know how to negotiate a maze for instance, and certain crows know how to use tools for various purposes. But it is doubtful that a crow genuinely has the propositional knowledge that, e.g. it can fashion a hook out of a wire and use it to retrieve a bit of food out of a thin glass tube, even if that is exactly what the crow does. Similarly, Alva Noë notes that dogs are not smart enough to grasp many propositions, and more generally “whether or not they can grasp propositions is an open question”. Nevertheless it is clear that dogs often know how to do various things, e.g. catch a Frisbee (Noë 2005: 289). I would add that it is unclear whether dogs have the concepts of catching or of Frisbees, much less particular ways of catching frisbees. And it is very doubtful that rats have the concept of a maze.

We do occasionally attribute knowledge to animals, but this does not reduce the force of the present point. Even if we might sometimes say ‘Alva’s dog knows that he can catch a frisbee by clamping his jaws around it’ it is quite unclear how literally we should take this. And moreover, it is the contrast with know-how attributions that is important: We have no hesitation at all in attributing know-how to even quite stupid animals, and there is no inclination to take such attributions as less than fully literal. If know-how were just knowledge-that, we would expect there to be no contrast in our intuitions about the appropriateness of knowledge-that and know-how attributions. Thus we have another reason to think that know-how does not consist in knowledge-that.
4.4 PMPs again

I have already argued that "practical modes of presentation" do not offer an adequate way to defend Intellectualism. Now that I have highlighted a number of respects in which know-how does not appear to be ordinary knowledge-that, I want to put forward some further arguments against PMPs.

I think many of the features of know-how discussed above are features that are not possessed by knowledge of facts under familiar modes of presentation (e.g. de se knowledge about oneself, indexical knowledge about the present time or place, or demonstrative knowledge of things presented to one in sensory experiences). If this is true, then the prima facie case that some know-how is not knowledge-that cannot be accommodated by arguing that knowledge under a PMP is no more special than other knowledge under modes of presentation.

Consider first the question of justification. While we saw reason to think that some know-how is independent of justificatory considerations, there is no reason to think that this is explicable in terms of modes of presentation. The model for special modes of presentation, first-personal knowledge about oneself, is obviously subject to Gettier-like problems. Suppose (a) I believe in a first-personal way that either my credit report is bad or I am descended from George Washington, (b) my credit report is bad, but I am not descended from George Washington and (c) I am justified in believing the disjunction because I am justified in believing that I am descended from George Washington. Intuitively, I do not know the disjunction that either my credit report is bad or I am descended from George Washington. There is nothing special here about de se knowledge. A similar case could obviously be constructed for the knowledge that the meeting starts this week, or for the knowledge that that is George Bush.\footnote{Stanley (Forthcoming) claims that there is a distinctive mode of presentation associated with knowledge-where, and that knowledge-where does not require justification, but I do not feel the force of the examples he appeals to.}

Similar points apply to other properties surveyed above. For instance, there is no reason
to doubt that first-personal knowledge about oneself or one’s temporal or spatial location, or
demonstrative knowledge about objects around one, are linguistically accessible and express-
ible, generally available to central executive functioning, and requiring of concept-possession.
But rather than dwelling on these points to further criticize appealing to modes of presentation
to capture the special properties of know-how, I will focus on two other properties.

Recall the point above about the acquisition of procedural knowledge and of declara-
tive knowledge. The point applies to the intuitive categories of know-how and ordinary
knowledge-that: the kind of know-how at issue in typical cases is a sort of knowledge that
is acquired gradually, rather than all at once, while ordinary knowledge-that is acquired all
at once rather than gradually. Bill’s learning that Jim was 12 years old did not take place
gradually over the course of a month, though his efforts to learn Jim’s age may have ex-
tended throughout the month. But Bill’s learning how to ride a bicycle was a gradual process
— no one knows how to ride a bicycle after having lacked this knowledge a second earlier.
In order to accommodate intuitions that know-how is a special kind of knowledge, S&W
have appealed to modes of presentation, so we should ask whether the observation about
knowledge-acquisition can be dealt with in this way.

In fact, the distinctive process of acquisition of know-how cannot be explained by analogy
with familiar modes of presentation. First-personal knowledge that, e.g., my credit report is
bad is knowledge that is special in various ways, and has dispositional implications that are
lacked by knowledge that that guy’s credit report is bad (I will be disposed not to apply for a
home loan, for instance). But it is no different from ordinary knowledge-that when it comes
to gradual acquisition. It takes only an instant for me to add de se knowledge about my bad
credit to my body of information, even if efforts to acquire such knowledge extend over long
periods of time. Similarly, the knowledge that tax returns are due this week is knowledge
under a special mode of presentation, but that bring along no special temporal features of
its acquisition. This undermines the attempt to use PMPs to argue that know-how is not so
special, for PMPs would have to explain, by yet unknown means, something that no familiar
modes of presentation need to explain.

There is a similar feature that ordinary modes of presentation have no need to explain, but which marks know-how as special: the loss of know-how involves a process unlike the loss of ordinary knowledge-that. Consider a surfer who not only knows that *that* is a way to hang ten, but knows how to hang ten himself. As his coordination, balance, and muscle strength deteriorate in old age, there comes a point when the surfer’s know-how fades away. Pointing to a hunched over, geriatric man with walker, one cannot say “That guy knows how to hang ten”, unless it is clear in the context that one simply means that he has the kind of knowledge that is shared by anyone knowledgeable about surfing, e.g. knowledge that one hangs ten by standing on the front of the surfboard. Similarly, someone who used to know how to play Pierre Boulez’s Second Sonata on piano may no longer, despite having the sharpest memory in the world. She might be able to tell you just as much about playing the Second Sonata as she always could, and give no indication of having forgotten any facts. As her skills and abilities have faded, so has a kind of know-how that she used to possess.

The Intellectualist would attempt to explain these observations by claiming that what the pianist and surfer have lost is simply knowledge of a ordinary fact under a PMP. But reason to believe such a claim is undermined by comparing the phenomena above with features of de se knowledge. Becoming old and arthritic has no effect on my first-personal knowledge that my credit report is bad, nor on my indexical knowledge that *that* is a way to play the Second Sonata. These are typical pieces of knowledge under special modes of presentation, but they are easily retained by someone with a sufficiently sharp memory, regardless of their coordination, balance, strength, and other bodily attributes.

Stanley and Williamson would likely try to respond by emphasizing that some ordinary indexical knowledge is lost simply by the change in circumstances of an individual. If the meeting starts now, and I know that, I cannot know tomorrow in the de se way that the meeting starts *now*. It would then be argued then that know-how of the sort at issue above is similar. But attend to the question of what has changed in the temporal case. The time and date have
changed, obviously. And in the case of someone who moves to New York and so no longer
knows in the de se way that this is Cambridge, what has changed is obviously the person’s
location. He is no longer positioned appropriately to be able to pick out Cambridge by thinking about it as one thinks about the location one occupies. The problem with individuals who
lose knowledge under familiar modes of presentation is thus typically that they are no longer
able to think about the relevant place or time in the appropriate way.

Let us now contrast the loss of the pianist and surfer’s know-how. Have those individuals
simply lost the ability to think about the relevant activities (or ways of performing them) in
the right way? This is hardly obvious, in contrast to the cases above. We can step back,
though, and ask what circumstantial changes the individuals have undergone. Their physical
and temporal locations are not what is relevant, since if their bodies had aged better, they
would still know how to hang ten or play the Second Sonata. And they might still be able
to point to an instance of hanging ten or playing the sonata and say, “that is a way to do
it.” The only thing they seem to have lost is the ability to put themselves in a position to
say, demonstrating their own action, “this is a way to do it”. But they have lost that because
they are unable to do the thing in question! Hence, it would seem that pursuing the analogy
between PMPs and familiar modes of presentation naturally leads one to place the real blame
for special losses of know-how on losses of ability. So the notion of a PMP plays no real role
— the data are accounted for more simply in the way suggested in section 4.1 and discussed
in section 5.4, by claiming that ‘S knows how to φ’ entails ‘S can φ’.

We have now seen ample reason to think that PMPs, if explicable in any useful way,
cannot be explicated as just one member of the general family of modes of presentation.
Know-how is not just knowledge-that under a certain mode of presentation, at least not in any
sense that can be explained on the conception of modes of presentation that is philosophically
familiar.
5 Between Intellectualism and anti-Intellectualism

The considerations set out in the preceding sections provide good reason to think that practical knowledge of how to swim is not just ordinary knowledge of a fact. In this section I want to take a closer look at what conclusions really follow from the data above, showing that we need make further distinctions among formulations of Intellectualism.

5.1 Strong Intellectualism and Weak Intellectualism

Let us begin by looking at our final regimentation of Intellectualism’s defining thesis, (25), and thinking about how the examples discussed above bear on that thesis.

We have considered several versions of ‘F’. On S&W’s view, $F(p)$ iff $p$ is a contextually relevant proposition of the form: $w$ is a way for $x$ to $\phi$. Alternatively, $p$ is a proposition of the form: $x$ could $\phi$ in way $w$, or: $x$ can $\phi$ in way $w$. I argued in section 4.1 that the latter is most defensible, so I will focus on that in what follows. This gives us the following instance of (25):

$$\square \forall x \ (x \text{ knows how to swim} \leftrightarrow \exists p \ (x \text{ knows } p \text{ & } p \text{ is a contextually relevant proposition stating, for some } w, \text{ that } x \text{ can swim in way } w)).$$

In section 4.3 we looked at examples of know-how that lack the characteristics of knowledge-that, thus providing counterexamples to (76)—the left-hand side of the biconditional is satisfied though the right-hand side is not. I now want to reconsider the import of those various examples. In my discussions of the examples, I relied on a variety of assumptions about what could be used as an identifying characteristic of knowledge-that. For instance: Knowledge-that requires belief, justification and Gettierizability, linguistic accessibility, availability of content for use in inference, and concept-possession. These are the sort of features typical of the knowledge present in cases philosophers have discussed under the heading “knowledge-that”, so it natural to think that if they are not possessed by know-how, then know-how is not
But we should think harder about which of these features are really characteristic of the kind of knowledge which Intellectualists want to use to explain know-how. Let us distinguish a number of notions of knowledge-that according to how many features discussed in sections 4.3 are tied into the notion. We can let *thinline propositional knowledge* simply be knowledge that has a proposition as a relatum, and let *thickly propositional knowledge* be knowledge of a sort with a set of substantive requirements like those discussed above. We might actually distinguish various thick notions of propositional knowledge. We might say that knowledge is thickly propositional iff it is knowledge that requires belief and justification — this would be a fairly minimal “thick” propositionality. A thicker notion might require some mixture of other conditions such as being Gettierizable, being linguistically accessible, and having its content available for use in reasoning. Various thick notions relate to each other in interesting ways according to how the various properties discussed above relate to each other, but for my purposes below the differences will not be very important. Let us simply note for the moment that the paradigm cases of knowledge that epistemologists have focussed on seem to represent a natural category of knowledge that is thick in some respects. For some subset S of the properties above, this sort of thickly propositional knowledge possesses the features in S. Call this *theoretical knowledge* and let us distinguish between a weak and a strong Intellectualist thesis.

(WI) All know-how is knowledge that has a proposition as a relatum.

(SI) All know-how is theoretical knowledge.

Corresponding to this distinction, we could make (25) more explicit in two ways, one by saying that x has knowledge with the proposition that p as a relatum, and one by saying that x has theoretical knowledge of the proposition that p.

Now the key observation I want to make is simple: (WI) might be true without (SI) being
true. Perhaps the reader will find this claim obvious now that it has been brought to attention, but I will provide three ways to help see the point.

First, to simply highlight the relevant portion of logical space: To my knowledge, no one has ever given an argument from (WI) to (SI), and it is extremely difficult to see how such an argument could go. For (WI) is a thesis about the relata of know-how, whereas (SI) is a thesis about the relation itself: the properties in question are properties of the relation, not properties of the proposition. How could one connect the two theses? Although it is very much up for debate what properties know-how has, everyone agrees that it is a kind of knowledge. So the relevant argument would have to show why strengthening this claim by adding that know-how has a proposition as relatum would bring along all the properties of theoretical knowledge. I simply do not see how this could go, or why the argument in this case would not carry over to other propositional mental states. We take pretending that p to be a propositional mental state, but this obviously does nothing to show that pretending that p requires belief that p or good reason to believe that p. I take it that a non-theoretical sort of knowledge is conceivable, 19 so why is such a conception incompatible with a proposition getting added to the picture?

Second, it is not hard to imagine a specific example of non-theoretical propositional knowledge. Suppose that our interactions with physical objects and beliefs about the behaviors of those objects are guided by tacit knowledge of physical laws in the following sense. The laws are represented implicitly in certain cognitive modules that are used to, e.g., allow us to catch a baseball. We can tell approximately where projectiles will land, although not many of us have any explicit knowledge about the laws that govern the motion of projectiles. The relevant information is stored in sub-personal states that are independent of conceptual resources and that are isolated from certain kinds of executive functioning — e.g. you cannot state the laws that govern projectiles or apply your tacit knowledge of the laws in conscious inference. In an everyday sense, you might have no reason to believe the relevant laws, and

19 For two reasons: If it were not, the argument for Intellectualism would be much easier than it is — anti-Intellectualism would not have seemed tempting in the first place; and second, we already countenance one form of non-theoretical knowledge, albeit one quite different from know-how: Smith knows Jones.
you might even disbelieve them. Nevertheless, your cognitive system carries the information
that projectiles move in such-and-such way — it carries that propositional content. 20

I have a third, more abstract, reason to doubt that any argument for (SI) can be derived
from (WI). The thought relies on a general view about what the role of abstract objects is in
our characterizations of each other’s mental states. How it is that we can capture some interes-
ting facts about people’s minds by attributing to them certain relations to propositions? We
are physical objects with cognitive systems that help us negotiate our way through a phys-
cical world. How do some abstract entities, be they ordered n-tuples, functions from worlds
to truth-values, or Fregean senses, play any role in that story? A familiar answer is that the
semantic relations among propositions are mirrored by syntactic relations among the objects
that play causal roles in our behavior — symbols in a mental system of representation. The
brain operates on mental symbols in processes like inference, belief change, and linguistic
interpretation, and operates according to principles defined on the syntax of these symbols
(like the rules of inference of a formal system), but strings of these symbols can be mapped
to propositions which stand to one another in corresponding relations (e.g. entailment). Thus
propositions can be used to index the objects that really do the causal work in our lives.

This line of thought points to a more general perspective on relations to propositions. So
long as the members of a certain class of possible mental states can be put in some systematic
correspondence with propositions, the latter can be used to discuss the former. Take, for
instance, abilities. For any action of φing by an individual S, we could map S’s ability to φ
onto the proposition that S φs, and instead of saying that S is able to φ, we could say that
S “ables that he φs”. If we had this linguistic convention, we might note that “abling” is an
attitude toward a proposition, but of course, by hypothesis, we would be talking about the
same thing we actually talk about with ability attributions. No strong Intellectualist view of
abilities results from the possibility of such a linguistic practice, and I see no reason to think
the case would be different with a practice of using propositions in our attributions of know-

20See Fodor (1968) for an account of abilities and know-how as a kind of tacit knowledge.
how. Perhaps in speaking English we do use propositions to index states of know-how as well as states of theoretical knowledge, but it hardly follows that know-how is a kind of theoretical knowledge.

The point I am trying to make is inspired by discussions of numerical relations by Paul Churchland (1979: 100–107), Robert Stalnaker (1987), and Robert Matthews (1994; 2002). These authors ask us to compare the relations between people and propositions to the relations between objects and units in claims like ‘S has a mass of 150 pounds’. The semantic value of ‘150 pounds’ is a certain abstract object, so it looks like having mass is standing in a relation to an abstract object. But how can abstract objects have any role to play in explanations of physical bodies traveling through space, colliding with each other, etc.? Plausibly, natural language exploits the fact that the class of mass properties has a certain structure, a structure mirrored by a numerical scale, which allows us to use numerals to specify which property out of the class an individual has. The answer I am suggesting to the question about the role of propositions takes an analogous line: we use them, or sentential complements that denote them, to help us pick out a mental state that an individual is in. What constraints does this practice put on the natures of the states being indexed by propositions? If our use of the ‘knows how’ locution is an instance of using propositions to index mental states, what does that tell us about know-how? It appears to tell us nothing about the issues discussed in Sections 1 and 4. It does not tell us whether know-how requires belief or justification, it does not tell us whether know-how can play a role in inference, whether it requires possession of certain concepts, and so on.

Now, despite all this, someone might try to produce an argument that (WI) entails (SI), or at least entails an (SI)-like thesis in which the criteria for theoretical knowledge are restricted to a few key items like belief and justification. “Look, suppose knowing how to $\phi$ is knowing some proposition, say the proposition that $p$. So knowing how to $\phi$ is knowing that $p$. But surely if $S$ knows that $p$, then $S$ believes that $p$, and is justified in that belief. So know-how requires belief and justification.” But why accept the argument’s premises? If it
seems plausible, that is only because we rarely (if it is even possible) attribute practical know-how by using ‘knows that’, and our usual uses of the latter are uses to describe subjects who have knowledge-that of the familiar sort that philosophers have traditionally focussed on. In arguing from (WI) to (SI) one cannot simply assume that the traditional sort of knowledge-that is the only sort there is. Indeed, one might just as well argue in the opposite direction. Suppose that initially one has reason to think that practical know-how lacks various requirements that we normally associate with knowledge-that, including belief and justification. And now suppose one is presented with some demonstration that all know-how is a relation to a proposition. One now has two options. One can change one’s view, concluding that it was a mistake to think that practical know-how did not require belief and justification, since after all, any knowledge with a proposition as a relatum requires belief and justification. Or one can maintain one’s view, concluding that belief and justification are inessential to propositional knowledge after all, and are only features of the kind of propositional knowledge possessed in the cases we normally focus on under the heading “knowledge-that” — theoretical knowledge. The challenge for the objector is to provide an argument for the former response — to my knowledge, none has ever been given. Independent of substantial further argument, (WI) should not be taken to entail (SI).

While the distinction between the two theses has not so far been made in the literature, doing so helps us avoid significant confusion. For instance, S&W expend effort defending their view from the objection that know-how cannot be Gettierized. But that is only an objection to (SI). And the semantic precedents for a propositional analysis of ‘knows how to φ’ that S&W appeal to in support of their view are really only precedents for treating know-how in accord with (WI). S&W seem to have either conflated (WI) and (SI) or ignored the need to provide an argument from the former to the latter. They do, however, make one relevant comment:

If the special subclass of knowing-that which we call ‘knowing-how’ is too dissimilar from other kinds of knowing-that, then one might suspect that we have
just recreated the traditional distinction between knowing-how and knowing-that, but in other terms. So it must be that, on our analysis, knowing-how possesses the characteristic features of other kinds of knowing-that. (Stanley and Williamson 2001: 434)

There is something right and something wrong with this claim. On one hand, S&W are being too concessive: they explicitly aim to establish that know-how is propositional, and it is irrelevant to whether they accomplish their aim that they make know-how a rather distinctive kind of propositional knowledge. So what is wrong with their worry is that (WI) really commits them to very little resemblance between know-how and other propositional knowledge, and defense is unnecessary. On the other hand, S&W seem to be feeling the force of the thought that what has been at stake in the debate is whether practical know-how has the properties traditionally thought to be characteristic of propositional knowledge. So what is right about their worry is that the thesis of Intellectualism has probably often been intended to be something stronger than (WI), namely (SI), and if their view leaves know-how very dissimilar from knowledge-that as standardly conceived, then they have indeed failed to establish that conclusion.

Some of their critics have made the same error of failing to distinguish two theses that the Intellectualist could have in mind. Wallis is an obvious example — at numerous points he writes as if he is arguing against the thesis that know-how is propositional, but he at no point offers an argument that know-how does not have a proposition as a relatum. He only argues that the mental state itself lacks various properties possessed by ordinary cases of ‘S knows that p’. Another example is Schiffer (2002), who offers criticisms that apply to (SI), but offers no argument that the falsity of (SI) entails the falsity of (WI). These authors are not alone — perusal of the literature shows a general lack of arguments for connecting know-how’s propositionality to its possession of various features of theoretical knowledge.

The upshot of the distinction for our observations in section 4.3 is clear. The examples there show that (SI) is false, but do not thereby show that (WI) is false. All know-how may
have propositional content despite practical know-how lacking the properties of theoretical knowledge.

5.2 Practical knowledge in English

Recall now our conclusions about the argument for Intellectualism in section 2. The argument set out to establish the propositionality of know-how by showing that it followed from a general theory of the syntax and semantics of knowledge-wh. Our central worry was that the argument presupposed that there was no good reason from outside contemporary syntactic theory to think that know-how was special. We have gone on to show that some know-how is special, but we have also just seen that the respects in which it is special do not show that it does not have propositional content. That means that we have not found anything inconsistent with treating all know-how attributions semantically as follows: We take 'how to φ' to denote a set of propositions and take 'knows' to have its usual role of relating an individual to that set iff she stands in a relation of knowledge to a proposition in that set.

But then does 'know' not semantically express a special kind of propositional knowledge in its use in know-how attributions, as opposed to its uses in other attributions of knowledge-wh? Note that nothing we have said so far addresses this question. We have said that some know-how is a special kind of knowledge, and we have said that some knowledge with propositional content is independent of belief, justification, and so on. But we could take either of two positions now: We could hold that the special status of practical know-how is reflected in a linguistic ambiguity in propositional uses of 'knows', or we could hold that there is no such ambiguity. I think both positions are defensible, though I will defend an ambiguity. Before doing so, it is worth explaining the other view for a moment.

A non-ambiguity view could be spelled out in two ways. First, one could hold that 'knows' has a thin semantics that does not entail belief, justification, and so on, though it is part of the nature of theoretical knowledge that entails these things. The explanation for why 'S knows that p' seems to entail that S believes p and is justified in believing p would be that
such sentences are conventionally used when the subject possesses theoretical knowledge. Second, one could hold that ‘knows’ has a thick semantics that entails belief, justification, and so on, though there is a convention allowing ‘S knows how to $\phi$’ to be used when a subject has non-theoretical knowledge. The conventions appealed to in these accounts would have to be motivated, but I suspect this could be done with some ingenuity. However, I think the preponderance of evidence points toward an ambiguity in ‘knows’, so this is the strategy I will now pursue.\(^{21}\)

My view is that on one interpretation of ‘S knows how to $\phi$’, ‘knows’ expresses a kind of non-theoretical knowledge with the characteristics discussed in section 4.3. On other uses of ‘knows’ in which it is complemented by a that-clause or an embedded question, it expresses theoretical knowledge. In section 3.5 we discussed the conjunction-reduction test for ambiguity, and I now want to return to that issue. We concluded that when the test results in an anomalous sentence, we have good evidence for an ambiguity, but when the test results in an acceptable sentence, we have somewhat shaky evidence against an ambiguity. As we discussed, S&W use the acceptability of sentences like (33) to argue against an ambiguity in ‘knows’. But when we look at the data more closely, we find that the test suggests the opposite.

Recall that in section 3.9 we noted that ‘S learned to $\phi$’ does not mean the same as ‘S learned how to $\phi$’, though on at least one interpretation of the latter, it is entailed by the former. I suggested that ‘learned to’ provides a parallel in English for special know-how locutions in other languages such as French, in which know-how is attributed with a knowledge-verb, ‘savoir’, complemented by an infinitive rather than an embedded question. I now want to use these infinitive-complemented verbs to support an ambiguity in ‘S knows how to $\phi$’. Consider the following:

(77) a. *John learned that swimming is fun and to do it.

\(^{21}\)For an example of another philosopher who explicitly defends an ambiguity in ‘knows’ see Rosefeldt (2004).
b. Mary learned about knitting and to knit.

(c. Bill learned why he should exercise and to play tennis.

This confirms that there are multiple interpretations of ‘learns’. Now, we should expect a distinction among kinds of knowing if there is a distinction among kinds of learning. My view accommodates this point. Since there is no reading of ‘John knows to swim’ (with no complementizer) corresponding to the non-deontic interpretation of ‘John learned to swim’, it seems that in English, the semantic slack is taken up by ‘knows how to’.

And while conjunction-reduction does not directly reveal a special interpretation of ‘knows how to ϕ’, there is another way in which it provides indirect support. If there are two sorts of uses of ‘knows’ which are translated by semantically distinct locutions, then ‘knows’ itself has semantically distinct interpretations. For since translation is meaning-preserving, two uses of ‘knows’ cannot be translated by semantically distinct locution while being semantically equivalent to each other. And the conjunction-reduction test points to an ambiguity in the French verb ‘savoir’ that translates ‘knows’.

(78) a. *Elle sait nager et que Damien nages.
She knows to-swim and that Damien swims.
She knows how to swim and that Damien swims.

b. *Elle sait que Damien nages et nager.
She knows that Damien swims and to-swim.
She knows how to swim and that Damien swims.

Thus French provides evidence that the English ‘knows how to’ conceals two interpretations. This conclusion is reinforced even further by the observation in section 3.9 that in some languages like Russian, there is a verb used only to attribute know-how, while in no languages are there special verbs used only to attribute, e.g., knowledge-when. If Russian sometimes translates ‘knows’ with one verb and sometimes with another depending on whether know-how is being attributed, this indicates that ‘knows’ in English is actually expressing two different things.
Jason Stanley has claimed to explain the data from French, Russian, and similar languages while maintaining Intellectualism. He does not note the results of the conjunction-reduction test in those languages, so I cannot discuss his views on that issue, but he does offer some claims about how to interpret the relevant constructions. ‘Savoir faire’, he says, is not semantically distinct from ‘savoir comment faire’ — ‘comment’ (which translates ‘how’) is always syntactically present, but it is only optionally pronounced. Furthermore, in ‘John sait nager’, there is also a silent “free manner variable” (Stanley Forthcoming). To explain the difference in usage between ‘savoir faire’ and ‘savoir comment faire’, Stanley claims that there is a convention of attributing knowledge under a PMP when the complementizer is unpronounced, and of attributing knowledge under an ordinary mode of presentation when the complementizer is pronounced. I have already explained in sections 4.2 and 4.3 why PMPs do not provide an adequate way of accommodating the intuitions about English truth-conditions that seem to favor anti-Intellectualism, and the same points apply to intuitions about sentences of other languages. I will not rehearse those points, but it is worth drawing attention to another worrisome aspect of Stanley’s approach. In discussing the fact that Russian and some other languages have special verbs for know-how, not just special constructions involving the usual knowledge-that verb, he writes:

One might wonder why there are languages in which “know how + infinitive” is translated with a different word than the propositional knowledge verb, if it is analyzed in terms of it. It does not seem, for example, that there are languages in which “know who + infinitive” is translated with a different verb. But an alternative explanation is ready to hand. “How” is the only question word that is optionally pronounced in embedded question constructions across languages. The fact that some languages employ a different verb to translate “know how + infinitive” may simply be a reflection of this purely accidental grammatical fact about “how”. (Stanley Forthcoming)

There are two problems here. First, Stanley gives no explanation of why the option to
have a silent complementizer would result in use of a completely different lexical item for the verb that takes the complement in question. I can think of no reason that it would to offer on his behalf. And in English, the ‘that’ complementizer is optionally pronounced (e.g. in ‘John knows it’s raining’), but there is no special verb we use in place of ‘knows that’. Second, and more importantly, there is no explanation for why ‘how’ and its counterparts in other languages would be the only wh-complementizers in any language that were optionally pronounced. That would be a surprising and odd fact, and there is no motivation for the claim independent of Intellectualism. The only apparent reason Stanley thinks that ‘savoir faire’ has a silent complementizer and silent “free manner variable” is that he thinks it expresses ordinary knowledge-that. But why think that? There is at least prima facie reason not to, since ‘savoir faire’ is — again, at least prima facie — evidence that some know-how is linguistically singled out as special. Stanley needs to motivate his claims about Russian, French, and so on, and he cannot do so by running an argument parallel to the one in section 3.3. That argument essentially assumes that there are no reasons outside of standard syntactic and semantic theories of English for hypothesizing a special interpretation of ‘S knows how to ϕ’, and the parallel claim is prima facie false of the other languages in question. Nor can Stanley’s view of such languages simply be motivated by a desire to parallel attributions of know-how in English, since this would be question-begging: the cross-linguistic data is offered by the anti-Intellectualist as evidence that English and the other languages are similar, and that practical know-how is represented in both. I conclude that the data I have cited in favor of an ambiguity in English stand — Stanley’s alternative account of the data is unsatisfactory.

I now want to offer two other reasons to think that the special status of some know-how is reflected by an ambiguity in English. Here is a loose heuristic for detecting an ambiguity in a sentence-form \( s \): If a speaker asserts \( s \) and an interlocutor responds with reason to accept not-\( s \), then if the speaker can felicitously retort “That’s not what I meant”, then \( s \) is ambiguous. This test works for both structural ambiguity and lexical ambiguity.

(79) A: John Stamos has a lot of fans.
B: No, in fact no one likes him or anything he's ever done.
A: That's not what I meant. [. . . Stamos has a problem with hoarding household appliances.]

(80) A: Visiting relatives can be difficult.
B: I don't think so — I've always found my relatives to be quite congenial when they are visiting.
A: That's not what I meant. [. . . They're difficult to visit if they're far away, for instance.]

The same sort of dialogue is perfectly felicitous when it comes to know-how:

(81) A: John doesn't know how to swim.
B: Sure he does! John, come over here and explain how to swim.
A: That's not what I meant. [. . . John never learned to swim, he just learned a little about swimming.]

Of course, one can say 'That's not what I meant' when one intended to say something other than what one did say, when one was speaking metaphorically, or when one's main intent was to convey an implicature of the asserted sentence. But if there is no good reason to think something like that is going on in examples like the ones above, I think the test provides at least some evidence for ambiguities.

A related test is the following. If a speaker can felicitously assert a sentence of the form 'In one sense, s, but in another sense, not-s', then s is ambiguous. (Or in place of 'not-s', one might say 'that's not the case', or 'that's not true'.)

(82) a. In one sense, John has a lot of fans, but in another sense, he doesn't have a lot of fans.
b. In one sense, a boy kissed every girl, but in another sense, that's not true.
c. #In one sense, John owns a lot of household appliances, but in another sense, that’s not the case.

The same qualifications apply here, but the test prima facie suggests that know-how locutions are ambiguous. Suppose Bill is extremely weak and uncoordinated, and so has never learned to swim. But he is interested in swimming, and has read books about swimming technique. He could easily explain how to swim, and has given helpful instruction to others. The following is a perfectly apt characterization of his situation.

(83) In one sense, Bill knows how to swim, but in another sense, he doesn’t know how to swim.

I have now defended both the claim that there is a special, non-theoretical kind of know-how, and the claim that the distinction between this practical know-how and ordinary knowledge of facts is embodied in a linguistic ambiguity in ‘knows’. I have also shown how my view is compatible with the claim that all know-how has propositional content, so that it can be fairly characterized as both a kind of Intellectualism (preserving (WI)), and as a kind of anti-Intellectualism (rejecting (SI)). In the next section I want to further explain what the propositional content of know-how might be.

5.3 The content of practical knowledge

The Intellectualist’s observation that know-how locutions resemble other knowledge-wh attributions does not show that (SI) is true, but it does illustrate that the most straightforward semantic analysis of ‘S knows how to φ’ would treat it as true iff ‘knows’ related S to a proposition of a certain sort. I propose to accept this straightforward analysis, since doing so produces no conflict with the evidence about know-how surveyed above. What I want to do now is to look more closely at what the propositions are that are the contents of know-how. The central question, touched on in sections 3.1 and 4.1, is how we should interpret the
modality contributed by the infinitival construction in ‘how to φ’.

A widely accepted framework for the semantic analysis of modality is set out in influential work by Angelika Kratzer, especially her (1981) and (1991). The central idea is to treat all modal expressions as quantifiers over restricted sets of worlds. Modal expressions differ on three axes — their (quantificational) force, modal base, and ordering source. ‘Can’ and ‘must’ illustrate a difference in force. The former is used to say that in some accessible worlds, something obtains, while the latter is used to say that in all accessible worlds, something obtains. The notion of a modal base does the same work as the logician’s accessibility relations. Different uses of modal expressions involve different accessibility relations, i.e. the expressions quantify over different sets of worlds, i.e. they have different modal bases. This is illustrated by (84), taken from Kratzer (1991: 646):

(84)  

a. Hydrangeas can grow here.

b. Hydrangeas might be growing here.

(84-a) would be used to describe a place whose soil and climate could sustain the growth of Hydrangeas, whether or not they have ever grown there. (84-b) would never be used to describe a place known to be Hydrangea-free, even if the soil and climate are adequate. The modal in (84-b) quantifies over the set of worlds compatible with what is known (by some contextually relevant person or group, perhaps), while the modal in (84-a) quantifies over the set of worlds in which the relevant location matches the actual world in features like soil quality and climate. Kratzer captures this difference by saying that ‘can’ in (84-a) has a circumstantial modal base (more on these below), while ‘might’ in (84-b) has an epistemic modal base.

Ordering sources are sets of propositions that provide an ordering of the worlds in the modal base (the accessible worlds) according to how close they come to satisfying certain ideals or goals. A typical example would be provided by ‘You should go to business school’, asserted in a context in which the salient goal is to become a wealthy business executive.
Different worlds in the modal base do better or worse in satisfying that goal, and can be ordered accordingly. If you go to business school in all of the worlds that come closest to satisfying your goal of becoming a wealthy business executive, then the assertion is true. Personal goals are only one sort of ordering source. Others include bodies of law, codes of morality, and norms of rationality.

Some uses of modal expressions have an empty ordering source, for example (85) as used in a context in which John’s strength is being discussed.

(85) John can curl this dumbbell.

The sentence means that in some worlds matching ours in relevant circumstantial facts (such as the force of gravity, the mass of the dumbbell, and the condition of John’s muscles), John curls the dumbbell. Goals of John’s and other sorts of norms are unimportant here, and may vary throughout the modal base, so that (85) might be true even if in fact John hates curling dumbbells, and so does not do so in any nearby world. Note that on its most salient use, the sentence seems equivalent to ‘John is able to curl this dumbbell’. Indeed, Kratzer treats ability-locutions as just another sort of modal, discussing examples such as (86) (1981: 290).

(86) Nobody is able to run from Andechs to Aufhausen in ten minutes.

The worlds relevant to the truth of (86) are those that match the actual world in facts such as those concerning human physiology, the composition of the earth’s surface between Andechs and Aufhausen, and the distance between the two cities — ‘able’ is a modal with a circumstantial modal base. Kratzer observes that not only ‘able’, but “any modality expressed by the suffixes -ible or -able will likewise have a circumstantial modal base” (1991: 647). This is clear in sentences like ‘Pears are edible’ and ‘This violin is unplayable’, which clearly do not concern what is epistemically, metaphysically, or nomologically possible. They concern what is compatible with, among other things, human constitution and the constitution of pears or of the violin.
It is well worth noting that “The kind of facts we take into account for circumstantial modality are a rather slippery matter” (Kratzer 1981: 302), determined in a complex way by the context in which a modal expression is used. Kratzer provides a helpful illustration in discussing (87) (1981: 304).

(87) Ich kann nicht Posaune spielen.
I can not trombone play.

She writes:

I may mean that I don’t know how to play the trombone. I am sure that there is something in a person’s mind which becomes different when he or she starts learning how to play the trombone. A programme is filled in. And it is in view of this programme that it may be possible that I play the trombone.

On the other hand, she observes, the sentence may be used in a slightly different way. If I know how to play the trombone but have asthma, then I might use (87) to say “I am not able to play the trombone.” Further, external circumstances might interfere: “Imagine I am travelling by sea. The ship sinks and so does my trombone. I manage to get to a lonely island and sadly mumble [‘Ich kann nicht Posaune spielen’]”. Here, “I could play trombone in view of my head and my lungs, but the trombone is out of reach.”

Some modal expressions, then, are quite flexible, allowing in different contexts of use for different circumstantial facts to constrain the modal base. For a clear illustration in English, consider an example of Paul Snowdon’s (2003). Suppose that I have a safe in my home, but I am thousands of miles away. Snowdon claims that I am unable to open the safe. That seems right in a way, but when my friends call to ask “Are you able to open the safe at your house?” or more naturally, “Can you open the safe at your house?” I could reply in either of two ways: ”Yes, of course, why would I own a safe that I wasn’t able to open?” or “No, I’m thousands of miles away”. For the first response, imagine that my friends just want to know whether I have forgotten the combination, say, or whether the door of the safe has been
welded shut. For the second case, suppose my friends have left something in my safe and want me to retrieve it. Context affects whether or not 'I am able to open my safe' is true. A similar point applies to another of Snowdon’s examples. A chef may lack the flour to bake his trademark cake. Whether the lack of flour deprives him of his ability to bake such a cake depends on how our context constrains the modal base.

So on some uses of ‘able’ and ‘can’ (or similar verbs in other languages), the shipwrecked musician is still able to play (can play) trombone, the traveler is still able to open (can open) his safe, and the chef is still able to bake (can bake) his trademark cake. What seems to be happening interpretively in these cases is that certain factors “external” to the individual are being screened off from consideration. This phenomenon is in fact characteristic of some modal expressions, as Kratzer illustrates with examples from German. Imstande sein, usually translated as able, only concerns “strength of our body, character, or intellect” (1981: 304). One would never use it to say that one was unable to play trombone due to one’s trombone being at the bottom of the ocean. Citing unpublished work by Ferenc Kiefer, Kratzer also reports that in Old High German, können expressed only “intellectual capacities”, being later extended to encompass physical capacities.

So while ability-locutions across languages are context-sensitive expressions, some have the special function of restricting the modal base to circumstantial facts internal to an individual.22 In English, this function is served by general-purpose modals like ‘able’ and ‘can’. On some uses of the latter, the circumstances defining the modal base are internal facts — as in Kratzer’s examples, facts about an individual’s body, character, or intellect.

The distinction between internally and externally oriented modals, or between internal and external circumstances, has a close relative in the distinction between the ‘can’ of ability and the ‘can’ of opportunity (or between ability-able and opportunity-able). The latter distinctions are found in the linguistics literature, e.g. in Hackl (1998), who analyzes ability-locutions within Kratzer’s framework, but they are due to early discussions by J.L. Austin

22Kratzer tells us that there are also modals that only concern external circumstances, e.g. the circumstantial reading of -hat / -het in Hungarian.
and several others.23

We are tempted to say that ‘He can’ sometimes means just that he has the ability, with *nothing said* about opportunity, sometimes *just* that he has the chance, with nothing said about ability, sometimes however, that he really actually *fully can* here and now, having both ability and opportunity. (Austin 1956: 230)

But note that Austin’s comments must be taken with ‘ability’ interpreted in an internal way. For sometimes ‘is able to’ conveys that an individual has both what it takes internally and has a certain opportunity, as in the reading on which the shipwrecked trombonist is *not* able to play trombone. When Austin and Hackl use the term ‘ability’, they mean to draw our attention to the sense in which a shipwrecked trombonist has not lost her ability.

5.4 Practical knowledge and abilities

Now I want to apply the above observations about modality to help us understand ‘S knows how to φ’. My suggestion is that in the uses of the sentence to attribute practical knowledge, the infinitive contributes a circumstantial possibility modal whose base consists of facts internal to the subject, as Kratzer suggests about the German *imstande sein*.

What counts as *internal* and what as *external* to an individual? Even if we do not offer philosophical analyses of these notions, they are intuitive enough. If they are fuzzy on the edges and contextually shifty, that is only the more appropriate to the phenomena we are discussing. Consider a spectrum of cases in which there is no clear boundary between being able and unable: Take an individual, Nina, and ask in which of the following cases she might be able to play trumpet, or might know how to play trumpet. Case (a): The trumpet is in the other room. Case (b): There is no trumpet anywhere nearby. Case (c): There are no trumpets in existence (all have been destroyed), and no one who can build one. Case (d): Nina has a

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23See also Piñón (2003: 390), who, like Kratzer, finds expressions in languages other than English that distinguish among different uses of ‘able’ and ‘can’: “In Spanish, for example, if *poder* ‘be able to’ appears in the preterite tense (*pretérito*), it corresponds to opportunity *able*, and if it appears in the imperfect tense (*imperfecto*), it corresponds to ability *able*.”
hang-nail making it too painful to play trumpet. Case (e): Nina has a cast covering her entire right hand. Case (f): Nina has lost both her hands in an accident. Case (g): Nina has had a severe stroke, disrupting all of her bodily movements and coordination. Case (h): Nina is a brain in a vat.

In different contexts, different cases may seem to be possible cases in which Nina can (or is able to) play trumpet. My intuitions have it that Nina’s ability extends at most through case (e), but a modal more dedicated to internal factors than the English ‘able’ or ‘can’ could be expected to be more generous. I think the covert modality of the infinitive in ‘S knows how to ϕ’ plays just this function. So we might state the propositional content of S’s non-theoretical knowledge how to swim in something like the following way: S has the internal ability to swim. 24

Initial support for this hypothesis comes from its convergence with philosophical work and commonsense intuitions that are independent of the linguistic considerations canvassed above. From Ryle onward, many philosophers have found it a natural view, if not obvious, that know-how at least entails ability. And in discussing my work with non-philosophers, I have found it common for them to tacitly, or even explicitly, assume that if one knows how to do something, then one has the ability to do it. Furthermore, Katherine Hawley has, independent of the linguistic data, proposed that a criterion for possession of knowledge how to ϕ is that the subject successfully ϕ in certain nearby possible worlds. “To say that Sarah knows how to drive is to attribute success to Sarah under some but not all counterfactual circumstances” (2003: 20). 25 If my view is correct, we have an explanation of why such views have come naturally — know-how does entail an ability of a certain sort.

Another benefit of my view, previewed in section 4.1, is that it provides a simple way to explain why some knowledge about ϕ’ing does not suffice for know-how. Recall Stanley and Williamson’s example: S knows that that [demonstrating a passing bicycle-riding’s way

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24 For a quite different attempt to spell out an internal notion of ability, see (Lihoreau 2008).
25 In a somewhat similar vein, see Charles Wallis on the felicity of know-how attributions and the relative closeness of various possible worlds.
of riding] is a way for her to ride a bicycle, but she does not know how to ride a bicycle. S&W deal with such examples by invoking practical modes of presentation, already criticized above. Another way to deal with them would be to claim that ‘knows’ in ‘S knows how to φ’ expresses a kind of ability. I avoid the need for either such move and have no need to invoke any mysterious machinery. Know-how is simply a thinly propositional form of knowledge, not an ability, but it has a content that entails that the subject possesses the relevant ability. If S knows how to ride a bicycle, she must have the ability to do so. That is why knowing that that is a way to ride a bicycle does not suffice for know-how. Similarly, I may know that that is a way in which I could wiggle my ears (if I had the requisite muscle control, e.g.), but I do not know how to wiggle my ears because I do not know that that is a way in which I can, in the ability sense, wiggle them. I do not know that because it is false — I am not able to wiggle my ears in any way at all.

A third virtue of my view is that it is not threatened by standard counterexamples to the identification of know-how with ability. Readers familiar with the literature have no doubt been thinking about cases like the following:

A ski instructor may know how to perform a certain complex stunt, without being able to perform it herself. Similarly, a master pianist who loses both of her arms in a tragic car accident still knows how to play the piano. But she has lost her ability to do so. It follows that Ryle’s own positive account of knowledge-how is demonstrably false. (2001: 416)

The first thing to note is that the most these examples show is that there is one kind of know-how that can be possessed without the corresponding ability. But that is already a component of the view defended above, and has been evident since our preliminary discussions in section 2.1. It is no threat whatsoever to the view that there is also an interpretation of ‘Nina knows how to play piano’ on which it entails that Nina is able (on an internally-oriented use of ‘able’) to play piano.
Examples like those above would be more worrisome if it could be shown that the sort of know-how present in those cases is the very sort that anti-Intellectualists want to highlight. However, that does not seem to be true. Suppose that after the pianist’s accident, with her hands completely gone, I introduce you to her, saying “She knows how to play the piano really well!” This sort of remark would in ordinary contexts be used to attribute practical know-how. And note that in the context described, you would interpret my remark as some kind of cruel joke, not a perfectly sensible report of her expertise. Or suppose we are in a retirement home, chatting with a 100-year old man who is too weak to push his own wheelchair. The remark “He knows how to ski” would be quite infelicitous. Similarly if we are chatting with a war veteran who has lost both his legs.

The second thing to note about the putative counterexamples is that they ignore the fact that the sort of ability entailed by know-how is not what was discussed earlier as “opportunity-ability”. It is an internal ability, what is attributed by a modal that screens off from consideration circumstantial facts outside a subject. That is why there is no sense in which losing one’s trumpet results in one’s losing one’s trumpet-playing know-how. As noted above, the circumstances relevant to uses of a modal expression are a context-sensitive matter. Modals focussing on internal facts are no exception, so we should expect the internal facts relevant to know-how to be somewhat shifty. To the extent that in a certain context one thinks of a pianist’s hands merely as tools that she uses to exercise her ability and as objects that can be removed and replaced without alteration of the subject herself, an attribution of know-how will seem more felicitous. S&W’s piano-player is just a marginal variant of the following sort of case: Nina was born without hands, but thanks to the wonders of modern medicine and technology, she has been supplied with mechanical hands that plug into sockets on the ends of her wrists. Using these artificial hands, Nina has become quite proficient at piano-playing. Unfortunately, Nina’s hands have recently been lost. Now in a sense, Nina can still play piano, and this is why we can still say that Nina knows how to play piano.

The idea just defended converges with suggestions of Alva Noë, who takes a similar
approach to defend the claim that know-how entails ability. He maintains that S&W's ski instructor and pianist both retain their abilities, but are prevented from exercising them due to "the failure of a necessary enabling condition to be satisfied" (2005: 283). To warm us up, we are offered the example of a pianist who just does not have access to a piano. Such a pianist has not lost her ability, Noë says, since if only a certain enabling condition obtained, i.e. a nearby piano was available, she could play just fine. Losing one's arms is just a more severe analogue of losing one's piano. My view clarifies the notion of an enabling condition by means of the general theory of circumstantial modals. What is behind Noë's idea is the distinction between internal and external circumstances, a distinction that is part of a general and widely-accepted framework in linguistic semantics. His defense of a close connection between abilities and know-how is thus corroborated.

My account of know-how is now complete. I have set out the strongest case for Intellectualism and shown that it is lacking. By investigating a variety of cases of know-how and surveying cross-linguistic data, I have defended the commonsense and philosophically traditional view that know-how is not simply ordinary knowledge of facts. It is rather a form of knowledge that, while possessing propositional content, need not be justified or warranted, generally available to conscious executive functioning, or possessed of various other features characteristic of the traditional cases of knowledge-that. It is more akin to the tacit knowledge of physics with which baseball players unconsciously compute the trajectories of fly balls — knowledge that is not the kind the folk attribute when they say ‘S knows that p’, but that nonetheless is an information-carrying state. Thus Weak Intellectualism is true, though Strong Intellectualism is false. In the final section of this thesis, I will take an in-depth look at one important application of anti-Intellectualism. I will show that, contrary to what might initially be thought, Frank Jackson's Knowledge Argument against physicalism can be blocked so long as (SI) is false.
6 Physicalism and practical knowledge

A central application of anti-Intellectualism has been in providing a response to Frank Jackson’s Knowledge Argument against physicalism. I will set out a version of Jackson’s argument here, using its main features to remind the reader of the “ability response” pressed by authors including Nemirow (1980) and Lewis (1990) and to evaluate the importance of know-how for that response. I take the basic structure of the argument to be the following: 26

1. When she is still in the room, Mary knows all the fundamental physical facts.27

2. If Mary knows all the fundamental physical facts, then Mary is in a position to know all the facts entailed by the fundamental physical facts.

3. If Mary acquires knowledge when she leaves her room, she acquires knowledge of a fact.

4. When Mary leaves the room, she acquires knowledge that she had not been in a position to acquire while in the room.

5. So when Mary leaves the room, she acquires knowledge of a fact that she had not been in a position to acquire while in the room. [From (3) and (4)]

6. So Mary acquires knowledge of a fact that is not entailed by the fundamental physical facts. [From (5), (1) and (2)]

7. So there is a fact that is not entailed by the fundamental physical facts. [From (6)].

According to the view of Lewis and Nemirow, it is true that Mary gains some knowledge when she leaves her black and white room, but it is false that she gains knowledge of some fact. Rather, she gains some knowledge-how, which is simply a skill or ability, so that premise

26I follow Byrne (2006).
27Or better: all the fundamental physical facts related to color vision. I suppress this qualification for simplicity of exposition.
(3) is false. Mary gains the ability to visually imagine an experience of red, recognize redness, or something similar (I here ignore the question of what, exactly, the ability in question is supposed to be, since this is orthogonal to our main concerns). The fact that someone with complete knowledge of the fundamental physical facts might still lack certain abilities is, of course, no objection to physicalism, so Jackson’s argument fails to accomplish its aim.

It is natural to take Intellectualism to block this response to Jackson’s argument, since if know-how is knowledge of a fact, then if Mary acquires know-how, Mary acquires knowledge of a fact, allowing the reductio of physicalism to go through. Stanley and Williamson, for instance, press this line of argument. I want to set aside my own view about know-how for a moment and consider two responses to the worry that are helpfully discussed by Yuri Cath (2009a).

The first strategy is to pursue what Cath calls the “fallback response” of abandoning the claim that Mary acquires some know-how and simply retaining the claim that Mary acquires new abilities. The idea is that know-how per se is inessential to the ability hypothesis — it is, after all, the ability hypothesis. S&W provide two problems for this response and Cath adds his own, but I think none of the problems are convincing. Cath’s worry is that if the physicalist denies that Mary gains know-how, then the ability response “no longer speaks to our intuition that Mary learns something upon release and thereby gains knowledge. Being able to say that Mary learns how to do something, and thereby gains knowledge-how, seems to me to be a clearly essential feature of the ability hypothesis” (2009a: 141). This worry relies on the premise that for Mary to gain abilities is not sufficient for our being able to say that Mary learns something, and this is a quite dubious premise. Even if ability is not understood in terms of know-how, we commonly conceive of increasing one’s abilities (at sports or at solving a certain kind of problem, e.g.) as a kind of learning. And as Wallis would emphasize, this is not merely a feature of folk psychology: in cognitive science it is common to discuss such learning under the heading of the acquisition of “procedural knowledge” or “skill knowledge”.

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Perhaps Cath intends to highlight some more basic intuition: Even if gaining the relevant ability could be considered learning, gaining the ability would not amount to being enlightened about some aspect of seeing red things. Cath would then be arguing that the crucial premise (4) of the Knowledge Argument really rests on the intuition that Mary is so enlightened. But if this is the intuition that is supposed to block the ability response, it would seem to apply equally to the unmodified view that says that Mary gains some know-how when she leaves the room. For coming to know how to imagine red things seems to have the same status as gaining the ability to imagine red as far as being enlightened goes — if, independently of your view about Intellectualism, you doubt that becoming able to imagine red is gaining some enlightenment about what it is like to see red, then you probably have the same doubt about coming to know how to imagine red, in which case you have simply rejected the ability response from the start. Perhaps that is the right move to make, but it is independent of the question of whether Intellectualism is true, and I will therefore move on to other worries about the fallback version of the ability response.

I turn now to S&W’s worries for the fallback position. The first is directed at someone who thinks that there is no such thing as knowing how to imagine red — there is only being able to imagine red. I do not find this view plausible, but it is worth discussing S&W’s objection in any case. The problem is supposed to be that being able to imagine red is the ability to perform a certain intentional action, and that ability requires knowledge of how to imagine red, which (on their view) is knowledge that a certain way $w$ is a way for one to imagine red. They state: “We do find it very plausible that intentional actions are employments of knowledge-how” (2001: 442), but they do not provide an argument for their claim. If the claim is true perhaps there is a problem for the fallback position, but in the absence of a convincing argument, it is perfectly reasonable for the physicalist to hold the following position: “Since, as S&W have

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28I say “perhaps” because all intentional actions could be employments of knowledge-how without it being true that any intentional action of φing were an employment of knowledge how to φ. Just for illustration, one could hold that (a) φing is an employment of knowledge how to perform the various sub-tasks whose performance would together amount to φing, and (b) knowledge how to perform such sub-tasks does not entail knowledge how to φ. But S&W seem to have had the stronger claim in mind.
convinced me, knowing how to imagine red is ordinary knowledge of some proposition about ways to imagine red, being able to intentionally imagine red does not require knowledge of how to do it. For it is quite implausible that when we intentionally imagine red we need to apply our knowledge that such-and-such is a way to imagine red.”

S&W’s second worry applies only to someone who maintains that Mary knows how to imagine red while she is still in the room but that she acquires the ability to imagine red when she leaves. Their argument against this position is this: “If she knows how to imagine an experience of red, why is she unable to imagine such an experience?” (Stanley and Williamson 2001: 443) I must confess to finding the worry utterly baffling given the dialectic in which it is set. One of S&W’s main claims is that knowing how to do something does not entail being able to do it — we must distinguish know-how and ability. That is precisely the objection that they pose to Ryle’s view of know-how. I certainly agree that, on one interpretation of ‘know how’, someone can know how to do something without being able to do it, and I see no justification for S&W’s position. Why would mental abilities be different in principle from other sorts of abilities? Whatever the source of the gap between know-how and ability in one domain, why would there not be the same gap in the other?

Of course, S&W do not take a stand on what propositions one would know in knowing how to visually imagine an experience of a red thing, so perhaps they could argue that there is some special reason in this case that the usual gap between know-how and ability is inapplicable. But they have provided no such argument, nor any reason to think that such an argument could be given. So summing up so far, I think it is perfectly open for someone like Lewis or Nemirow to emphasize that the ability hypothesis is the ability hypothesis, and that the notion of know-how is dispensable for the purposes of responding to the Knowledge Argument. But there is another excellent defense of the ability hypothesis that is closely related to the one pursued by Cath. The response relies on my distinction between (WI) and (SI).

If we recall that (WI) allows that know-how might not be a sort of theoretical knowledge and might therefore lack various properties of knowledge—that as ordinarily conceived, we can
see that as far as (WI) goes, practical know-how might be incapable of interacting with other knowledge in processes like conscious reasoning. And in that case, Mary might simply be incapable of gaining practical know-how by inference from the fundamental physical facts, even if she could gain by inference some knowledge — theoretical knowledge — of the proposition that is the content of knowledge how to imagine an experience of a red thing. This response takes issue with the inference from (5), (1) and (2) to (6). Mary was not in a position to have the knowledge she later gained, but that was not because she was not in a position to know the proposition to which the knowledge she gained related her. Rather, she was not in a position to acquire the kind of knowledge of that proposition that she later acquired.

To put the point another way, what is important to using know-how to respond to the knowledge argument is the gap between knowledge of the fundamental physical facts and possession of practical know-how. The crucial thing to ask, then, is whether this gap would be closed by (WI). The answer is negative. On its own, know-how’s having propositional content entails nothing about whether it could be acquired by anyone who knew all the fundamental physical facts — whether it could be so acquired depends on the nature of the know-how relation itself, not simply on what sort of relata the knowledge has.

It may be unclear whether or why this is a version of the ability response rather than a version of the old fact / new mode response. But it may be a version of both — the difference between them is not so great as it seemed. (Here I am indebted to Cath’s discussion.) But the reason I think it fair to view the strategy just sketched as a way of showing that (WI) does not affect the ability response is that the strategy relies on exactly the point that gives the original ability response its force. The original ability response only has any plausibility because of a prior thought that knowing all the fundamental physical facts is not sufficient to provide one with the relevant know-how. If knowing all the facts about the brain and color vision were enough to give Mary knowledge of how to imagine red, then objecting to the third premise would be useless for the physicalist — the following premise could simply be added to the
argument:

(3*) If Mary knows all the fundamental physical facts about the brain and color vision, then Mary is in a position to know how to $\phi$.\(^{29}\)

This premise is implausible (which of course is exactly why the ability response has been assumed to get off the ground), but if one accepted it, it would not matter if one rejected (3), the premise that the ability response is usually taken to reject. For premise (3) could be replaced with a weaker premise to derive the anti-physicalist conclusion.

(4*) If Mary acquires knowledge when she leaves her room, she acquires knowledge of a fact or knowledge of how to $\phi$.

The revised argument would be as follows.

1*. When she is still in the room, Mary knows all the fundamental physical facts.

2*. If Mary knows all the fundamental physical facts, then Mary is in a position to know all the facts entailed by the fundamental physical facts.

3*. If Mary knows all the fundamental physical facts, then Mary is in a position to know how to $\phi$.

4*. If Mary acquires knowledge when she leaves her room, she acquires knowledge of a fact or knowledge of how to $\phi$.

5*. When Mary leaves the room, she acquires knowledge that she had not been in a position to acquire while in the room.

6*. So when Mary leaves the room, she does not acquire knowledge of how to $\phi$. [From (3*) and (5*)]  

\(^{29}\)Say, to know how to visually imagine an experience of seeing red. Substitute your favored bit of know-how if you think the ability response should rely on, say, knowledge of how to recognize red things.
7*. So when Mary leaves the room, she acquires knowledge of a fact that she had not been in a position to acquire while in the room. [From (4*), (5*) and (6*)]

8*. So Mary acquires knowledge of a fact that is not entailed by the fundamental physical facts. [From (7*), (1*) and (2*)]

9*. So there is a fact that is not entailed by the fundamental physical facts. [From (7*)].

Putting the argument this way shows that in the original version of the ability response, it is useful to reject the claim that Mary learns a fact when she leaves the room only if one tacitly relies on the rejection of (3*). And the rejection of (3*) is exactly what is preserved by the revised version of the ability response that I sketched just above: Mary is not in a position to know how to \( \phi \) because know-how is not the kind of knowledge that one is always in a position to acquire merely by knowing propositions that entail the relevant proposition about how to \( \phi \).

I mentioned above that this response was closely related to Cath’s own revised version of the ability response, and that it could be considered a version of the old-fact/new-mode response. This connects to S&W’s idea that know-how is knowledge of a proposition under a practical mode of presentation. Cath’s response takes issue with the Knowledge Argument at the same point as the response I have suggested, and indeed Cath appeals to S&W’s PMPs to illustrate one way to defend the claim that know-how cannot play the role in reasoning necessary for Mary to be in a position to gain it on the basis of knowing all the fundamental physical facts: Mary cannot come to know how to imagine an experience of red because knowing the fundamental physical facts about color vision does not suffice to allow one to acquire knowledge about color vision under a practical mode of presentation. While I find talk of practical modes of presentation unenlightening and unmotivated, Cath’s response to the knowledge argument seems to me well-motivated from within the perspective of S&W’s theory of know-how.
The final point I want to make about know-how and the knowledge argument is also the most straightforward, at least from the perspective of my own view about know-how. Everyone agrees that Mary learns some propositions when she leaves the black and white room. She learns that she has seen red, that she can imagine red, that she is able to recognize red, and so on. These propositions were all false before she left the room, so it is no threat to physicalism that she did not know them. My position is simply that for S to know how to φ (in the relevant sense of ‘know how’) is just for S to have non-theoretical, practical knowledge that S can φ in way w. If S cannot φ, then the proposition is false, and hence S does not know how to φ. So even though Mary learns a fact when she leaves the room, this is no threat to physicalism because the relevant fact did not obtain until she left the room — Mary could not imagine an experience of red while she is still in the room.

I have been focussing exclusively on one application of anti-Intellectualism, but the distinction between (WI) and (SI) is also relevant to another application worth mentioning. As S&W note, various authors have claimed that knowing a language is having know-how, not knowledge-that. Once we recognize that this claim could be intended as the claim that knowing a language is not having theoretical knowledge, we see that it may be distinct from the question of whether knowing a language is having knowledge with propositional content.

(WL) Knowledge of a language is knowledge that has a proposition as a relatum.

(SL) Knowledge of a language is theoretical knowledge.

Both theses are worth discussing, but (SL) seems to me a much more substantive and interesting claim, and I suspect that it is the claim that most authors have had in mind in debating the nature of linguistic knowledge. Dean Pettit (2002), for instance, argues that understanding a language cannot be understood as the possession of propositional knowledge, but it is clear that his conclusion is really that understanding a language cannot be understood as the possession of propositional knowledge of the usual sort — understanding a language does
not require justification or belief, for instance.\textsuperscript{30}

\textsuperscript{30}At least, this is the charitable interpretation of Pettit. If he intends to refute (WL), his arguments are not adequate.
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