

In support of anti-intellectualism

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Abstract Intellectualist theories attempt to assimilate know how to propositional knowledge and, in so doing, fail to properly explain the close relation know how bears to action. I develop here an anti-intellectualist theory that is warranted, I argue, because it best accounts for the difference between know how and mere “armchair knowledge.” Know how is a mental state characterized by a certain world-to-mind direction of fit (though it is non-motivational) and attendant functional role. It is essential of know how, but not propositional knowledge, that it makes possible performance errors and has the functional role of guiding action. The theory is attractive, in part, because it allows for propositional, non-propositional and perhaps even non-representational varieties of know how.

Keywords Know how · Propositional knowledge · Intellectualism · Direction of fit · Functional role · Performance errors

The recent literature on knowing how is dominated by intellectualism.¹ Most intellectualists subscribe to what is, frankly, a rather unintuitive view: to know how to do something is to *know that* it can or ought to be performed in a certain way. Resistance to intellectualism can be motivated by appeal to the essential link that know how bears to action, a link that is best captured within an anti-intellectualist model.

¹ See especially Stanley and Williamson (2001). References to other recent work are provided below.

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A theory of knowing how, whether intellectualist or anti-intellectualist, must respect the distinctions we ordinarily draw between those who know how to perform an action and those who merely have “armchair knowledge” about how the action is performed. Attending carefully to these distinctions reveals an important and, I believe, essential feature of know how. Knowing how, in contrast with mere “armchair knowledge,” has a world-to-mind “direction of fit” (similar to but importantly different from the world-to-mind direction of fit of motivational states). The central claim in the paper is that know how is exhaustively characterized by a certain *direction of fit* and attendant *functional role*.

1 Knowing how and armchair knowledge

The most famous discussion of knowing how is somewhat dated, occurring in chapter two of Gilbert Ryle’s *The Concept of Mind*. Recently, however, there has been a renewal of interest in the subject among philosophers. Even those who haven’t read the relevant philosophical literature are sure to have some grasp of the concept, mediated by a familiarity with the distinction between knowing how and knowing that. This is the distinction that marks the difference between an artist’s knowledge and an art critic’s, an athlete’s knowledge and an instructor’s. The one involves a fittingness for practical engagement with the world, the other a theoretical appreciation of that engagement.

One of the most important sources of evidence to which an adequate theory of know how must attend are the cases that provide us with our fundamental grasp of the concept. These cases evince a contrast between practical and theoretical knowers—between, on the one hand, individuals who genuinely know how to perform an action and, on the other, individuals who have “armchair knowledge” about how to perform the action, perhaps even to the extent of being able to verbally articulate precisely how the action is to be performed, while lacking know how. The following case will serve as an example of the phenomenon and I will advert to it later on in the essay.

Compare a professional hockey player with Harry. Harry is an expert about hockey who has never in his life put on a pair of skates. Harry knows that a forward should protect the puck with his skates, that a defenseman should always “take the body”, that a goalie should protect the “five-hole” on a breakaway, etc. But Harry, unlike a professional hockey player, does not know how to do any of these things. Not because he lacks fine-grained information about how the game is played. We are supposing that Harry possesses as much information about hockey as anyone alive. What Harry is missing is know how itself, not just the physical capacities that are necessary to turn know how into ability. Even if Harry suddenly acquired the ability to skate, he would not—at least not immediately—know how to protect the puck with his skates. He might do better than someone who has never heard of the game, but he would not be able to intelligently focus his efforts at puck-protection.

Mutatis mutandis for the other actions Harry has propositional knowledge about but doesn't know how to perform.²

Intellectualists and anti-intellectualists have varying things to say about Harry-type cases. Anti-intellectualists take the distinction between knowing how and knowing that at face value. Ryle (1946, 1949) is a classic anti-intellectualist and nearly all philosophical treatments of knowing how since the 1950s take their cue from Ryle.³ Ryle's target, against which he offers a range of objections, is the so-called "intellectualist legend," the idea "that the intelligent execution of an operation must embody two processes, one of doing and another of theorising" (1949, p. 32). For Ryle, knowing how is ability. To know how to play chess, for example, is to have the ability to make moves on a chessboard that are permitted by the rules of chess. On Hawley's (2003) updated version of Ryle's account, to know how is, roughly, to have the relevant ability in a class of potentially counterfactual circumstances. Thus, according to most anti-intellectualists, practical knowers differ from theoretical knowers by virtue of having an ability that theoretical knowers lack.⁴

Intellectualist positions on knowing how have been defended by a number of philosophers, most recently by Stanley (forthcoming), Bengson and Moffett (2007), Snowdon (2004) and Stanley and Williamson (2001).⁵ All of these philosophers agree that knowing how is a special kind of knowing that. As Stanley and Williamson put it, to know how to do X is to know that w is a way of doing X. To know how to boil an egg, for example, is to know that bringing some water to a boil, putting an egg in the water, and so on, is a way of boiling an egg. Because intellectualists do not think that knowing how and knowing that are distinct kinds of knowledge, they must attempt to account for cases like that involving Harry by maintaining that knowing how and armchair knowledge are different species of propositional knowledge. For example, according to Stanley and Williamson the practical and the theoretical knower both know the same Russellian proposition; the difference is that they apprehend the proposition under different "modes of presentation."⁶

In the next three sections of the essay (2–4), I develop an anti-intellectualist theory on which it is essential of know how that it is *non-motivationally directive*. I argue that this view is best able to account for the difference between knowing

² Harry, by the way, represents an analogue to Mary in Frank Jackson's knowledge argument (Jackson 1987). Mary knows everything there is to know in the science of color vision but doesn't have knowledge by acquaintance of the color red. Harry knows everything there is to know about how hockey is played but doesn't know how to play the game.

³ Michael Polanyi's work on "tacit knowledge" has also been influential in certain quarters (Polanyi 1962).

⁴ See also Pollock's (1987) anti-intellectualist view. My own view has, perhaps, more in common with Pollock's view than with Ryle's and Hawley's views.

⁵ Other intellectualist treatments of know how can be found in Katzoff (1984), Carr (1979, 1981), Hintikka (1975) and Brown (1970).

⁶ Stanley and Williamson are careful not to commit themselves to a Russellian account of propositions rather than, say, a Fregean account. Following them, I ignore alternative accounts of propositions in order to make their view more perspicuous.

how and mere armchair knowledge. The theory is non-reductive in an important sense. I do not attempt to identify know how either with ability or with some other folk-psychological state like belief or propositional knowledge. Instead, I provide a novel psychological characterization of know how that distinguishes it from belief states like propositional knowledge. Knowing how has (1) both a mind-to-world and a world-to-mind direction of fit and (2) the functional role of guiding action. In concession to the intellectualist, *some* doxastic states may fit this profile, but not in virtue of other properties of doxastic states, especially the property of having propositional content. Empirical investigation of certain cases of know how suggests, against intellectualism, that they are non-beliefs, failing to have one or another of the properties characteristic of belief. What unites all cases of know how are their directions of fit and functional role.

In the final two sections of the essay (5–6), I evaluate alternative accounts of know how that likewise attempt to capture the distinctions we ordinarily draw between practical and theoretical knowers, including Stanley and Williamson’s account and their appeal to modes of presentation. There is an attractive alternative anti-intellectualist account of know how that says what is distinctive about know how—what distinguishes it from mere armchair knowledge—is that it is uncodifiable or non-propositional. While this view may capture certain important instances of know how, I argue that it is plausible only because of its focus on a restricted class of instances. Sometimes know how is propositional and sometimes it isn’t. *What is distinctive about know how is its direction of fit and functional role rather than how or whether it encodes content.* My account of know how is attractive, I argue, because it allows for propositional, non-propositional and perhaps even non-representational varieties of know how.

2 Know how and directions of fit

Know how has its own unique psychology, different from that of propositional knowledge and belief. It is a “hybrid” state, having both directions of fit. *Not only should know how fit the world, but the world should also fit it.* In subsequent sections of the essay, I argue that this view offers the best explanation of the relevant data. In this section, however, I limit myself to a detailed explication of the view. First, by way of motivating the hybrid view, I provide examples of other representations that have both directions of fit, including those that are non-motivational and thus closely analogous to know how. Second, I characterize in detail the way in which mental states can have the world-to-mind direction of fit without being motivational.

Anscombe (1957) defines the two directions of fit as follows. A mental state or linguistic expression has the mind-to-world direction of fit, is “descriptive,” iff it should fit the world; it has the world-to-mind direction of fit, is “directive,” iff the world should fit it.⁷ An example of Anscombe’s nicely conveys the idea. Take a list

⁷ The terms I use to denote the two directions of fit, ‘descriptive’ and ‘directive,’ are taken from Millikan (1996).

of grocery items, which may be an inventory or a shopping list. As an inventory it is descriptive. What's on the list should match what's in the store. As a shopping list it is directive. What's in the shopping cart should match what's on the list. One reason the example is useful is that it highlights that direction of fit is way of characterizing force or attitude rather than content—force in the case of language, attitude in the case of mental states—since the content of the list is the same whether it is an inventory or a shopping list. Similarly, a belief and a desire may take the same proposition as their content, differing only in direction of fit, that is, differing only in attitude.

Some mental states and linguistic expressions admit of both directions of fit. Ruth Millikan offers several examples of representations like this, what she calls “pushmi-pullyu” representations (Millikan 1996; see also Searle 1979, pp. 18–20). Before I proceed to give examples of the phenomenon note first that there is no prima facie incoherence in the idea that a representation has both directions of fit. Given a functionalist account of attitude or force, for example, it may be that one and the same representation plays two (or more) functional roles.⁸

Intentions, according to Millikan, are both descriptive and directive. If someone intends P they both believe P will happen (perhaps with some probability) and desire P.⁹ Millikan suggests that representations of social norms also have a dual normative profile. Such representations are able to facilitate the coordination of social behavior by both representing that something is good, right, etc. and motivating action. Campbell (2007) has recently developed an account of moral judgment along these lines. According to Campbell, to judge an action morally wrong is (typically) to both believe it is wrong and experience a negative moral emotion toward it.

Let's turn now from mind to language. Millikan suggests that imperatives given in declarative form have both directions of fit. ‘We don't eat peas with our fingers’ and ‘You will report to the CO at 6 am sharp’ both describe how things are and elicit behavior in others by, Millikan says, imparting an intention to a hearer. Performative utterances, according to Millikan, also have both directions of fit. If someone says ‘The meeting is now adjourned’ or ‘This ship shall be called *The Queen Elizabeth*’, they are both describing how things are (e.g., that the meeting is over) and directing others to act so as to make it the case (e.g., to end the meeting).

The representations listed above are directive in a variety of different ways. Some are or express motivational states; some impart an intention to one's audience; some direct action. It may be natural for philosophers to suppose that direction of fit marks the distinction between cognitive and motivational states, between beliefs and desires. That is close but not quite right. Descriptive mental states are indeed beliefs (at least if propositionally encoded). But while directive states include desires, wants, inclinations and the like, not all directive states are motivational states. The clearest examples of representations that are “non-motivationally

⁸ Whether this is possible in any given case may turn on the specific content of the representations and/or whether the descriptive representation and directive representation have exactly the same content. I do not have the space to go into this in detail.

⁹ Even those who do not identify intentions with belief-desire complexes do appear to think intentions have both directions of fit, e.g., Davidson (1978), Harman (1986, p. 79).

directive” are found in language. *Hypothetical imperatives* are directive, though not in virtue of expressing motivational states, nor because they bear, in virtue of illocutionary conventions, some “downstream” relation to action-production (as, for example, categorical imperatives might).

Know how is a directive state but it is *not* a motivational state, like some of the examples above. Know how does not initiate behavior; it *guides* behavior. Reflecting on an analogous sentence that has the same directions of fit is a useful way of understanding what sort of directive state know how instantiates. Know how is analogous to “informationally-loaded hypothetical imperatives” of the following sort: ‘In order to walk smoothly, put one foot in front of the other landing first with the heel and then with the toe;’ ‘In order to open the drawer, pull the handle while lifting the safety latch;’ ‘In order to start the program, double-click on its icon’. All of these sentences are directive but they do not express motivational states; nor do they have the illocutionary function of producing action or intention.

Although informationally-loaded hypothetical imperatives are not themselves truth-apt, there is a truth-apt assertion communicated by these sentences. In the second sentence, above, the assertion communicated is ‘It is possible to open the drawer by pulling on the handle and lifting up the safety latch.’ Know how is likewise non-motivationally directive *and* descriptive. Now, this analogy is intended to be purely illustrative, that is, to convey what sort of hybrid mental state I think know how is. It still remains for me to argue (1) that know how has the properties of this mental state, and (2) that these properties distinguish know how from belief and propositional knowledge.

In order to mount an argument in support of the hybrid view of know how, we need a more precise characterization of the directive direction of fit and the functional roles associated with it. Since, as we have discovered, not all directive states are motivational, it is no longer entirely clear what it is to be mental state of a sort that the world should fit it. We have, by contrast, a far better idea of what the descriptive direction of fit amounts to, and in line with my intellectualist opponents I believe that know how is descriptive. Plausibly, knowing how to get somewhere involves, in part, having a descriptive representation of one’s environment.¹⁰

The normative property characteristic of directive mental states, that the world should fit them, manifests itself in two different ways, depending on whether or not the state is motivational. For descriptive states, *inaccuracy* constitutes a “descriptive failure”: the state should fit the world but it doesn’t. There is, for directive states, likewise the possibility of failure, here “directive failure”. The world should fit *motivational* directive states in that the intentionality of these states directs the agent who possesses them to act upon the world. Where the motivation is overriding, a *failure of the end to be satisfied* constitutes a directive failure. By contrast, the world should fit *non-motivational* directive states in that the intentionality of these states specifies certain ways of acting. Given an overriding desire to act *the specific way the agent acts should conform to the non-motivational*

¹⁰ I examine anti-representationalist accounts of know how of the sort that deny this claim in Sect. 6, below.

directive state.¹¹ Rather than unsatisfied ends it is *performance errors* that constitute directive failures for non-motivational directive states.

Some care is required in order to distinguish non-motivational directive states from motivational directive states. For non-motivational directive states like knowing how, it is performance errors (rather than unsatisfied ends) that constitute directive failures. There is, however, a complication to be added to this picture: a performance error requires the presence of a desire to act. My not successfully riding my bike even though I know how to ride it is no performance error if I don't want to ride it. Nevertheless, an unsatisfied end is neither necessary or sufficient for a directive failure qua performance error. Let me illustrate. Suppose I do have an overriding desire to ride my bike, I ride it as I know how, but I fall over through no fault of my own (say, because of a sudden gust of wind). In that case, I am not guilty of a performance error. So, an unsatisfied end is not sufficient for a directive failure of know how. Now, suppose one knows how to ride a bike but instead of turning the handlebars to the right when one is leaning too far to the right, one turns the handlebars to the left and falls down. In that case the world should fit one's know how but it doesn't. Not because one doesn't manage to stay on the bike as one wants, but because one does not act in the way one knows how to act. For suppose instead that when one turns the handlebars to the left (incorrectly) one somehow manages to stay upright. Since one's desire is satisfied there is no motivational directive failure, but we still have a performance error. So, an unsatisfied end is not necessary either. What all of this means is that although performance errors require the presence of a desire, the condition that is a directive failure of the desire—an unsatisfied end—is neither necessary or sufficient for a performance error. And so, we have, demonstrably, two different kinds of directive states.

I believe that direction of fit, though a normative concept, is to be cashed out in terms of functional role. Whether an attitude toward P is, for example, descriptive or directive is determined by its functional relations to perception, action and/or other attitudes. (My arguments below do not turn on this functionalist thesis.) So, what functional role is characteristic of directive mental states? A mental state is directive iff its functional role is to either produce or guide behavior. Beliefs may also guide behavior, but that is not their essential function. (More on this below.) If a directive mental state is non-motivational, it does not have the function of producing behavior. Nevertheless, it is directive in that it guides behavior; when accompanied by other mental states needed to initiate action, know how regulates action in an intelligent way. A motivational state has the function of producing behavior. An action-guiding state like knowing how has the function of shaping behavior. In short, a motivational directive state *pushes*, while a non-motivational directive state *guides*.

Table 1 represents a summary of the discussion above concerning the difference between motivational and non-motivational directive states.

¹¹ Perhaps, as an anonymous reviewer suggests, one should say that the subject must have an overriding desire to act *as she knows how to act*. I doubt that this is necessary. In most actions this more specific desire is not present. One should at least say that the subject must *not* have an overriding desire to act other than in the way she knows how to act. In what follows, I assume that this condition holds in the relevant cases.

Table 1 Types of directive failure and functional role characteristic of motivational and non-motivational directive states

	Directive states	
	Motivational	Non-motivational
Directive failure	End isn't satisfied	Performance error
Functional role	Moves/pushes	Guides/regulates

Knowing how has, I believe, the kinds of directive failure and functional role characteristic of non-motivational directive states. Necessarily, if someone knows how they are capable of committing performance errors and their mental state is action-guiding. In the next section, I provide arguments in support of this view. In the section after, I defend the view further and describe the relations that know how bears to propositional knowledge and ability, relations that others have mistaken for identity.

3 Know how as non-motivationally directive

Instead of motivating action, states like know how are supposed to guide it. But what about belief states like propositional knowledge? They appear to guide action too, paradigmatically, in combination with a desire in voluntary action. Why think then that know how is any different from belief? Answering that question is the main task of this section and the next. In this section, I argue that belief and know how are *normatively* as well as *functionally* distinct. There is a normative and functional gap between belief and action, one that does not obtain between know how and action. Know how, but not belief, is essentially non-motivationally directive; in other words, know how, but not belief, entails the possibility of performance errors and necessarily is action-guiding. Both of these claims are evidenced in the sorts of cases that, as I argued in Sect. 1, are fundamental to our understanding of know how, namely, cases that contrast an individual who knows how to perform an action with another who has armchair knowledge about how the action is performed but in whom proper know how is absent.

Compare again a professional hockey player with our armchair hockey expert, Harry. Harry has propositional knowledge about precisely how to perform various maneuvers on the ice, but does not know how to perform them. Cases like this provide evidence of two differences between know how and belief. First, it is not necessary that the world should change to fit beliefs. Performance that is incongruent with a belief about how to perform an action does not necessarily constitute a directive failure qua performance error. If someone knows how to protect the puck with her skates and has an overriding desire to protect the puck, her failing to do so in the way she knows how counts as a performance error. If Harry, by contrast, has the same overriding desire but fails to protect the puck with his skates, that doesn't count as a performance error. After all, competence is required in order to commit a performance error and Harry lacks the competence possessed by someone who knows how to play the game. Thus, when accompanied by the

appropriate motivation, know how does, while belief does not, entail the possibility of directive failure qua performance error.

It may appear as if know how fails to entail the possibility of performance errors in certain cases. Consider Gordie who, once a top notch hockey player, knows how to shoot a puck but lacks the ability because of a recent serious injury to his leg. Overcome with the desire to shoot a puck, Gordie attempts to do so but, sadly, falls over. Intuitively, this is not a performance error. It is not a mistake in the mental deployment of Gordie's puck-shooting competence. So, does this mean that know how, like belief, *does not* entail the possibility of performance errors? Not quite. Some failures to act successfully result from improper deployment of know how while other failures result from the absence of the physical capacities necessary to exercise know how. Given know how and given overriding motivation to act, when someone fails to act successfully by failing to properly deploy her know how she commits a performance error. When, instead, someone who knows how fails to act successfully because he lacks the physical capacities that along with know how are necessary for ability, he is not guilty of a performance error. More precisely, then, know how, unlike belief, entails the possibility of performance error when accompanied by (1) an overriding desire to act along with (2) the physical capacities necessary to translate know how into action.

Those friendly to intellectualism may be inclined to suggest at this point that both the professional hockey player and Harry have know how, and that the only relevant difference between them is that the hockey player possesses, while Harry lacks, the physical capacities necessary to exercise their shared know how. If Harry had these capacities he would be capable of committing performance errors. So, both know how and belief entail the possibility of performance errors under the same conditions, and one of these conditions is that the subject must have the physical capacities necessary to exercise know how. The problem with the suggestion is that it fails to take seriously the distinctions we ordinarily draw between those who genuinely know how and those with mere armchair knowledge. Mere armchair knowledge about how to play hockey is not limited to those who lack the physical strength and co-ordination needed to play the game. The difference between Harry and a professional hockey player is *cognitive* rather than merely physical. The intellectualists discussed in Sect. 5 do take these distinctions seriously and offer other accounts of the difference.

The first difference between know how and belief, detailed above, concerns their different directions of fit. The second difference between know how and belief is that know how is, while belief is not, essentially the sort of mental state that has the functional role of guiding action. Beliefs may, in combination with desire, guide action, but they are not irremediably bound to action in any essential way. Harry's belief, for example, cannot guide action, at least not in a way that is consonant with the content of the belief. That armchair knowledge about how to act cannot guide action is, I submit, precisely what makes such cases interesting. Harry might *accidentally* succeed in his efforts, but that is manifestly not an instance in which his mental states guide his action in a way that is fully sensitive to their content. A mental state counts as know how only if it can guide action in this way. However, a mental state can count as a belief even if it is incapable of providing the relevant

guidance, as with Harry. Put another way, action-guidingness is part of the identity conditions for know how but not for belief. Of course, on my view belief is likewise associated with a certain functional role, *but cases like that involving Harry illustrate that action-guidingness is not an essential functional role of belief*. For Harry's mental state cannot guide the relevant actions; yet, it still counts as a belief. Plausibly, what is essential of belief is that it can participate in theoretical and practical inferences with other mental states. Or perhaps beliefs are defined by a cluster of functional roles, including action-guidingness. In any case, action-guidingness is not by itself necessary, as Harry's case demonstrates. I would like to commit myself to as little as possible about what is the right functionalist account of belief. The lesson anyway is that know how does not consist in the mere descriptive accuracy sufficient for true belief; it requires a regulative mental capacity that Harry's propositional knowledge about how to play hockey lacks.

As I say, I do not want to commit myself to too much regarding how beliefs are to be characterized functionally. However, my claim that action-guidingness is part of the identity conditions for know how may seem to conflict with recent "assertion" accounts of belief (Kaplan 1996; Maher 1993).¹² Mark Kaplan argues that you believe that P if and only if "were your sole aim to assert the truth (as it pertains to P), and your only options were to assert that P, assert that $\sim P$, or make neither assertion, you would prefer to assert that P" (Kaplan 1996, p. 109). If something like Kaplan's view is right then it may be that belief *is* essentially action guiding: it guides the linguistic expression of its content. But Kaplan's view is consistent with my account, since I claim, minimally, only that having a belief about how to perform an action is not necessarily capable of guiding *that* action; I may admit (though I am not inclined to do so given the choice¹³) that it *is* necessarily capable of guiding linguistic expression of its content.

Harry and similar cases aside, there are other instances of belief that do seem to be non-motivationally directive. There are some beliefs capable of guiding action (in the relevant sense) and one might argue that these beliefs are also associated with performance errors. Consider Jerry, who believes that in order to accurately fire one of the shotguns he owns, one must aim slightly left of the target. Typically, Jerry uses this belief to guide his shooting. One day Jerry repeatedly fails to make the required correction. It is not that he has forgotten; he continually reminds himself to make the correction but, for whatever reason, when it comes to pulling the trigger he aims straight for the target rather than making the correction. (Perhaps he has gotten used to firing another gun that shoots straight.) Intuitively, Jerry is guilty of a performance error. Thus, it appears that some beliefs are non-motivationally directive. Given the requisite motivation and physical capacities, it is just in virtue of having a belief that Jerry smoothly fires his gun when he manages to, and just in virtue of having a belief that he commits performance errors when he

¹² Thanks to an anonymous reviewer for directing me to these accounts of belief.

¹³ One reason to take issue with the assertion account of belief is that it denies belief to non-linguistic animals and perhaps even human beings incapable of physically expressing the content of their mental states. The link between belief and utterance seems contingent rather than constitutive.

does not manage to. So, Jerry knows how to fire his gun accurately, just in virtue of his belief.

Is this a problem for my view? No. I have characterized know how as a mental state with a certain normative profile and functional role. Know how *can* be tokened or realized by states of belief, but it is not essential of know that it has an intellectual character. Other properties of belief, e.g., that it has propositional content, are incidental to its suitability for endowing subjects with know how. *Know how is not belief* because a belief about how to do something is neither sufficient or necessary for knowing how to do that thing. First, as I have been arguing at length, there are some beliefs about how to perform an activity that do not constitute know how. So, belief is not sufficient. Second, there are some kinds of know how that are not beliefs because they lack the other properties that are necessary for belief. So, belief is not necessary for know how either. This is the thrust of many persuasive anti-intellectualist treatments of know how. I discuss the relevant arguments in the next section (and again in Sect. 6). For now, note again that even though I admit that know how can be tokened by doxastic states, my proposal is that know how is defined by attitudinal properties rather than the sorts of sophisticated cognitive properties favored by intellectualists.

Let me recap. I have argued that know how, aside from being descriptive, is also essentially non-motivationally directive. That is, necessarily, if a mental state is an instance of know how, then (1) there is the possibility of performance errors and (2) the mental state is action-guiding. Non-beliefs may have these properties and insofar as beliefs have these properties, they have them only contingently. My account of know how in terms of direction of fit and functional role has relied on certain intuitions, namely, that Harry's failure to perform various maneuvers on the ice do not count as performance errors and that his beliefs cannot guide action. I think that these judgments are intuitive. However, I want also to offer a "burden of proof" challenge to those who remain unconvinced. Everyone in the debate must accept that there is an important difference between know how and mere armchair knowledge. Those who would like to resist my characterization of this difference—as concerning action-guidingness and the possibility of performance errors—owe a better characterization. My arguments in Sects. 5 and 6, below, show that characterizations so far offered by intellectualists and anti-intellectualists are deficient. Absent better characterizations, we have good reason to think the view on offer is correct.

In the course of arguing for my view, I have endorsed the thesis that the normative notion of direction of fit is to be cashed out in terms of functional role. The normative property of being non-motivationally directive *is* the psychological property of being action-guiding. The normative disparity and the psychological disparity between know how and belief are therefore two sides of the same coin. My arguments above do not rest on this thesis, however. Suppose one thinks that direction of fit and functional role are connected by some relation weaker than identity or entirely independent of one another. One may, nevertheless, accept the two arguments above by understanding the normative disparity between belief and know how as distinct from their functional disparity.

4 Knowing how, knowing that and ability

In this section I provide further support for my account by contrasting it with both intellectualist and certain rival anti-intellectualist accounts of know how. I argue that my account of know how better captures the relationship between, on the one hand, know how and propositional knowledge and, on the other, know how and ability. But, furthermore, I also explain why other theorists mistakenly identify know how with either propositional knowledge or ability.

First, consider the relation between knowing how and knowing that. There is a tight web of relationships connecting these two kinds of knowledge (so tight that, as I say, intellectualists have mistaken it for identity). For example, many instances of propositional knowledge are generated (perhaps constitutively) by species of intellectual know. I know how to interpret statistical data and by exercising this know how I acquire propositional knowledge about, say, the habits of the average American taxpayer. More pertinently, some instances of know how are tokened by propositional knowledge. This accounts for a key intuitive motivation in favor of intellectualism, namely, that we sometimes acquire know how by learning some important facts, e.g., facts about the rules of a game, about how to use a tool, about the causal relation between an action and one of our ends, etc. Nevertheless, as Harry-type cases demonstrate, propositional knowledge is not sufficient for knowing how. And thus my view also explains why sometimes learning facts does not suffice to give us the relevant know how. Reading a “how-to manual” is, as we all know, often not sufficient to acquire practical expertise.

The reason that know how is not identical with belief is that the direction of fit and functional role properties characteristic of know how do not necessitate other properties characteristic of belief. Inspection of many cases of know how suggests that some instances of know how are not beliefs. Most clearly, some paradigm instances of know how seem to be subdoxastic. Colloquially, it may be expressed as follows: often one knows how to do something “without knowing how one does it.” For example, I know how to solve a puzzle, put spin on a tennis serve, convince my friend to lend me some money, etc., but in all these instances my practical expertise outstrips my explicit understanding of what I do. I have only a dim notion of how I do these sorts of things. So, *first*, I cannot consciously entertain a proposition about how the actions are performed. In some cases, I am not even consciously aware *that* I know how. For example, part of what it takes to physically manipulate objects with one’s hands is to orient one’s hands in a way such that they fit the shape of the target object; but most people do not explicitly know that they do this. Thus, in some cases of know how one doesn’t even have a *demonstrative* conscious representation about how the actions are performed (contra to Stanley [forthcoming](#); Bengson and Moffet 2007, p. 52). *Second*, in these cases of know how the information I possess is not available for use in either theoretical or practical inference. In sum, because one’s know how is often consciously inaccessible and inferentially isolated, one may know how to do something without possessing a belief about how to do it.¹⁴

¹⁴ See Stich (1978) for articulation of these constraints on belief.

If intellectualism is to be even remotely plausible, proponents of the view must hold that propositional knowledge can be tokened by subdoxastic states. If so, the cases described immediately above are not counterexamples to the intellectualist thesis. Probably what is essential to intellectualism—what gives its proponents license to appropriate the label—is the admittedly vague idea that know how is realized by “fairly sophisticated” mental states. Perhaps, then, intellectualism is the view that knowing how is a representation with propositional content. In that case, that a subject lacks conscious access to the content of her know how and that the content is inferentially isolated is consistent with intellectualism. Still, since propositional knowledge is standardly understood as a kind of belief, the intellectualist claim that know how is a species of propositional knowledge is at least misleading. Lack of precision in formulating the view is probably due to intellectualists’ fixation on the language we use to ascribe know how and propositional knowledge rather than knowledge itself and the human mind (see, e.g., Stanley and Williamson 2001; Hintikka 1975; Brown 1970). To avoid confusion, it is probably best to understand intellectualism not as a thesis about the assimilation of knowing how to knowing that, but as the thesis that knowing how is a representation with propositional content. This is clearly what Stanley and Williamson have in mind. Notice, as a consequence, that even if it could be shown that know how is realized by structured representations, that would not be enough to vindicate intellectualism. Else the truth of intellectualism would be guaranteed by the truth of a globally computationalist theory of mind.¹⁵ But if the dispute between intellectualists and anti-intellectualists is to be a dispute of any importance, intellectualism demands of know how more sophistication than does bare computationalism.¹⁶

Suppose, then, that intellectualists may accept that some know how is subdoxastic without contradiction. The reason that knowing that is not *necessary* for knowing how is that mental states that lack propositional content can be non-motivationally directive. One important class of know how concerns actions that involve fine motor control. These actions appear to be guided by very basic psychological states and processes. Consider keeping balance on a bike, which is effected by automatic corrections to one’s center of balance guided by subliminal sensory input from the inner ears. Activities like this are guided by the cerebellum, a phylogenetically old part of the nervous system in charge of fine motor control, including the maintenance of balance. In order to intelligently guide behavior, the cerebellum represents in some way how the body is to be positioned. Plausibly, however, the cerebellum does not encode information propositionally. So, knowing how to keep balance on a bike does not consist in having a propositionally encoded

¹⁵ I owe this point to Shaun Nichols. Cf. Fodor (1968).

¹⁶ The intellectualism/anti-intellectualism debate may appear to find purchase outside of epistemology too, in linguistics and cognitive science. Chomsky’s account of linguistic competence is described as intellectualist (see, e.g., Chomsky 1980, p. 91). It would be rash, however, to assume that the debates are strictly analogous. All linguistic competence can’t be a matter of having a propositionally encoded belief, on pain of regress. Some basic linguistic competence must be non-propositional. Fodor (1968) claims to be an intellectualist but I suspect that his view is not relevantly similar to the intellectualists discussed here.

representation. Nevertheless, the relevant mental states are non-motivationally directive: they can guide action and they can be incorrectly deployed. When someone who knows how to keep balance on a bike fails to do so they are guilty of a performance error. (Further instances of knowing how that appear to be non-propositional will be described in Sect. 6.)

While my view is not intellectualist, I do share with intellectualists the view that know how is a mental state.¹⁷ In contrast with Ryle's and Hawley's anti-intellectualist views, I do not believe that know how is ability. Why should we think that know how is *not* ability? In the rest of this section I'll consider arguments for this conclusion offered by intellectualists and explain what I believe is the real basis for distinguishing know how from ability.

Some intellectualists claim that the identification of know how with ability is plainly false, since there are, uncontroversially, cases in which one has know how while lacking the corresponding ability (see, e.g., Bengson et al. 2009; Bengson and Moffett 2007; Snowdon 2004; Stanley and Williamson 2001). I know how to shoot pool, for example, even though my arm is in a cast and I am therefore unable to shoot pool. Even if this is a damning criticism of Ryle (and I am skeptical that Ryle was as unsophisticated as the objection supposes) various Rylean accounts of know how are immune from the objection. For Hawley, to know how is, roughly, to have the ability in a set of potentially counterfactual circumstances. In the case of my knowing how to shoot pool, Hawley would say, I must be able to shoot pool only in those circumstances in which my bones are intact.¹⁸ So, that a subject may know how to do something without having the ability to do it does not challenge the anti-intellectualist identification of know how with ability.

On my view, know how is not identical to ability, but it is a necessary condition on certain kinds of abilities. If someone knows how they have a certain *mental* property. Ability, in contrast, also depends on certain enabling conditions, often features of a subject's *body*, that are not requisite for know how.¹⁹ The difference between knowing how and ability can be understood as follows. Know how is "smart," while ability is "smart" *and* "dumb". Having the ability to ride a bike, for example, requires not just know how but also a sufficient degree of muscular development; however, having this "dumb" physical property is not a condition on knowing how.

Although I do not identify knowing how with ability, my view is able to countenance and explain the truth of Hawley's claim that there is a necessary link between knowing how, on the one hand, and having the ability under certain conditions, on the other. To know how is to have a necessary condition on having an

¹⁷ All "mental state theories" of know how—and not just intellectualism—must face Ryle's regress argument. Suppose that in deploying one's know how, one must activate a mental state. If activation of this mental state is an exercise of know how, then one must activate another mental state in order to exercise one's know how. And so on, ad infinitum. Stanley and Williamson argue, I believe correctly, that the way out of this regress is to deny that all *exercises* of know how are intelligent activities of the sort that we must know how to perform.

¹⁸ See also Noe (2005, pp. 282–283). Thanks to Ephraim Glick for helping me to see this point.

¹⁹ This is not to say that know how isn't embodied. I discuss the putative embodiment of know how in Sect. 6.

ability—the “smart” part—and so one will have the ability in certain potentially counterfactual conditions if and only if one knows how. But this is because ability is identical with knowing how plus certain physical capacities, not because knowing how is identical with having the ability under certain conditions.

5 Intellectualist alternatives

In the rest of the paper, I critically discuss alternative theories of know how. In this section, I evaluate two intellectualist treatments of the difference between practical knowers and theoretical knowers. In the next section, I turn to alternative anti-intellectualist accounts of know how that emphasize the ways in which know how is non-propositional or uncodifiable.

Know how, if I am right, differs from belief in virtue of normative and psychological properties that are essential to the former but not the latter. These properties mark the difference between practical knowledge and mere armchair knowledge—between artists and art critics, hockey players and armchair hockey experts, etc. Stanley and Williamson (2001) also attempt to mark the difference. But they argue that the difference is not between two kinds of knowledge (of course) but two *modes of presentation*. Both Harry and a professional hockey player have knowledge of the same (Russellian) propositions, but they apprehend these propositions under different modes of presentation. For Harry, the mode of presentation is descriptive, while for the hockey player the mode of presentation is “practical.” One feature of the “practical” mode of presentation, Stanley and Williamson say, is that it has links to action. So, we should expect that someone who knows how will be disposed to reliably perform the action she has propositional knowledge about. This, then, is what accounts for the difference between a professional hockey player and Harry.

Stanley and Williamson’s proposal has some merit, in part because it is plausible that the instantiation of certain semantic properties requires specific kinds of conditioning. For example, it may be that in order to have the concept of red one must first have experience of the color red. Analogously, in order to apprehend a proposition under the “practical” mode of presentation, it may be that one must have experience performing the relevant activity—experience of a sort that may endow one with the ability to perform the activity, thus offering a further explanation, within an intellectualist model, of the close link between know how and ability. The problem with this intellectualist alternative to my view is that it is unmotivated. We have no independent reason to believe in so-called practical modes of presentation, except that Stanley and Williamson need them to make their account defensible (Noe 2005, p. 287). Stanley and Williamson introduce the notion as a way of making sense of the following case. *I* know a way of riding a bicycle only in that I know it when I see it. *You* know a way of riding a bicycle by virtue of riding in that way yourself. Stanley and Williamson claim that the notion of a practical mode of presentation is needed to distinguish my knowledge and yours. I know a way to ride a bike under a demonstrative mode of presentation, while you know it under a practical mode of presentation. However, that claim depends on the

supposition that what both of have is propositional knowledge. Anti-intellectualists deny that this is the right way of understanding this case. In knowing that *that's* the way to ride a bike, I have, to be sure, some demonstrative representation of how to ride a bike, but anti-intellectualists contend that my ability to ride a bike it is not supported by a descriptive representation of the same proposition. So, the problem for Stanley and Williamson is this. The only means they have of demonstrating the existence of the practical mode of presentation is to appeal to descriptions of cases that are question-begging in the context of a dispute with anti-intellectualists. Therefore, they are unable to provide any *independent reason* to think that there is such a thing as the practical mode of presentation. I am, by contrast, in a better position than Stanley and Williamson. *For we do have independent reason to embrace the notion of being non-motivationally directive.* The notion aptly characterizes various other representations besides knowing how, as I argued in Sect. 2. Hypothetical imperatives, for example, are directive but they are not tied to motivation in the way that other linguistic expressions appear to be so tied.

Bengson and Moffett's (2007) more recent intellectualist account of know builds on Stanley and Williamson's. For these authors, to know how to perform an action is to know some proposition about how the action can be performed; however, a subject knows how only if she also has "reasonable conceptual mastery" over the concepts contained in the proposition, a mastery that is not required to simply possess the concepts. As Putnam (1975) and Burge (1979) have famously argued, one may possess certain concepts—e.g., the concepts of beech, elm, arthritis, etc.—while lacking full or accurate information about their content, while lacking conceptual mastery. Some of the relevant concepts contained in one's know how are, Bengson and Moffett say, "ability-based." (Never mind that some of them aren't.) To have reasonable conceptual mastery over the concept of addition, for example, entails having the ability to add. Thus, even an intellectualist can account for the essential tie between know how (qua know that) and action. Practical knowers have the requisite conceptual mastery while (merely) theoretical knowers do not, and conceptual mastery secures the necessary link to action.²⁰ Now, let's set aside the oddness of claiming that a professional hockey player has more *conceptual* mastery than does Harry. The major problem with Bengson and Moffett's view is that it is doubtful that there are any ability-based concepts. Having conceptual mastery over the concept of addition may entail *knowing how to add*, but it does not entail having the ability to add. Someone who gets very nervous whenever he is asked to give the sum of two integers may be unable to add while still having reasonable conceptual mastery over the concept of addition. At best, there are "know how-based" concepts—such that having mastery over them entails having the relevant know how—but obviously an intellectualist would not want to invoke know how-based concepts in their analysis. This objection points to a deeper problem in Bengson and Moffett's account. For them, know how requires a kind of understanding, namely, mastery over the relevant concepts. But, arguably, we can't

²⁰ Bengson and Moffett do not actually offer this argument as I have presented it. Their main concern lies elsewhere. I do think, however, the argument presents an interesting way of extending their view in order to account for the phenomena.

make sense of this kind of understanding without invoking know how (or the psychological properties with which I have characterized know how).

6 Anti-intellectualist alternatives

In this section, I assess other varieties of *anti-intellectualism*. My strategy has been to argue that know how and belief differ in virtue of normative and functional role features of those states. Other anti-intellectualists argue that know how is a mental state that has non-propositional content, or that know how isn't even representational. One of the most important challenges to intellectualism comes from recent work in embodied cognition (see, e.g., Noe 2005, p. 284, 2006).²¹ Work in this field suggests that a lot of our know consists not in the deployment of mental representations. Rather, we manage to negotiate environmental demands in virtue of features of our body. Sensorimotor loops, for example, allow us to respond quickly to parts of our environment without having to engage in costly information-processing.

Accounts of know how on which it is non-propositional or non-representational are potentially illuminating because many of the actions we know how to perform are not paradigm instances of conscious, voluntary action and are mediated by very basic cognitive mechanisms (e.g., keeping balance, physically manipulating objects with one's hands, etc.). Nevertheless, the problem with this kind of anti-intellectualism is that it privileges a certain class of know how. It can hardly be doubted that sometimes we exercise know how by engaging explicit representations of how an action is to be performed. We considered an example of this kind of know how in Sect. 4: Jerry knows how to fire his gun accurately by deploying a conscious representation of how to do so. Still, there is something important and revealing about the embodied understanding of know how. Fortunately, my view can accommodate that understanding. First, that cognition is embodied does not itself entail anti-representationalism. It may be that the body is itself part of the cognitive system and that representations extend beyond the brain (see Clark 1997). In that case, embodied know how may still be both descriptive and non-motivationally directive. Second, anti-representationalists may choose to adopt a version of my view on which know how is *only* non-motivationally directive (and not also descriptive). Supposing that know how is sometimes realized by non-representational, perhaps dynamical states, what makes these states apt are is that they entail the possibility of performance errors and are action-guiding, even though they lack content. Neither of these two properties are essentially representational.

Since I believe that my view is compatible with the motivations behind anti-intellectualist treatments of know how, I want to show in some detail how my account fits with cases that motivate a particular alternative anti-intellectualist account, namely, Paul Churchland's connectionist account of know how. Whereas intellectualists tend to focus on cases in which we exercise know how by deploying explicit representations of propositions, anti-intellectualists like Churchland focus

²¹ See also Varela (1999), who offers an extended discussion of embodied ethical know how.

on activities that, as he argues, seem to be supported by tacit representations that have non-propositional content. Again, what is definitive about know is its normative profile and functional role, not the way its content is encoded.

Churchland argues that much of our know how is far too complex to be encoded in a set of general rules (Churchland 1995, Chap. 6; see also his 1989 and 1998).²² Moral know how, for example, involves being sensitive to countless features of one's social environment in such a way as to produce a subtle variety of behavior. To know how to respond to others who are grieving, say, does not involve merely following the rule 'if someone is sad, comfort them.' Rather, the type of response that is called for is influenced by numerous different factors, such as who is grieving, what stage of grief they are in, what relationship you bear to them, and so on, many of which factors can not be articulated.

Churchland argues that connectionist accounts of cognition are better able than rules-and-representations accounts to accommodate the complexity of our know-how. In brief, to have a piece of know-how is to have one or more "prototypes," neurophysiological states that are activated by types of sensory inputs and appropriately connected to various motor outputs. A prototype is a pattern of neural activation (or, better, a pattern of *potential* neural activation). A number of input nodes are stimulated and activate one or more sets of intermediate nodes, which are themselves connected to several output nodes. Which outputs are activated by which inputs is determined by the weights of the various connections in the system; a period of training and/or innate developmental processes set the weights to appropriate levels. Prototypes are realized in these stored weights which serve to classify input signals into various types and produce as output certain motor commands. Know how, Churchland argues, is realized in these neural network states. (This neurobiological model is, as Churchland suggests, a throwback to an Aristotelian, virtue-based moral psychology/epistemology.)

Unlike beliefs, prototypes are understood, at least by some, as not always encoding information propositionally. For some connectionists, representations, instead of being discrete units with compositional structure, are instead distributed over a neural network; different representations are semantically related to one another not because they are composed of the same units but to the extent that they share some overlap across the entire system. Prototypes differ from beliefs in another way too. For, also unlike beliefs, *prototypes are plausibly understood as essentially having both directions of fit*. They are poised between stimulation and action in such a way as to be in a position to deploy information in the direct guidance of behavior.²³ If that is the right way of understanding the functional role of connectionist prototypes, then a connectionist approach to know how dovetails nicely with my own account.

For all that my account says, some know is propositionally encoded while some know how is non-propositional. When it concerns many simple, voluntary actions,

²² See Clark (2000) for criticism. Clark argues that the public symbols of natural language provide important "cognitive scaffolding" for the development of moral know how.

²³ I don't suppose we have any intuitive purchase on whether or not prototypes qua prototypes entail the possibility of performance errors.

know how is perhaps propositional, and sometimes tokened by belief. When it concerns either more complex actions or subpersonal activities, both of which are mediated by unconscious cognitive mechanisms, know is plausibly non-propositional or non-representational. It is, I contend, a unique advantage of my account that it subsumes a range of different kinds of know how.

7 Conclusion

Know how is both descriptive and non-motivationally directive. It is tied essentially to action in a way that propositional knowledge is not. Know how, but not propositional knowledge, entails the possibility of performance errors. To know how is to possess descriptive representations of the world, perhaps, but it also requires a connection with the structures in the mind responsible for guiding behavior. Whether or not a mental state has propositional content is irrelevant to its suitability for endowing an agent with the normatively evaluable capacity to guide her actions.

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