

KNOWLEDGE-HOW: LINGUISTIC AND PHILOSOPHICAL CONSIDERATIONS

Joshua Habgood-Coote

**A Thesis Submitted for the Degree of PhD
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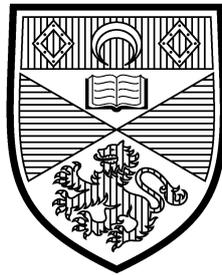
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Knowledge-How: Linguistic and Philosophical
Considerations

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University of
St Andrews

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at the
University of St Andrews

Department of Philosophy
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Abstract

This thesis concerns the nature of knowledge-how, in particular the question of how we ought to combine philosophical and linguistic considerations to understand what it is to know how to do something. Part 1 concerns the significance of linguistic evidence. In chapter 1, I consider the range of linguistic arguments that have been used in favour of the Intellectualist claim that knowledge-how is a species of propositional knowledge. Chapter 2 considers the idea that sentences of the form ‘S knows how to V’ involve a free relative complement, and the relation between this claim and the Objectualist claim that knowledge-how is a kind of objectual knowledge. Chapter 3 argues that Intellectualism about knowledge-how faces a problem of generality in accounting for the kinds of propositions that are known in knowledge-how, which is analogous to the generality problem for Reliabilism. Part 2 turns to philosophical considerations, offering an extended inquiry into the point of thinking and talking about knowledge-how. Chapter 4 considers why we should want to work with a concept of knowledge, isolating two hypotheses: i) that thinking and talking about knowledge-how helps us to pool skills, and ii) that thinking and talking about knowledge-how helps us to engage in responsible practices of co-operation. Chapter 5 criticises the former hypothesis by arguing against the suggestion that there is a knowledge-how norm on teaching. Chapter 6 offers an indirect argument for the latter hypothesis, arguing for a knowledge-how norm on intending. Part 3, which consists of chapter 7, offers a positive account of knowledge-how which takes into account both philosophical and linguistic considerations. According to what I will call the *Interrogative Capacity* view, knowing how to do something consists in a certain kind of ability to answer the question of how to do it.

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Katherine Hawley deserves special thanks for being the best that I could have hoped for in a supervisor. Thanks to Ruth for walking beside me, and to Christine and Mike for having my back.

Chapter 2 is forthcoming in *Episteme* as *Knowledge-How: Free Relatives and Interrogatives*, a version of chapter 5 is forthcoming in *Synthese* as *Knowing-how, Showing, and Epistemic Norms*, and chapter 6 is forthcoming in *Philosophical Studies* as *Knowledge-How is the Norm of Intention*.

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Introduction

When we consider questions in philosophy we often find ourselves answering two questions at the same time: a first-order question about some philosophical issue and a second-order methodological question about how to resolve this issue. To answer a question like *what are numbers?*¹ we would need to first ask a series of metaphilosophical questions. For starters: *what does it mean to ask 'what are numbers?'?* The recent debate about the nature of knowledge-how provides a good example of how first-order philosophical questions interact with methodological issues. This debate encompasses first-order, and methodological disputes. On the one hand, we have *Intellectualist* views of knowledge-how, which argue that knowledge-how is a species of propositional knowledge on the basis of primarily linguistic evidence. And on the other hand, we have *Anti-Intellectualist* views of knowledge-how, which argue that knowledge-how is *not* a species of propositional knowledge on the basis of primarily non-linguistic evidence.

This thesis investigates two questions: the first-order question *what is the correct account of knowledge-how?* and the methodological question *how ought we to balance linguistic and philosophical considerations in understanding the nature of knowledge-how?* On both questions, my approach is conciliatory. At the metaphilosophical level, I will be arguing for a framework that allows us to bring philosophical and linguistic considerations together in our understanding of knowledge-how. I advocate for a picture on which the relationship between linguistics and philosophy is a two way street: philosophical considerations can feed into our account of the best semantics for natural language sentences, and linguistic considerations constrain the accounts of phenomena which are picked out by sentences of natural language. And at the first-order, I will be arguing for a compromise position between the standard versions of Intellectualism and Anti-Intellectualism, according to which knowledge-how is both a kind of ability, and a relation to a question. According to

¹ I will use 'question' to pick out a metaphysical category – questions – and 'interrogative' to pick out a linguistic category – sentences and phrases in the interrogative mood. These should not be confused with the speech act of *asking* a question. I will use wh-phrases with single quotes to refer to interrogative phrases, and italics with question marks to refer to the questions that are expressed by interrogative phrases. On this convention the interrogative phrase 'what's for dinner?' expresses the question *what's for dinner?* I will occasionally use '*Wh-F?*' and '*Wh-F?*' as variables for questions and interrogative phrases.

what I will call the Interrogative Capacity view, knowing how to do something consists in a certain kind of ability to activate knowledge of the answers to a question.

I will address these questions from a number of different directions, but there are three central themes to this thesis.

The first theme is that the best — perhaps the only — way to engage with metaphilosophical questions is by doing a lot of first-order philosophy. When I started to think about the connection between knowledge-how and metaphilosophical issues, I thought that it would be possible to first resolve the metaphilosophical issues about the nature of philosophical inquiry, and with those issues safely resolved take on the first-order questions about the nature of knowledge-how equipped with the right philosophical tools.² Over time, I came to realise that it is rather difficult to get traction on the metaphilosophical questions without thinking through particular philosophical issues in considerable detail, meaning that making claims about philosophical methodology requires a correspondingly broad overview of first-order philosophy. My approach in this thesis will be to start with first-order philosophical questions that have metaphilosophical significance. Once I've made some progress on these first-order issues, I will try to draw out some of the metaphilosophical implications.

The second theme is that the knowledge-how debate has neglected epistemic questions about the nature of knowledge-how. Putting to one side the question of whether knowledge-how is a species of propositional knowledge I take it that knowledge-how is interesting *qua* species of knowledge (Hawley 2003: 19). One might have thought that we can only get straight on the epistemic properties of knowledge-how once we've settled the question of whether knowledge-how is a species of propositional knowledge. I think that this attitude is mistaken: there are a great many questions about the properties of knowledge-how that are orthogonal to the issue of whether it has a propositional or non-propositional object. For example, we can consider the question of why knowledge-how is a species of knowledge (Setiya, 2008, p. 407, 2012, pp. 304–5) independently of the question of what kind of knowledge it is. Part 2 of this thesis is an extended enquiry into the epistemological properties of knowledge-how, which — following (Craig 1990) —

² (Habgood-Coote, 2013).

considers what the point of having a concept of knowledge-how is and what different pictures of its point can tell us about the role of knowledge-how in the mental economy.

The third thought is that to the extent that we have an ordinary concept of knowledge-how, it is messy, contradictory, and context-sensitive in a way that makes it unsuitable for serious philosophical theorising. Consider the attitudes of ordinary speakers toward the relation between knowledge-how and ability. Almost without exception, when I describe my academic work to non-philosophers, they will make the suggestion that knowing how to do something is just being able to do that thing — or some related suggestion involving muscle memory, skill, or some kind of bodily knowledge. However, when we consider the relation between knowledge-how and ability more carefully, it becomes clear that there are many cases in which we pre-theoretically judge that it is possible to have knowledge-how without ability, or ability without knowledge-how. Our intuitions about the intension and extension of knowledge-how appear to be in conflict.

Another indication of the messiness of the concept of knowledge-how comes from cross-linguistic evidence concerning the grammatical constructions used to pick out this kind of knowledge. A brief survey shows that the translations for the English phrase 'S knows how to V'³ involve importantly different constructions. Here is a representative (but certainly not exhaustive) survey:

- (1) Ruth knows how to swim (English)
- (2) Ruth sait nager (French)
- (3) Ruth sabe nadar (Portuguese)
- (4) Рут умеет плавать (Rut umeyet plavat') (Russian)
- (5) 露丝會游泳 (lau6 si1 wui5 jau4 wing6) (Cantonese)
- (6) Ruth tietää miten uida/Ruth osaa uida (Finnish)
- (7) Ruth yüzmeyi biliyor (Turkish)
- (8) Ruth kann schwimmen (German)⁴
- (9) Ruth kan svømme (Danish)

³ Throughout 'S' will denote an agent, and 'V' an activity.

⁴ Stanley claims that German has no translation for 'S knows how to V', because it doesn't allow infinitives in embedded questions (Stanley, 2011b, p. 132). Ditter points out that having the same syntactic properties is an implausible test for adequate translation (Ditter, 2016, pp. 8–9).

(10) I Ruth kseri kolimbi (Modern Greek)

To ascribe knowledge-how English (1) employs the embedded question construction with the same verb used to ascribe propositional knowledge. Romance languages like French (2) and Portuguese (3) employ an infinitival construction with no question-word, but the same verb (Rumfitt, 2003, pp. 161–3). By contrast, Russian (4) employs different verbs to pick out knowledge-how and knowledge-that and the verb for practical knowledge (*umejet/ymeet*) can only take an infinitival complement with no question-word (Rumfitt, 2003, pp. 164–5; Ditter, 2016, pp. 5–6). We find the same pattern in Cantonese (5), which employs no question word in the knowledge-how construction, and uses different verbs — 會 (*wui5*) and 認識 (*jing6 sik1*) for know-how and know-that, which correspond to *connaître* and *savoir* in French (Stanley, 2011c, p. 233). Interestingly Finnish (6) allows both the embedded question construction and the infinitival construction, but uses different verbs for each construction (*tietää/osaa*) (Stanley, 2011b, p. 137). Turkish (7) uses the propositional knowledge verb (*bilmek*), but combines this with a finite verb with no question-word (Ditter, 2016, pp. 6–7). German (8) (Ditter, 2016, p. 7) and Danish (9) uses a construction for ascribing knowledge-how which involves a verb which can also mean ‘can’ (*können* and *kan* respectively). Modern Greek employs various constructions for ascribing knowledge-how, including a construction involving a noun phrase with no question word which literally means ‘Ruth knows swimming’ (10) (Douskos, 2013, p. 2329) (for examples of this construction in English, see (Glick, 2012, pp. 125–6)). I don’t want to draw any very grand conclusions out of this lightning survey, except to point out that from a linguistic point of view, things are just really messy.

Rather than assuming that we have a clear concept of knowledge-how already in our language, I will make the case that our ordinary concept of knowledge-how, and our ordinary language constructions for picking out knowledge-how are in important ways flawed and unsuitable for systematic philosophical theorising. The account of knowledge how which I develop in chapters 6 and 7 can be understood as an ameliorative proposal giving us a way to *change* our concept of knowledge-how in order to facilitate clearer thinking and talking about practical knowledge.⁵

⁵ On the ameliorative project, see (Haslanger, 1999, 2000, 2006) and on conceptual engineering, see (Cappelen, forthcoming; Burgess & Plunkett, 2013a, 2013b).

Looking forward, here's a plan of the structure of this thesis.

Part 1 considers a range of linguistic arguments for various views about the nature of knowledge-how. The methodological line will be conciliatory: I will argue that linguistic evidence concerning the semantics of 'knows how' ascriptions is relevant for philosophical debates about the nature of knowledge-how, but that we cannot read a complete account of knowledge-how off of the semantics offered by contemporary linguistics, and that linguistic considerations do not necessarily overrule philosophical considerations. Chapter 1 sets out the context of this debate, focusing on the linguistic case for Intellectualism. I distinguish a number of versions of the linguistic argument for Intellectualism, and argue that the interesting role of the linguistic evidence in this debate is in telling us which accounts of the nature of knowledge-how can be semantically implemented. Chapter 2 applies the idea of semantic implementability to Objectualist accounts of knowledge-how (Bengson & Moffett, 2011a) showing that these accounts are not semantically implementable because a free relative semantics for 'S knows how to V' is not linguistically plausible. Chapter 3 argues that there is an in-principle challenge to reading an Intellectualist account of the nature of knowledge-how off of the semantics for 'knows how' constructions in English, since the standard semantics does not offer an account of the *generality* of the propositions involved in knowledge-how. I argue that this leads to a kind of generality problem for Intellectualism, consider a number of ways to resolve this problem, and argue that they are unsatisfactory.

Part 2 asks what the point of having a concept of knowledge-how is and what the function of the concept can tell us about the normative properties of knowledge-how. Chapter 4 lays out Craig's (1990) genealogical framework for thinking about the function of the concept of knowledge. I isolate two proposals about the function of our concept of knowledge-how, with two corresponding norms. The first proposal is that the function of the concept of knowledge-how is to allow us to pool practical skills (Craig, 1990, Chapter 17), by picking out a state as the norm on teaching (Buckwalter & Turri, 2014). The second is that the function of the concept of knowledge-how is to allow us to engage in responsible practices of co-operation, by picking out a state that is the norm on intending. Chapter 5 criticises the first proposal, arguing that a know-how norm on teaching is implausible. Chapter 6 makes the case for the second proposal, arguing that knowledge-how is the norm on intending.

Part 3 brings linguistic and philosophical considerations together. Chapter 7 argues that the conflict between linguistic and philosophical evidence concerning knowledge-how has been overstated and that there is a way to account for both kinds of evidence by claiming that knowledge-how is a certain kind of capacity to answer a question, which I call the *Interrogative Capacity* view.

I cannot hope to address all of the topics in the knowledge-how debate, so some questions will inevitably be put to one side:

- Whether there is a legitimate notion of a practical mode of presentation (Stanley, 2011b, Chapter 4; Zardini, 2013; Glick, 2015; Pavese, 2015b);
- Whether there is a species of ability which co-ordinates with knowledge-how (Rosefeldt, 2004; Noë, 2005; Fantl, 2008; Lihoreau, 2008; Glick, 2012; Carter & Czarnecki, 2016);
- How knowledge-how connects to skill (Stanley & Krakauer, 2013; Dreyfus, 2014; Pavese, 2016a, 2016b; Stanley & Williamson, 2016);
- What the epistemic properties of knowledge-how are (Poston 2009; 2016; Cath 2015; Carter and Pritchard 2015a; 2015b; Brownstein and Michaelson 2016);
- What the relationship between knowledge-how and agents' knowledge is (Setiya, 2008, 2009, 2012; Small, 2012; Hornsby, 2013);
- What empirical evidence from psychology and cognitive science can tell us about the nature of knowledge-how (Wallis 2008; Toribio 2008; Adams 2009; Stanley 2011a; Glick 2011; Stanley and Krakauer 2013; Gregory et al. 2016).

Part 1: Linguistic Evidence

Chapter 1: Linguistic Arguments about Knowledge-How

Introduction

In this chapter, I untangle various linguistic arguments that have been used in the knowledge-how debate, and argue for a conciliatory attitude about the significance of linguistic evidence. I argue that linguistic arguments are a legitimate source of evidence about the nature of knowledge-how, but maintain that there might be non-linguistic reasons to prefer an account of knowledge-how that is not consistent with the best theories of contemporary linguistics. In §1, I set out the main contours of the debate about the nature of knowledge-how. In §2 I discuss Ryle's contribution to this debate, before in §3 considering some linguistic problems for the Ryle-inspired 'Standard View' of knowledge-how. In §4, I dive into Stanley and Williamson's linguistic case for Intellectualism, using their discussion as a jumping off point for a wider discussion of the significance of linguistic evidence in this debate.

1. Set-up of the Rylean Debate

The distinction between knowledge-that and knowledge-how seems like an important feature of our folk epistemological framework. It is natural to trace back certain kinds of failing to the lack of one or other kind of knowledge. When someone has read all of the books she can get about running, but still struggles to pace herself or come up with a sensible training plan, she lacks a kind of practical grasp of running. When an experienced runner produces excellent results, but can't say anything about how they train, or what rules they are following while they are running, she lacks a certain kind of theoretical grasp of running. We might say that the former runner has a great deal of factual knowledge, but doesn't know *how to run*; whereas the latter runner knows how to run, but cannot convert this knowledge into informative factual knowledge.

That our ordinary use of 'knows how' and 'knows that' seem to mark a distinction between a practical and a theoretical grasp on some subject matter suggests that there is a

theoretically important distinction between knowing that something is the case, and knowing how to do something. Let's call this claim *Anti-Intellectualism*:⁶

Anti-Intellectualism: knowledge-how is distinct from knowledge-that.

Anti-Intellectualism is true if there are some states of knowledge-how that are not states of knowledge-that, and there are some states of knowledge-that which are not states of knowledge-how. Anti-Intellectualism would be true if all states of knowledge-how and knowledge-that were disjoint — so that no state of knowledge-how was a state of knowledge-that and vice versa — but it does not rule out the possibility of there being states which are both knowledge-how and knowledge-that,⁷ nor does it rule out the possibility that knowledge-how *relies* on various pieces of knowledge-that (Hornsby, 2005, 2011; Wiggins, 2012, pp. 115–6). Even if the two kinds of knowledge are disjoint, any reasonable Anti-intellectualist will admit that both are species of *knowledge*, meaning that both share whatever properties are essential to knowledge.

Anti-Intellectualism is a thesis about the relation between knowledge-that and knowledge-how, and not a theory of knowledge-how. In itself it does not tell us what the extension of these two species of knowledge are, or what their properties are. Anti-Intellectualism can be combined with a number of different accounts of the nature of knowledge-how:

Abilityism: S knows how to V iff S is able to V .⁸

Actism: S knows how to V iff S knows V -ing.⁹

Objectualism: S knows how to V iff S knows O , and O is F .¹⁰

Predicativism: S knows how to V iff S knows x is P , and P is F .¹¹

⁶ On the history of the distinction between Intellectualism and Anti-Intellectualism, see (Kremer, forthcoming).

⁷ An analogy: courage and kindness are distinct, but certain character traits — such as a disposition to care for someone with severe mental illness — can make a person both courageous and kind.

⁸ (Rosefeldt, 2004; Glick, 2012).

⁹ (Carr, 1979, 1981; Hornsby, 2011; Wiggins, 2012).

¹⁰ (Michaelson, MS; Bengson & Moffett, 2011a). Bengson and Moffett call their view *Non-propositional Intellectualism*, but their terminology is rather different from mine (see footnote 26).

¹¹ (Brogaard, 2011).

(Here and below, I'll use F as a placeholder for property standing for an account of the distinctive kind of activity, proposition, object and so on which is employed in the analysis of knowledge-how or knowledge-that.)

Anti-Intellectualism is falsified if all cases of knowledge-how are cases of knowledge-that, or if all cases of knowledge-that are cases of knowledge-how. Lets call the first view *Intellectualism*, and the second view *Practicalism*¹²:

Intellectualism: Knowledge-how is a species of knowledge-that

Practicalism: Knowledge-that is a species of knowledge-how

Like Anti-Intellectualism, both Intellectualism and Practicalism are claims about the relation between knowledge-how and knowledge-that, and not accounts of the nature of knowledge-how. However, in both cases commitment to the thesis about the relation between the two kinds of knowledge will likely be driven by theories of knowledge-that and knowledge-how respectively. Practicalism is likely to be motivated by an analysis of knowledge-that as a kind of ability (Hartland-Swann 1956; Roland 1958; Hetherington 2011). Let's call this kind of account of knowledge-that *Praxism*:

Praxism: S knows that p iff S knows how to V and V is E .

Similarly, the Intellectualist's claim that knowledge-how is a species of knowledge-that is likely to be motivated by a specific propositional account of knowledge-how (Stanley & Williamson, 2001; Stanley, 2011b). Let's call this claim *Propositionalism*:

Propositionalism: S knows how to V iff S knows that p , and E_p .

One central concern of this chapter will be whether one can establish Intellectualism via linguistic support for Propositionalism.¹³

¹² I take the term 'Practicalism' from (Hetherington, 2011).

¹³ In the X-first terminology, Intellectualism is a knowledge-that-first theory, and Practicalism is a knowledge-how-first theory. It is possible to endorse these claims of explanatory priority without endorsing the species-genera claims. Ryle claims that "knowledge-how is a concept logically prior to the concept of knowledge-that," (1945, pp. 4–5), but does not endorse Practicalism. Insofar as virtue epistemologists appeal to the notion of competence analysing the notion of propositional

2 Ryle's Discussion of Knowledge-How

Contemporary discussions of knowledge-how have their source in Ryle's mid-century discussions (Ryle 1945; 1949/2009).¹⁴ Ryle employs the distinction between knowledge-how and knowledge-that as a tool in his wider polemic against dualism. Ryle's Dualist splits the life of an agent into two: her *outer* physical life, and her *inner* mental life, and claims that behaviours inherit mental predicates from internal mental acts.¹⁵ In these two essays Ryle's target is the application of dualism to intelligence, which he calls Intellectualism. The Intellectualist claims that intelligent action can be divided into inner acts of thought, and physical behaviours, and claims that the intelligence of both our mental and practical activities is due to the consideration of appropriate propositions (Ryle, 1945, p. 1, 2009b, pp. 15–16). On this view, if we apply an adverb of (positive) intelligence to someone's action — for example saying that an agent acted cleverly, sensibly, or wittily — this adverb picks out some private, silent, and internal act of considering an appropriate proposition.¹⁶ Ryle's use of 'Intellectualist' differs from the use set out in the previous section, so I will call this view *Rylean Intellectualism*. Ryle's aim in these papers is to upset the Rylean Intellectualist's paradigm for understanding intelligence and to put forward an alternative picture of intelligence adverbs, according to which they pick out a procedure or manner of those acts (1945, p. 3, 2009b, p. 20) stemming from a dispositional state (1945, p. 3, 2009b, pp. 33–9).¹⁷

The point of appealing to the knowledge-how in this dialectic is to use our everyday inclination toward Anti-Intellectualism (in the sense of §1) as a tool against the Rylean Intellectualist:

knowledge, we might think they also endorse a knowledge-how-first epistemology. This worry is distinct from the concern that virtue epistemologists need to construe the relevant kind of competence as a competence *to know that p* (Kelp, forthcoming; Millar, 2009; Miracchi, 2015; Pavese, 2016a, pp. 642–3), which concerns whether virtue epistemology can avoid being a knowledge-that-first theory.

¹⁴ Page references to *The Concept of Mind* are to the 2009 edition.

¹⁵ (Small, forthcoming; Hornsby, 2011).

¹⁶ It's not obvious what the Rylean Intellectualist thinks about negative intelligence adverbs, such as 'stupidly', 'recklessly', or 'dully'. Do these acts involve considering the wrong proposition or failing to consider any proposition?

¹⁷ There is some controversy about whether this view is behaviourist, see (Stanley, 2011b, Chapter 1). It is true that Ryle understands various mental states in terms of dispositions. However, these dispositions are to actions, not to behaviours described in non-mental terms, meaning that this view is not the Skinner-Watson style of behaviourism, but is rather closer to the kind of Aristotelian behaviourism proposed by (Stout, 2006).

Philosophers have not done justice to the distinction which is quite familiar to us all between knowing that something is the case and knowing how to do things. In their theories of knowledge they concentrate on the discovery of truths or facts, and they either ignore the discovery of ways and methods of doing things or else they try to reduce it to the discovery of facts. They assume that intelligence equates with the contemplation of propositions and is exhausted in this contemplation (Ryle, 1945, p. 4)

Ryle's thought seems to be that philosophers have gone along with Rylean Intellectualism by focusing on the role of knowledge-that in producing intelligent acts, thereby neglecting the role of knowledge-how in producing intelligent acts. Knowledge-how is not a natural fit for the Rylean Intellectualist's picture of intelligence, in part because the exercise of knowledge-how does not seem to involve the contemplation of propositions, and in part because the possession of knowledge-how does not seem to consist in a relation to a proposition. In order to account for the role of knowledge-how in producing intelligent action, the Rylean Intellectualist needs to identify knowledge-how with knowledge-that, endorsing Intellectualism, applying their model of intelligence to the various practical activities which we know how to do, such as reasoning, fishing, and playing chess.¹⁸

Ryle gives a number of arguments against Intellectualism about knowledge-how. First, he points out that knowledge-how and knowledge-that have different epistemic properties. Knowledge-that entails belief and justification, and knowledge-how does not (Ryle, 2009b, p. 17; see also: Glick, 2011; Brownstein & Michaelson, 2016). Knowledge-how ascriptions are gradable — we can say that Raj knows *in part* how to swim, or that Tahlia knows how to swim *better than* Raj — whilst knowledge-that ascriptions are not (Ryle, 2009b, p. 46; see also: Pavese, 2017). Secondly, Ryle observes that knowledge-how and knowledge-that seem to be associated with different kinds of learning. Whereas knowledge-that can be imparted at once, for example by an act of testimony, knowledge-how can only be inculcated via a gradual process of practice meaning that when we learn a practical skill we learn *to*, rather than learning *that* (Ryle 1945, 15; Ryle 2009b, 30–31, 46;

¹⁸ This interpretation owes a great deal to (Hornsby, 2011).

Ryle 1971; Ryle 2009a; see also: Hawley 2010; Dickie 2012; Glick 2012). Thirdly, Ryle raises the challenge to the Intellectualist to say which body of propositions a given piece of knowledge-how is identical to; asking which propositions one would need to know in order to know how to play chess (Ryle, 1945, p. 5).

Ryle's central argument against the Rylean Intellectualist is a series of regress arguments. The regress arguments are tricky: they are not easy to understand, and it is controversial whether these argument is successful against Intellectualism.¹⁹ I will present a version of what I take to be the central regress which I take to be pretty faithful to Ryle's text, and at least somewhat plausible, following (Bengson & Moffett, 2011b, p. 10).

I take the regress argument to have three premises:

1. An act is intelligent in virtue of the manifestation of propositional states (definition of Rylean Intellectualism);²⁰
2. The manifestation of a propositional state is an act which is assessable for intelligence;²¹
3. An act inherits its intelligence from the intelligence of the manifestation of the propositional states that underlie that act.²²

Some clarifications: In this argument, 'intelligent' picks out *positive* intelligence adverbs, putting negative intelligence adverbs to one side. Although Ryle frequently talks about the manifestation of propositional states as involving the *contemplation* or *consideration* of propositions, talking about contemplation can make it sound like Ryle's Intellectualist thinks that every intelligent act requires a conscious mental act of thinking about a

¹⁹ (Stanley & Williamson, 2001, pp. 214–6; Hornsby, 2005, 2011; Fantl, 2011; Stanley, 2011b; Cath, 2013; Weatherson, 2016).

²⁰ "The prevailing doctrine [...] holds: [...] that practical activities merit their titles "intelligent," "clever," and the rest only because they are accompanied by some such internal acts of considering propositions." (1945, p. 1).

²¹ "The consideration of propositions is itself an operation the execution of which can be more or less intelligent, less or more stupid" (2009b, p. 19).

²² "The absurd assumption made by the intellectualist legend is this, that a performance of any sort inherits all its title to intelligence from some anterior internal operation of planning what to do." (2009b, p. 20).

relevant proposition. Although it might be true that Ryle's targets did endorse that claim,²³ endorsing this claim might make one think that one can avoid the regress argument by giving a different account of how propositional knowledge manifests in action (Stanley, 2011b, pp. 14–6). Moving to a premise concerning manifestation in general blocks off this move.²⁴ Some versions of the regress omit premise 3 (Weatherson, 2016) but I think it is crucial. Premises 1 and 2 are compatible with an act being intelligent whilst the thought underlying the act is stupid. If (some) stupid acts are unintelligent because they are not the manifestation of propositional states at all (see footnote 16) then an intelligent act that is grounded in a stupid thought can block the regress, since that stupid thought need not be accompanied by the activation of a distinct propositional state. Including premise 3 blocks off this move.

The regress argument goes like this. Take some intelligent act: such a clever foot-swap made whilst climbing. According to the Rylean Intellectualist, this act is intelligent in virtue of being the manifestation of some propositional state or states: say, the agent's knowledge that she needs to adjust her balance. But her manifestation of that propositional state is also assessable for intelligence: we can ask whether she ought to have been thinking about balance, or focusing on other features of her situation. And the intelligence of the action depends on the intelligence of the thought. The act of performing the foot-swap can only be clever if it was also intelligent to consider the issue of balance at that time. If balance isn't a big deal in the current situation, then thinking about balance is stupid, and the foot-swap was not a clever move to make. But if the manifestation of propositional knowledge is itself an intelligent act, then by the Rylean Intellectualist's lights we need to explain the intelligence of this manifestation in terms of the manifestation of some other propositional state. This explanatory demand goes on indefinitely, meaning that the Rylean Intellectualist ends up positing an infinite series of propositional states in order to explain the intelligence of any action. This regress suggests that something is seriously amiss with the Rylean Intellectualist's explanation of intelligence.

²³ Bengson and Moffett find this kind of view in Husserl, Cook Wilson, and Frege (Bengson & Moffett, 2011b, n. 13), and Kremer finds it in G.F. Stout and Stebbing (Kremer, forthcoming).

²⁴ One might think that premise 2 is only plausible when a propositional state manifests via a mental act. (Weatherson, 2016) gives some nice examples of the manifestations of propositional states being assessable for intelligence without being accompanied by an act of contemplation.

Unlike most formulations of the regress argument (and closely following Ryle), this argument makes no mention of knowledge-how. There are two ways in which Ryle might connect this regress to Intellectualism about knowledge-how. One might see the regress as a reductio of Rylean Intellectualism, and think that Ryle proposes an alternative picture of intelligence, in which knowledge-that plays *no* role (Bengson & Moffett, 2011b, pp. 14–16). Alternatively one might think that knowledge-how is introduced to play the role of regress-stopper (Hornsby, 2011, p. 83)²⁵.

The first interpretation seems problematic. It is just obvious that we sometimes activate propositional states before acting (Bengson & Moffett, 2011b, pp. 15–6), a fact which Ryle was well aware of:

Now very often we do go through such a process of planning what to do, and, if we are silly, our planning is silly, if shrewd, our planning is shrewd. (Ryle, 2009b, p. 20)

As we shall see below, Ryle also has an important role for propositional thought in his account of intelligent action.

On the second interpretation, knowledge-how plays the regress-stopper role, providing a fundamental explanation of what makes acts intelligent. This interpretation leaves some space for propositional knowledge in the explanation of the intelligence of action. When Ryle says that intelligence adverbs pick out manners of performance which are grounded in the dispositions which are manifested in those acts, it would be a mistake to interpret him as saying that the states which are involved in the production of intelligence are exclusively non-propositional.²⁶ His point is that when propositional states

²⁵ (Hornsby, 2005) sees knowledge-how playing a similar regress-stopping role for a regress relating to intentional action, (see also (Fantl, 2011)).

²⁶ This means that when Bengson and Moffett are mistaken to ascribe to Ryle the view that intelligent action is due to some kind of ability or disposition, rather than a propositional attitude (Bengson & Moffett, 2011b, p. 15). In their set-up of the logical space the Intellectualist can appeal to both propositional states, *and* to other kinds of states in explaining intelligence and giving an account of the conditions which ground knowledge-how (Bengson & Moffett, 2011b, pp. 7–8) but the Anti-Intellectualist theory of intelligence can only appeal to dispositional states. One might think that the default Anti-Intellectualist theory of intelligence is that states of intelligence involve *both* dispositional states, and propositional states, a position which Bengson and Moffett call *Conjunctivist* (Bengson & Moffett, 2011a, n. 5).

play a role in explaining the intelligence of action, it can only be with the assistance of an underlying state of knowledge-how (Hornsby 2005; Wiggins 2012, §9-11)

What kind of picture of knowledge-how does Ryle need to have in order for knowledge-how to play the regress-stopping role? Ryle needs to be committed to the falsity of Intellectualism, since a position which identified knowledge-how with a species of knowledge-that would lead to the regress above. Beyond this things get a little murky. It is common to claim that Ryle identifies knowing how to do something with the ability to do it,²⁷ but we also find interpreters claiming that Ryle has no positive account of knowledge-how (Hornsby, 2011, p. 82). I think it is clear that Ryle does not endorse *Abilityism*, but I think that by connecting some hints we can extract a positive account of knowledge-how.²⁸

Ryle does make some comments which suggest an identification of knowing how with ability.²⁹ For example:

What is involved in our descriptions of people as knowing how to make and appreciate jokes, to talk grammatically, to play chess, to fish, or to argue? Part of what is meant is that, when they perform these operations, they tend to perform them well, i.e. correctly or efficiently or successfully (Ryle, 2009b, p. 17).

In this passage and others Ryle is certainly suggesting that knowing how to do something is a kind of dispositional state, in line with his general dispositional account of knowledge, (Ryle, 2009b, pp. 116–7; Kremer, 2016a), and his dispositional picture of intelligence. However, Ryle himself warns against the over-simplistic picture of these dispositions involved in knowing-how:

Epistemologists, among others, often fall into the trap of expecting dispositions to have uniform exercises. For instance, when they recognise that the verbs 'know'

²⁷ (Stanley & Williamson, 2001, p. 416; Snowdon, 2004; Noë, 2005, p. 283; Kotzee, 2016, p. 219; Santorio, 2016, p. 36).

²⁸ See (Gustafsson & Backstrom, forthcoming; Kremer, forthcoming; Small, forthcoming) who share a picture of Ryle as offering a third way between a picture which explains intelligence in terms of thought (Rylean Intellectualism), and a picture which explains intelligence in terms of automation and associations (a position we might call Rylean Anti-Intellectualism).

²⁹ Here I gloss over the distinction between abilities and dispositions, as I will throughout this thesis. This distinction is potentially useful (see: Fantl, 2008) but it would take us too far afield to get a clear picture of what it amounts to.

and 'believe' are ordinarily used dispositionally, they assume that there must therefore exist one-pattern intellectual processes in which these cognitive dispositions are actualised. (2009b, p. 32).

Following his own advice, Ryle claims that knowledge-how involves a *multi-track* disposition to perform a heterogeneous range of actions. He claims that knowing how can be exercised in i) appreciating others' performances of the relevant activity,³⁰ ii) explaining why a particular act succeeded or failed, iii) advising and teaching others, iv) imagining performing the activity, and v) predicting whether an attempt will succeed (Ryle 2009b, 33, 42–43 especially the discussion of the marksman, and tying a clove-hitch knot). In his discussion of the distinction between skills and habits, Ryle contrasts the kind of automatic unthinking disposition which involved in a habit (such as reciting a multiplication table), with the kind of controlled thoughtful intelligent disposition which is associated with a skill or a piece of knowledge-how (2009b, p. 30). In these passages, Ryle clearly distinguishes knowing how from the wider class of abilities to do.³¹

Ryle offers a positive picture of the kind of activity which is involved in knowing how:

Knowing *how*, then, is a disposition, but not a single-track disposition like a reflex or a habit. Its exercises are observances of rules or canons or the applications of criteria, but they are not tandem operations of theoretically avowing maxims and then putting them into practice. (2009b, p. 30)

If we thought that Ryle had no role for propositional states in his account of intelligence, it would be strange to see him glossing the kind of disposition associated with knowledge-how as involving the observances or rules or canons, and the applications of criteria. However, on the interpretation I am pursuing, Ryle is not opposed to rules, canons, or regulative propositions playing a role in intelligent or skilful activity, so long as the application of those rules is driven by a non-propositional dispositional state, such as the disposition to apply criteria to action.³²

³⁰ For more on the receptive dimension of knowledge-how, see (Montero, 2012).

³¹ (Gustafsson & Backstrom, forthcoming; Small, forthcoming).

³² Here I am drawing on (Waights Hickman, MS.)

On this interpretation, Ryle is interested in offering a non-dualist picture of the role of thought in action. Ryle agrees with everyday language that intelligent or skilled action involves what he calls ‘thinking what one is doing’ (2009b, pp. 18, 30) but rather than positing an inner act of thought he claims that thinking what one is doing is an external manner of performing. As Hornsby puts the point, Ryle wants to ‘exteriorise’ the concept of thinking (2011, p. 87). Consider the following passage which characterises skilled activity:

A mountaineer walking over ice-covered rocks in a high wind in the dark does not move his limbs by blind habit; *he thinks what he is doing*, he is ready for emergencies, he economises in effort, he makes tests and experiments; in short he walks with some degree of skill and judgment. If he makes a mistake, he is inclined not to repeat it, and if he finds a new trick effective he is inclined to continue to use it and to improve on it. He is concomitantly walking and teaching himself how to walk in conditions of this sort. (2009b, p. 30 italics added)

On Ryle’s view, thinking what one is doing is a way of attending to one’s activity by comparing it to regulative criteria, adjusting one’s action to the particularities of the situation (Ryle, 1976), and teaching oneself how to act as one goes along.³³ The connection between improvement in skilled activity and thinking is made especially clear in a later essay *Thinking and Self-Teaching*, which argues that thinking just is a kind of self-teaching process, in which agents apply general purpose problem-solving techniques to deal with practical problems (Ryle, 1971, see also: 2009a). The appeals to learning by doing, applying regulative criteria, and self-teaching can all be understood as unpacking what it is to act intelligently without needing to appeal to inner acts of thinking, and hence as lending specificity to the account of what kind of activities one is disposed to engage in when one knows how to do something.³⁴

³³ For connected interpretations of Ryle, which stress the importance of regulative criteria in Ryle’s account of intelligence see (Löwenstein, 2014; Elzinga, 2016). For discussions of the nature of regulative criteria, see (Bianchi, MS; Waights Hickman, MS).

³⁴ For an account of the role of thought in skilled action which connects thinking to self-improvement, see (Montero, 2016).

Let's sum up. Ryle's principal target is Rylean Intellectualism — the view that intelligence stems from inner acts of thinking — and the need for a non-propositional notion of knowledge-how emerges from his criticism of this view. Because knowledge-how needs to be non-propositional in order to play the regress-stopping role, Ryle is committed to Anti-Intellectualism. His discussion does suggest a positive account of knowledge-how, which claims that knowing how to do something is a matter of being disposed to think what one is doing by applying criteria to that kind of activity in a distinctive way that involves a process of self-teaching. Ryle did not hold that knowing how to do something is identical to the ability to do it.

3 The 'Standard View' and Linguistic Evidence

Before we consider the linguistic arguments for Intellectualism, I want to consider the way that linguistic evidence interacts with the post-Ryle consensus position, which — following Snowdon — I'll call the *Standard View*. A good deal of the criticism of the Standard view was linguistic, and these criticisms point to a legitimate use of linguistic evidence.

In the second half of the twentieth century, the consensus position seems to have been that Ryle established that knowledge-how and knowledge-that are distinct states. In addition to Anti-Intellectualism, this consensus endorsed a number of further claims:

- **Linguistic distinction:** the contrast between knowledge-how and knowledge-that matches the linguistic distinction between the knowledge picked out by 'knows how' and 'knows that' ascriptions;
- **Abilityism:** Knowing how to V is identical to being able to V;³⁵

³⁵ Abilityism is distinct from what we might call *Ability Correlation*: S knows how to V iff S is able to V. Abilityism is a non-propositional theory of knowledge-how, whereas *Ability Correlation* just states a necessary and sufficient condition for knowledge-how. An Intellectualist can endorse Ability Correlation, and some appear to do so (Pavese, 2015b). Glick argues that Stanley and Williamson's picture of knowledge-how is actually committed to the necessity of ability for knowing-how (Glick, 2012, p. 137). Hintikka suggests that 'S is able to V' is an implicature of 'S knows how to V', (Hintikka, 1975, p. 11), which is a claim that Intellectualists are also free to endorse.

- **Logical structure:** sentences of the form 'S knows how to V' involve the logical structure — S (knows how (to V)).

Let's call the combination of Anti-Intellectualism with these claims the *Standard* view. There are two important linguistic elements of this view. First, this view replaces Ryle's philosophical characterisation of the distinction between knowledge-how and knowledge-that — something like the kind of knowledge which plays the regress stopper role and grounds application of intelligence adverbs versus the kind of knowledge which does not play this pair of roles — with a linguistic characterisation of this distinction — the kind of knowledge which is ascribed using the 'knows how' construction, versus the kind of knowledge which is picked out using the 'knows that' construction. Secondly, as we shall see below, the primary motivation for *Logical Structure* is linguistic, stemming from the fact that 'knows how' ascriptions involve an infinitival verb phrase, rather than an indicative that-clause.

It is difficult to find authors defending all of *Linguistic Distinction*, *Abilityism*, and *Logical Structure* in print³⁶, but it is fairly clear that a number of critics of received opinion have this combination of views in their targets.

Snowdon identifies the Standard View as the view that:

That there are at least two types of knowledge (*or to put it in a slightly different way, two types of states ascribed by knowledge ascriptions*) identified, on the one hand, as the knowledge (or state) which is expressed in the 'knowing that' construction [...] and, on the other, as the knowledge (or state) which is ascribed in the 'knowing how' construction. (Snowdon, 2004, p. 1 italics added)

In this quotation knowledge-how is identified with the linguistic category of knowledge picked out by 'knows how' ascriptions, demonstrating that Snowdon's opponent is committed to *linguistic distinction*. He also claims that this view is also

³⁶ Carr defends *Logical Structure* explicitly (Carr, 1979, pp. 399–400) but doesn't endorse *Abilityism* (Carr, 1981). (Stanley & Williamson, 2001; Snowdon, 2004) give a host of references for *Abilityism*.

committed to *Abilityism*, casting this claim as one of the central parts of his opponent's position (Snowdon 2004: 2).

Moore also puts a linguistically motivated Anti-Intellectualist view into the mouth of his interlocutor:

We long ago learned to accept that “knowledge how” and “knowledge that” are entirely disparate kinds of knowledge. To know that something is the case is to be apprised of some truth. To know how to do something, by contrast, is to have a capacity. This is related to the fact that states of “knowledge how”, unlike states of “knowledge that”, are not states of belief, a fact which is evidenced in our language. (Moore, 1997, p. 167)

As in the quote from Snowdon, the quotation marks alert us to the fact that the view is interested primarily in a linguistic distinction, suggesting a commitment to *Linguistic Distinction*.

Stanley and Williamson also claim that the target of their paper is *Logical Structure* (2001, pp. 416–7) and motivate this view by appealing to linguistic considerations that presuppose *Linguistic Distinction*. They identify their target by quoting a passage from Bechtel and Abrahamsen:

In general, the expression 'knowing that' requires completion by a proposition, whereas the expression 'knowing how' is completed by an infinitive (e.g. 'to ride') specifying an activity. (Bechtel & Abrahamsen, 1991, p. 151 quoted in Stanley and Williamson 2001, p. 417)

This quote demonstrates a commitment to *Linguistic Distinction*. Additionally, Stanley and Williamson take Bechtel and Abrahamsen to be offering a linguistic argument for *Logical Structure*:

On this [Bechtel and Abrahamsen's] view, in a sentence such as (2) [Hannah knows how to ride a bicycle], 'knows how' forms a constituent, which takes as a complement the expression 'to ride a bicycle', which is a description of an action. 'Know' has no clausal complement in (2). In (3) [Hannah knows that penguins waddle], on the other hand, 'that penguins waddle' is the clausal complement of

'knows', and denotes a proposition which is the object of the knowledge relation (Stanley & Williamson 2001, p. 417)

In this passage, the Anti-Intellectualist argues that the fact that 'knows how' ascriptions involve a relation to an infinitival verb phrase provides evidence that these ascriptions pick out relations to something non-propositional.

The Standard View faces three main criticisms, the first concerning *Abilityism*, the second concerning *Linguistic Distinction*, and the third concerning the linguistic argument for *Logical Structure*.

The most famous criticism of the Standard view stems from counterexamples to *Abilityism*. This argument is non-linguistic, and it would take us rather far astray to discuss all of these counterexamples at length, so I will just note the basic contours of this debate.

Against the necessity of ability for knowing-how we find the following examples:

- Cases of agents who know how to do something, but lack a internal physical condition required to succeed (See Hawley's Legless cyclist (2003, p. 23), Snowdon's Raymond Blanc (2004, p. 8), Stanley and Williamson's handless pianist (2001, p. 416).
- Cases of agents who know how to do something, but are in an environment which prevents them from succeeding (See: Snowdon's sugar case (2004, p. 8)).
- Cases of agents know how to do something which is impossible for them to complete (See Bengson and Moffett's π case (2011a, p. 170)).

Against the sufficiency of ability for knowing-how, we find the following examples:

- Cases of agents who are able to do something, but do not realise that they are (see Snowdon's crack in the rock case (2004, p. 11)).
- Cases of agents who luckily succeed at some goal without knowing how to pull it off (see Hawley's Susan, Shelly, and Susie cases, (2003, p. 27)), Bengson and Moffett's Irina case (2007, p. 407, 2011a, p. 171), and Carr's Miltiades case (1979, p. 404).

- Cases of agents how are able to do something in virtue of being in a position to work out how to do it as they go along, but do not know how to do it (see Bengson and Moffett's Kytoon case (2011a, pp. 172–3)) and Snowdon's improvisation case, (2004, p. 11).

There is a pretty sizeable literature on whether it is possible to rescue Abilityism from these counterexamples, but assessing which side of this debate comes out on top is beyond the scope of this thesis.

Let's now turn to the linguistic problems with the standard view.

One problem with *Linguistic Distinction* is that there are many sentences involving 'knows' and 'how' which ascribe propositional knowledge. There are many finite 'knows how' ascriptions which pick out propositional knowledge: 'Pico knows how coffee smells', 'Ines knows how Hilary climbed Everest', and 'Rain knows how the getaway was made' all ascribe propositional knowledge (D. G. Brown, 1970, p. 216; Hintikka, 1999, p. 14; Hornsby, 1980, p. 84; Moore, 1997, p. 168; Sgaravatti & Zardini, 2008, n. 4; Snowdon, 2004, p. 7; Glick, 2011, p. 427). The existence of these sentences demonstrates that the philosophically interesting distinction is not between the species of knowledge picked out with the words 'how' and 'that'. One might think that it is possible to recover a linguistic distinction by focusing in on the knowledge picked out in sentences with an infinitival 'how' complement, leaving us with the distinction between 'knows that' and 'knows how to' (Hornsby, 1980, p. 84). However, this distinction is also problematic: the sentence 'Vida knows how to spell "comma"' seems to pick out a state of knowledge-that (Moore, 1997, p. 171; Sgaravatti & Zardini, 2008, n. 4; Glick, 2011, p. 427), and 'Idris knows how to write' has several readings which pick out propositional knowledge (about *how writing is done*, *how one writes*, and *how he ought to write*) (Brown, 1970, p. 235; Vendler, 1972, p. 104; Hornsby, 1980, p. 84; Stanley & Williamson, 2001, p. 424). Contra *Linguistic Distinction*, the distinction between practical and theoretical knowledge does not seem to be tracked by a linguistic distinction in English.³⁷

A second problem with the Standard view concerns the linguistic motivation for *Logical Structure*. It is true that sentences of the form 'S knows that p', and 'S knows how to

³⁷ Perhaps this distinction might show up better in another language, perhaps correlating with the *savoir faire* constrictor, or the use of 'ymeet' in Russian or 會 in Cantonese.

V' have important linguistic differences. 'Knows how' ascriptions involve i) a complement in the interrogative mood, ii) an infinitival verb, and iii) the word 'how'. However, these differences do not point toward 'S knows how to V' picking out a state of non-propositional knowledge because the linguistic differentia are possessed by other kinds of knowledge ascriptions involving an interrogative complement: what I will call 'knows-wh'⁵⁸ (Moore, 1997, pp. 167–73; Stanley & Williamson, 2001, pp. 417–8). Consider the following sentences:

- (1) Ruth knows how to swim.
- (2) Shawn knows that Theresa May is the Prime minister.
- (3) Aliya knows where the coffee shop is.
- (4) Brunhilda knows where to dance.

Although there are differences between (1) and (2), they are the same differences which we find when we compare (2) to (3) and (4). Sentence 3 involves a grammatical complement in the interrogative mood — 'where the coffee shop is' — but what Aliya knows is plausibly just that the coffee shop is in such-and-such a place. Similarly, sentence 4 involves an infinitival interrogative phrase — 'where to dance' — but again this sentence seems to pick out propositional knowledge. So, involving an interrogative complement or an infinitival interrogative are not sufficient grounds for a knowledge-ascription to pick out non-propositional knowledge. What about the third difference - the word 'how'? We've already seen that there are many knowledge ascriptions involving 'how' picking out states of propositional knowledge.

These considerations establish that there is no basis in the linguistic structure of 'knows how' ascriptions for thinking that they pick out a non-propositional state (Stanley & Williamson, 2001, p. 19). Although it might be right that knowledge-how is a species of non-propositional knowledge — and perhaps even some English sentences of the form 'S knows how to V' pick out this knowledge — the linguistic evidence does not point towards this result. I do not think that these linguistic considerations demonstrate any of the following theses: i) that we should endorse a propositional theory of knowledge-how,

⁵⁸ Throughout this thesis I will treat knowledge-how as a species of knowledge-wh, and 'knows how' ascriptions as a species of 'knows wh' ascriptions. If I need to pick out other species of knowledge-wh, I will talk about the non-how kinds of knowledge-wh.

ii) that all Anti-Intellectualist accounts of knowledge-how are untenable, or even iii) that the standard view is untenable.³⁹ The arguments above target one non-propositional theory of knowledge-how, and point out that the linguistic evidence which the supporters of this view appeal to is implausible. These are linguistic considerations *against* one argument for the Standard view, and not in favour of Intellectualism. The fact that there is no linguistic evidence for the Standard View does not mean that there are not *non-linguistic* motivations for this view, or for elements within this view. The point of this section is to get some linguistic considerations on the table, in the hope that all participants in the debate about the nature of knowledge-how ought to be able to accept that these linguistic considerations knock out a bad argument for the Standard view.

4 Linguistic Arguments for Intellectualism

In the previous section, I set out one use of linguistic evidence against the Standard view. In this section we will consider the more ambitious use of linguistic evidence in favour of Propositionalism. I will distinguish three ways in which linguistic evidence might be used to argue for a Propositionalist account of knowledge-how: i) the argument from uniformity, ii) the argument from truth-conditional semantics, and iii) the argument from semantic implementability. I will argue that the first and second arguments do not provide compelling arguments for Intellectualism, and that although the third argument does provide some evidence in favour of an Intellectualist-friendly treatment of knowledge-how, it does not rule out the possibility of there being compelling non-linguistic evidence against Intellectualism.⁴⁰

4.1. The Argument from Linguistic Uniformity

³⁹ This point is especially clear in Moore's discussion, which goes on to endorse a non-propositional account of knowledge-how on non-linguistic grounds. (Moore, 1997, pp. 70–6). Williamson's review of *Points of View* is helpful as an example of the distinction between Moore's negative use of linguistic evidence against argument for the standard view, and his own use of linguistic evidence in favour of Intellectualism (Williamson, 1999, p. 44).

⁴⁰ In thinking about these issues I have benefitted greatly from (Glick, MS).

The first kind of argument for Intellectualism appeals to the linguistic similarities between ‘knows how’ ascriptions, and other ‘knows wh’ ascriptions. Stanley sets out this argument extremely clearly:

In English, we say that people know how to do things via the construction “knows how + infinitive”. The fact that we speak of knowing how in this way in English raises a problem for the Rylean that has long been exploited by Intellectualists about knowing how (Brown, 1970, Stanley and Williamson, 2001). It is a common assumption between the Rylean and the Intellectualist that sentences involving constructions like “know where + infinitive”, “know when + infinitive”, “know why + infinitive”, etc. all can be defined in terms of propositional knowledge. But given that ascriptions of knowing-how in English look so similar to such ascriptions, it is hard to see how they could ascribe a different kind of mental state. This provides a powerful argument in favor of the conclusion that our ordinary folk notion of knowing-how is a species of propositional knowledge. (Stanley, 2011c, p. 208)

Let’s call this the argument from *Linguistic Uniformity*.⁴¹ The core idea of this argument is that a grammatical uniformity in a class of sentences is *ceteris paribus* evidence of those sentences having an underlying structural uniformity, meaning that they pick out a uniform class of entities in the world (Bengson & Moffett, 2011b, p. 179).

Although the uniform view of knowledge-wh ascriptions has an appealing simplicity, considerations of linguistic simplicity do not provide a compelling argument for Intellectualism.

First, this kind of argument is neutral on what the underlying structure is, leaving open the possibility that linguistic uniformity is being generated by some non-propositional structure. For example, Bengson and Moffett (2011a, p. 180) suggest that the underlying linguistic structure might relate agents to non-propositional objects, meaning that knowledge-wh ascriptions pick out states of *Objectual knowledge*. Insofar as an Objectualist

⁴¹ The argument from Uniformity is explicitly endorsed by (D. G. Brown, 1970, pp. 221–3; Williamson, 1999, p. 44; Stanley & Williamson, 2001, pp. 417–20; Bengson & Moffett, 2011a, pp. 179–80), and seems to be in the background in (Vendler, 1972, pp. 91–4, 103–4; Hintikka, 1975, p. 14; Snowdon, 2004, pp. 6–8).

and a Propositionalist account of knowledge-wh equally explain the linguistic uniformity, both can claim equal support from this kind of uniformity consideration.⁴²

Secondly, there are some pretty clear exceptions to the idea that surface grammatical uniformities are generated by uniformities in underlying structure. Consider the following example (from (Bengson & Moffett, 2011b, p. 42) attributed to Michaelis, (see also: Michaelis, 2011, p. 262)):

- (5) S tried to ϕ
- (6) S knew to ϕ
- (7) S understood to ϕ
- (8) S learned to ϕ

Although these sentences are grammatically similar they pick out different kinds of relations. In 5 S is related to an activity, whereas in 6 and 7 S is related to a proposition about how one ought to engage in some activity, and 8 has both deontic and activity-relating readings. This counterexample brings home the important point that linguistic uniformity is at best a *ceteris paribus* consideration which can be overruled by other considerations.

A closer look at knowledge-how suggests that there are compelling non-linguistic differences between these species of knowledge which mean that the *ceteris paribus* consideration is not met. We can find Anti-Intellectualists arguing that knowledge-how fails to possess pretty much all one of the conditions which are thought to be necessary for knowledge-that:

- Justification: (Glick, 2011, pp. 408–9)
- Associated true belief: (Wallis, 2008, pp. 133, 139–40; Cath, 2011; Glick, 2011, p. 409; Brownstein & Michaelson, 2016)
- Gettierisability: (Poston, 2009)
- Sensitivity to defeaters: (Cath, 2011; Weatherson, 2016)

⁴² Although it's worth noting that an objectualist account of all 'knows wh' ascriptions is extremely implausible. See Chapter 2.

- Safety: (Hills, 2009; Poston, 2009; Cath, 2011; Carter & Pritchard, 2015a, 2015b)
- Linguistic expressibility: (Schiffer, 2002; Wallis, 2008, pp. 132–3)
- KK principle: (Wallis, 2008, p. 140)
- Conscious accessibility: (Wallis, 2008, pp. 132–3; Devitt, 2011, pp. 210–2; Kumar, 2011, p. 146)
- Availability for reasoning: (Moore, 1997; Sgaravatti & Zardini, 2008, pp. 244–52; Glick, 2011, p. 410; Kumar, 2011, p. 146)

Perhaps not all of these arguments are successful. But the cumulative case seems overwhelming: we only need knowledge-how to differ in a few epistemic properties to have a philosophical difference between know-how and know-that to contrast with the linguistic similarities between ‘knows how’ and other ‘knows wh’ ascriptions.

Although the argument from Linguistic Uniformity provides some *prima facie* reason for thinking that knowledge-how of a kind with other kinds of knowledge-wh, it underdetermines the nature of the underlying uniformity, and the non-linguistic differences between knowledge-how and other kinds of knowledge-wh mean that the *ceteris paribus* consideration that this argument relies upon is not met. The argument from Linguistic Uniformity is not a compelling argument for Intellectualism.

4.2. The Argument From Truth-Conditional Semantics

The most famous linguistic argument for Intellectualism comes from an appeal to a truth-conditional semantics for sentences of the form ‘S knows how to V’ derived from the standard syntax and semantics for interrogative complements. Stanley and Williamson present their account as being motivated by this kind of consideration:

The positive account’s most obvious benefit is that it is the account entailed by current theories about the syntax and semantics of the relevant constructions. Rejecting it would involve revising many well-entrenched beliefs about them in linguistics. This move would be legitimate if the account could be shown to face

serious difficulties. But we have been unable to uncover such difficulties. (Stanley & Williamson, 2001, p. 440)

Stanley and Williamson claim that their account is *entailed* by standard views about the syntax and semantics of embedded interrogative constructions, suggesting both that one can simply move from accepted views in linguistics to the surprising view that knowledge-how is a species of propositional knowledge, and that the fact that an account of knowledge-how is in line with the standard semantics is a decisive reason to prefer this account of knowledge-how.⁴³

Stanley and Williamson argue that Intellectualism is entailed by standard linguistic views by giving a linguistic analysis of the 'S knows how to V' construction in line with standard views in linguistics about the syntax and semantics of embedded interrogative phrases. They give a couple of different implementations of this idea appealing to different accounts of interrogatives: Stanley and Williamson (2001) follows (Karttunen, 1977), and Stanley (Stanley, 2011b, 2011c) follows (Groenendijk & Stokhof, 1984). Rather than following these discussions too closely I will give a schematic reconstruction of their argument that catches the central features of their account.⁴⁴

To start off with, we need to know what the syntactic structure of a knowledge-how ascription is. Take a sentence like (1) 'Ruth knows how to swim'. Stanley and Williamson claim that the standardly accepted structure for this sentence (using brackets to mark clausal boundaries) is:

(9) Ruth (knows (how PRO to swim t))

Giving us the structure: noun (verb (interrogative clause)). PRO is an unpronounced pronoun, which can refer to the subject of the verb, or to an arbitrary

⁴³ (D. G. Brown, 1970) offers his own analysis of the meaning of 'knows how' ascriptions. Brown distinguished two readings: the standard reading, which does not relate to ability, and the 'English reading' for activities for which ability entails knowledge-how. Brown claims that the former kind of knowledge ascription involves knowledge of an imperative relative to a contextually supplied goal (an account which is close to those of Bhatt and Roberts), but his account of the 'English' reading is strikingly close to Stanley and Williamson's.

⁴⁴ See (Pavese, 2016b) on the linguistic argument for Intellectualism. For good reconstructions of these arguments which do justice to the semantic detail, see (Glick, MS, 2011, 2012).

person, having a ‘one’-type reading, and ‘t’ is a trace of syntactic movement, which is irrelevant to the truth-conditions of the overall sentence.

Given this syntactic structure, the content of the knowledge-ascription will be specified by the denotation of the interrogative clause. Whereas we can give an account of the meaning of indicative sentences or clauses (such as that-clauses), in terms of propositional contents, it is difficult to see how to give this treatment to interrogative or imperatival sentences. The sentences ‘where is the toilet?’ and ‘open the door!’ do not seem assessable for truth-value. Rather than denoting propositions, we might think that interrogatives denote *questions*. Just as ‘Ruth can swim’ denotes the proposition *Ruth can swim*, so ‘how to swim?’ denotes the question *how to swim?*.⁴⁵ Just as we express propositions by engaging in assertoric speech acts, we express questions by engaging in questioning-related speech acts.

Since ‘knows-wh’ ascriptions involve interrogative complements, we ought to hope to understand what is known in a particular ascription by understanding what the question is. Although questions are not identical to propositions, they are closely related to them, since a proposition can *resolve* a question. Let’s call the set of propositions that resolve a question in some possible world its *answers* (using the term rather loosely). In linguistics it has been extremely common to suppose that we can build an account of the meaning of an interrogative phrase (inter alia, an account of what questions are) out of the answers to that question. There are various options on the table here (for an overview, see (Higginbotham, 1996; Lahiri, 2002; Wisniewski, 2015)). Hamblin claims that a question is a set of all possible answers both true and false, both partial and complete (Hamblin, 1958, 1973), Karttunen claims that a question is the one true and complete answer in the actual world (Karttunen, 1977), and Groenendijk and Stokhof claim that a question is a set of mutually incompatible complete answers (Groenendijk & Stokhof, 1984). The differences between these treatments will not be important for our purposes. What these treatments have in common is that they all treat a question as a set of propositions, meaning that they can say that a proposition answers a question when it is either *a* or *the* true answer to the question (depending on the framework).

⁴⁵ ‘How to V?’ can sound odd as a standalone question: we don’t say ‘how to swim?’ except perhaps when asking ourselves rhetorical questions. However, the ‘how + infinitival verb’ construction is available in other languages. ‘Comment nager?’ is an acceptable direct question in French.

Unlike verbs like ‘wonders’, which relate to the whole of a question, the standard view is that ‘knows’ relates to a/the true answer to a question.⁴⁶ This is suggested by the fact that we can substitute questions with their true answers within ‘knows’, preserving meaning. Consider:

- (10) Dipti knows who the Prime Minister is
- (11) Dipti knows that Theresa May is the Prime Minister

This allows us to give an account of knowledge-wh ascriptions in terms of propositional knowledge related to the correct answer to a question, along the lines suggested by (Higginbotham, 1996). This view is sometimes called Reductionism,⁴⁷ but I will call it the *Answer Theory* (ANS for short) in reference to the fact that this theory explains knowledge of questions in terms of standing knowledge of the answers to those questions:

ANS: A sentence of the form ‘S knows Wh-F?’⁴⁸ is true iff *S* knows that *p*, and *p* answers the question *Wh-F?*

On the way I am using the terminology, ANS already entails Intellectualism about knowledge-how, because I am using ‘knows wh’ to include knowledge-how. However, in order to establish the plausibility of this view, Stanley and Williamson offer a specific Propositionalist analysis of knowledge-how. Applied to sentence (1), ANS yields:

ANS_{HOW}: ‘Ruth knows how to swim’ is true iff Ruth knows that *p*, and *p* answers the question *how to swim?*

Because this claim connects knowledge-how to the answers to *how to* questions, we can use it to understand the object of knowledge-how by understanding the meaning of infinitival how-questions. Adding PRO back in, we need to analyse the following interrogative phrase:

⁴⁶ For an overview of different classifications of ‘wonders’/‘knows’ type verbs, see (Lahiri, 2002, pp. 189–92).

⁴⁷ See (Higginbotham, 1996; Schaffer, 2007; George, 2013; Parent, 2014).

⁴⁸ I’ll use ‘*Wh-F?*’ as a variable for questions (see footnote 1).

‘how PRO to swim?’

In most cases, we can derive the answers to a wh-question by treating the wh-word as a variable, and the rest of the phrase (what is sometimes called the question abstract) as a predicate. Depending on which account of the meaning of an interrogative we endorse, the answers to that question will consist of some kind of assignments of the predicate to the elements in the contextually supplied domain.⁴⁹ For example, for Hamblin an answer is an assignment of one element in the domain to the predicate, whereas for Groenendijk and Stokhof an answer will be a complete (negative and positive) assignment of the predicate to all entities in the domain. Different kinds of question words seem to trigger restrictions to different domains — ‘why’ to reasons, ‘who’ to people, ‘where’ to places, ‘what’ to things, and so on — and ‘how’ triggers a restriction to ways, in this case *ways of acting*. There is a good deal to say about what ways of acting are, but I will put this topic off until chapter 3.

With how-to questions, the predicate expressed by the rest of the wh-phrase can have various different meanings, due to the fact that PRO can either refer to the subject, or a generic agent, as well as the different modal flavours — deontic, counterfactual, or abilitative — which are associated with the infinitival phrase ‘to V’ (Stanley & Williamson, 2001, pp. 422–5). Replacing ‘how’ with a variable for ways gives us the following menu of meanings for ‘how PRO to swim’ in (1):

- i. w is a way that Ruth can swim
- ii. w is a way that one can swim
- iii. w is a way that Ruth ought to swim
- iv. w is a way that one ought to swim

With this account of the possible meanings of ‘how to swim’, we can say that sentence (1) is true just in case Ruth knows a proposition of one of these forms. These different interpretations seem to neatly match up with different interpretations of ‘Ruth knows how to swim’, which can mean that she has deontic knowledge, or knowledge about

⁴⁹ In this chapter, I am ignoring some of the details of the context-sensitivity of ‘knows how’ ascriptions. We will return to this topic in chapter 3.

how *one* swims. Stanley and Williamson point out that interpretations ii through iv, are obviously propositional, meaning that by elimination that the interesting class of practical knowledge-how is picked out by interpretation i) (Stanley & Williamson, 2001, p. 425).⁵⁰

The final complication in this account concerns how many answers one needs to know in order to count as knowing how. ‘Knows wh’ ascriptions can claim that the agent knows either one (the mention-some reading), or all (the mention-all reading) of the true (non-complete) answers to the question. Consider the following sentences:

- (12) The prisoner knows how to escape the prison.
- (13) The guard knows which prisoners escaped the prison.

On their most natural readings, (12) claims that the prisoner know that one way is a way to escape the prison, whereas (13) claims that for *all* the prisoners that escaped, the guard knows that they escaped (and also that she has no false beliefs about who escaped). Stanley and Williamson appeal to conversational aims to claim that the default reading of a ‘knows how’ ascription will be the mention-some reading, meaning that knowing one answer suffices for knowing how (2001, p. 426).

Fixing in on reading i) of the how to question, and taking the mention-some reading we get to the following account of the meaning of sentence (1):

$ANS_{S\&W}$: ‘Ruth knows how to swim’ is true iff Ruth knows that *w* is a way in which she can swim

$ANS_{S\&W}$ gives us an account of the nature of knowledge-how according to which it comes out as knowledge of a specific kind of propositional knowledge: knowledge about ways in which the subject can engage in activities. This propositional account of knowledge how entails that Intellectualism about knowledge-how is true.

⁵⁰ I don’t find this argument especially plausible, and I think that at least some of the practical knowledge-how ascribing sentences involve the ought-reading. See the discussion of Bhatt in 4.2.4. However, I will put these worries to one side, since they do not concern the propositionality of knowledge-how.

This isn't quite Stanley and Williamson's final account: they claim that 'knows how' involves *de re* knowledge of the way (Stanley, 2011b, pp. 56–60; Schroeder, 2012), and claim that the practical species of knowledge-how involves a special *practical mode of presentation* (PMP) of the answer to the question (Stanley & Williamson, 2001, pp. 429–30; Stanley, 2011b; Pavese, 2015b).⁵¹ I will these elements of the view to one side, leaving us with the bare bones linguistically motivated version of the view.

It is one thing to demonstrate that standard views in linguistics entail that knowledge-how is a species of propositional knowledge, but Stanley and Williamson go further, claiming that the fact that their view is suggested by linguistics count in favour of it, providing a decisive reason to endorse Intellectualism about knowledge-how.

Our view of ascriptions of knowledge-how is very straightforward. It is just that the standard linguistic account of the syntax and semantics of embedded questions is correct. Furthermore, it should not be radically altered to rescue philosophical views about an allegedly philosophically significant subclass of them. [...]

We take our view of ascriptions of knowledge-how to be the default position. From a linguistic perspective, very little is special about ascriptions of knowledge-how. It is hard to motivate singling them out for special treatment from the rest of a family of related constructions. Our view of ascriptions of knowledge-how is the analysis reached on full consideration of these constructions by theorists unencumbered by relevant philosophical prejudices. (Stanley & Williamson, 2001, p. 431)

In this passage, and others like it (Stanley, 2011b, pp. 143–9), it can sound like Stanley and Williamson think that one can read off the correct metaphysical analysis of some phenomenon from the semantics of the sentences which are used to pick out this

⁵¹ In Stanley and Williamson (2001), PMPS are motivated on the basis of linguistic considerations. Stanley and Williamson appeal to (putative) Frege cases in which an agent knows that *w* is a way to *V*, but does not know how to *V* to support the idea that knowing most involve knowing this kind of proposition under a special mode of presentation (2001, pp. 428–30). Stanley 2011 claims that it is possible to explain the difference in truth values in the Frege cases by appealing to different readings of the modal involved in the infinitive (2011b, pp. 126–7), but maintains that there are still philosophical reasons for appealing to PMPs to explain other kinds of Frege cases (2011b, pp. 123–6), and linguistic reasons for thinking that knowledge-how involves a kind of *de se* content (Stanley, 2011b, Chapter 3).

phenomenon. Furthermore, they seem to suggest that the semantic theories offered by linguists should have methodological priority over the considerations offered by philosophers — encumbered as we are with relevant prejudices — in case the two conflict. This kind of methodological attitude is understandably controversial, and it has generated a good deal of the heat in the knowledge-how debate. We will now turn to this controversy to consider what it can tell us about the legitimate role of linguistic evidence.

4.2.1. Is Linguistics Relevant to Intellectualism?

Perhaps the most forceful criticism of Stanley and Williamson comes from Alva Noë who contends that the linguistic considerations which Stanley and Williamson consider are simply *irrelevant* to the distinction between knowledge-how and knowledge-that:

It is difficult to see how the positive analysis offered by Stanley and Williamson entails the falsehood of Ryle's distinction between knowledge how and knowledge that. Ryle's distinction is not a thesis about the sentences used to attribute propositional and practical knowledge respectively. It is a thesis about the nature of practical and propositional knowledge. (Noë 2004: 286-7).

Noë's contention is that Stanley and Williamson's account of knowledge how is irrelevant to the debate about the nature of knowledge-how, being *merely* an account of the truth conditions of English sentences. The claim of irrelevance is hard to maintain. As Stanley points out, even if we decided that linguistic considerations were irrelevant to the nature of knowledge-how we would still need an account of the nature of knowledge-how, and ANS_{S&W} is surely going to be a contender. Moving from an account of the semantics of a class of ascriptions to an account of the nature of the phenomena that they pick out is difficult to object to:

Discussions of semantics are often in fact discussions of metaphysics, carried out in the formal mode. When semanticists give accounts of sentences containing embedded questions [interrogatives], are they giving an account of what it is to bear a relation to a question, or are they giving an account of the meaning of certain

sentences? The right answer is that they are doing both tasks at once; this is why so often linguistic semanticists treat philosophical discussions as contributions to formal semantics. (Stanley, 2011b, p. 144)

One way to think about this issue is that everyone ought to accept some version of the truth schema:

Truth: ‘S’ is true iff S

When applied to a knowledge-how ascription, this gives us:

Truth_{KNOWS-HOW}: ‘Ruth knows how to swim’ is true iff Ruth knows how to swim

Truth_{KNOWS-HOW} links together the correct account of the truth conditions of our ordinary knowledge ascriptions with the correct account of the nature of knowledge-how, meaning that our account of the metaphysics of knowledge-how needs to be answerable to the correct account of the semantics of ‘knows how’ ascriptions, and the correct account of ‘knows how’ ascriptions needs to be answerable to the correct account of the nature of knowledge-how.

4.2.2. Metaphysics or Linguistics First?

A different methodological criticism comes from Devitt (2011). Devitt accepts the relevance of linguistic considerations to the investigation of knowledge-how, but contends that they are not decisive evidence about the nature of knowledge-how:

I think that we should always be suspicious of this [Stanley and Williamson’s] way of proceeding: our semantic theories should be guided by our theories of the world rather than vice versa. We should follow the methodology of “putting metaphysics first.” Why? *Because we know much more about the way the world is than we do about the semantics of our talk about that world.* (Devitt, 2011, p. 217)

Devitt accepts the connection between knowledge-how and ‘knows how’ ascriptions, claiming that his arguments demonstrate that some part of Stanley and

Williamson's linguistic thesis must be incorrect (Devitt, 2011, p. 207). His worry concerns the proper way to read that truth schema. Stanley and Williamson read the truth schema from left to right, moving from an account of the semantics of our ordinary sentences to an account of the nature of knowledge-how, meaning that they put linguistics *first*. By contrast, Devitt claims that we ought to put metaphysics first by always starting our inquiry with metaphysical claims about the target phenomenon, using these claims to constrain our linguistic account.

We might think that it is just as implausible to always put metaphysics first as it is to always put linguistics first. The more reasonable position would be to assign neither linguistics nor metaphysics a special priority, instead playing metaphysical and linguistic considerations off against one another on a case-by-case basis. This is in line with Stanley's point about the continuity of linguistics and philosophy — just as linguists might give philosophers reason to change their metaphysical accounts, philosophers might give linguists reasons to change their truth-conditional semantics. Consider a topic which both philosophers and linguists have spent considerable time working on: the correct understanding of adverbs in action sentences.⁵² Suppose that linguists all accept a Davidsonian analysis of adverbs as predicating properties of events, and philosophers discover that there are metaphysical reasons to be suspicious that there are any events. That would be a good philosophical reason for linguists to drop the linguistic analysis of adverbs as predicates of events, in favour of some other account. In this case philosophical considerations would motivate a change in the linguistics.

The challenge for critics of Intellectualism is then to find metaphysical reasons for thinking that knowledge-how is a relation to something non-propositional.⁵³ Devitt claims that the psychological distinction between procedural and declarative knowledge provides such evidence for non-propositionality (2011, pp. 208–15). However, Stanley argues that the distinction between declarative and procedural knowledge is irrelevant to propositionality, since it concerns the way in which information is implemented, rather than whether knowledge has informational content (Stanley, 2011b, Chapter 7). As Glick points out, it would have been a surprise if empirical science came up yielded a result

⁵² (Parsons, 1990, 1995; Davidson, 2006).

⁵³ Note that that we need evidence for non-propositionality, not just for a distinction between knowledge-how and knowledge-that. The latter could be explained by positing two kinds of knowledge-relation (see 4.2.5.) without changing the standard semantics for interrogatives.

concerning what kind of abstract objects can be the object of the knowledge-relation (Glick, 2011, p. 407). This isn't to say that there might not be other reasons for thinking that knowledge-how involves a non-propositional object; only that Devitt's reasons aren't compelling.

A paper setting out this kind of linguistically revisionary response to Stanley and Williamson is (Santorio, 2016), which explores a fruitful analogy with the semantics for normative language offered by Metaethical Expressivism. Expressivists about some discourse claim that sentences in that discourse express attitudes rather than stating facts. A central problem for this view is the Frege-Geach problem, which one can see as a problem of semantic implementation concerning how this view is give a semantic theory for normative language which can explain the way that it functions in attitude contexts and with truth-conditional connectives. One important line of Expressivist response to the Frege-Geach problem is to offer a novel Expressivist semantics for normative language which is motivated on philosophical grounds. Santorio develops a possible revisionary semantics for 'knowledge-how' ascriptions in English, on which knowing-how is a kind of plan oriented state. Santorio's paper is an important contribution to the linguistically revisionary line of response to Intellectualism, but by his own admission he doesn't offer a compelling philosophical argument for the revisionary semantics.

4.2.3 Which Language Should we Prioritise?

As I pointed out in the introduction, there are various different constructions employed for ascribing knowledge-how in different languages. Several of these constructions are not a natural fit for Stanley and Williamson's proposed semantics, which a number of authors have taken to cause a problem for Stanley and Williamson's proposed semantics (Rumfitt, 2003; Roberts, 2009; Hornsby, 2011; Glick, 2012; Wiggins, 2012; Abbott, 2013; Douskos, 2013; Ditter, 2016). The troublesome constructions for Intellectualism are:

- i. S + knows + infinitive (French, Portuguese)

- ii. S + special epistemic verb + infinitive (Russian, Cantonese)⁵⁴
- iii. S + can + infinitive (German, Danish)⁵⁵

The worry is whether the obvious semantics for these constructions supports Intellectualism. On the face of it, the syntactic structure of the infinitival constructions is: noun+verb+verb phrase. The most obvious semantics for this construction would not involve a proposition-denoting term like an interrogative or that-clause, but rather to an activity or property denoting verb phrase.⁵⁶ Given that sentences with this form are used to translate English 'knows how' ascriptions, if these sentences *only* have non-propositional readings, then there must be some non-propositional reading of English 'knows how' ascriptions. This line of criticism allows that linguistic evidence is relevant to the nature of knowledge-how, but questions which view of knowledge-how it supports. Just as the most obvious semantics for English 'knows how' ascriptions supports a propositional account of knowledge-how, the most obvious semantics for the infinitival construction in French or Cantonese supports a non-propositional account of knowledge-how as a relation to an activity, meaning that both views seem to have equal linguistic support.

An Intellectualist can insist that the fact that 'knows how' is propositional means that there must be some propositional reading of the 'savoir faire' construction. In fact, Stanley has gone as far as offering a revisionary semantics for this construction, according to which it picks out a state of propositional knowledge (Stanley 2011b: 138-40). However, this move is also available to Anti-Intellectualists: they can offer a revisionary semantics for English, based on the semantics for other languages. If the English construction is a good translation for the French, Cantonese and Danish constructions, either we either need to posit a non-obvious non-propositional reading for 'Ruth knows how to swim', or a non-obvious propositional reading for 'Ruth sait nager', '露丝會游泳', and 'Ruth kan svømme'. By itself, the linguistic evidence does not tell us which languages we ought to be positing a revisionary semantics for. I think at the end of the day, this issue is going to turn

⁵⁴ Where the special epistemic verb is a verb like 'умеет' or '會' that would be translated by 'knows', but is distinct from the verb used in 'knows that' ascriptions.

⁵⁵ Glick (2012, pp. 123–6) points out that some of these constructions can also be found in English. We occasionally use the gerund construction 'S knows V-ing', and we also use an infinitival construction with 'learns' 'S learns to V'.

⁵⁶ Interestingly, these constructions seem to provide some linguistic evidence for the standard view's *Logical Structure*.

on the plausibility of the revisionary semantics, which is an issue beyond the scope of this thesis.⁵⁷

4.2.4. Alternative Semantics for English

A different way to oppose Stanley and Williamson's account is to claim that their semantics for the 'knows how' construction in English is incorrect. Like the criticism based on the cross-linguistic evidence, this objection allows that linguistic evidence is relevant to the nature of knowledge-how, but contends that Stanley and Williamson are wrong about the linguistic evidence.

Some of the alternative semantics for 'knows wh' ascriptions in English are compatible with Stanley and Williamson's account. For example, Rajesh Bhatt posits a complex bouletic modal in 'knows how' ascriptions,⁵⁸ in contrast to Stanley and Williamson who posit an ambiguity between the 'ought' and 'can' reading (Bhatt, 2006, Chapter 4). Bhatt's account offers a unifying account of these two readings, as well as neatly explaining the way in which these readings can shift in response to conversationally salient goals.⁵⁹ Although Bhatt's account privileges knowledge of ways that achieve some contextually supplied goal,⁶⁰ it agrees with Stanley and Williamson that 'knows how' ascriptions pick out states of propositional knowledge. We can also fiddle with the modality, the interpretation of PRO, or the mention-some/all distinction in ANS_{S&W} without undermining the core Intellectualist claim.

However, there are a number of semantic treatments for 'knows how' ascriptions on the market which are opposed to a propositional account:

⁵⁷ But see (Pavese, 2016b, sec. 1) who argues that the Intellectualist can explain the difference between the infinitival and interrogative constructions within the different readings of the interrogative construction.

⁵⁸ A bouletic modal concerns what is possible or necessary given a person's desires or goals.

⁵⁹ For more on Bhatt's semantics, see chapter 3 §3.3. The importance of contextual goals is noted by (D. G. Brown, 1970, p. 222; Moore, 1997, p. 169)

⁶⁰ In line with Brown's account of the standard use (D. G. Brown, 1970) and Besson's account of knowledge-how as knowledge of means-ends propositions (Besson, MS.).

- i. *Free Relative semantics:* Bach (2012), and Abbott (2013) suggest that the ‘how to’ clause in ‘S knows how to V’ does not function as an interrogative, but rather has a free relative noun phrase denoting an object. In a related vein, (Bengson & Moffett, 2011a) argue that there are linguistic reasons for thinking that ‘how to V’ denotes an object. (We will return to the free relative view in chapter 2, where I will argue that this semantic account is linguistically implausible.)
- ii. *Interrogative/Contrastivist Semantics:* Masto (2010), suggests that ‘knows wh’ ascriptions in English involve a relation not to the *answer* to the question, but to the question as a whole — making knowledge-wh more like wondering-wh than telling-wh. Schaffer has also argued for the Contrastivist view that knowledge-wh is a ternary relation between a subject, a proposition and a question (Schaffer, 2004, 2005, 2007, 2008, 2009), and has defended a contrastivist semantics for ‘knows’ (Schaffer & Szabó, 2014). Although Masto and Schaffer do not explicitly address the application of the Interrogative or Contrastive account to knowledge-how, it opens the door to treating knowledge-how as a relation to a question, rather than to a set of propositions.
- iii. *Predicative Semantics:* In a series of papers, Brogaard has also argued on linguistic grounds that knowledge-wh is not a relation to a proposition, but is rather a relation to the property expressed by the question abstract (so, if I know where dinner is, then what I know is the place for dinner, not that the dinner is at such and such a place) (Brogaard, 2008a, 2008b, 2009), and applies this account of knowledge-wh to knowledge-how in her (2011)
- iv. *Imperative Semantics:* Finally, Roberts (2009) builds on work by Dowty and Jacobson which treats infinitival wh-phrases not as interrogatives, but as verb phrases denoting a complex imperatival meaning concerning acts which can achieve some goal.

Although it is beyond the scope of this thesis to assess the linguistic plausibility of all of these treatments (although see chapter 2 on the Free relative semantics, (Schaffer, 2009) on Predicativism, and (Aloni & Égré, 2010; Stanley 2011b, p. 61-5) on Contrastivism), the existence of these alternative semantics for knowledge demonstrates that Stanley and Williamson’s linguistic picture is not as uncontroversial as they make out.

4.2.5. Objects and Relations

A final objection to Stanley and Williamson's argument — due to Ephraim Glick (2011) — concerns whether the linguistic evidence establishes the interesting kind of Intellectualism. Following Glick, let's call any species of knowledge with a propositional object *propositional knowledge*, and let's call a species of knowledge with a propositional object and all of the same epistemic properties as the standard examples of knowledge-that (justification, belief, Gettier proofing etc.) *theoretical knowledge*. This distinction gives us two ways to understand Intellectualism:

Strong Intellectualism: Knowledge how is a species of theoretical knowledge

Weak Intellectualism: Knowledge how is a species of propositional knowledge

Whereas Weak Intellectualism only makes a claim about the *object* of knowledge-how — that it is a proposition — Strong Intellectualism claims that the object of knowledge-how is a proposition, and that the knowledge-how *relation* is identical to the theoretical knowledge relation, with all of the same properties. It seems clear that many of the critics of Intellectualism are interested in criticising Strong Intellectualism, and this certainly seems to be the claim that Ryle had in his sights. The interesting Intellectualist claim is that knowledge-how is a species of the ordinary kind of knowledge-that which we ascribe with sentences of the form 'S knows that p'.

Is Strong Intellectualism established by the linguistic evidence? Glick argues that it is not: the linguistic evidence given above concerned the proper interpretation of the 'how to V' clause, showing that it denotes a proposition. This evidence does not tell us what the correct semantics for 'knows' is. This means that the linguistic evidence is compatible with 'knows' picking out both the theoretical knowledge relation in the case of 'S knows that p', and some other relation in 'S knows how to V', such as the seeming relation (Cath, 2011), or a special *practical* knowledge relation (Cath 2011; Glick, 2011). The linguistic evidence can tell us what kind of abstract objects we are related to in different kinds of knowledge-ascriptions, but it does not tell us about what the epistemic properties of those relations are. This means that the truth-conditional semantics given by Stanley and Williamson are

compatible with significant differences between the epistemic properties of knowledge-how and knowledge-that, of the kind proposed by Anti-Intellectualists in 4.1..⁶¹

Glick's discussion brings out some important points that we will need to bear in mind below. First, investigation of the nature of knowledge-how connects in complicated ways to investigation of the nature of theoretical knowledge, and knowledge in general. Secondly, when we are thinking about the logical space in the knowledge-how debate, it is crucial to distinguish between claims about the object of knowledge-how, and claims about the knowledge-how relation, a point that we will return to in chapter 7.

4.3. The Semantic Implementability Constraint

In this chapter I have set up the context for our discussion of knowledge-how in the rest of the thesis, setting out the main contours of the debate about the nature of knowledge-how with a focus on the importance of linguistic arguments. I have offered an interpretation of Ryle's discussion of knowledge-how that shows him to be principally interested in *non-linguistic* issues, and argued that he doesn't hold that knowing how to do something is just any kind of ability. I have suggested that – somewhat surprisingly – linguistic evidence entered into the knowledge-how debate on the side of Anti-Intellectualism via linguistic motivations for the standard view, and argued that the linguistic motivation for this view is weak.

In §4, I set out what I take to be the linguistic arguments for Intellectualism and worked through some of the responses to this argument to get clearer on the legitimate uses of linguistic evidence in this debate. The overall assessment of these criticisms is partly concessionary to the Intellectualist. I have conceded that truth-conditional semantics are relevant to our account of the nature of knowledge, meaning that one can legitimately use linguistics as a source of evidence about the nature of knowledge-how. However, I have argued that we shouldn't overstate the significance of linguistic evidence. For one thing, we should not expect linguistic uniformities to follow through to

⁶¹ Stanley accepts this point (2011b, pp. 148–9), and it is natural to read chapters 7 and 8 of *Know How* as a defence of the idea that knowledge-how involves theoretical knowledge, rather than some other relation.

metaphysical uniformities. Furthermore the standard semantics offered by contemporary linguistics are not the final word in our account of the truth-conditions of knowledge-how ascriptions, and might be over-ridden by philosophical considerations. I have also suggested that the linguistic evidence — both concerning the correct semantics for English 'knows how' ascriptions, and the cross-linguistic evidence — is more complex than Stanley and Williamson claim. Even if Stanley and Williamson's semantics for English is correct, I have argued that it does not resolve some crucial issues about the nature of knowledge-how: leaving open the question of how we should characterise the knowledge-how relation.

Going forward, it would be helpful to have a positive picture of what the legitimate role of linguistic evidence in this debate that accepts the relevance of linguistic considerations to the nature of knowledge-how, without endorsing the general priority of linguistic over philosophical considerations. I think that one helpful way to think about legitimate role of linguistic evidence in this debate is as providing a semantic implementability constraint on accounts of knowledge-how. Supposing that knowledge-how is the state which is picked out by our ordinary ascriptions of the form 'S knows how to V', it is a condition on an acceptable account of the nature of knowledge-how that it is compatible with a linguistically plausible account of the truth-conditions of 'S knows how to V'. All we need to get this connection is the truth schema; we don't need to be committed to the controversial linguistics-first methodology.

Stanley hints at this kind of implementability constraint:

Suppose one produces an analysis of knowing how to do something. Surely, it would be a worry with such an analysis if there is no correct compositional semantics of English according to which ascriptions of knowing how to do something express that analysis. If there were no plausible compositional semantics for English ascriptions of knowing how that assigned to them one's favored analysis, then that would show that one's analysis could not possibly be what English speakers mean when they use such ascriptions. (Stanley, 2011 quoted in Bengson & Moffett, 2011b, p. 36).

I think that this constraint provides a plausible picture of the role of linguistic evidence in this debate. We can understand the linguistic criticisms of the Standard picture as applications of this constraint. Supporters of the standard view claimed that a non-propositional account of knowledge-how was the only semantically implementable account of knowledge-how, and their Intellectualist opponents quite reasonably pointed out that their view was not semantically implementable, given standard views about ‘knows how’ ascriptions. This constraint also gives some prima facie support to Propositionalism. Since an Propositionalist account can be semantically implemented, via Stanley and Williamson’s semantics, it has one up over other accounts of knowledge-how, for which there is not an obvious semantic implementation.

One place where I want to depart from Stanley concerns what happens if an account fails the implementability constraint. If it turns out that an account of knowledge-how is not compatible with any off-the-shelf semantics, then this is a strike against that account, because this provides evidence that our ordinary ‘knows how’ ascriptions are not picking out the state posited by that account, leaving the proponent of that account open to the charge that they are changing the subject away from our ordinary notion of knowledge-how (Bengson & Moffett, 2011b, pp. 36–7; Stanley, 2011b, p. 144). However, there are a number of ways in which the supporter of an unimplementable account might respond to this challenge. One would be to offer a novel account of the semantics of ordinary ‘knows how’ ascriptions that is amenable to their metaphysics (perhaps along the lines of (Santorio, 2016)). Taking this option allows the supporter of this account to claim that their analysis connects to ordinary meaning; the point is just we needed to do some substantial philosophical work to get a grip on that meaning.

An alternative response is to disconnect their account of knowledge-how from the semantics of ‘knows how’ ascriptions entirely. One might opt for an error theory of our ordinary ‘knows how’ ascriptions, claiming that all sentences of the form ‘S knows how to V’ are false, meaning that we need to employ other constructions to pick out knowledge-how. Alternatively one might pursue a revisionary philosophical project, opting for an explication of knowledge-how, which aims to tidy up our ordinary notion of knowledge-how in ways that deliberately depart from the ordinary concept (Bengson & Moffett, 2011b, p. 44). If our ordinary knowledge-how ascriptions are simply false, or the philosophical project is to develop a new notion of knowledge-how, then the charge of

changing the subject loses its sting, and theories of knowledge-how can be developed independently of linguistic considerations.

In closing, I want to connect the criticisms of Intellectualism to the chapters to come. In §4.2.2. I argued that there might be philosophical reasons to think that knowledge-how is not a species of propositional knowledge. In chapter 3 I give an example of such an argument, contending that Intellectualism faces a significant problem in isolating a kind of propositional knowledge that is plausibly identical with knowledge-how. In §4.2.4. I pointed out that there are a number of alternatives to the interrogative semantics offered by Stanley and Williamson. In chapter 2 I will consider the Free Relative semantics suggested by Abbott and Bach, argue that it provides the only way for Objectualists to semantically implement their account of knowledge-how, and show that it is a linguistically implausible account of 'knows how' ascriptions. In §4.2.5. I considered Glick's argument that linguistic evidence fails to establish the interesting kind of Intellectualism. In chapter 7, I will build on his discussion, arguing that the linguistic evidence is compatible with knowledge-how being a species of ability — the ability to answer a question.

Chapter 2: Knowledge-How: Interrogatives and Free Relatives

Introduction

In this chapter, I consider what I take to be the most plausible non-interrogative semantics for ‘knows-how’ ascriptions, which treats the ‘how to V’ phrase as a free relative noun phrase (Bach, 2012; Abbott, 2013). According to the free relative semantics, ‘how to V’ denotes not a question, but an *object*. If linguistically plausible, this semantics would provide a natural way to implement Bengson and Moffett’s *Objectualist* account of knowledge-how, which claims that knowing how to do something involves the understanding relation to a way of acting (Bengson & Moffett, 2011a). I argue that on balance the free relative semantics is *not* linguistically plausible. Although Bengson and Moffett consider a number of linguistic phenomena that suggest such a view, these phenomena can equally be explained by interrogative semantics. Furthermore, standard linguistic tests for detecting interrogative and free relative readings strongly suggest that sentences of the form ‘S knows how to V’ have a clear interrogative reading, and no free relative reading. The upshot is that Objectualists need to look elsewhere for a way to semantically implement their view.

The plan of action is as follows. In §1 I lay out the distinction between Interrogative and Free Relative readings of wh-phrases. In §2, I relate these two readings to the debate about the nature of knowledge-how, and show that the Free Relative semantics is the most plausible way for Objectualists to semantically implement their view. In §3, I consider Bengson and Moffett’s linguistic evidence that ‘how to V’ has an objectual reading, and in §4 I run through some standard linguistic tests for detecting Interrogative and Free Relative readings.

1. Interrogatives and Free Relatives

We can get an intuitive grip on the distinction between interrogative and free relative wh-phrases by considering the different meanings that wh-phrases can have.⁶² Consider the following sentences:

(1) I asked what was for dinner.

(2) I ate what I was given.

We can give an account of the meaning of sentence (1) by reading the wh-phrase as having an interrogative meaning, denoting a question. Sentence (1) is true if I utter the sentence ‘what’s for dinner?’. However, it would be wrong to treat the wh-phrase in sentence (2) in the same manner. Sentence (2) doesn’t claim that I ate the question *what was I given?*. Questions just aren’t the kinds of things we eat. Hence, in (2) the wh-phrase ‘what I was given’ must denote something else, plausibly *some stuff* that I was given. Linguists standardly explain this difference in meaning by claiming that in sentence (1) the wh-phrase is functioning as an *interrogative*, denoting a question, whereas in (2) the wh-phrase is functioning as a *free relative*, denoting an object.

We can often work out how a wh-complement is functioning by considering the meaning of the embedding verb. Some verbs can relate only to questions, requiring an interrogative reading of their wh-complements, whereas other verbs can relate only to non-propositional objects, requiring a free relative reading. For example, ‘ask’, ‘inquire’ and ‘wonder’ can only relate to questions, whereas ‘eat’, ‘take’ and ‘give’ can only relate to objects.

When a verb doesn’t make such a restriction in virtue of its meaning, we find sentences that are ambiguous between the free relative and embedded question readings.⁶³ Consider the following situation: Tariq and Mona are spies. Their job is to keep track of rival spies who are after their country’s nuclear codes, and to inform their superiors whenever the rival spies attempt to communicate with their handlers. Tariq and Mona do not themselves know the nuclear codes. They are tracking two spies: Jorge and Petra. It is common knowledge between them that Petra has a belief about what the codes are,

⁶² Standard linguistic treatments of this distinction can be found in (Bresnan & Grimshaw, 1978; C. L. Baker, 1995; Huddleston & Pullum, 2002, pp. 1068–79).

⁶³ For a parallel example with ‘ask’, see (Michaelis, 2011, n. 3)

although they don't know the content of that belief, or whether it is true. Tariq utters the following sentence:

(3) Jorge knows what Petra believes.

There are two interpretations of this sentence, which have different presuppositions, and make different commitments as to the relation of Jorge and Petra.⁶⁴

If we read 'what Petra believes' as a free relative, it denotes the thing that Petra believes — that the nuclear code is XYZ. On this reading (3) says that Jorge knows the thing that Petra merely believes: that XYZ is the nuclear code. On this reading, this sentence presupposes that Petra's belief is *true*, since Petra believes the proposition that Jorge knows, and knowledge is factive. However, this reading says nothing about Jorge's knowledge of Petra: they might have the same beliefs without ever having heard of one another.

By contrast, if we read 'what Petra believes' as an interrogative, the wh-phrase denotes a question, meaning that (3) says that Jorge knows the answer to the question of what Petra believes. This question might either be answered by a proposition like *Petra has some belief about what the nuclear code is*, or by a proposition like *Petra believes that the Nuclear codes are XYZ*. On this reading, (3) does not presuppose that Petra has a true belief, because it might be that Jorge only knows that Petra has some belief or other about the codes, without having any knowledge about what the code is. However, this sentence does require that Jorge is aware of Petra, since he cannot know what she believes without having some idea about who she is.⁶⁵

⁶⁴ One way to make these readings salient is by shifting focus. Consider:

- (3a) Jorge KNOWS what Petra BELIEVES
(3b) Jorge knows WHAT Petra believes

The pattern of focus in (3a) favours the free relative reading, whereas the focus in (3b) favours an interrogative reading.

⁶⁵ Sentences like (3) pose an interesting problem for Brogaard's account of knowledge-wh ascriptions. She treats interrogative wh-complements and free relatives as having the same kind of meaning (Brogaard, 2008b, p. 162, 2009, pp. 449–53), which means she doesn't have the resources to explain sentences which are intuitively ambiguous between interrogative and free relative readings. She considers a related sentence – 'what John is is boring' (2008: example (30c) on p. 165) – but her comments do not suggest a general strategy for explaining this ambiguity.

2. Free Relative Semantics for ‘S knows how to V’

Having got clear on the difference between interrogatives and free relatives, let’s connect this distinction to the debate about the nature of knowledge-how. Applying the interrogative and free relative treatments to sentences of the form ‘S knows how to V’ gives us the following general truth conditions (with brackets used to pick out the object of the knowledge relation):

KH-INT: ‘S knows how to V’ is true iff for some way w , S knows [that w is a way to V]

KH-FR: ‘S knows how to V’ is true iff for some way w , S knows [w] and w is a way to V

Removing the quotation marks in these semantic treatments gives us two rather different accounts of the nature of knowledge-how. Disquotation on KH-INT yields the claim that knowledge-how is knowledge of a certain kind of proposition about the nature of knowledge-how, in line with $ANS_{S\&W}$. By contrast, disquotation on KH-FR yields the claim that knowledge-how is a kind of objectual knowledge of a relevant way of acting. Whereas KH-INT is a natural partner for Propositionalism; KH-FR is a natural partner for an Objectualist account of knowledge-how, as (Abbott, 2013) and (Bach, 2012) observe.

The best-developed version of Objectualism is Bengson and Moffett (2011a) (see (Bengson & Moffett, 2007) for a precursor, and (Michaelson, MS) for another way to develop this view). On Bengson and Moffett’s view, knowing how to do something consists in an objectual understanding relation toward a way of acting, together with a distinctive kind of action-guiding conception of that way of acting, which plays the same role as the practical mode of presentation in Stanley and Williamson’s account. Bengson and Moffett have an ambivalent relation with the Free Relative semantics. A good deal of the evidence for their view comes from linguistic arguments, which can easily be adapted

to support the free relative semantics, as we shall see in the next section. However, Bengson and Moffett are cagey about the connection, claiming that:⁶⁶

It is not clear to what extent the *metaphysical* distinction between propositions and ways of acting currently at issue corresponds to the *linguistic* distinction between embedded questions [i.e. interrogatives] and free relatives. (2011b footnote 42)

I think that this unclarity can only stem from general unclarity about the relation between linguistic distinctions and metaphysical distinctions. The discussion in chapter 1 provides us a picture of the connection between metaphysical and linguistic distinctions, in the shape of the Semantic Implementability Constraint. This constraint requires that an Objectualist account of the nature of knowledge-how be compatible with a linguistically plausible semantics for ‘knows how’ ascriptions. The free relative semantics is an obvious option for the Objectualist to semantically implement their account, and if this semantics were plausible, then this would put Objectualism on par with Propositionalism with respect to the linguistic evidence.

In fact, the free relative semantics looks to be the only currently available semantics for ‘knows how’ ascriptions that allows the Objectualist to semantically implement their account. We have seen in chapter 1 that there are a number of semantics which depart from the Answer theory: interrogative semantics which treats wh-phrases as expressing a question (Schaffer, 2007; Mastro, 2010), predicative semantics which treats wh-phrases as expressing a predicate nominal (Brogaard, 2009), and imperatival semantics which treats an infinitival wh-phrase as expressing a complex imperatival meaning (Roberts, 2009). None of these accounts are natural partners for the Objectualist account.⁶⁷ (Ginzburg, 2011) and (Michaelis, 2011) also depart from the standard account of ‘knows-wh’ ascriptions, although they both end up treating wh-phrases as expressing propositions. Although Ginzburg suggests that some non-English infinitival knowledge ascriptions are non-propositional, he treats ‘S knows how to V’ as involving a relation to a fact. Michaelis

⁶⁶ (Michaelson, MS) is an example of an Objectualist view that is much clearer in endorsing the free relative semantics.

⁶⁷ Although the Predicativist semantics might be thought to work well with Objectualism, on this account one knows a predicate in virtue of knowing *that* certain objects fulfil that predicate.

treats *wh*-complements as presupposing an open proposition (of the form: $x \text{ is } F$),⁶⁸ and asserting that the agent knows the unbound variable in that open proposition. Although Michaelis's view can sound close to Objectualism, she explicitly claims that her account is truth-conditionally equivalent to Stanley's account (2011, p. 277) meaning that her account is not strictly speaking an alternative to the interrogative semantics.

By elimination, the free relative semantics is the only available semantics that is compatible with Objectualism, meaning that the most natural way for Objectualists to try to semantically implement their view is by endorsing this semantics. If this semantics is not plausible — as I shall argue below — then this is a strike against the Objectualist account of knowledge-how. As I observed in chapter 1 §4.2.3., the fact that an account of knowledge how is not semantically implementable does not mean that this account is untenable: one could offer a revisionary semantics which is compatible with one's metaphysics, opt for an error theory, or embark on a project of explicating the concept of knowledge-how. However, the fact that an account is not implementable is a negative feature.

In the interests of accurately representing Bengson and Moffett's discussion, it is worth pointing out that they offer a different interpretation of the argument from linguistics. They appeal to the Argument from Linguistic Uniformity (see chapter 1 §4.1.), claiming that positing a uniformly Objectualist account of knowledge-*wh* explains this linguistic uniformity just as well as a propositional account. One consequence of this argument is that it commits Bengson and Moffett to a general Objectualist account of knowledge-*wh*, meaning that they need to endorse an Objectualist-friendly semantics for all 'knows *wh*' ascriptions. Although we have seen above that at least some 'knows *wh*' ascriptions involve the free relative reading (in our discussion of sentence (3)), Bengson and Moffett need the much more ambitious claim that *all* 'knows *wh*' ascriptions involve this reading. There is lots of good linguistic evidence against this claim, stemming from the application of the linguistic tests considered in §4 below. However, in the interests of space, I will simply put the suggestion that all 'knows *wh*' has a free relative reading to one side. One exception: below I will assume that 'knows whether' ascriptions have only an interrogative reading, and use 'knows whether' as a test to calibrate whether Bengson and

⁶⁸ On the difference between open propositions and sets of propositions, see (Friedman, 2013, pp. 152–3).

Moffett's linguistic evidence is really suggestive of a free relative reading. This is — I hope — not an especially controversial assumption. I find it difficult to even understand the suggestion that 'knows whether' ascriptions involve a free relative reading, in part because it's not clear what kind of object is supposed to be involved.

3. Evidence that 'how to V' is a Free Relative

Bengson and Moffett appeal to four linguistic phenomena to build an argument for thinking that the 'how to' complement in knows how ascriptions denotes an object rather than a proposition (Bengson & Moffett, 2011a, pp. 178–85):

- i. The availability of apparent objectual paraphrases for 'knows how' ascriptions,
- ii. The fact that 'knows how' ascriptions fail to take propositional modifiers,
- iii. The oddness of raising the question of justification about knowledge-how,
- iv. The gradability of 'knows how' ascriptions.

Although Bengson and Moffett do not present these phenomena as evidence for a free relative semantics, they are suggestive of such a view, since these phenomena can be explained by a free relative semantics. I will argue that these phenomena do not provide a compelling argument for the free relative semantics, since all of these phenomena can also be explained by the supporter of an interrogative semantics. This is bad news for both Objectualism, and free relative semantics since it removes a central plank in the argument for both views.

Bengson and Moffett's first piece of linguistic evidence comes from the paraphrases for 'knows-how' ascriptions. They claim that the natural paraphrase for (4) is not Stanley and Williamson's (4a), but rather (4b) (with brackets for clausal boundaries):

(4) Ruth knows how to swim.

(4a) Ruth knows [that w is a way in which she herself can swim].

(4b) Ruth knows [the way to swim].

They point out that the naturalness of (4b) is good news for the objectualist, since in this paraphrase the object of knowledge seems to be an object-denoting noun phrase – *the way to swim* – rather than a proposition-denoting that-clause. This paraphrase is extremely close to the free relative reading of ‘how to swim’, which seems like good news for the free relative semantics.

Although this paraphrase is suggestive, a supporter of the interrogative semantics can easily explain it. ‘Knowledge-the’ ascriptions like (4b) plausibly have a *concealed question* reading which is equivalent to an interrogative knowledge-wh ascription (White, 1982, pp. 31–2; Brogaard, 2008b; Bach, 2012). Consider:

(5) Jane knows the capital of Mali.

This sentence has two readings: an objectual reading which says that Jane is *acquainted* with Bamako, and a concealed question or quasi-interrogative reading which says that Jane knows *what the Capital of Mali is* but makes no commitments about acquaintance. Given the concealed question reading of ‘knows-the’ ascriptions it is unsurprising that interrogative knowledge-wh can be paraphrased by ‘knowledge-the’ ascriptions, as Pavese points out (Pavese, 2013, n. 15). Taking a concealed question approach to (4b) it comes out as meaning something like ‘Ruth knows what a way to swim is’, which not only involves an interrogative, but is pretty close to Stanley and Williamson’s proposed paraphrase (4a).⁶⁹

Bengson and Moffett’s second piece of evidence comes from the observation that the complement in ‘knows how’ ascriptions fails to take modifiers that are appropriate for that-clauses. For example:

(6) Noelle knows that the Prime Minister is a woman – so it must be true!

sounds fine, but:

⁶⁹ We also use ascriptions like ‘Jane knows loads of ways to swim’ which like (4b) suggest an objectual reading. Ascriptions of this form are also susceptible to a concealed question analysis, despite not involving ‘the’. ‘Jane knows loads of Capitals of African Countries’ has a reading which means ‘Jane knows *what* the capitals of loads of African countries are.’ On the parallel treatment, ‘Jane knows loads of ways to swim’ means something like ‘Jane knows *what* loads of ways to swim are’. It is worth noting that whereas ‘knows-the’ sentences can take either a concealed question or an objectual reading, ‘learns-the’ sentences like ‘Joan learnt the capital of Mali’ can *only* take a concealed question reading, which suggests that ‘learns’ cannot take an objectual complement. This is an awkward result for the objectualist, given the close conceptual connections between learning and knowing (Pavese, 2016b, pp. 654–5).

(7) ?Ruth knows how to swim – so it must be true!

seems grammatically odd.⁷⁰ Following Bengson and Moffett, we might think that sentence (7) is odd because the how-complement denotes an object, and objects cannot be true. The supporter of the free relative semantics can appeal to the same explanation, since on their view ‘how to swim’ is an object-denoting noun-phrase.

Bengson and Moffett also note that ‘knowledge-how’ ascriptions seem not to be ‘bumped up’ to certainty, but rather seem to be bumped up to mastery:

(8) ? Ruth knows how to swim — in fact, she’s certain of it!

(9) Ruth knows how to swim — in fact, she's mastered it!

There is a parallel argument in the offing here. The supporter of a free relative semantics can point out that one cannot be certain of ways, although one can master them.

Although these arguments initially seem appealing, they end up significantly over-generating. It is easy to construct examples in which other kinds of ‘knows-wh’ ascriptions fail to take these modifiers. Consider:

(10) ? Noelle knows whether the Prime minister is a woman – so it must be true!

(11) ? Vesta knows who came to the party — so it must be true

Sentences (10) and (11) sound just as weird as (7), which suggests that if one wants to take this evidence seriously, it supports the claim that a whole swathe of ‘knows wh’ ascriptions have a free relative reading, which is a contentious position. Bengson and Moffett do float the idea that all knows-wh involves objectual knowledge, so we might think that they would be happy to endorse a free relative semantics for (11). However, even they ought to balk at the suggestion that ‘knows-whether’ ascriptions involve a free relative complement, as I observed above.

Furthermore, the supporter of an interrogative semantics can appeal to a fairly simple explanation for the oddness of these sentences. According to the interrogative semantics, a wh-phrase denotes not a proposition, but a *question*. And on the face of it,

⁷⁰ I use ? to mark grammatically anomalous sentences.

questions aren't the kinds of things that can be true or false.⁷¹ So, we might think that (7), (10), and (11) are odd because of anaphora failure. The modifying phrase 'so *it* must be true' involves the anaphoric 'it', which looks back in the sentence to find something which might be true. Since the interrogative phrase denotes a question, one might think that the anaphoric phrase is odd simply because 'it' fails to secure reference to anything. The general lesson is that although the Propositionalist is committed to thinking that 'knowledge-wh' ascriptions are made true by states of propositional knowledge, they don't need to think that 'knows-that' and 'knows-wh' ascriptions have precisely the same semantic or syntactic properties.⁷²

The supporter of an interrogative semantics can also explain the appropriateness of (9). Presumably one can master *activities* as well as ways of acting. And, on the standard interrogative semantics, (9) relates Ruth to a question about the activity of *swimming*. So on the standard interrogative semantics for (9) the first part of the sentence includes a term picking out an activity which can be the subject of anaphoric reference in phrases like 'in fact, she's mastered it'.

Examples like (8) involving 'in fact, she's certain of it' are a little trickier. Intuitively, one *can* be certain of questions — consider 'Paul was certain of who came to the party' —, so the interrogative semantics predicts that these sentences ought to be acceptable. Interestingly, the parallel examples for 'knows-whether' are a little strange but seem grammatically acceptable. For example:

⁷¹ For example, one plausible view of the denotation of interrogatives identifies questions with a partition consisting of mutually exclusive complete answering propositions (Groenendijk & Stokhof, 1984). Since a partition is not the kind of thing that can be true or false, this view can easily explain the weirdness of (7), (10), and (11).

⁷² Bengson and Moffett consider this kind of response (Bengson & Moffett, 2011a, n. 43). They point out that this explanation predicts that anaphora with predicates of questions (like: 'it is easily answered', 'it is a difficult question', or 'it is extremely interesting') ought to be acceptable. They give an example of question-anaphora which seems bad:

- (1) ? Michael knows how to swim, it is easily answered.

However, there are other examples which seem grammatically acceptable, although baroque:

- (2) Xenia knows how to solve the puzzle, although it is a difficult question.
 (3) Paula knows how to prove the ABC conjecture, it is extremely interesting.

It is also worth noting that part of the oddness of 1) might well come from the fact that *how to swim* is not an easy question, which is a semantic, rather than a grammatical issue with the sentence.

(12) Noelle knows whether the Prime Minister is a woman — in fact she's certain of it!

sounds fine. This sentence says that Noelle doesn't merely know, but is certain of whether the PM is a woman. Pretty much all of the examples here are controversial, but I think that at least some 'knows how' sentences can be modified by certainty. For example:

(13) Thorald knows how to pronounce 'phǝ' — in fact she's certain of it!

Sounds grammatically acceptable (at least, to me): it says that Thorald doesn't merely know, but is certain of how to pronounce 'phǝ'?.⁷³ There's certainly room for disagreement about the acceptability of this sentence, and I can easily imagine supporters of the free relative semantics sticking to their guns, and claiming that (13) is unacceptable. However, if there is disagreement about our intuitions, this is bad news for the supporter of free relative semantics. If there are conflicting or fuzzy intuitions about the acceptability of a class of sentences, then neither side of the debate ought to be relying on the acceptability (or unacceptability) of these sentences as motivation for their view, which means that examples like (8), (12), and (13) are not admissible evidence for either side.

Bengson and Moffett's third piece of evidence is the fact that 'knows-how' ascriptions do not open up the question of justification, unlike 'knows-that' ascriptions (Austin, 1956). They point to the following exchange:

- (14) a) Martin knows how to get to the airport,
b) Hmmm ... is he really justified in believing that?

The response in (14b) is certainly odd, and one might think that this is because knowledge-how is not the kind of knowledge which involves justification.

⁷³ Incidentally, (12) sounds even better to me if we omit the final 'of it':

(12*) Ana knows how to pronounce 'phǝ' — in fact she's certain!

However, the supporter of an interrogative semantics can explain the oddness of this exchange by appealing to the same kind of anaphora failure which occurs in sentence (7), (8), (10) and (11). The response in (14b) involves an anaphoric ‘that’ which looks for a proposition in (14a) about which one can raise the question of justification. However, if the interrogative semantics is correct, then (14a) ascribes knowledge of a question, meaning that there are no propositions available for the anaphoric ‘that’ to pick up on. Consider a parallel example with ‘knows-whether’:

- 15) a) Martin knows whether to swim
b) Hmmm ... is he really justified in believing that?

The response in (15b) is just as weird as (14b), suggesting that the weirdness stems from problems with anaphoric reference to interrogative phrases, rather than any special features of ‘how to V’ phrases.

Putting the oddness of (14b) to one side, one might think that there remains a powerful non-linguistic argument for Objectualism in the offing here. It seems that there are many cases in which agents know how without having a related justified belief (Cath, 2011; Glick, 2011, pp. 408–9; Weatherson, 2016, pp. 12–3). Since most theories of the propositional knowledge relation claim that it requires justification, one might take the observation that there are cases of knowledge-how without justification as evidence that the relation involved in knowledge-how is something other than propositional knowledge. In particular, one might take this as an argument for thinking that knowledge-how is non-justification entailing *objectual* knowledge. This is an instance of a wider class of arguments which we might call *divergence arguments*, which are most familiar from the debate about the Gettierisability of knowledge-how (Poston, 2009; Cath, 2011, 2015; Carter & Pritchard, 2015b). These arguments contend that knowledge-how cannot be a kind of knowledge-that because the two kinds of knowledge have different epistemic properties (see chapter 1 §4.1. for some more examples of divergences).

A successful divergence argument establishes that knowledge-how involves a relation with different epistemic properties to standard examples of knowledge-that. However this result doesn’t establish that the object of knowledge-how is anything other than a proposition. Supposing that knowledge-how does not entail justification, it might be the case that knowledge-how is a special kind of non-justification-entailing propositional

knowledge, or that knowledge-how is a non-knowledge constituting relation to a proposition.⁷⁴ Although positing that knowledge-how is a kind of non-justification entailing propositional knowledge seems rather ad hoc, there are various accounts of propositional knowledge on the market which claim that propositional knowledge does not require justification (Goldman, 1967; Kornblith, 2008).⁷⁵ So, even if the divergence argument for justification goes through, it does not establish that the object of knowledge-how is anything other than a proposition.

Bengson and Moffett's final piece of evidence comes from the apparent gradability of 'knows-how' ascriptions. We can say one person knows how to do something *better* than someone else, or that they know *in part* how to do something. These qualitative and quantitative modifiers don't apply to 'knows that' ascriptions, suggesting that know-how, but not know-that, can come in degree (Ryle, 2009b, p. 46). A free relative semantics is in a nice place to explain this data, since objectual knowledge ascriptions also permit degree modifiers – one can have partial knowledge of Paris, or know Paris better than someone else. These modifiers can be neatly explained by pointing out that one can be more or less acquainted with an object, suggesting that these modifiers attach to the knowledge-how *relation*.

However, a supporter of Interrogative semantics can also provide plausible explanations for the gradability of knowledge-how ascriptions, positing that these modifiers attach to the *object* of knowledge-how. For example, Stanley treats comparative modifiers like *better than* as grading the quality of the ways known (2011b, pp. 31–5) and Pavese argues that degree modifiers like 'in part' mark a partial answer to the embedded question (Pavese, 2013, 2017), (see also: Roberts, 2009). The upshot is that both Objectualism and Propositionalism can explain the gradability of 'knows how' ascriptions, although Objectualism posits a modification of the knowledge relation, and Propositionalism a modification of what is known.

To sum up, although the four linguistic phenomena that Bengson and Moffett appeal to in support of Objectualism to are suggestive of a free relative semantics, closer attention shows us that a supporter of interrogative semantics can also explain these

⁷⁴ Both of these moves are somewhat controversial, but are represented in the literature. For the analogue moves in the Gettierisability debate, see (Cath, 2015) and (Cath, 2011) respectively.

⁷⁵ Sections 7.2. and 7.3. in (Stanley, 2011b) are effectively an extended version of this response to various divergence arguments.

features, meaning that the ability to explain these linguistic phenomena is not a reason to prefer a free relative semantics.

4. Tests for Distinguishing Free Relatives from Interrogatives

There are a number of linguistic tests that can be used to determine whether a 'knows wh' ascription has an interrogative or free relative reading (Schaffer 2009: 486-91). These tests pose a serious problem for the free relative semantics for 'know-how', since 'S knows how to V' systematically tests positive for an interrogative reading and negative for a free relative reading.

There are five tests for detecting an interrogative reading of a wh-phrase:

- i. *Wh-the-hell*: If the wh-phrase can be extended to an exclamation like wh-the-hell then it has an interrogative reading (Zwicky & Sadock, 1975);
- ii. *Co-ordination*: If the wh-phrase can be embedded within a verb which only accepts interrogative complements – like 'wonder', 'ask', or 'inquire' – then it has an interrogative reading (Bresnan & Grimshaw, 1978, p. 332; C. L. Baker, 1995, pp. 204–7);
- iii. *Multiple questions*: If the wh-phrase can be extended to include multiple question-words, then it has an interrogative reading (C. L. Baker, 1968; Bresnan & Grimshaw, 1978, p. 335);
- iv. *Paraphrase*: If the wh-phrase can be paraphrased in terms of a question-word that cannot take a free relative reading, then it has an interrogative reading (C. L. Baker, 1995, p. 217);
- v. *Infinitive*: If the wh-phrase is infinitival, then it is an interrogative, and *not a free relative* (C. L. Baker, 1995, pp. 216–8; Huddleston & Pullum, 2002, pp. 1070–3).

A couple of points about these tests. First, the tests detect readings of a wh-phrase, so testing positive for one reading doesn't establish that the other reading is not available. Some wh-phrases are ambiguous between interrogative and free relative readings (as we

saw with sentence (3)). The exception to this is test (v), which *does* tell against a free relative reading. Secondly, passing a test is a *sufficient* condition for a reading, but not a necessary condition. Failing one test is not a guarantee of the absence of a particular reading: for example finite wh-phrases do not pass (v), but may pass all of the other tests for an interrogative reading. However, if a wh-phrase fails *all* of the tests for a reading, I take this to be good evidence that that reading is not present. Thirdly, these tests detect readings of a given wh-phrase independently of the embedding verb. There may be sentences in which a wh-phrase can have two readings, but the embedding verb forces one of those readings (such as (2)).

A typical know-how ascription – ‘Kasey knows how to get to Larissa’ – gives clearly positive results on tests (i), (ii) and (v). Tests (iii) and (iv) do not give clear positives, but don’t cause serious problems for the interrogative semantics.

The wh-the-hell test (i) suggests an interrogative reading, since:

(16) I don’t know how the hell to get to Larissa

is an acceptable sentence.

The co-ordination test (ii) also suggests an interrogative reading, since ‘how to get to Larissa’ can be moved into verbs that can only accept interrogative complements. Consider:

(17) Kasey wondered how to get to Larissa

(18) Kasey asked how to get to Larissa

(19) Kasey inquired how to get to Larissa

All of these sentences are completely acceptable.

Whereas the patterning of the data on tests (i) and (ii) is robust, with all ‘know how’ ascriptions passing these tests, the multiple question test (iii) is less decisive. We can find some examples of infinitival know-how ascriptions with multiple question words. For example:

(20) Kasey knows how to get to where

(21) Kasey knows how to get to whom

However such examples are few and far between, and seem to be of doubtful acceptability. I don't think that the rarity of multiple questions ought to be too much of a worry for an interrogative treatment. For one thing, these tests provide merely sufficient conditions for an interrogative reading. Furthermore, it is just as difficult to find multiple question examples for 'who to', 'where to', and 'whether to', suggesting that the underlying pattern is that it is difficult to construct multiple wh-phrases for sentences involving infinitival wh-phrases.

The paraphrase test (iv) is based on the observation that different question-words seem to be more or less favourable to the free relative reading, with 'whether' never taking a free relative reading.⁷⁶ We might try to paraphrase 'Ruth knows how to get to Larissa' with a 'knows-whether' ascription. Consider:

(22) Kasey knows whether taking the road north is the way to get to Larissa.

This does not seem like a particularly successful paraphrase for the original sentence. Again, because these tests provide sufficient conditions for an interrogative reading, the doubtfulness of this paraphrase is not a serious worry for the supporter of an interrogative reading.

The infinitive test (v) is crucial, since it both supports an interrogative reading, and speaks against a free relative reading. We have seen (from example (3)) that 'knows' can take interrogatives and free relatives. However, when it comes to embedded infinitival wh-phrases we can only seem to detect interrogative readings. The sentences:

(23) Naomi knows when to turn off the road.

(24) Ywieng knows why to take the high road to Larissa.

(25) Dai knows whether to start off early or late.

⁷⁶ As incidental support of the line that 'knows how' does not involve a free relative, it is worth noting that some linguists class 'how' along with 'whether' as a question-word which can *never* take a free relative reading (C. L. Baker, 1995, p. 217; Huddleston & Pullum, 2002, p. 1072). This claim is too strong (for example, 'I was upset because of how he acted' is pretty clearly a free relative, and 'How she writes is unclear' seems ambiguous between free relative and interrogative readings), but the fact that a number of prominent linguists have made this claim is indicative of how rare it is to find clear examples of 'how' functioning as a free relative.

seem only to mean that Kasey knows the propositions which answer the various indirect questions, and do not have objectual readings.⁷⁷ Additionally verbs that can only take free relative *wh*-phrases – like ‘take’, ‘ate’ and ‘gave’ – cannot be combined with an infinitival *wh*-phrase. Consider:

(26) ? Aurelie takes what to use for cleaning the board.

(27) ? Jeyla ate what to eat.

(28) ? Yves gave what to use to write on the board.

Since there are no good examples of infinitival *wh*-phrases with a free relative reading, test (v) both strongly suggests an interrogative reading of ‘S knows how to V’, and speaks against a free relative reading.

Let’s take stock. The results of tests (i), (ii), (v) strongly suggest the availability of an interrogative reading for sentences of the form ‘S knows how to V’, and (v) also speaks against a free relative reading. Tests (iii) and (iv) are not so decisive, but in the context of the positive results on the other tests these failures do not speak against the interrogative reading. This means that the simple view according to which ‘how to V’ always functions as a free relative in ‘knows how’ ascriptions is implausible. There are two ways in which the supporter of the free relative semantics might respond to these results: to argue that the free relative reading holds true for some sub-set of ‘knows how’ ascriptions, or to argue that ‘knows how’ ascriptions are ambiguous between the two readings.

The first move restricts attention to a sub-set of ‘knows how’, and suggest that some ‘knows-how’ ascriptions are interrogatives and others free relatives. Although it is true that the philosophically interesting class of knowledge-how is not all knowledge picked out with a *how*-complement, as noted above in chapter 1 §3 the most plausible way to linguistically delimit the philosophically interesting kind of know-how is to focus on ‘S knows how to V’, which test (v) suggests is an especially implausible candidate for a free relative reading.⁷⁸ A more plausible move would be to appeal to ambiguity, claiming that

⁷⁷ We shouldn’t be misled by the ‘knows-the’ paraphrases for these sentences, which involve concealed questions, making them equivalent to the interrogative readings (see section 3).

⁷⁸ Perhaps finite ‘knows how’ ascriptions might provide better case for a free relative reading. For example, ‘Artur knows how coffee smells’, seems to have one reading which denotes acquaintance knowledge (Moore, 1997, p. 183), and passes test (vi) for a free relative reading. Since these ascriptions do not ascribe the practical species of knowledge-how, the existence of a free relative reading of these sentences is incidental to our main concern here.

'knows how' has both interrogative and free relative readings, like sentence (3). This kind of view could explain the positive results on tests (i) and (ii) since if 'know-how' were ambiguous, the addition of interrogative modifiers or embedding within a verb like 'wonder' would force the interrogative reading.

However, the ambiguity view runs into serious problems. For one thing, test (v) speaks both for the interrogative reading, and against the free relative reading. It is also worth noting that Bengson and Moffett have themselves pointed out that 'knows how' fails standard tests for ambiguity (Bengson & Moffett, 2007, pp. 28–40; Bengson, Moffett, & Wright, 2009, pp. 393–4). Furthermore, the standard tests for a free relative reading come up negative, suggesting that there is no available free relative reading. There are two tests for a free relative reading:

- vi. *Wh-ever*: If the wh-word can be extended to wh-ever, then the wh-phrase is a free relative (Bresnan & Grimshaw, 1978, pp. 334–5; Huddleston & Pullum, 2002, pp. 986–7);
- vii. *Co-ordination*: if the wh-phrase can be combined with a verb which cannot take an interrogative complement – like 'took', 'believes', or 'ate' – then it has a free relative reading (Bresnan & Grimshaw, 1978, p. 332; C. L. Baker, 1995, pp. 204–7).

Test (vi) gives a negative result for a free relative reading. For example:

(29) ?Kasey knows however to get to Larissa.

is not acceptable.

The co-ordination test with 'believes' (vii) also brings bad news. If the ambiguity story were correct, we would expect that 'how to V' could combine with 'believes', and other predicates which cannot embedded interrogatives. Consider:

(30) ?Kasey believes how to get to Larissa

This result confirms Ryle's observation that we don't believe-how (Ryle, 2009b, p. 17).⁷⁹

⁷⁹ Stanley suggests that 'believes' cannot take 'how to V' is because it cannot ever take interrogative complements (Stanley, 2011b, p. 33). This conjecture seems false. There are examples of the form

Kent Bach (2012) suggests an extension of this test, claiming that ‘practice’, ‘demonstrate’ and ‘perfect’ cannot relate to propositions, meaning that the fact that these verbs can embed ‘how to V’ provides evidence for a free relative reading. It is certainly true that ‘practice’, ‘demonstrate’ and ‘perfect’ cannot take that-clauses as their objects.⁸⁰ However, if we look a little closer at the wh-phrases that can embed in these verbs, it becomes clear that they can embed interrogatives (Pavese, 2013, n. 15). These verbs can take infinitival wh-phrases, ‘whether’ questions, and multiple questions, which can only be interrogatives:

(31) Somerton practiced what to say.

(32) Arndt demonstrated whether to use ‘less’ or ‘fewer’ in the example sentences.⁸¹

(33) Chrisjen perfected what to do when.

The acceptability of (31), (32), and (33) suggests that these verbs can take interrogatives, meaning that the fact that ‘how to V’ can embed in them does not provide evidence for a free relative reading.

As I noted above, the failure to pass all of the tests for a given reading provides strong evidence that that reading is not present, meaning that the failure of ‘S knows how to V’ to pass (vi) and (vii) gives us strong evidence that it has *no* free relative reading. Together with test (v) this establishes a strong case against the suggestion that ‘S knows how to V’ has a free relative reading. I conclude that the how-complement in ‘S knows how to V’ can take an interrogative reading, but not a free relative reading.

‘I could hardly believe...’, which seem to be genuine interrogatives. If I say, ‘I could hardly believe what he was wearing,’ it isn’t the clothes, but *that* he was wearing them which is difficult to believe. (Glick, 2011, n. 9) Although this fact somewhat undermines the significance of the ‘believes’ data, it remains true i) that putting this special context to one side ‘believes’ *can* embed free relative clauses, such as ‘what he said’ but not ‘how to’ clauses, and ii) other verbs which select for a free relative reading - such as ‘ate’, and ‘took’ do not embed ‘how to’ clauses.

⁸⁰ A caveat: one can demonstrate that p, but only with the sense which means ‘establish’, which is not the sense at issue here.

⁸¹ Note that even if one is doubtful about (32), ‘demonstrate’ can take both infinitival wh-phrases, and multiple wh-phrases.

5. Conclusion

In this chapter, I have argued that although a free relative semantics for knowledge-how ascriptions initially appears to be an attractive way to semantically implement a non-propositional account of knowledge-how, on balance this semantics is linguistically implausible. The linguistic data which Bengson and Moffett point to, although suggestive, can also be explained by the standard interrogative semantics. Furthermore, standard linguistic tests suggests that sentences of the form 'S knows how to V' have an interrogative reading, and no free relative reading.

The linguistic implausibility of this view means that the supporter of an Objectualist metaphysics needs to look elsewhere to semantically implement their account. They can either: i) offer a revisionary semantics for 'S knows how to V' on philosophical grounds (although these arguments will need to be different from those offered in §3), ii) opt for an error theory of ordinary 'knows how' ascriptions, or iii) undertake an explication of the concept of knowledge-how. Although the Semantic Implementability Constraint posited in chapter 1 is weaker than the uses of linguistic evidence proposed by Stanley and Williamson this chapter demonstrates that it nonetheless introduces an important role for linguistic evidence in the debate about the nature of knowledge-how.

Chapter 3: The Generality Problem for Intellectualism

Introduction

According to Stanley and Williamson, knowing how to do something is a species of propositional knowledge: knowing how to do some activity is knowing of some way that it is a way in which one can engage in that activity. It is controversial whether there is a species of propositional knowledge which is sufficient for knowing how. Following Glick (2015, p. 538) let's call the problem of isolating a kind of propositional knowledge about V-ing which is sufficient for knowing how to V the *Sufficiency problem* for Intellectualism.

One familiar and important aspect of the sufficiency problem concerns how the Intellectualist is to account for the practical character of knowledge-how. There is a great deal of propositional knowledge about how to swim that doesn't have the right kind of practical character to be sufficient for knowledge how to swim. Consider the kind of propositional knowledge about skiing which one might pick up via testimony: there seems to be a considerable gap between having the knowledge gained from an instruction booklet and knowing how to ski, in the practical sense. Let's call the problem of isolating knowledge about how to V that is relevantly practical *the Practicality problem*. The standard move in response to the Practicality Problem is to appeal to a distinctive *practical mode of presentation* (PMP). In this chapter, I want to put the Practicality problem to one side (we will return to it in chapter 7), in order to focus on a neglected aspect of the sufficiency problem.

In this chapter I want to focus on the question of how to isolate propositional knowledge of the appropriate level of generality. In order to give an account of knowing how to swim in terms of propositional knowledge, the Intellectualist needs to be able to isolate a kind of propositional knowledge about swimming of the right level of generality: which concerns the whole activity of swimming, rather than just one of its aspects (like moving one's arms), or some broader class of activity (like moving one's body around).⁸² I will call this problem of isolating propositional knowledge of the right level of generality

⁸² For allusions to this problem, see Schaffer's flute playing example (2007, p. 396), and Fridland's discussion of granularity (2013).

the *Generality Problem* for Intellectualism, in deliberate allusion to the Generality problem for Reliabilism, since the problem for Intellectualism shares a basic structure with the Generality Problem for Reliabilism. I will argue that the Generality problem is a serious issue for Stanley and Williamson’s Intellectualism, since their theory does not have the theoretical resources to isolate propositional knowledge about V-ing which is of the appropriate level of generality to be sufficient for knowledge how to V. I will consider a number of ways to try to isolate the relevant kind of propositional knowledge, and argue that all are in some way unsatisfactory.

The plan of action is as follows. In §1 I revisit Stanley and Williamson’s Intellectualism, focusing on their appeal to ways of acting. In §2, I argue that the fact that their theory appeals to ways of acting leads to a problem with a similar structure to the Generality problem for Reliabilism. In §3, I consider some candidate solutions to this problem, taking pointers from the debate about Reliabilism, and argue that none of them are satisfactory. In the final section, I consider where this problem leaves Intellectualism, and the scope of this Generality problem. This chapter provides one example of a non-linguistic problem for Intellectualism that might be used to motivate a non-propositional theory of knowledge-how on philosophical grounds.

1. Intellectualism and Ways of Acting

The bare bones of Stanley and Williamson’s theory of knowledge-how — bracketing the commitment to practical modes of thinking, the claim that know how is a kind of de re knowledge and some other twists⁸³ — is the following claim:

ANS_{S&W}: Ruth knows how to swim iff Ruth knows that w is a way in which she can swim

This claim is derived from i) the answer theory of knowledge-wh, ii) the claim that ‘how’ picks out questions which are about *ways*, and iii) a particular interpretation of PRO and the infinitive in the question-abstract of the embedded interrogative ‘how to V?’. In

⁸³ Some of these complications will re-emerge later in the discussion, where I will consider whether these elements can solve the Generality problem.

chapter 1 §4.2. we focused on elements i) and iii) but left ii) to one side. I now want to return to this issue.

Above I pointed out that different question-words are associated with answers which concern different kinds of things: ‘where’ with propositions about *places*, ‘why’ with propositions about *reasons*, ‘who’ with propositions about *people* and so on. The general category of how-questions seems to be associated with propositions about *ways*. These might be ways of looking (*how did she look?*), ways of being (*how is your brother?*), or ways in which something happened (*how did the fire start?*). However, when it comes to how-questions concerning actions, the relevant kind of ways are *ways of acting* (*how did she enter the room?*, *how to open the safe?*). Ways of acting are plausibly picked out by a subset of adverbial phrases such as ‘slowly’, and ‘by turning the knob’. Adverbs are a much discussed topic in the philosophy of action, which means that Stanley and Williamson can appeal to independently motivated accounts of ways of acting to supplement their account (Stanley & Williamson, 2001, pp. 427–8; Stanley, 2011b, p. 58). According to the standard Davidson-inspired account of adverbs, adverbs are treated as predicates of actions (Parsons, 1990, 1995; Davidson, 2006).⁸⁴ On this account a sentence like ‘Jane swam carefully’ predicates of the act of Jane’s swimming the property of being careful. This means that the question *how did Jane swim?* is answered by a proposition which characterises Jane’s swimming under a contextually appropriate adverb, for example *Jane swam sloppily*.⁸⁵ If adverbs are predicates of actions, according to this account the ways of acting which figure in the propositions which answer the question *how to V?* will be properties of actions, or *way-types*.⁸⁶ ⁸⁷

⁸⁴ Here, I am bracketing Davidson’s commitment to the claim that actions are events (for criticism, see (Steward, 2012; Hornsby, 2013), and sticking with the more general claim that adverbs are predicates of actions.

⁸⁵ This question concerns a particular act. How questions can also involve generics. Consider: *how does Tablia play the piano?* Plausibly, such questions will be answered by generics, such as *Tablia plays with feeling*.

⁸⁶ We will need way-tokens to make sense of various other kinds of sentence. For example the sentence ‘the way that Patti looks is very similar to the way Raul looks’ on the face of it says that the token ways of looking associated with Patti and Raul share many properties in common.

⁸⁷ The main alternative to the Davidsonian semantics is to treat adverbs not as predicates, but as predicate modifiers (Thomason & Stalnaker, 1973). I don’t think that the difference between these two treatments is significant for our purposes. The predicate modification account still treats adverbs as picking out features of action, the key difference between the two accounts is the question of what the linguistic mechanism for picking out features of action is.

It is not just any kind of way of acting which can figure as an appropriate answer to the question 'how to V'. Consider the following line from Liberace in *Behind the Candelabra* (Soderbergh, 2013):⁸⁸

You know, I always get asked: How do you play the piano with all those rings on your fingers? And I always tell them: very well, indeed.⁸⁹

The interviewers' question *how do you play the piano with all those rings on your fingers?* is intended to raise the issue of which techniques or adjustments Liberace needs to make in order to play the piano with so many rings on. But Liberace deliberately interprets the question as raising the issue of how to characterise his piano playing when he has so many rings on his fingers.⁹⁰ The ambiguity in this kind of question seems to stem from two different kinds of ways of acting, which we might call *manners* and *methods*.⁹¹ Manners are the ways of acting which are most familiar from discussions of adverbs, which are associated with adverbs like 'slowly', 'carefully' and 'gracefully'. By contrast methods are something like a directive, or a set of instructions, and are associated with the *by-gerund* construction, for example: 'by lifting from the knees,' 'by taking a left at Pilrig street'. I will rely on an intuitive sense of this distinction, leaving space to substitute in a more developed theory of methods.⁹²

Intuitively manners do not seem to figure for the interestingly practical kind of knowledge-how, whereas methods do. Knowing that I can open the door *gracefully* is not sufficient for knowing how to open the door, whereas knowing that I can open the door *by*

⁸⁸ Thanks to Mark Bowker for this example

⁸⁹ See (Jaworski, 2009) for some more examples.

⁹⁰ There is a whole family of jokes with this structure:

- 1) My dog has no nose. How does he smell? Awful
- 2) How do hedgehogs make love? Carefully
- 3) How are we going to escape this planet? With great difficulty

⁹¹ This distinction in the meaning of 'how' questions is noted by (D. G. Brown, 1970, pp. 239–340; White, 1982, pp. 22–3; Cross, 1991, p. 248), and is discussed in depth by (Jaworski, 2009; Sæbø, 2016). Elizabeth Fricker also informs me that Gareth Evans stressed this distinction in lectures on modes of presentation. I will remain neutral on whether to understand this distinction as a metaphysical one (as Jaworski does), or as a linguistic one (as Sæbø does).

⁹² There are a number of possible views of methods: one might take them to be a series of action types, a set of imperatival instructions, or something analogous to an algorithm (Pavese, 2015b). The Generality problem will emerge for any of these views of methods, since each are committed to a many-one relation between methods and activities.

jiggling the key in the lock is plausibly sufficient for knowing how to open it. Whereas finite how questions can be answered by either methods or manners, infinitival how questions can seemingly only be answered by methods.⁹³ This means that an infinitival how question will be answered by a proposition concerning a method of engaging in some activity. Given Stanley and Williamson’s preferred interpretation of the question-abstract, this means that a how-to question will be answered by a proposition expressing a modal relation between the embedded verb and some contextually appropriate method. For example, the question *how to swim?* will be answered by a proposition like *S can swim by moving her arms and legs in the water.*⁹⁴

Although Stanley and Williamson don’t explicitly mark the distinction between methods and manners, it seems charitable to interpret them as claiming that knowledge-how concerns methods rather than manners. Stanley switches between talk of methods and ways in several places.⁹⁵ Putting together the Stanley and Williamson’s account of the meaning of ‘how’ questions $ANS_{S\&W}$, and the Davidsonian account of adverbs, we get following account of knowledge-how:

⁹³ Note that adverbs which normally pick out a manner can pick out a method. Consider the following report:

Sanjeet is really worried about not upsetting her mother. She asked me how to tell her mother than she was dating a women, and I told her: *extremely gently*

This reply need not be a joke along the lines of Liberace’s one-liner. Rather the speaker might be offering a genuine piece of advice about what kinds of method Sanjeet ought to employ in order to tell her mother that she is dating a women without upsetting her: sensitive methods.

⁹⁴ In this case the method involves another action. If all methods involve other actions, then we might worry that Intellectualism leads to a regress in which one performs an intentional action by means of employing an infinite series of distinct actions. This kind of regress will be worrying for philosophers who want to endorse a category of teleologically basic actions which we do but not by means of doing anything else (Danto, 1965; Hornsby, 1980, Chapter 8). Hornsby employs this kind of consideration as an argument for a non-propositional species of knowledge-how relating to basic action (or basic activity, in her preferred terminology) (Hornsby, 2005, 2013). On this kind of picture, non-basic knowledge-how can be propositional knowledge concerning a means-ends proposition, but basic knowledge-how can only be propositional (for a related view which is motivated in somewhat different grounds, see (Setiya, 2012)). However, the success of this kind of argument relies on there being a category of basic action, which some philosophers of action have recently denied (Thompson, 2008; Lavin, 2013). Intellectualists can also insure themselves against the possibility that there is basic action by claiming that methods need not involve other actions, but can instead claim that methods are something non-agenial.

⁹⁵ “The question word “how” adds a λ -abstract over ways (or methods) [...]” (Stanley, 2011b, p. 122), “If someone shows me how to do something, before I learn how to do it from their demonstration, I must acquire a practical way of thinking of that method of doing it.” (Stanley, 2011b, p. 129)

$ANS_{S\&W+DAV}$: S knows how to V iff S knows that S can V by employing M

This account claims that the practical species of knowledge-how concerns propositions about method types that are related to some activity by the *can A by B-ing* relation. $ANS_{S\&W+DAV}$ extends Stanley and Williamson's theory, but does so in a way that is supported by accounts of the meaning of adverbs, and different kinds of how-questions, meaning that the added detail has a linguistic motivation

2. Generality Problems

A Generality problem for a view has three basic elements: first, the analysis makes appeal to types, secondly, there are a range of types at different levels of generality which are available to be substituted into this analysis, and thirdly the available types must differ in whether they are sufficient for the phenomena in question. The problem arises when an account cannot distinguish types that are relevant for the phenomena at issue from those which are irrelevant. This kind of problem is an extremely general one. Any philosophical analysis which appeals to types runs the risk that the account will not have resources to determine which types instantiated by an object will be relevant for establishing the presence of the phenomena in question. In this section, I will run through the Generality Problem for Reliabilism, before demonstrating that Intellectualism faces a problem with the same structure.

2.1. Reliabilism

To start off let's consider how the Generality problem gets going in the case of Reliabilism.⁹⁶ Process Reliabilists analyse a belief's justification in terms of the reliability of the method by which it was formed, endorsing the following claim:

REL: S is justified in believing p iff S 's belief that p was produced by a reliable process.

⁹⁶ This problem was first observed by (Goldman, 1979), but the canonical statement is (Conee & Feldman, 1998).

How should we understand what it is for a process to be reliable? Intuitively, it is not *token* belief-forming processes that are the bearers of reliability, but *types* of belief-forming process. For a process to be reliable is for it to *tend* to deliver the goods, but token-processes are unrepeatable, meaning that it is difficult to make sense of their tendencies. This pushes the Reliabilist towards saying that a belief is justified just in case the token process which led to the formation of that belief instantiates a *type* which is suitably reliable. At this point a problem arises, since a token belief-forming process will instantiate an indefinite number of process-types.⁹⁷ When I glance out of the window and form the belief that there is a bird outside, the process instantiates the type *forming beliefs on the basis of perception* but also the type *forming beliefs on the basis of perception about objects behind solid barriers*. While the first is reliable, the second is not. It is not at all obvious which type we should look to in order to determine whether my belief is a reliable one.

The Generality Problem for Reliabilism is the challenge of giving a procedure for determining which belief-forming process-type instantiated by a process-token is relevant for assessing the reliability of the belief produced by that process. This problem is serious: without an account of relevant process-types Reliabilism is ‘radically incomplete’ since it is unable to determine whether a belief is reliable or not (Conee & Feldman, 1998, p. 3).

There are three broad strategies for resolving this problem (Conee & Feldman, 1998; Goldman & Beddor, 2015):

- i. Give an account of which process-types are relevant for assessing the reliability of a belief, either by appealing to common-sense (Goldman, 1979) or scientific classifications (Alston, 1995);
- ii. Reformulate the theory so that it doesn’t appeal to types in the first place, instead appealing to tokens (Comesaña, 2006, pp. 28–30), or to collections of types (Wunderlich, 2003);
- iii. Appeal to contextual mechanisms to select a process-type (Heller, 1995).

⁹⁷ It might also be difficult to identify what the token belief-forming process which causes the belief is (Weatherson, 2012).

The mere fact of being faced with a Generality Problem does not mean that an analysis is untenable, because there might be one or more satisfactory accounts of which types are relevant for the phenomenon in question. What matters is whether there is an adequate response to the problem. Conee and Feldman offer three criteria on a successful response to the generality problem for Reliabilism (Conee & Feldman, 1998, p. 4), which naturally generalise. First, they point out that a response to a Generality problem ought to provide a *principled* selection criterion for types, avoiding cherry-picking types to get the right predictions. Secondly, the response must provide *defensible predictions* about the target phenomenon. Because the response to a generality problem will in large part determine the predictions of the theory, it matters that it gets the cases right. Thirdly, the account of which types are relevant must appeal *only* to the theoretical resources of the original theory, without illicitly relying on concepts from opposing theories. For example, it would be a failure of the Reliabilist project if one could only respond to the Generality problem by appealing to Evidentialist notions.

In order to definitively establish that there is no satisfactory response to a Generality problem, one would need to consider *all* of the possible accounts of which types are relevant. This would be laborious, so I will follow Conee and Feldman's lead, and consider only those responses that seem promising (Conee & Feldman, 1998, pp. 5–6). Establishing that this restricted set of responses are unsatisfactory does not show that there is no response to the Generality Problem for Intellectualism, but it does shift the dialectical burden onto the Intellectualist to give an account of which way-types are relevant, and shows that the Generality problem is something that they should take seriously.

2.2. Intellectualism

With the structure of a Generality Problem on the table, we are in a position to explore the Generality problem for Intellectualism. We have already established that Intellectualism appeals to types in the form of ways of acting. In order to establish a generality problem we need to show that there are many way-types which can be

substituted into $ANS_{S\&W+DAV}$, and that at least some of these types are such that knowing that they are a way in which one can V does not suffice for knowledge how to V.

As Fridland points out, $ANS_{S\&W+DAV}$ is compatible with propositions of variable granularity figuring in the analysis (Fridland, 2013). This phenomenon can be traced back to the level of generality of the ways of acting that figure in these propositions. If the methods which figure in $ANS_{S\&W+DAV}$ are very general, then the propositions which figure in knowledge-how will be coarse-grained, and if the ways of acting are more specific, then the propositions will be more fine-grained.⁹⁸ The variable generality of ways of acting means that it is easy to generate a large number of way-propositions associated with any given activity. Imagine watching someone swim up and down in a pool. What answers to the question *how are they swimming?* could one give? Even restricting our attention to methods, there are still a huge number of answers to this question. One could say that they are swimming: *by employing the backstroke, by cutting their arms through the water and scissoring their legs, by keeping their back straight, by moving about in the water* and so on. On the face of it all of these methods are candidates to figure in the proposition *M is a way in which the swimmer can swim*, since each of the methods is in fact a way that the swimmer can employ in order to swim. Furthermore, any competent swimmer will know many of these facts, meaning that they are all candidates for being identified with knowledge how to swim

Why does the existence of many propositions about ways of V-ing pose a problem for Intellectualism? For starters, $ANS_{S\&W+DAV}$ appeals to the mention-some reading, claiming that knowledge-how is identical with knowledge of *one* way-fact about V-ing. The case of the swimmer suggests that there will be many way-facts known by any agent who knows how to V, which raises the question of *which* propositional knowledge about swimming is supposed to be identical to knowing how to swim. However, the more serious problem is that knowledge of some way-propositions does not secure knowledge how to V. *Moving about in the water* is certainly a method for swimming (in a suitably broad sense of

⁹⁸ Fridland argues that the variable granularity of these propositions in itself points to a problem, since neither very finely or coarsely individuated propositions can by themselves explain intelligent action (Fridland, 2013, pp. 884–91). The basic thought is that if the Intellectualist appeals to fine-grained propositions, they will need to invoke an intelligent faculty to select a proposition, whereas if they appeal to coarse-grained propositions, they will need to invoke an intelligent faculty to implement those propositions. I am sympathetic to her worry, but it is a distinct issue from that which I am considering, which concerns the prior issue of how an intellectualist is to fix which propositions figure in the object of knowledge-how.

‘method’, and ‘swimming’), but someone who only knew that *moving about in the water* was a way to swim *does not* know how to swim. *Blowing into the mouthpiece* is a way to play the flute, but someone who only knows that *blowing into the mouthpiece and moving one’s fingers* is a way to play the flute *does not* know how to play the flute.⁹⁹

To illustrate how issues about the generality of ways lead to sufficiency problems for $\text{ANS}_{\text{S\&W+DAV}}$, consider Hornsby’s touch-typing example (2011, p. 91). Hornsby considers the case of Jim, a touch-typing novice, who is practicing by typing out ‘Afghanistan’ again and again (he has heard it’s a good word to practice on). Through practice Jim has mastered typing this word, so that the method that he employs in typing this sequence is identical to that which a skilled touch-typist would use. However, he has yet to tackle touch-typing any other words. Now, Jim knows a number of facts about touch-typing. He knows that typing ‘A-F-G-H-A-N-I-S-T-A-N’ with the right fingers is a way to touch-type the word ‘Afghanistan’. This knowledge can plausibly be identified with Jim’s knowing how to touch-type ‘Afghanistan’. However, Jim also knows that typing ‘A-F-G-H-A-N-I-S-T-A-N’ with the right fingers is a way to touch-type (that’s why he is practicing touch-typing by typing that word). This means that he also fulfils the conditions for knowing how to touch-type. The crucial point is that although Jim knows how to touch-type the word ‘Afghanistan’, intuitively he *does not* know how to touch-type.¹⁰⁰ Whereas knowing that tapping out the sequence ‘A-F-G-H-A-N-I-S-T-A-N’ is a way to touch-type ‘Afghanistan’ seems sufficient for knowing how to type ‘Afghanistan’, knowing that the very same method is a way to touch-type does not suffice for knowing how to touch-type. This example makes clear that many cases, possession of some general piece of know-how requires mastery of various different methods, and that knowledge of a fact about just one of the methods is not sufficient for possessing the general piece of know-how; although knowledge of one of these methods might be sufficient for a more specific piece of knowledge-how.

⁹⁹ This is the point of Monty Python’s ‘How to do it’ sketch: (Schaffer, 2007, n. 21). It might be possible to set up conversational contexts in which these propositions do answer the contextually relevant questions (see section 3.4). However, I don’t think that anyone seriously thinks that knowledge of this fact suffices for the practically important kind of know-how.

¹⁰⁰ One might think that the meaning of ‘touch-typing’ can be modulated by context to become much less demanding, such that in some contexts Jim *does* count as knowing how to touch-type. If this is right, then we can just restate Hornsby’s point by focusing on a context in which ‘touch-typing’ means something reasonably demanding.

We are now in a position to see that Intellectualism provides all three elements of a Generality Problem. The basic commitments of the account include an appeal to way-types, due to the plausible account of the meaning of how-to questions as denoting answers about ways of acting. The swimming example demonstrates how easy it is to generate many propositions of the relevant kind about any given activity. And, the sufficiency problem emerges when we notice that many of these way propositions of form *M is a way to V* are such that knowledge of them will not be sufficient for possessing knowledge how to V, as the examples of swimming, flute-playing and Jim the touch-typist show.

What does the Intellectualist need to do in order to resolve this problem? Adapting Conee and Feldman's criteria, what the intellectualist needs is a principled selection criterion which matches up pieces of know-how with ways of acting of the appropriate levels of generality, which gets the cases right about who knows how to do what, and doesn't appeal to the theoretical resources of opposing theories. Although it would be unreasonable to expect the Intellectualist to provide us with an account of how people swim (this is a question for physiologists, or sports scientists), they ought to be able to provide us with criteria for selecting which kinds of propositions about swimming are of the right kind such that knowledge of them is sufficient for knowing how to swim

3. Responses to the Generality Problem

We can get a good start on the possible responses to the Generality Problem for Intellectualism by considering responses to the Generality problem for Reliabilism.¹⁰¹ This suggests the following responses:

- i. Give an account of which ways of acting are relevant for possessing knowledge-how by appealing to common-sense or empirical science;
- ii. Reformulate Intellectualism so that it doesn't appeal to way-types;
- iii. Appeal to contextual mechanisms in order to select relevant ways of acting.

¹⁰¹ Stanley and Williamson have already made moves along these lines in developing ANS_{S&W+DAV} (excepting strategy (i)). I will introduce these refinements of their view piecemeal to avoid overwhelming the reader with exegesis.

There are also a couple of responses that do not have a clear analogue in the case of Reliabilism stemming from developments of INT:

- iv. Appeal to PMPs to select which ways of acting are relevant for the possession of knowledge-how;
- v. Adjust the account of the modality associated with knowledge-how in order to ensure that only methods with a certain kind of modal profile are available to be substituted into the Intellectualist account.

I will consider each of these responses in turn. Although I make no claim to have exhausted the options for the Intellectualist, the parallel with Reliabilism suggests that these are the most plausible responses to the problem, meaning that the fact that the failure of these responses moves the dialectical burden onto the Intellectualist to show how they can respond to this problem.

3.1. Giving an Account of Relevant Ways of Acting

The simplest solution to the Generality Problem would be to appeal to a natural division amongst the methods for V-ing which isolated only those which were sufficient for knowing how to V. As in the case of Reliabilism, there are two versions of this strategy: to appeal to common-sense classifications, and to appeal to empirical science. I think appealing to common-sense types is a non-starter because it will leave too many way-types standing. All of the examples of ways of acting that I considered in the previous section are common-sense, which didn't stop them from posing counterexamples to the Intellectualist account.

An appeal to empirical science holds out more hope. The idea here would be that inquiry in psychology or cognitive science might provide us with an account of the methods which underlie our ordinary activities, which the Intellectualist can slot into their account of knowledge-how. This gives the following account of relevant ways of acting:

W1: The method that figures in an agent's knowledge how to V is the method for V -ing that figures in the best scientific explanation of that agent's (successfully) V -ing.

The Intellectualist who pursues this line can point to some apparent successes in empirical science. For example, one might understand research into the neural basis of grasping actions (Milner and Goodale 2004) as giving an account of the methods that underwrite the activity of grasping. A detailed assessment of this response would require looking in depth at the empirical literature, but there are a couple of reasons to be sceptical about the general strategy. For one thing, it is not obvious that empirical inquiry into methods will yield just one uniquely best explanation of successful activity. Instead it might turn out that there are several equally good explanations about the methods that we employ in engaging in a given activity, possibly at different levels of description (Conee & Feldman, 1998, pp. 17–18). A further issue is that it is not obvious that scientific inquiry will deliver methods that we have any claim to *know*, since the psychological explanation of how we engage in various activities might take place entirely at the sub-personal level without positing personal-level states (as with Milner and Goodale's explanation of the neural mechanisms which underwrite grasping (Drayson, 2012, pp. 14–5)). So, although there is some mileage in this strategy, it relies on empirical inquiry delivering methods at the personal level that are in line with the Intellectualists' theoretical goals.

3.2. Appeal to Sets of Propositions

The basic picture given by $ANS_{S\&W+DAV}$ identifies a given piece of knowledge-how with knowledge of just one proposition, due to Stanley and Williamson's focus on the mention-some reading. However, there is nothing about the Intellectualist view that requires thinking that pieces of know-how match up one-to-one with pieces of propositional knowledge. Stanley exploits this fact in discussing the connection between know-how and skill:

When we say that a skilled outfielder knows how to field a fly ball, we do not mean that he knows, of at least one way to field a fly ball, that it gives him counterfactual success in fielding fly balls. That is, we do not intend the *mention-some* reading of

the embedded question, “how to field a fly ball”. Rather, in such a case, we mean the mention-all reading of the embedded question. What we assert when we assert of a skilled outfielder that he knows how to field fly balls is that he knows *all* of a range of relevant ways that give him counterfactual success in fielding fly balls. (Stanley, 2011b, p. 183)

Here Stanley modifies $ANS_{S\&W+DAV}$, suggesting that some (but presumably not all) knowledge-how ascriptions take a mention-*all* reading, meaning that some pieces of knowledge-how will consist in knowledge of a body of propositional knowledge. These comments suggest the following modification to the Intellectualist account:

$ANS_{S\&W+DAV}1$: *S* knows how to *V* iff for all of some set of methods $\{M1, M2 \dots\}$ *S* knows that *Mn* is a way in which she can *V*.

This move is analogous to Wunderlich’s response to the Generality Problem for Reliabilism which offers an account of reliability in terms of *all* of the process-types instantiated by the process which leads to a belief (Wunderlich, 2003).¹⁰²

Thinking of knowledge-how as relating to a set of way-propositions does avoid the difficulty of finding one proposition to figure in the object of knowledge-how, but it does not solve the Generality Problem. Consider a twist on the Jim case in which Jim has learnt how to touch-type all words beginning with the letter ‘A’, but doesn’t know how to type any other words. He now knows a number of propositions which answer the question *how can I touch-type?*, but I think that we should still say that he does not know how to touch-type. Instead of the problem of finding a way of matching up pieces of know-how with single propositions, $ANS_{S\&W+DAV}1$ faces the problem of finding a way of matching up pieces of know-how with *sets* of propositions. This requires having specifying both the level of generality of the ways that figure in these propositions, and how many of them must be known.

¹⁰² Another way to drop way-types would be to claim that know-how is knowledge about way-*tokens* (Comesaña, 2006, pp. 28–30). This view is implausible because it cannot account for the idea that knowledge-how is a kind of general knowledge that can be exercised in many different token actions.

3.3. Contextualism

Just as a Reliabilist might reject the demand for an account of which process-types determine reliability, and claim that conversational context determines which process types are relevant to a given reliability ascription (Heller, 1995), an Intellectualist might reject the demand to give a general account of relevant methods by claiming that conversational context determines which ways of acting are relevant to a given knowledge-how ascription.

This kind of response naturally goes together with a Contextualist account of the meaning of interrogatives, which claims that which question an interrogative expresses depends on conversational context.¹⁰³ There is a decent amount of linguistic evidence for the context-sensitivity of interrogatives. For example, the interrogative sentence:

(1) What caused the Second World War?

plausibly expresses *different questions* when it is asked in everyday conversation, and when it is asked in a history exam. We can see this by noting that in an everyday context, this question can be answered by a somewhat general proposition, whereas in a history exam a detailed and specific proposition is called for. A natural way to accommodate this data is to posit the influence of context on the semantic value of interrogative phrases.¹⁰⁴ This contextualist thesis bears on the debate about knowledge-wh, since contextualism about interrogative phrases means that which answers an agent needs to know to count as 'knowing Wh-F?' will depend in part on features of the conversational context. This kind of contextualism about knowledge-wh is to be distinguished from well-known versions of contextualism about knowledge-that (Cohen, 1986; Lewis, 1996; DeRose, 2009). Whereas the established debate focuses on the context-sensitivity of the relation expressed by 'knows', contextualism about interrogatives yields a kind of contextualism about interrogatives, or about *what is known*.

¹⁰³ (Braun, 2006; Parent, 2014).

¹⁰⁴ Alternatively, one could appeal to warranted assertibility to explain this phenomenon. See (Hawley, 2003, p. 22; Braun, 2006, 2011; DeRose, 2009, pp. 69–79).

A Contextualist about knowledge-how might respond to the Generality Problem by contending that there is no need for a general account of which way-types figure in knowledge-how, since various contextual mechanisms will select which way-types are relevant in a given context. Here's a toy example of how this contextual restriction on question-meanings can lead to a restriction in relevant ways of acting. Suppose that I utter the sentence:

(2) Józefa knows how to get to London

in a context in which we are deciding who should *drive* us there. By the Contextualist's lights there will be some kind of restriction on the meaning of the embedded interrogative in this sentence, such that the question which it expresses is really something like *how can one drive to London?*. If this is the case, then the answers which will be relevant to the knowledge ascription will be restricted to those which concern ways of getting to London *by driving*, meaning that (2) will come out false if Józefa only knows a way to get to London by train. The restriction on the meaning of the interrogative leads to a corresponding restriction in which way-propositions can figure in the knowledge-how ascriptions.

I think that the case for contextualism about Interrogatives is pretty compelling. However, in order to show that context can provide a fix to the Generality problem, the Intellectualist needs to offer an account of the contextual mechanisms at work in 'knows how' ascriptions. One option is to appeal to general contextual mechanisms at work in interrogatives. Here are two salient options:

- i. Interrogatives are associated with a domain restriction to a contextually salient set of objects, meaning that an interrogative expresses a set of answers concerning only contextually salient objects (Stanley, 2011b, pp. 56–8, 118).
- ii. The meaning of an interrogative phrase is affected by the interests and purposes of conversational participants, meaning that an interrogative only expresses a set of answers which are relevant to the speaker or hearer's interests and purposes (Boër & Lycan, 1986).¹⁰⁵

¹⁰⁵ This isn't quite Boër and Lycan's view; they claim that it is the answerhood relation which is context-sensitive (Parent, 2014, n. 29). See also (Ginzburg, 1995a, 1995b, 2011).

These are plausible as accounts of the mechanisms of context-sensitivity in ‘knows-wh’, but they won’t help solve the Generality problem. Both mechanisms place general restrictions on what counts as an answer to a how-question in a given conversational context, which will lead to a restriction on which ways of acting can figure in knowing how. However, this account runs into trouble due to the fact that we are able to make know-how ascriptions at different levels of generality in the *same* conversational context. Consider the following sentence said about Jim from Hornsby’s touch-typing example:

- (3) Jim knows how to touch-type ‘Afghanistan’, but he doesn’t know how to touch-type.

This sentence is true of Jim in Hornsby’s example. In order for the first half of the sentence to come out true, there better be some contextual mechanism which means that only relevant ways of touch-typing ‘Afghanistan’ figure as answers to the question *how can Jim touch-type ‘Afghanistan?’* (ruling out answers like ‘by using his fingers’). The problem is that once a relevant way of touch-typing ‘Afghanistan’ is available in the context, it will also figure in an answer to the question *how can Jim touch-type?*, (assuming that context does not shift between the two halves of the sentence). This entails result that the second half of the sentence comes out false, since Jim knows a contextually relevant way to touch-type. The lesson is that we seem to be able to switch between narrow and general know-how ascriptions without triggering a corresponding change of context, which suggests that general mechanisms of contextual sensitivity cannot resolve the Generality Problem.

In response to this problem, the Contextualist might switch focus to more specific mechanisms of context dependence in the meaning of ‘how to’ questions. There are three accounts of this kind in the literature:

- i. That the modal ‘can’ involved in knowledge-how ascriptions takes a contextually supplied set of worlds as its modal base (Stanley, 2011b, pp. 126–7);
- ii. That knowledge-how ascriptions are associated by an unpronounced task variable, which is filled out by context (Hawley, 2003, pp. 21–2);

- iii. That infinitival knows-wh ascriptions involve context-sensitive goal-oriented bouletic modality, where goals are supplied by context (Bhatt, 2006, pp. 117–58).

We'll consider Stanley's account of context-sensitivity in (3.5), so let's focus here on the kinds of context-sensitivity suggested by Hawley and Bhatt.

Hawley suggests that knowledge-how ascriptions are associated with an unpronounced task variable which gets filled out by context, where tasks can pick out both engaging in an activity in a certain kind of environment, or more specific kinds of V-ing (Hawley, 2003, pp. 21–2; Cath, 2015, n. 14). A task like driving can be contextually altered to concern driving in snow, or driving an automatic car. This view gives the following account of knowledge-how:

ANS_{S&W+DAV}2: S knows how to *V* iff for all of a contextually salient set of sub-tasks of *V*-ing {*t*₁, *t*₂, ...} S knows that that some method *M* is a way in which she can perform task *tn*.

This view can explain our pattern of judgements in the touch-typing case. Suppose that context provides us with a salient set of tasks associated with *touch-typing 'Afghanistan'*, and another rather larger set of tasks associated with *touch-typing*. Jim's limited knowledge might provide him with knowledge of how to perform the tasks associated with one activity, but not the tasks associated with the other. This view can also explain the possibility of truthfully uttering sentences like (3), since it can posit two different task-variables in this sentence, which will get filled out by tasks associated with the two different activities.

Although this seems a plausible account of knowledge-how, the question is whether context will provide the right kinds of material to make the appropriate knowledge-how ascriptions come out true. In order to take the sting out of the Generality Problem, it needs to be the case that for every knowledge-how ascription, contextual mechanisms winnow down the possible answers to the question 'how to *V*' to yield a set of answers such that knowledge of them (individually or jointly) is sufficient for the possession of knowledge-how to *V*. Although we have evidence that context does cause variability in the knowledge-

how ascriptions, it would surely be a coincidence if contextual mechanisms restricted the meaning of interrogatives in just the way that Intellectualists need to save their theory (Conee & Feldman, 1998, pp. 20–4).

On Bhatt’s view, knowledge-how ascriptions are associated with a complex bouletic modal, which can take two readings: expressing either a *circumstantial can* (V is possible given the way the world is), or a *bouletic should* (V is a/the way to satisfy one’s goals). Bhatt suggests that the ‘can’ reading is the default for knowledge-how ascriptions (Bhatt, 2006, p. 125) and on this reading, his account yields a semantic value close to $ANS_{S\&W+DAV}$. However, he notes that in cases where there is a contextually salient goal, a ‘should’ reading is available (Bhatt, 2006, p. 125). To see this reading, consider sentence 4) in a context where the goal is to solve the problem but without violating any social norms:

(4) Magnus knows how to solve this problem.

Intuitively, in such a case, the correct paraphrase of 4) is deontic, expressing knowledge of a way that avoids norm-violation:

(5) Magnus knows how he *should* solve this problem (in order to avoid violating any social norms).

According to Bhatt’s account we should understand sentence 4) as saying (roughly) that Magnus knows i) that some way *w* is a way in which he can solve the problem, and ii) that employing this way will satisfy his goal of not violating any social norms.

Bhatt’s notion of contextually supplied *goals* can restrict the level of generality of answers, offering a potential way to address the generality problem. For example, if Jim’s goal is to touch-type a manuscript accurately at a speed of at least 60 words per minute, then in order to know how to touch type, he better know a way of touch-typing which satisfies the goal of typing at least 60 words per minute, whereas if his goal is just to touch-type, then any way of touch-typing will do. This means that in a context with goals are contextually salient, Bhatt can say that Jim doesn’t know how to touch-type because his way of touch-typing does not allow him to satisfy his goals. Generalising, we might suggest

that according to Bhatt's account the relevant ways of acting are just those that lead to the fulfilment of contextually supplied goals.

Appealing to goals can fix the level of generality ascriptions where there are rich goals available in the context, but does not solve the Generality Problem. On Bhatt's account, rich contextual goals only play a role on the 'should' reading. In order to get a 'can' reading out of the underlying bouletic modal, he relies on the idea that in some conversations the salient goals are *trivial* in the sense that acting automatically entails achieving the goal (Bhatt, 2006, pp. 129–31). If I say that I know how to swim, my salient goal might just be *swimming*, meaning that all I need to know is that some way is a way in which I *can* swim (since all such ways of swimming will lead to success in the goal of swimming, meaning that clause ii) in the account will be trivially satisfied). Since Bhatt's account only appeals to (non-trivial) goals in cases where the 'should' reading is salient, this account cannot solve the generality problem for ascriptions with a 'can' reading, which Bhatt claims is the majority of knowledge-how ascriptions. Even for ascriptions with a 'should' reading, it is a substantial empirical claim that conversational context will provide salient goals that are sufficiently rich to do the explanatory work of selecting a way of acting of the appropriate level of generality. This issue mirrors the problem for Hawley's account: it would be a coincidence if conversational context happened to always provide salient goals which fixed the level of generality of ways of acting to the appropriate level.

I take it that both Hawley's and Bhatt's accounts are plausible accounts of kinds of context-sensitivity at work in knowledge-how ascriptions. What I take issue with is the move of pushing the explanation of the generality of methods into the conversational context, on the grounds that without an argument that context always possesses relevant generality-fixing features, we shouldn't rely on it to do this explanatory work.

3.4. Practical Modes of Presentation

I now want to turn to consider a response that is specific to Intellectualism: appealing to Practical modes of presentation to fix which propositions figure in knowledge-how. For the purposes of this section, I will assume that PMPs are genuine and

explanatory, since my goal is to show that PMPs cannot solve the generality problem. Effectively the goal of this section is to demonstrate the distinctness of the Practicality and Generality Problems.

Let's consider a simple way in which PMPs might be put to work in giving an account of the ways of acting which are relevant for knowledge-how. We might think that relevant methods must be thought about in a practical way:

W2: The method that figures in an agent's knowledge how to *V* is the method of *V*-ing that she thinks about in a practical way.

There is some plausibility to this proposal. One might think that it is part of the very idea of a practical way of thinking that it hones in on the *one* method for *V*-ing that an agent is in fact employing in her *V*-ing.¹⁰⁶

One preliminary issue with this proposal is that it is an oversimplification to think that an agent who knows how to do something will think of only *one* way of doing that activity in a practical way. A skilled swimmer will typically have mastered a number of different strokes, meaning that according to our everyday individuation of methods, by the Intellectualist's lights they will think about a number of way-propositions in a practical way. In response to this, an Intellectualist might appeal to the idea that knowledge-how is identical to a body of propositional knowledge, and say that the relevant set of propositions are picked out by being thought of in a practical way.

The more serious problem for this proposal stems from the fact that we can generate cases where an agent thinks about an *irrelevant* way of acting in a practical way.¹⁰⁷ Recall that knowing that *moving about in the water is a way to swim* is not sufficient for

¹⁰⁶ (Pavese, 2015b) presents a richer account on PMPs, according to which the relationship between PMPs and ways is structurally analogous to the relationship between computer programs and algorithms. Although her account doesn't face the problem of knowing irrelevant ways in a practical way, her account still faces the task of explaining which of the algorithms corresponding to a given activity (or *task* in her terminology) are relevant for knowing how to engage in that activity. See (Bianchi, MS) for another way to develop the notion of a way of acting.

¹⁰⁷ I will assume that it is the way of acting (rather than the whole proposition), which must be known in a practical way. This does seem to be the standard way in that Intellectualists think about PMPs (Stanley & Williamson, 2001, pp. 428–30; Stanley, 2011b, pp. 122–30), but see (Pavese, 2015b) for a Fregean account which makes the PMP part of the proposition known.

knowing how to swim. On the view under consideration, the explanation for this fact is that someone who doesn't know how to swim will not think about the proposition *that moving about in the water is a way for me to swim* in a practical way. However, there are cases in which agents who do not know how to swim do think about this proposition in a practical way. Consider an agent who knows how to splash people around her, in virtue of knowing that *moving about in the water* is a way to splash people around you. According to the friend of PMPs, such an agent had better be acquainted with *moving about in the water* in a practical way. However, once the agent thinks of this method in practical way, the explanation of her ignorance about how to swim cannot be that she does not think about the method *moving about in the water* in a practical way.

This example helps us to see why the Practicality Problem and the Generality Problem are distinct. A solution to the generality problem requires a matching procedure that relates pieces of know-how to ways of acting at the relevant level of generality, whereas a solution to the Practicality Problem a restriction amongst ways of acting to the relevantly *practical* species of propositions. These two restrictions are orthogonal. Even if we had a satisfactory account of the species of proposition that are relevantly practical, there would still be a question about which pieces of know-how match up with which practical propositions.

A different way to put PMPs to work in responding to the Generality problem would be to rely on their connection with demonstratives and de re thought. On Stanley's view, knowledge-how is a kind of de re knowledge (2011: 120). Furthermore, in a number of places Stanley and Williamson claim that the standard way of expressing knowledge-how under a PMP will be by employing demonstratives of the form: '*this* is a way for me to V' where 'this' refers to the agent herself V-ing (Stanley & Williamson, 2001, p. 433; Stanley, 2011b, pp. 161–2). Because ways of acting are types, Stanley and Williamson claim that this demonstrative functions as a kind of deferred ostension, in which pointing to an object which instantiates some type secures reference to that type itself (Stanley & Williamson, 2001, n. 29). This suggests that an Intellectualist might try to solve the Generality Problem by appealing to demonstrative thought:

ANS_{S&W+DAV}3: The method that figures in an agent's knowledge how to V is the one that she refers to in sentences (and thoughts) of the form: '*this* is a way for me to V'.

The problem is that it isn't obvious that (or how) the relevant class of demonstratives secure reference. Presumably there are instances of successful deferred ostension to types in ordinary language, but I suspect that they are restricted to fairly limited cases where conversational context is sufficiently rich to make clear what the intended type is meant to be. In the case of pointing at oneself engaging in some activity, there will be a huge number of ways of acting instantiated, and it is not obvious that any one of those types is referred to. If I point at myself cycling and say '*this* is a way for me to cycle', a hearer would be legitimately confused. Plausibly, this confusion would stem from the fact that my speech act has failed to secure reference to a single type.¹⁰⁸ The appeal to demonstratives transforms the Generality problem into a linguistic problem, but since it is not obvious that demonstratives in the relevant cases secure reference at all, hence this move doesn't get any traction on the substantive philosophical issue of what the relevant ways of acting are.

3.5. Counterfactual Success Condition

A final option is strengthening the modal involved in the relevant class of propositions. INT involves a 'can' type modal force, saying of a way of acting that it is a way in which the agent *can* engage in some activity. However, it is also open to the Intellectualist to offer a stronger modal condition on ways of acting. They might say that knowledge-how concerns *methods* for V-ing, and that it is essential to the idea of methods that employing them leads to reliable success in the relevant activity.

In *Know How*, Stanley already goes some way toward pursuing this option; taking up Hawley's claim that knowledge-how is related to counterfactual success, rather than a 'can'-type modal. On this view the relevant kind of proposition is one of the form that some method is a way in which the agent can perform some task in *all* of a contextually salient set of 'normal' worlds, which need not be close worlds (Hawley, 2003; Stanley, 2011b, pp. 126–8). This tweak gives the following account of knowledge-how:

¹⁰⁸ (Hornsby, 2011, p. 91; Wiggins, 2012, pp. 120–1). See (J. Brown, 1998) for an analogous problem about reference to natural kinds.

ANS_{S&W+DAV}⁴: S knows how to *V* iff S knows that that some method *M* is a way in which she could *V* in all (or at least most) of a contextually salient set of normal worlds.

A first thing to notice is that since this account appeals to a contextual mechanism to specify the relevant set of worlds, it is open to the general criticism from the last section: that it is not obvious that contextual mechanisms will deliver the goods that the Intellectualist needs (i.e. a generality-fixing set of contextually available worlds).

One issue faced by leaning on modal properties to pick out the relevant class of ways of acting is that one needs to have a robust account of what the relevant modal properties are. This move faces a version of the problem that faced supporters of the ability theory. Just as it is difficult to give an account of the modal properties of the kind of ability to *V* which supporters of Ability theory claim co-ordinates with knowledge how to *V*, it is difficult to give an account of the modal properties of the ways of *V* which Intellectualists claim are known by someone who knows how to *V*. A weak ‘can’ type modal picks out too many ways of acting, allowing ways of acting which are only successful in one situation to count as relevant, leading to too many people counting as knowing how. By contrast, a strong reliability condition runs the risk of picking out too few ways of acting, ruling out ways of acting which occasionally lead to failure predicting that agents who employ a method for *V*-ing which leads to occasional failure at *V*-ing cannot know how to *V*.

A further issue concerns trivial ways of acting. Strengthening the modal condition on ways places a lower bound on the generality of the ways of acting that can figure in the object of knowledge-how, but it does not place an upper bound on their generality. In the limit case, the Intellectualist needs to be able to explain why trivial methods do not suffice for knowledge-how. For example, *by swimming* is an extremely reliable way to swim, securing success at swimming in all of the worlds in which swimming is possible.¹⁰⁹ But it doesn’t seem true that someone who knows only *that swimming is a way to swim* should count

¹⁰⁹ Is *by swimming* a way to swim? If someone asked ‘how can you swim?’ you wouldn’t answer by saying ‘by swimming’; presumably because this is an unhelpful answer. However, *by swimming* certainly is a way of acting: one can answer the question ‘how are you going to get across the river?’ by saying ‘by swimming’.

as knowing how to swim. Appealing to a strengthened modal condition cannot explain why trivial way-propositions of the form *V-ing is a way to V* do not suffice for knowledge-how, since a trivial way will be maximally reliable.

There are two options to deal with the problem of trivial ways, both of which lean heavily on PMPs. On the one hand Intellectualists might claim that this trivial knowledge *isn't* sufficient for knowledge how to swim because it is not possible to think about the proposition *swimming is a way to swim* in a practical way. This need to bring PMPs in just tells us that strengthening the modal condition by itself cannot solve the generality problem, and raises the question of why one cannot think of trivial propositions practically. Alternatively Intellectualists might bite the bullet and claim that trivial knowledge can be sufficient for having knowledge-how, but only when the trivial proposition is thought of practically.¹¹⁰ This view is pretty unattractive. For one thing, it requires having an adequate account of PMPs, which is a pretty tall order. Furthermore, this view runs the risk of making the content of knowledge-how irrelevant. If we can explain someone's intelligent action by appealing to their practical knowledge of a trivial proposition, then the mode of presentation must by itself do all of the work of explaining intelligence. However, if PMPs can do all of the explanatory work in these trivial cases, one might worry that they will also fully explain intelligent action in cases where an agent knows a non-trivial proposition. This would make the content of these non-trivial propositions explanatorily irrelevant. The problem is that it looks like the content of propositions do have an important role in explaining intelligent action. When my trumpet teacher tells me to focus on not putting pressure on my mouthpiece, the obvious way to explain the improvement in my performance is by appealing to the content of the propositions which I have learnt.

4. Conclusion

I hope to have shown that the Generality problem is a *serious* problem for Stanley and Williamson's version of Intellectualism, just as the Generality problem is a serious problem for process Reliabilism. The existence of a Generality problem challenges the basic explanatory power of a view, questioning whether it offers a satisfactory account of

¹¹⁰ See (Pavese, 2015b, pp. 14–16) for this suggestion in the case of basic know-how (see also (Sosa, 2010, p. 45)).

the target phenomenon. Since Stanley and Williamson's view doesn't distinguish ways of acting which are relevant for a given activity, their view significantly over-generates knowledge-how. Furthermore, it fails to make clear predictions about which propositions are known when someone knows how to do something. I have argued that the obvious responses to the Generality problem for Intellectualism are unsatisfactory, meaning that the onus is on Intellectualists to provide an account of which ways of V-ing are relevant for knowledge how to V.

It is worth briefly noting two kinds of responses that are worthy of further consideration. First, there are contextualist accounts that appeal to context to enrich the meaning of knowledge-how ascriptions. These theories explained how context interacts with knowledge-how ascriptions, and can provide the right kind of machinery to resolve the generality problem in cases where the context is sufficiently rich. The problem was that they did not provide us with reasons for thinking that context will always be sufficiently rich to fix the level of generality. Secondly, there is potential for an empirically influenced version of Intellectualism that takes the relevant ways of acting from empirical science. The task for this theory will be to give us substantive reasons to think that empirical explanation of successful action will appeal to *just one* way of acting, which is thought of at the personal level. Although both views address the generality problem, it is notable how different they are, and how much work one would need to do to satisfactorily defend them.

Let's now consider how general the Generality Problem is. I take it that the Generality problem will afflict any version of Intellectualism that endorses ANS_{S&W}, since this minimal theory appeals to way-types as part of its account of the semantics of how-questions. This means that the generality problem will arise for the various iterations of Stanley and Williamson's view, as well as Pavese's (2015a, 2015b) (see footnote 106) and Cath's (2015) versions of Intellectualism (that said, I haven't argued that Pavese's or Cath's accounts don't provide them with the resources to resolve the generality problem; there's a difference between facing a generality problem, and not being able to resolve that problem). To avoid the problem one could claim that knowledge how to V is knowledge about V-ing which doesn't involve ways of V-ing, or one could claim that knowledge how involves way-*tokens*, and not way-*types*. Both views are options, but are implausible. A non-way-involving Intellectualist account would be in tension with the linguistic evidence, and

an account that appealed to way-tokens would not be able to explain the fact that knowledge-how is a kind of general knowledge (see footnote 102).¹¹¹

There are also some Non-Intellectualist views which face the Generality Problem. Objectualist accounts treat knowledge-how as objectual or acquaintance knowledge of a way of acting, meaning that they face the issue of explaining which of the many ways of V-ing are such that objectual/acquaintance knowledge of them is sufficient for knowing how to V. Brogaard's Predicativist account also has an open variable for way-types in her account, meaning that she also faces this problem. Accounts that identify knowledge how to V with a kind of ability or disposition to V face the related problem of specifying a kind of ability or that is necessary and sufficient for knowledge-how (See chapter 1 §3). This problem isn't strictly speaking a version of the Generality problem, but it does leave ability-theorists with a sufficiency problem that is just as difficult. This issue is dialectically important, since if all of the alternatives to Intellectualism cannot give conditions which are sufficient for knowledge-how, then Intellectualism is no worse off than the alternatives.

However, not all Non-Intellectualist theories face this kind of problem. Consider the Actist view that knowledge-how is a knowledge-relation to an activity. According to this view, knowledge how to swim consists in standing in the knowledge relation to the activity of swimming. There is only one activity-type in question here – swimming – meaning that the Generality Problem cannot get off the ground. Since Actism does not face the Generality Problem, the Intellectualist cannot get off the hook by contending that all other accounts of knowledge-how face similar problems.

It's also worth noting that generality problems seem to also occur for other kinds of knowledge-wh. Consider the application of the answer theory to infinitival knowledge-what:

ANS_{WHAT}: *S* knows what to do in a situation *C* iff *S* knows that *V-ing* is the thing that *S* ought to do in *C*.

¹¹¹ "Learning is becoming capable of doing some correct or suitable thing in *any* situations of certain general sorts. It is becoming prepared for *variable* calls within certain ranges." (Ryle, 2009b, p. 129).

In order to get a generality problem going for this account of knowledge-what, we need to be able to shift the level of generality of the action-variable to generate cases in which one can know that V-ing is the thing to do, without knowing *what to do*. It is not too difficult to set up an example with these features. If S is facing a difficult moral choice, they might know that the thing to do is *the right action*, without knowing which of the options they are faced with is the right action. In such a situation they would know that *doing the right thing* is the action they ought to do, without knowing what to do. One might think that the existence of this kind of case suggests that the Generality Problem ultimately targets the Answer theory of knowledge-wh. Although this is a tempting conclusion, I think that the target is somewhat narrower. The problem targets the application of ANS to kinds of knowledge-wh that quantify over *types*, and not ANS in general. This is evidenced by the fact that we cannot find generality-style cases for non-type-quantifying knowledge-wh. For example, *who came to the party?* is answered by propositions about token individuals, and applying the Answer theory to ‘S knows who came to the party’ does not seem to lead to generality problems. This pattern of generality-style cases is important, since my contention that the generality problem for Intellectualism stemmed from its appeal to types would be undermined if similar problems arose for non-type-quantifying knowledge-wh.

In chapter 1 §4.2.2., I argued that even if Intellectualism is supported by the most plausible semantics for ‘knows how’ ascriptions in English, there might be compelling non-linguistic reasons to reject Intellectualism, leading one to endorse a non-standard semantics on philosophical grounds. This chapter has provided one example of such a problem. If Intellectualists cannot give a satisfactory account of which ways of acting are relevant for determining the presence of knowledge-how, then this would be a good reason to reject Stanley and Williamson’s account of knowledge-how, and their semantics for ‘knows how’ ascriptions in favour of an account of the metaphysics and semantics which either does not lead to a generality problem — such as an *Activist* view — or a view which has a more tractable problem of generality. This brings home an important methodological point: it is possible that linguistic theory suggests a certain account of a phenomenon, which should be rejected for entirely philosophical reasons. Accepting that linguistic theory is a legitimate source of evidence about philosophical problems doesn’t mean that linguistic considerations always trump philosophical arguments whenever the two come into conflict.

Part 2: A Genealogy of Knowledge-How

Chapter 4: What's the Point of Knowledge-how?

Introduction

In *The Concept of Mind*, Ryle introduces the notion of knowledge-how with a rebuke to philosophers:

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 [that they engage in] than with the truths that they learn. (Ryle, 2009b, p. 17)

Ryle is surely right that we care a great deal about knowledge-how and competence but he doesn't consider *why* we should care about these notions.

In this chapter I want to consider why we care about knowing-how. To address this question I will follow Edward Craig's *Knowledge and the State of Nature*, asking what the function of our concept KNOWS¹¹² might be. I will focus on two pictures of the function of the concept of knowledge-how, which I will call *Pooling Skills*, and *Mutual Reliance*:

Pooling Skills: We care about knowledge-how because we want to pick up skills which other people have; we use the concept of knowledge-how to make discernments amongst potential teachers.

¹¹² I'll follow the convention of capitalising concepts, so 'KNOWS' denotes the concept of knowledge. I will also talk about the concepts KNOWS-HOW and KNOWS-THAT below, taking these to be complex concepts composed of KNOWS plus some other element. I won't have very much to say about concepts — I take them to be some kind of representational device connected to natural language expressions. If you don't think that there are concepts, then talk about them can be rephrased as talk about the practical interests which are part of the metasemantics of natural language terms.

Mutual Reliance: We care about knowledge-how because we need to be able to rely upon people to do stuff for and with us; we use the concept of knowledge-how to make judgements about who to rely upon.¹¹³

I will argue below that these two functional claims are closely connected to two epistemic norms which will form the focus of the two chapters that follow: the knowledge-how norm of teaching (KNT), and the knowledge-how norm of intention (KNI):

KNT: One must: teach someone how to V , only if one knows how to V .

KNI: One must: intend to V , only if one knows how to V .

In §1 I introduce Craig's function-first methodology for understanding knowledge. In §2 I sketch Craig's account of the function of KNOWS-THAT, and connect it to the claim that knowledge is the norm of assertion. In §3 I consider Craig's extension of his account to KNOWS-HOW, which leads to *Pooling Skills*, and connect this view to the claim that knowledge-how is the norm on teaching. In §4, I set out some problems for *Pooling Skills*, and introduce *Mutual Reliance*. In §5 I will suggest that KNOWS-HOW bears the marks of both *Pooling Skills* and *Mutual Reliance*, suggest that this means that our concept of knowledge-how is inconsistent.

1. Function-First Methodology

There are various places at which one might start inquiring into the nature of knowledge (Here I follow (Gardiner, 2015)).

¹¹³ One might think that there is a Rylean alternative:

Explaining Intelligence: We care about knowledge-how because we want to understand why people act intelligently.

Although it is true that we do sometimes use knowledge-how ascriptions to explain an intelligent act, I do not think that Explaining Intelligence is a plausible picture of the function of KNOWS-HOW. There appear to be a great many knowledge-how ascriptions which have nothing to do with intelligence. Consider knowing how to make a cup of tea, how to get to the shops, or how to raise one's arm.

An *Extension-first* approach starts with an extension for ‘knows’, most likely derived from our intuitive judgements, and builds an account of knowledge which aims to match and explain this extension. This approach goes well when there is agreement about an intuitive extension and one account which can explain that extension, but runs into trouble where the intuitive extension is fuzzy or unclear, where different accounts of knowledge can equally explain the extension, or when other theoretical values — such as simplicity or elegance — conflict with tracking the intuitive extension (Weatherson, 2003).

An *Intension-first* approach starts with platitudes about the nature of knowledge and aims to build an account of knowledge which can explain these platitudes. This approach will go well when we can agree on the platitudes about the nature of knowledge, but in cases in which there is conflict about the content of intensional intuitions, or intuitions about intension conflict with extensional intuitions, the approach will run into trouble.

We have seen some reasons to be sceptical about the application of either approach to the case of knowledge-how. There is no obvious consensus about the intuitive extension of knowledge-how. Knowledge-how does not seem to be picked out by any particular linguistic construction, and statement of the form ‘S knows how to V’ are ambiguous. This means that intuitive judgements about whether some agent ‘knows how’ will be unreliable in determining whether the agent has the interesting kind of practical knowledge. There also appears to be disagreement about the intension of knowledge-how. Although Intellectualists and Anti-Intellectualists seem to agree that knowledge-how is a distinctively practical kind of knowledge, there is consensus around what this practicality comes to, and putative platitudes about the connection between knowledge-how and ability are extremely controversial.¹¹⁴ It is also not obvious whether we should expect knowledge-how to be governed by the same platitudes as knowledge-that; or to put the point a different way, whether the platitudes standardly posited for knowledge only govern knowledge-that.¹¹⁵

¹¹⁴ I will propose one way to cash out the practicality of knowledge-how in chapter 7.

¹¹⁵ See (Carter & Pritchard, 2015b), which suggest that knowledge *in general* excludes luck, but that knowledge-how does not.

In contrast to Extension-first and Intension-first approaches, Craig starts off inquiry by thinking about the function of KNOWS, employing what we might think of as a *Function-first* approach:

Instead of beginning with ordinary usage, we begin with an ordinary situation. We take some prima face plausible hypothesis about what the concept knowledge does for us, what its role in our life might be, and then ask what a concept having a role would be like, what conditions would govern its application. Such an investigation would still have an anchorage point in the everyday concept: should it reach a result quite different from the intuitive intension, or one that yielded an extension quite different from the intuitive extension [...] the original hypothesis about the role that concept plays in our life would of course be the first casualty. (Craig, 1990, p. 2)

We can think of this kind of approach as a kind of reverse engineering. We start with a hypothesis about the practical need which a concept might address, and a picture of how that concept might address that practical need. We then set out to design a concept which explains how the concept meets that need, and then assess whether that concept matches the ordinary extension and intension for the concept in question. In Craig's account, this story acquires a quasi-historical flavour, due to his employment of a state of nature narrative.

This approach raises a number of questions:

- i. Why think that concepts have theoretically interesting functions?
- ii. How should we assess a hypothesis about the function of KNOWS?
- iii. What does it mean to talk about the function of KNOWS?
- iv. What is the significance of the Genealogical elements of Craig's account?
- v. How does Craig's approach to KNOWS relate to other function-first approaches?

I will address these issues in turn.

1.1. Why think that Concepts have Interesting Functions?

If we think of concepts minimally as a cognitive and linguistic tool for marking a distinction in reality, then we might think that all concepts have the boring function of picking out the extension which they pick out (Craig, 1990, p. 3). There is a sense in which all concepts play this minimal role, but I don't think that this means that they cannot also have more interesting functions.

A helpful way to frame the question of a concept's function is by thinking about the practical value of thinking and talking with a particular concept. We are cognitively limited agents, and we can only think and communicate with a limited array of concepts. Reality far outstrips our capacity to represent concepts in language or mind. The mere fact that there is a distinction in reality does not explain why we operate with a concept to track that distinction; the fact that a distinction is 'out there' doesn't explain why this distinction is an important one to represent in our conceptual scheme. In order to explain why we operate with a particular concept, it is natural to appeal to our practical interests. We operate with the concept FOOD which picks out (roughly) edible, nutritious, non-poisonous objects, rather than FOOD* which picks out edible, nutritious, non-poisonous objects and ball-point pens because working with FOOD addresses our practical need for nourishment better by helping us to make better judgements about what to eat. The fact that our conceptual scheme is answerable to our practical needs does not mean that all of our concepts have revelatory functions: perhaps the function of natural kind terms is just to pick out their extensions, and it might be that other concepts only answer our practical needs only as part of a wider array of concepts. It might also be that one natural language term is used to track multiple distinctions in different contexts. What this picture does is open up the possibility of gaining insight into our concepts by thinking about their functions.

1.2. How should we Assess a Hypothesis About the Function of KNOWS?

On Craig's view we can assess the success of a functional hypothesis by comparing the constructed concept to our actual conceptual practice with knows. A successful

functional hypothesis gets the extension of the concept roughly right, explaining our intensional intuitions about the nature of that concept, and the ‘constellation of thoughts’ which go along with that concept (Craig, 1990, pp. 2, 14). We might also add to Craig’s criteria that it would be good if the account of the function of KNOWS answers to at least some of the pragmatic and speech act theoretic uses of knowledge ascriptions, or what it is that we actually use knowledge ascriptions to do (Haslanger, 1999, pp. 462–3, 2000, p. 33). Craig also claims that since KNOWS is a very general concept, an account of its function ought to answer to very general features of human society (Craig, 1990, p. 2).

Unlike the Carnapian project of explication, which aims to construct precise versions of our messy concepts, the goal of Craig’s project is to construct a version of our actual concept, including the ways in which that concept is unclear, indeterminate, and inconsistent. One way in which Craig tries to keep this messiness contained is by focusing on explaining the central cases of knowledge, allowing that things might get tricky and indeterminate around the fringes of the concept. Intriguingly, Craig suggests that we might add the messiness of a concept to our evidence base, the thought being that the indeterminacies in whether certain cases constitute knowledge might stem from the way in which KNOWS meets its conceptual function.¹¹⁶

1.3. What does it Mean to Talk About the Function of KNOWS?

In order to talk clearly about the function of a concept, we need to get clear on the significance of talk about the functions of concepts.

Claims about the function of a concept need to be distinguished from claims about the function of the entities that that concept picks out. Consider knives. Plausibly the function of knives is to cut things. But this doesn’t mean that the function of KNIFE is to cut things; rather the function of KNIFE is (plausibly) to help us to make discerning judgements about what to use to cut things up. Let’s introduce the distinction between a concept’s *semantic function*, and its *metasemantic function*. A semantic function is a functional

¹¹⁶ See his discussion of Radford’s French-Canadian (Craig, 1990, pp. 37–8), and the diagnosis of the dispute between internalists and externalists (Craig, 1990, p. 63).

property which is part of the meaning of a given concept. Being suitable for cutting might be the semantic function of KNIFE because the functional property of being apt to cut is part of the meaning of 'knife'. By contrast, a Metasemantic function is a functional property of the concept itself, which plays a role in fixing its meaning. For example the metasemantic function of KNIFE might be to help us to make discerning judgements about what to use as an implement for eating our dinner. This function of helping us to make discerning judgements about what to use to cut up food is part of the meaning-determining conditions for KNIFE, but not itself part of the meaning of KNIFE.

Claims about the function of a concept also need to be distinguished from claims about the function of the speech acts which we make employing the term which corresponds to that concept. We might use ascriptions employing a certain concept for all kinds of pragmatic purposes beyond its metasemantic function. For example, the exclamation 'Knife!' might serve the function of warning those nearby of some kind of danger relating to knives. But that does not mean that the metasemantic function of KNIFE is to warn of danger. Although we shouldn't expect pragmatic uses of a concept in speech acts to stem from a metasemantic function, we should expect that a concept's metasemantic function shows up in its pragmatics.

The distinction between semantic and metasemantic functions is often unhelpfully blurred. It is common to say that on Craig's view the function of KNOWS is *to pick out good informants*.¹¹⁷ This gloss of Craig's view is problematic at a couple of levels. For one thing, it is pretty clear that being a good informant can come apart considerably from being a knower.¹¹⁸ But the underlying issue is that the functional claim ends up as a claim about what knowledge is, rather than a claim about the way in which having a concept of knowledge addresses our practical needs. This claim presents an account of the semantic function of KNOWS as an account of its metasemantic function. If we want the function-first approach to motivate accounts of our concepts on the basis of our conceptual needs, then it is crucial that we allow distance between a claim about a metasemantic function and the account of the target phenomenon. A functional hypothesis cannot simply smuggle in an account of the target phenomenon. There should be some theoretical work to

¹¹⁷ (Neta, 2006, pp. 266–7; Greco, 2007, p. 68; Kelp, 2011; Lackey, 2012 especially RIVKA; Pritchard, 2012; E. Fricker, 2015; McGrath, 2015).

¹¹⁸ (Kelp, 2011; Lackey, 2012; E. Fricker, 2015).

explaining how having a concept that picks out a certain set of objects helps us to address our practical needs.¹¹⁹

1.4. What is the Significance of the Genealogical Element of Craig's Account?

In order to understand the practical needs behind KNOWS, Craig employs a state of nature story. Craig often presents this state of nature story as a *hypothetical genealogical* story about the conceptual development of KNOWS, and many of Craig's interpreters have taken his account of knowledge to have an important historical flavour, involving a real or hypothetical account of the conceptual history of KNOWS.¹²⁰ This way of thinking about his project is misleading: the state of nature story is not historical, nor is it merely hypothetical.

In *Knowledge and the State of Nature*, Craig is clear that we shouldn't think of his treatment as a history of KNOWS:

I shall not treat its [i.e. KNOWS's] development diachronically, and that is not just an omission: if what I shall say is along the right lines, the core of the concept of knowledge is an outcome of certain very general facts about the human situation; so general, indeed that one cannot imagine their changing whilst anything we can still recognise as social life persists (Craig, 1990, p. 10)

In a later piece surveying different kinds of genealogical approaches, Craig also warns against a historical interpretation of his project.

It was only in so far as I hoped to explain the presence of the concept of knowledge – our present everyday concept of knowledge – in early cultures and their

¹¹⁹ Instead of saying that the function of KNOWS is to pick out good informants, I will say that the function of KNOWS is to help us pool information, and that the way that KNOWS plays this role is (roughly) by picking out agents who are good informants.

¹²⁰ For this interpretation of Craig see (Kusch, 2009, pp. 64–7, 2011; Kappel, 2010, pp. 69–71; Kelp, 2011; E. Fricker, 2015; Gardiner, 2015).

languages that I needed to think in terms of historical examples at all, and then only historical, not putatively prehistorical, examples. [...] Reference to mankind's prehistory was no essential part of my argument, but so to speak epiphenomenal to it. (Craig, 2007, pp. 191–2)

Craig claims that the features of social life to which KNOWS answers are extremely general, which means that he is committed to historical societies having these features. But, the fact that these societies are in the past plays no important role in his explanation of the nature of KNOWS.¹²¹

The role of the appeal to a 'primitive' society in Craig's account is to present us with a simplified general picture of human society, which makes it easier to see certain epistemically important features:

State-of-nature theories are "imaginary" then, at most in the sense that they weave fictions around factual claims about human nature. (Craig, 2007, p. 193)

In order to play this role the state of nature story must make some claims about the nature of real historical societies, meaning the state of nature story is not merely hypothetical, but contains important factual claims.

1.5. Comparison to Other Accounts

By downplaying the historical elements of Craig's discussion, it becomes clear that his project is related to various other projects that appeal to the functions of concepts. I want to focus on two theories: Haslanger's Ameliorative Project, and Bratman's planning theory of intention.

In a series of papers, Haslanger develops what she calls the Ameliorative project. Her application of this project to KNOWS sounds strikingly similar to Craig's project:

¹²¹ Although one might think of Objectivisation as a historical stage, Craig is clear that Objectivisation is a general conceptual pressure which operates on all of our concepts, rather than a specific historical phase in the development of KNOWS (Craig, 1990, p. 82).

On an [Ameliorative] approach the task is not simply to explicate our ordinary concept of X; nor is it to discover what those things we normally take to fall under the concept have in common; instead we ask what our purpose is in having the concept of X, whether this purpose is well-conceived, and what concept (or concepts) would serve our well-conceived purpose(s) assuming there to be at least one best. (Haslanger, 1999, p. 467)

One important difference between Craig's project and Haslanger's implementation of the Ameliorative project is that Haslanger is more pessimistic about whether the concepts we employ currently in fact answer to our legitimate purposes, meaning that she is much happier to endorse deeply revisionary accounts of various concepts, as her account of Race and Gender concepts make clear (Haslanger, 2000). Haslanger appeals to conceptual functions as part of a project to improve our concepts, making her approach a kind of conceptual engineering, or conceptual ethics.

Craig mentions this kind of revisionary approach, but puts it to one side:

Some may also wish to ask a very different normative question: where, if the concept of knowledge is to be developed or rendered more precise this ought to be done in one way rather than another; clearly, there are parallels in political theory. Again I shall not offer an opinion; in any case, unless we are told the purpose of such development, we do well to have no opinion to offer. (Craig, 1990, p. 9)

Craig seems to think that our default position should be that KNOWS addresses our legitimate purposes. There are good reasons to be sceptical about this claim (Haslanger, 1999, pp. 462–66). One way to understand the literature on testimonial injustice demonstrates how patterns of credibility attributions that track social identities rather than purely epistemic features can undermine the role of KNOWS in helping us to pool information (M. Fricker, 2007; McKinnon, 2016). There are good reasons for thinking that our knowledge-how attributions are similarly perverted (Hawley 2011).¹²²

¹²² See also (Stanley, 2016, Chapter 7) on the way that the distinction between knowledge-how and knowledge-that might further social divisions between manual and intelligent tasks. For criticism of Stanley, see (Kremer, 2016b).

Another reason for thinking that KNOWS might need amelioration is if it plays different functions which are in tension (Fassio & McKenna, 2015). Consider some alternatives to Craig's proposed: that KNOWS functions as an inquiry-stopper (Kappel, 2010; Kelp, 2011), or that KNOWS functions to regulate patterns of blame (Beebe, 2012). If it turns out that we use KNOWS to play several of these roles, we may need to employ it to pick out different extensions, leading to inconsistencies, and opening the door to amelioration.

Another illuminating comparison is with Bratman's planning theory of intention (Bratman, 1987). Bratman talks primarily of the function of *having* intentions, rather than the function of the concept INTENDS. I don't want to get caught up in whether Bratman intends these claims as referring to semantic or metasemantic functions. All that I want to point out is that there is a natural interpretation of the planning theory as an account of the function of INTENDS which meshes nicely with Craig's account of the function of KNOWS.

Here's a version of Bratman's theory translated into an account of the metasemantic function of INTENDS. Start with our practical needs. We are cognitively limited agents: we have relatively little knowledge about how the future will be, we have a limited capacity to make branching plans for contingencies, and a limited capacity for deliberation. We are also temporally and socially extended agents: we need to be able to co-ordinate across time with ourselves, and we need to be able to co-ordinate with other agents. How are we to deal with our need for interpersonal and interpersonal co-ordination, whilst taking full account of our cognitive limitations? The planning theory claims that INTENDS addresses these practical needs by picking out a state which is the upshot of practical deliberation, and has a distinctive functional profile: roughly, the role of being stable across time, relatively resistant to reconsideration, and being a constraint on our planning. Having a concept that picks out this state allows us to plan on the basis of what other agents will do — and for that matter what we will do — by attributing a state that is relatively stable in the face of reconsideration. Working with this concept also allows us to shape our planning, by making sure that we avoid inconsistent plans, and fill out our plans when the time comes. This claim can be dressed up in a state of nature narrative. Perhaps the central situation for the supporter of the planning theory is a situation of joint planning. Consider the situation of two flat-mates who want to co-

ordinate when each uses the shower in the morning to ensure that neither has to wait. The concept INTENDS helps these agents to address their co-ordination problem by allowing each agent to form and communicate a plan about when they will use the bathroom.

There are a couple of striking similarities between Craig's story about the function of KNOWS, and the Bratmanesque story about INTENDS. Both accounts appeal to our needs for co-ordination: Craig argues that KNOWS functions to address our need for epistemic co-ordination by helping us to pool information, and Bratman claims INTENDS to address our need for practical co-ordination by helping us to plan together. Both accounts claim that the concepts help us to plan: KNOWS helps us to tap other peoples' stores of information about questions relevant to our plans, and INTENDS by allowing us to plan on the basis of what other agents will do by allowing us to predict what they will do. Finally, both concepts aim to play a certain kind of inquiry-stopper role: KNOWS aims to end uncertainty about a factual question by delivering its answer via testimony, and INTENDS aims to end uncertainty about what someone (including oneself) will do via the expression, attribution, or formation of intention.

2. The Function of KNOWS-THAT

In this section, I lay out the central elements of Craig's account of KNOWS, and argue that his account of KNOWS supports the claim that knowledge is the norm of assertion.

Craig starts with our practical needs. Each of us has a need for true information about our environment, in order to allow us to bring our practical projects off successfully. But our access to information about the environment is limited, and information is distributed between agents. It would be helpful for agents to be able to tap the information possessed by others as and when it becomes pertinent. This gives us a practical need: the need to pool information between agents. Craig's hypothesis is that this need is addressed by KNOWS, positing the following metasemantic function:

Pooling information: the function of KNOWS is to help us to pool information between different agents.

One way to understand this need is by considering the situation of an inquirer,¹²³ someone who has an open question of practical significance, and faces a number of different agents who might be in a position to resolve that question for her.¹²⁴ What an agent in this kind of situation needs is a concept that can help her to assess potential informants on her question. Craig's central hypothesis is that KNOWS addresses our need to pool information by providing us with a state which provides a standard on potential informants (Craig, 1990, p. 11).

Craig primarily focuses on how KNOWS can facilitate informant choice, but he actually considers a couple of other mechanisms by which KNOWS helps us to pool information:

- i. An agent who is among various potential informants for some inquirer can apply the concept KNOWS to herself in order to determine whether she is in a sufficiently good epistemic position to assert (Craig, 1990, pp. 63–5);
- ii. An agent who is neither inquirer nor informant, can KNOWS in order to recommend someone else as a good informant (Craig, 1990, pp. 82–97);

To these we might also add:

- iii. After testimony has taken place, agents can use positive knowledge ascriptions to praise the speaker, and negative knowledge ascriptions to censure the speaker. These positive and negative ascriptions provide social pressure to drive up the general epistemic standards for testimony (Reynolds, 2002, 2008).

I think that the best gloss of Craig's functional story is that KNOWS helps us to address our need to pool information between agents by picking out an epistemic standard on information-provision. This means that the claim that the metasemantic function of

¹²³ On the distinction between the situation of inquirers and examiners, see (Williams, 1973, p. 149; Craig, 1990, p. 19).

¹²⁴ This question-based situation means that knowledge-wh ascriptions are much better illustrations of Craig's picture than knowledge-that ascriptions (Craig, 1990, p. 12).

KNOWS is to pool information gives us a gloss on the semantic function of knowledge — that knowledge is associated with the functional property of being a standard on good informants.

This gloss on the functional properties of knowledge is closely related to the knowledge-norm of assertion.¹²⁵ Supporters of the knowledge-norm of assertion endorse the following claim (Williamson, 2000, Chapter 11; DeRose, 2002; Hawthorne, 2004; Turri, 2011):

KNA: One must: assert that p , only if one knows that p ¹²⁶

This norm says that an agent's assertion is permissible only if she knows what she says. If a speaker says that something which is false, unjustified or not known, then there is something inappropriate about that assertion. Crucially, KNA makes a claim about *epistemic* permission: an ignorant or false assertion can still be morally or prudentially permissible, and a knowledgeable assertion can still be morally or prudentially *impermissible*.¹²⁷

One might have thought that KNA and *Pooling Information* were in competition. It is true that the examples of knowledge ascriptions used to illustrate KNA and the pooling view are importantly different: Craig focuses on the perspective of the *inquirer*, considering prospective knowledge-ascriptions which are used to flag good informants, whereas supporters of KNA focus on the perspective of the *examiner*, considering retrospective uses of knowledge-ascriptions to assess whether an assertion fulfilled an epistemic rule. These families of examples do demonstrate two different kinds of pragmatic functions of knowledge-ascriptions: a flagging use, and an evaluating use (McGrath, 2015). However, if

¹²⁵ A number of authors have also suggested that Craig's account supports the knowledge norm of practical reasoning. (Greco, 2008, 2012; Hannon, 2013; McKenna, 2013, 2014).

¹²⁶ The knowledge-norm of assertion is formulated in several different ways: as an imperative or must claim (Williamson, 2000, pp. 241–3), as a claim about appropriateness (J. Brown, 2008b), or as a claim about permissibility (Turri, 2011). There is also debate about whether the norm should be formulated as a sufficiency claim (J. Brown, 2008b, 2012), and how we should understand the notion of assertion (E. Fricker, 2015). For the purposes of my discussion of epistemic norms, the differences in formulation will not be significant, and I will focus on the weaker necessity direction of the norm.

¹²⁷ From this point on, I will use unqualified claims about permission to refer to epistemic permission.

we look a little more carefully, it should become clear that KNA and *Pooling Information* are not in competition.¹²⁸ For one thing, the two views are about different things: *Pooling Information* concerns the function of the *concept* KNOWS-THAT, whereas KNA is a view about the functional properties associated with the *state* of knowledge-that. *Pooling Information* is a claim about metasemantic functions and KNA is a claim about semantic functions. Not only are these two views not in conflict: endorsing KNA provides a plausible way to unify the various ways in which we can use knowledge ascriptions to facilitate the pooling of information. One way to put the point is that KNOWS facilitates the pooling of information in part *because* it picks out a state which is the norm of assertion: KNA is a semantic function which naturally supports the metasemantic function posited by *Pooling Information*.¹²⁹

3. The Function of KNOWS-HOW

Craig presents the Information Pooling account as a general account of the function of KNOWS. However, one might worry that Craig has merely given an account of the concept KNOWS-THAT, neglecting the function of KNOWS as it occurs in the objectual and ‘knowledge how to’ constructions. In the last two chapters of *Knowledge and the State of Nature* (Craig, 1990, Chapters 16, 17), Craig addresses this worry by extending *Pooling Information* to account for these two constructions. (From this point I’ll treat *Pooling Information* as an account of the function of KNOWS-THAT).

In the case of objectual knowledge, this extension is fairly unproblematic. The idea is that objectual knowledge ascriptions flag the subject as someone who is a good informant on questions about the relevant object (Craig, 1990, pp. 140–8). In the case of

¹²⁸ One potential conflict in the background is between Craig’s function-first approach, and the knowledge-first approach employed by KNA (Williamson, 2000). Craig recognises that these two approaches are in conflict (Craig, 1990, pp. 94–7). Williamson criticises Craig’s claim that our basic epistemic interest is for information, claiming that our basic need is for *knowledge* (Williamson, 2000 p.31 note 3). I don’t think that this conflict undermines the interest in this discussion: if knowledge is prior to the function of KNOWS, then we can simply endorse a knowledge-first version of *Pooling Information*, according to which the function of KNOWS is to help us pool *knowledge*.

¹²⁹ See also (Kelp, 2011; E. Fricker, 2015, pp. 74–84). Williamson also claims that the point of having a speech act governed by the knowledge-norm is to facilitate the pooling of knowledge (Williamson, 2000, pp. 266–9), which suggests that he endorses the knowledge-first version of this connection.

knowledge-how, the straightforward extension is not plausible. Although there is an information-provision sense of 'knows how' where the ascription marks a capacity as an informant a good proportion of our ascriptions do not seem to be connected to capacity as an informant (Craig, 1990, p. 150). When we say that a child knows how to get home we don't seem to be flagging them up as an informant. If these were merely peripheral cases, then the supporter of *Pooling Information* might reasonably write them off, but these appear to be central cases of knowledge-how. Another data-point is that knowledge-how ascriptions seem to have a clear capacity sense, or at least a capacity implicature (Craig, 1990, p. 149), which distinguishes knowing-how from knowing-that. Against the suggestion that 'knows' is ambiguous, Craig observes that cross-linguistically knowledge-how appears to be picked out by the verb 'knows', or at least a closely related verb (Craig, 1990, p. 141). Although the ambiguity hypothesis would explain the differences between knowledge-how and knowledge-that, it would not explain why we use the same word to pick out both kinds of states.

Taking these points on board gives Craig three data-points to explain:

- i. Knowledge-how ascriptions are sometimes used to flag informants, and sometimes used in a way that seems to not pick out informants;
- ii. Knowledge-how has a sense which seems to pick out, or at least implicate, a capacity to do some activity;
- iii. It is a robust cross-linguistic data-point that knowledge-how ascriptions involve a verb closely related to that which is used in other knowledge-ascriptions.

This leads to a puzzle for *Pooling Information*. The fact that 'knows how' involves the word 'know' (iii) suggests that these ascriptions ought to work to address our need to pool information, but on the other hand the capacity sense (ii), and the fact that these ascriptions diverge from the ability to act as an informant (i) suggest that knowledge-how ascriptions do not address our need to pool information, but instead address some distinct need.

In order to resolve this puzzle, Craig extends *Pooling Information* to apply to the pooling of other kinds of states. Craig suggests that we might understand the function of KNOWS-HOW by taking up the perspective of the *Apprentice*:

We may start with the obvious point that human beings need both true beliefs and capacities to act, since every action calls for both. The inquirer seeks a true belief on the question whether p ; the apprentice, as we may call him, seeks the capacity to do A . His purposes may be furthered either by someone who tells him, or by someone who shows him, how to do A . (Craig, 1990, p. 156).

Just as the inquirer needs a concept to help her to evaluate potential informants, the apprentice needs a concept to help her evaluate potential teachers.¹³⁰ Craig highlights two ways in which a teacher can inculcate knowledge in her students: by *telling* the apprentice how to V , and by *showing* the apprentice how to V .¹³¹ Given this disjunctive conception of teaching, the conditions required to be good teacher will also be somewhat disjunctive: some teachers will be able to tell, others to show, and others to engage in something in between.

This gives us an analogue function to *Pooling Information*:

Pooling Skills: the function of KNOWS-HOW is to help us to pool skills and capacities between different agents.

This function corresponds to an important pragmatic function of knows-how ascriptions. Consider the following exchange:

Anika: I'm looking to learn to play the recorder: do you know anyone who could teach me?

Marta: Sure! Parzifal knows how to play the recorder.

Although Marta's response doesn't directly address Anika's question about who might teach her, there is an implicature from the claim that Parzifal knows how to play the recorder to her being in a position to be a reasonable teacher. *Pooling Skills* suggests a natural analogy with the metasemantic and semantic functions of KNOWS-THAT: that

¹³⁰ Reynolds makes a closely related move, suggesting that the function of KNOWS-HOW is to flag someone up as a good teacher (Reynolds, 2002, pp. 158–9).

¹³¹ For a discussion of teaching-how and testimony, see (Hawley, 2010). For an argument for scepticism about gaining knowledge-how via testimony, see (Poston, 2016).

KNOWS-HOW helps the apprentice to choose teachers by picking out a state which is the standard on teaching.

Craig's functional hypothesis is in a nice position to explain data points i), ii) and iii).

This disjunctive conception of teaching-how helps to explain data-point i). Knowledge-how is sometimes connected with being an informant, because some teachers are good informants, but knowledge-how does not require being a good an informant, because other teachers are *not* good informants, instead teaching by *showing*.

The connection between showing and doing explains data point ii). Because showing will often involve the teacher engaging in the activity herself, we should expect knowledge-how to have an important capacity sense. The capacity implicature is messy, as the literature on counterexamples to the ability theory demonstrates. The importance of teaching by showing suggests that there will be an important connection between ability and knowing-how. But, the fact that one can teach by merely engaging in testimony suggests that we should expect there to be cases of unable knowers. For example, an ageing teacher might remain a very good teacher, in virtue of the fact that they can teach by telling their students how to perform the relevant task, despite not being in a position to pull off the relevant tasks.

This leaves us with iii). Effectively what Craig has given us is two conceptual functions. He claims that although these functions address distinct needs, these concepts 'huddle' together because of the underlying connections between being a good informant and being a good teacher (Craig, 1990, p. 156). What the apprentice is looking for will in many cases be the same kind of thing that the inquirer is looking for — a good informant. The two conceptual functions have come to be connected to the same word because the states which we need to pick out in order to address those needs overlap in important ways. One way to understand this idea is to say that *Pooling Information* and *Pooling Skills* are instances of a more general conceptual function:

Pooling Epistemic States: the function of KNOWS is to pool epistemic states between agents.

On this way of understanding things, the concepts KNOWS-THAT and KNOWS-HOW are connected in virtue of the fact that they address particular aspects of our need to pool epistemic states.

Craig's story about KNOWS-HOW appeals to the idea that it picks out a standard on good teachers. As with the account of the function of KNOWS-THAT, he focuses on the application of that concept by someone who is looking for a teacher, but he ought also be open to the self-application of that concept, its use in recommending teachers to others, and to the praising/censuring use of 'knows how' ascriptions to provide social pressure. This suggests an analogue of the knowledge norm of assertion, which I'll call the knowledge norm of teaching or KNT for short:

KNT: One must: teach how to V , only if one knows how to V .

This norm is suggested by Buckwalter and Turri (2014) in a discussion which will form the basis of the next chapter. Just as KNA claims that knowledge that p is a necessary condition on asserting p with epistemic propriety, KNT claims that knowing how to V is a necessary condition on teaching how to V with epistemic propriety.

Putting KNA and KNT together suggests a general knowledge-norm on pedagogy (Buckwalter & Turri, 2014, pp. 18–9).¹⁵² Let's call this claim the knowledge norm of *pedagogy*, or KNP for short:

KNP: One must: teach X , only if one knows X (where X is a variable for propositions, question-phrases, objects, subject-matters, and whatever else it might be possible to teach).

This norm has a number of attractive features. It holds out promise for a unified explanation of our evaluative practices with respect to pedagogical activities. If KNP is right, then knowledge is the standard for all kinds of pedagogy. Furthermore, if

¹⁵² This way of connecting KNT and KNA means that both normative claims are inherited from a more general norm. There are other ways in which the two norms might be connected: it might be that KNT is an *instance* of KNA, if we think that all teaching requires assertion of the relevant how fact (perhaps a demonstrative assertion, see (Stanley, 2011b, pp. 162–4). For a classification of arguments for common normative standards, see (J. Brown, 2012).

knowledge-how and knowledge-that are associated with the *being the norm of X* functional role, this would give us a rather nice general functional characterisation of knowledge, explaining why we should think that knowledge-how and knowledge -that are both species of knowledge.¹³³

4. Knowledge-How and *Mutual Reliance*

Craig's account of the function of KNOWS-HOW does a good job explaining his data points, and naturally combines with his account of the information pooling function of KNOWS-THAT to provide a general account of the function of KNOWS. However, I think that there are two serious worries about this account:

- i. Knowing how to do something and being a good teacher of that activity come apart;
- ii. *Pooling Skills* neglects an important function of knowledge-how ascriptions: flagging collaborators.

4.1. Knowing How to Do and Knowing How to Teach

One problem with *Pooling Skills* is the divergence between knowing how to do something, and being a good teacher of that activity. It is a familiar point that many agents who know how to do something are largely inarticulate about how to engage in that activity.¹³⁴ Craig is aware of this fact, and this is part of what motivates his disjunctive conception of teaching: the thought is that someone who is inarticulate can still transmit their skill via demonstration. I don't think that appealing to showing rescues the connection between knowing how and teaching.

There are cases in which it is possible to transmit a capacity or skill simply by performing a particular routine, and saying 'this is a way to V', but these are special cases. I might be able to teach you how to make a cup of builder's tea just by making one, since

¹³³ *Pooling Skills* can also yield a general norm by combining the knowledge norms on intention, and action.

¹³⁴ For some nice examples of this phenomenon, see (Brownstein, 2014; Montero, 2016).

the steps are fairly obvious to an observer. However, it would be bizarre to suggest that I could teach you how to play the trumpet or how to write a decent philosophy paper just by performing the relevant activities.

This point is connected to our discussion of the use of demonstratives to pick out ways of acting in chapter 3: a token performance will instantiate a great many possible methods, meaning that without further hints the apprentice will be unable to determine which methods at which level of generality she ought to be replicating in her own performance. One general feature of successful demonstrations is that they require the teacher to *decompose* her performance into simpler elements which she can highlight to the student. This decomposition might take a number of forms: the teacher might draw a diagram, pantomime the activity, or narrate her performance as she goes along. Without decomposition, a learner will not be able to pull out the important aspects of the performance or the method that they need to be able to employ themselves. Given enough time, a bystander might be able to reconstruct the central elements of an activity just by trial and error. However, it would be strange to think about this case as one of teaching; rather in this case the actor merely plays the role of being a rich source of evidence.¹³⁵ The cases in which knowing-how comes apart from being a good teacher are fairly common. I know how to ride a bike, but I couldn't teach someone else. I know to play Haydn's trumpet concerto, but I don't think that I'd be any use in teaching someone else to play it.

One way to put the challenge against *Pooling Skills* is to that there is an important difference between knowing how to do something, and knowing how to teach other people how to do something. Both kinds of knowledge can plausibly be treated as species of the general category of practical knowledge, but they concern different activities: *doing*, and *teaching others to do*.¹³⁶ Our consideration of the difficulties of teaching by showing shows that knowing how to do does not entail knowing how to teach, and suggest that being a good teacher of some activity relies on knowing *how to teach* that activity, rather than knowing how to teach it (we'll return to this distinction in chapter 5). This gives us a powerful argument against *Pooling Skills*.

¹³⁵ This point echoes Craig's distinction between informants and sources of information (Craig, 1990, Chapter 5).

¹³⁶ This distinction is also noted by (Noë, 2005, pp. 283–4; Stanley, 2011b, p. 128; Brownstein, 2014, pp. 557–8; Montero, 2016, pp. 87–91).

4.2. Clients and Collaborators

Although Craig isolates one pragmatic function of our knowledge-ascriptions, it is not the only use of knowledge-how ascriptions, and it is not obvious that it is their central function. Consider the following exchange:

Nat: I need someone to record a Trombone part for a piece that I'm working on.

Do you know anyone who could help?

Guiditta: Sure! Trenton knows how to play the Trombone

As with the exchange between Anika and Marta above, Guiditta's response does not directly answer the question of who might record the line for Nat, instead making a claim about Trenton's knowledge. The natural way to understand this exchange is to think that Guiditta's response implicates that Trenton will be able to help out with Nat's recording (perhaps given some presuppositions about how hard the Trombone part is). In this exchange, the knowledge-how ascription plays the role of flagging up someone not as a good teacher, but as a competent agent.

This function of knowledge-how ascriptions is noted by Moore and Hawley:

On this [Craig's] conception there is something basic about situations in which one wants to acquire some information, or a skill, and one is looking for reliable instruction. Is there not something yet more basic about situations in which one is looking, not for someone who is a reliable instructor, but just for someone who is reliable? Suppose I need someone who knows how to fix the plumbing. I am probably not the least bit interested in acquiring the skill myself. (Moore, 1997, pp. 173–4)

There is, however, a further kind of motive for seeking someone who knows how, a motive that may be very central to our thinking about knowledge how. When I seek a plumber, hairdresser, or architect, usually this is because I need the drains fixed, my hair cut, or a building designed. I need have no interest in learning how to do these things myself, nor in finding someone who can either teach or assess

others. Perhaps I know how to do such things already but am too busy or too lazy to get them done myself (and I can't reach to cut my own hair). I call this 'the client's situation,' in contrast with the inquirer's and the apprentice's situations. (Hawley, 2011, p. 287)¹³⁷

Moore and Hawley are both pointing toward an alternative perspective on the function of KNOWS-HOW. This perspective connects knowledge-how not to our need to pool skills, but rather to our need for responsible co-operation between agents, suggesting the following function:

Mutual Reliance: the function of KNOWS-HOW is to help us to engage in responsible practices of co-operation

It's worth noting that *Mutual Reliance* is in an important way broader than Moore's and Hawley's examples. They both focus on what Hawley calls the *Client's perspective*: that of someone who is looking for someone else someone to do some task for you. *Mutual Reliance* also applies to cases where the agent is after someone to collaborate with them on some project which they either do not have the time, knowledge, or capacity to pull off alone. I will call the basic situation involved in this perspective that of the *Collaborator*.

The natural suggestion would be that KNOWS-HOW addresses our need for collaboration by picking some kind of standard on collaborators. There are a number of different dimensions of evaluation of collaborators: how good their work is, how much they will charge, how likely they are to show up for work, and so on. It is fairly clear that knowledge-how is not connected to the evaluation of the cost of collaborators. Rather, it is connected to whether a collaborator is *trustworthy*. It is common to distinguish two dimensions of trustworthiness: whether the potential trustee is *sincere*, and whether she is *competent*.¹³⁸ The natural suggestion is that knowledge-how relates to the evaluation of the competence of potential collaborators.¹³⁹

¹³⁷ See also (Kotzee, 2016).

¹³⁸ (Jones, 1996).

¹³⁹ We should distinguish competence from the simple notion of reliability. Someone can be competent at performing some act, but be unable (in a sense) to perform that activity, because enabling conditions are not met. We might think competence is a kind of normal worlds reliability condition (Hawley, 2003; Stanley, 2011b, pp. 126–9).

Here we find a nice connection to the planning theory. The planning theory claims that INTENDS addresses our need for co-operation by picking out a mental state that marks a distinctive kind of commitment to performing some act. We can use INTENDS to facilitate collaboration by picking out other peoples' commitment, thereby assessing their sincerity. But INTENDS doesn't help us to address the *competence* of those who we are relying on. The natural suggestion is that KNOWS-HOW fills this hole in the planning theory. Consider again the situation of the flatmates who want to co-ordinate in order to avoid waits for the shower. It's all very well for the flatmates to express intentions to shower at particular times, but this plan will be useless if one or both of them is incompetent at telling the time, having reliably long showers, or planning their morning routine to avoid last-minute dashes for the bathroom. In order to make a successful plan, they need to rely not only on each others' plans, but also on their respective competences. To co-operate, we need both INTENDS, and KNOWS-HOW.

The idea that KNOWS-HOW picks out a standard on intentions suggests a normative connection between knowing-how and intending, which I will call the knowledge-how norm on intention, or KNI for short:

KNI: One must: intend to *V*, only if one knows how to *V*.

KNI claims that knowledge is a necessary condition on appropriate intention. We will return to this norm in chapter 7.

The Collaborator is interested in finding people who can perform various tasks for her, and *teaching her how to V* might easily be one of those tasks. The Collaborator can address this need by determining whether various agents in her vicinity know how to teach others to *V*. Note that whereas *Pooling Skills* claimed that we evaluate teachers of *V*-ing by determining whether they know how to *V*, this extension of *Mutual Reliance* to the activity of teaching suggests that we evaluate teachers of *V*-ing by determining whether they know *how to teach V-ing*. This puts this view in a better position to explain the gap between knowing how to do and being in a position to teach.¹⁴⁰ Craig makes this

¹⁴⁰ We will return to this suggestion in chapter 5, §3.3.

observation (Craig, 1990, p. 160), but he doesn't make very much of it. I think that this point suggests that a version of KNOWS-HOW shaped in the image of *Mutual Reliance* can do all of the work of one shaped in the image of *Pooling skills*.

5. On the Inconsistency of KNOWS-HOW

We have seen two functions for KNOWS-HOW: *Pooling Skills*, and *Mutual Reliance*. The question is: which function represents the function of our concept of knowledge-how? There are three options to consider:

- i. *Pooling Skills* is the genuine function of KNOWS-HOW, and the connection between knowledge-how and competence is illusory;
- ii. *Mutual Reliance* is the genuine function of KNOWS-HOW, and the connection between knowing-how and teaching is illusory;
- iii. Our conceptual practice is confused; we use KNOWS-HOW to address our need to pool information and our need to collaboration.¹⁴¹

Both the teacher-flagging and collaborator-flagging functions seem to have left their mark on the concept of knowledge-how. We use knowledge-how ascriptions to flag up potential teachers suggesting a connection with teaching, *Pooling Skills* can nicely explain the messy connection between knowledge-how and ability, and suggests an epistemic norm which meshes with an interesting picture of the normative role of knowledge, KNP. On the other hand, we also use knowledge-how ascriptions to flag people up as potential collaborators, and if knowledge-how didn't play the role of picking out a standard of competence on intentions, we'd need to come up with some other concept to play this role. However, both views face problems. *Pooling Skills* faces problems due to the divergence between knowledge-how and the ability to teach, which point toward *Mutual Reliance*. *Mutual Reliance* also seems to predict the knowledge-how should entail some kind of reliable ability condition, and it is not clear that there is any plausible ability condition on knowledge-how (Bengson & Moffett, 2011a).

¹⁴¹ Note that option iii. remains on the table even if it is possible to reconstruct the perspective of the Apprentice from within the perspective of the Collaborator. *Pooling Skills* predicts that 'S knows how to V' flags S as a good teacher, whereas version of the Apprentice's perspective which we can construct from within the perspective of the Collaborator predicts that 'S knows how to teach V-ing' flags S as a good teacher.

This points toward hypothesis iii.¹⁴² According to this hypothesis, KNOWS-HOW is a concept that has attracted *two* conceptual functions: *Pooling Skills*, and *Mutual Reliance*.¹⁴³ In some contexts, we use knowledge-how ascriptions to pick out potential teachers, and in other cases we use it to pick out potential collaborators. This wouldn't be a problem if the two conceptual functions meshed nicely or were confined to non-overlapping contexts. But there is not good reason to think that either condition holds. There will be competent teachers who are poor collaborators, and competent collaborators who are poor teachers, and in these cases our judgements about knowledge-how will be torn.

We can get a nice illustration of this tension in by considering some passages in which Snowdon and Noë discuss whether unable teachers possess knowledge-how:¹⁴⁴

To construct such examples [i.e examples of unable knowers] we need to describe cases in which *the subject can show, teach, or tell (or otherwise convey to) us how to do something, and hence must be credited with knowing how to do it*, but is for some reason or other unable to do it. There is no assumption here that the presence of knowledge entails that it can be passed on by the knower, but it makes a denial of the knowledge ascription very hard when the subject can, apparently, convey the relevant information to someone else. (Snowdon, 2004, pp. 9–10 italics added)

As the date of the accident recedes in Maestra's personal history, it becomes less and less plausible to think of her as retaining knowledge of how to play; what at first seemed like the failure of an enabling condition on her exercise comes to seem like a failure of ability itself. *The fact that she remains an expert judge of play, or an expert teacher, or that she retains her knowledge of music, is irrelevant to this assessment of her practical knowledge. [...] Teachers and critics, although very knowledgeable, do not, by that very fact, have the relevant practical knowledge.* (Noë, 2005, pp. 283–4 italics added)

¹⁴² (Hawley, 2003; Kotzee, 2016) also suggest a two-function picture of KNOWS-HOW.

¹⁴³ For a parallel discussion of KNOWS-THAT see (Fassio & McKenna, 2015).

¹⁴⁴ I take the contrast between these passages from (Small, 2014).

Snowdon takes the fact that someone can teach other people how to do something via some mechanism or other to be a sufficient criteria for knowing how to do that thing: how else could they teach others how to V if they didn't know how to V. By contrast, Noë wants to clearly distinguish skill at doing from skill at teaching, and takes it that of the two, we ought to associate knowing-how with skill at doing, or what he calls *practical* knowledge.

Here's a diagnosis of this disagreement. Snowdon is working with a concept of knowledge-how tied to our interests in pooling epistemic states, meaning that his concept realises *Pooling Skills*. It is obvious to him that someone who's in a position to teach others how to V must themselves know how to V. By contrast, Noë is operating with a concept of knowledge-how which connects knowing how to competence at acting, meaning that his concept realises *Mutual Reliance*. It is obvious to him that someone who is not competent at performing the relevant activity cannot have knowledge-how, no matter how good a teacher they are. On this diagnosis, the disagreement between Snowdon and Noë is *metasemantic*. They agree about the facts of Maestra's case, but disagree about how we ought to employ the concept of knowledge-how.¹⁴⁵

We should expect to find a similar disagreement about whether agents who are extremely competent at some activity, but inarticulate about how to engage in it have knowledge-how. Consider the following exchange from an interview with Kimberly Kim, the youngest person to win the US Women's amateur golf tournament:

Q. You're 5 down going into the 16th hole this morning. You finish with three birdies. I mean they weren't even long birdie putts. What did you do to motivate yourself to win three holes in a row?

KIMBERLY KIM: I have no idea. I guess it was like God playing for me. *I don't know how I did it. Thinking back, I don't know how I did it.* I just hit the ball and it went good.¹⁴⁶

¹⁴⁵ On metasemantic disagreements in philosophy, see (Chalmers, 2011; Plunkett, 2015)

¹⁴⁶ Quoted in (Brownstein, 2014, p. 555). Original interview at (Kim, 2006). It's worth noting that some denials of responsibility for their sports performances might be driven by extraneous social factors, such as the 'dumb jock' stereotype or imposter syndrome.

Does Kim know how to score birdies on the last three holes of the course she was playing on?¹⁴⁷ We want to say that it was obvious that Kim knows how to score three birdies in a row on that course — after all *she did it*, and there was no luck involved.¹⁴⁸ But there is a temptation to say that Kim doesn't know how to score three birdies in a row: she didn't know how to do it, she *just did it*, and everything worked out in the end. As with the disagreement between Noë and Snowdon, I want to suggest that this is a metasemantic disagreement about how to use the concept of knowledge-how.

We are faced with a choice. Should we continue to work with a concept of knowledge-how which serves two metasemantic functions, or should we choose one function? I think that we should plump for one function or other in the interests of avoiding a concept of knowledge-how which gives indeterminate or conflicting judgements about whether unable teachers or inarticulate agents have knowledge-how. I will spend the next two chapters arguing that we should favour *Mutual Reliance* over *Pooling Skills*. The argument for this claim is somewhat indirect. I will argue that KNT gets into trouble with cases of agents who know how to teach but not how to do, undermining *Pooling Skills*. By contrast KNI can be developed in a way that it is defensible.

¹⁴⁷ Note that this question is distinct from the question of whether she knows how she did it, which is a question about her memory, not about her practical knowledge.

¹⁴⁸ This idea might be what lies behind Polanyi's claim that we 'know more than we can tell' (Polanyi, 2009).

Chapter 5: Knowledge-How is not the Norm of Teaching

Introduction

In the previous chapter we considered an epistemic norm connecting knowledge-how to teaching, which we called the knowledge norm of teaching, or KNT for short.

KNT: One must: teach how to V , only if one knows how to V .

In a recent paper, Buckwalter and Turri (2014) have made the case for a norm close to KNT, arguing that:

Just as knowing that is the norm of *information* transmission, knowing *how* is the norm of *skill* transmission. In brief, just as knowing is the norm of *telling*, so too knowing is the norm of *showing*. (2014, p. 17)

I think that their use of ‘showing’ pretty closely matches my use of ‘teaching’ as a generic term for skill teaching, so I will treat Buckwalter and Turri as arguing for a knowledge-norm on *teaching*.¹⁴⁹ Buckwalter and Turri point out that one can adapt the arguments used in favour of KNA to KNT, and contend that there is an explanatory virtue to positing a unifying epistemic norm of pedagogy, which we are calling KNP:

KNP: One must: teach X , only if one knows X .

My central goal in this chapter is to argue that KNT is false. This norm faces counterexamples of agents who know how to teach but not how to do, who can successfully and appropriately teach others, despite not having the relevant knowledge-how. The cases are rather similar to Jennifer Lackey’s cases of selfless or generative assertors, who transmit knowledge to others which they do not themselves possess and pose the same kind of challenge for KNT as her examples do to KNA (Lackey, 2008). In

¹⁴⁹ To make things a little more confusing, I will later introduce a distinct category of showing, which picks out the kind of teaching that involves non-linguistic communication (i.e. all non-testimonial teaching). It should be borne in mind that this way of using ‘showing’ is considerably narrower than Buckwalter and Turri’s.

order to mark this similarity I will call the kind of teaching that causes problems for KNT *Generative Teaching*.¹⁵⁰ The falsity of KNT entails the falsity of KNP, and puts pressure on *Pooling Skills*, which as I argued in the last chapter predicts that KNT is true. I will also argue against two fall-back positions, which claim that knowledge-how is the norm on specific kinds of teaching. I will consider two kinds of teaching that might be governed by a knowledge-norm: *showing*, and *demonstrating*. These labels are largely arbitrary, and do not purport to track ordinary language usage: showing picks out the category of teaching via non-linguistic communication, and demonstration picks out the category of teaching in which the teacher performs the relevant activity in order to teach her student how to do it. I will argue that a knowledge norm on showing falls foul of cases of generative teaching, and that the apparent connections between knowledge-how and demonstration can be explained away by more general connections between knowledge-how and intentional action.

The plan of action is as follows. In §1 I will make some clarificatory comments about how to understand KNT, and lay out Buckwalter and Turri's conversational arguments for KNT. In §2, I consider the alternative conditions that might figure in a norm on teaching, and distinguish a number of different activities which knowledge-how might be the norm of. In §3 I argue that knowledge-how norms on teaching and showing are vulnerable to counterexamples of generative teaching, and that the apparent connection between knowledge-how and demonstration can be explained away by appealing to more general connections between knowledge-how and action.

1. The Knowledge-How Norm of Teaching

Before we start, some clarificatory comments about how to understand KNT.¹⁵¹ To reiterate, KNT is the following claim:

¹⁵⁰ Another analogy: Lackey's selfless assertor cases do double duty: acting both as counterexamples against KNA, and to the view that successful testimony is the transmission of knowledge from speaker to hearer. The cases of Generative Teaching I consider below also function as counterexamples to the view of teaching as the transmission of knowledge-how (Small, 2014).

¹⁵¹ These points apply equally to the norms KNS and KND discussed below.

KNT: One must: teach how to V , only if one knows how to V .

In order to understand this claim, we need to get clear on: i) the notion of teaching, ii) how KNT relates to the claim that knowledge-how is *necessary* for teaching, iii) the kind of knowledge which is supposed to figure on the right hand side of this norm, and iv) which cases this norm negatively evaluates.

First, how should we understand teaching? For starters, we should be clear that the relevant sense of ‘teach’ is the imperfective activity-denoting sense, rather than the perfective achievement sense. KNT kicks in as soon as an agent begins to teach; it does not say that a successful instance of teaching is permissible only when the teacher knows how to teach. The notion of teaching here is also presumably intentional teaching. In a case in which A secretly watches B make a tomato rose without B’s knowledge there is a sense we can say that B shows or teaches A how to make a tomato rose (Hawley, 2010, p. 402), but I take it that this is not the sense of ‘teaching’ that figures in KNT. Moreover, KNT only concerns teaching-how, and not teaching that.

Another complication in thinking about teaching comes from the fact that the teach+wh construction appears to be factive. The verb ‘teach’ is not in general factive – consider: ‘my secondary school chemistry teacher taught us that electrons were tiny particles, but that’s false’ – but it does seem to behave in a factive manner when combined with a wh-complement. Consider the following sentence:

(1) Raimo taught me how to move the bishop in chess

This sentence seems to either entail or presuppose that the method for moving the bishop that Raimo passed on to me is in fact the correct way to move the bishop. This is borne out by the *wait a minute* test: if I’ve been moving the bishop like a knight, you could reply to 1) by saying ‘hey - wait a minute, you’ve been moving the bishop wrong all match’. ‘Teach’ seems to fall into a class of verbs which are (or at least appear) factive with a wh-complement, although they are not factive with a that-complement (for parallel discussion of tell+wh see (Karttunen, 1977, p. 11; Vendler, 1980, pp. 283–4; Holton, 1997)). To avoid talk of *apparent* teaching in cases in which a teacher provides her student

with a method that is not a way to perform the relevant activity, I will treat the ‘teach+wh’ construction as non-factive.

Second, how does KNT relate to the idea that knowledge-how is necessary for teaching? KNT is a claim about the necessary conditions for *appropriate* teaching, and not a claim about the necessary conditions on teaching itself. The relevant necessity claim about teaching is NEC-T:

NEC-T: If *S* teaches how to *V*, then *S* knows how to *V*.

NEC-T is not especially plausible (especially if we remember that we are interested in the activity, not the achievement sense of ‘teach’). In fact, the truth of KNT *requires* that NEC-T be false. If engaging in the activity of teaching entails having knowledge-how, then it is not possible to teach without knowing, meaning that it is not possible to flout the norm posited by KNT. Epistemic norms on an activity and the corresponding necessity claims about that activity crowd one another out.

Third, what is the kind of knowledge involved in KNT? In this chapter I will use ‘knows-how’ and ‘knows-that’ to refer to the kinds of knowledge with practical and theoretical bundles of properties. As noted above, this category of practical knowledge may considerably diverge from the class of knowledge which ordinary language picks out using the locutions ‘knows how’ or ‘knows how to’. If Jared reads an instruction booklet about skiing there is some sense in which he counts as ‘knowing how to ski’. However, I take it that there is a kind of practical knowledge which he lacks until he straps on some skis and gets out on the slopes. This restriction means that KNT claims that it is not just any knowledge that is the norm on intention, but specifically the species of knowledge with the distinctive set of practical properties. In this chapter I will remain neutral on how we should understand the practical bundle of properties associated with knowledge-how, importantly leaving open whether knowledge-how entails ability. I will also remain neutral on the question of whether knowledge-how is a species of propositional knowledge, on the grounds that the question of the normative role of knowledge-how is orthogonal to the question of whether knowledge-how is a species of propositional knowledge.

Finally, let's get clear on which cases KNT negatively evaluates. As formulated KNT gives a negative evaluation only to teaching which is accompanied by ignorance, but does not require any connection between the teacher's knowledge, and what it is that she teaches to her students. This means that as stated KNT evaluates negatively someone who gives correct instructions about how to V, despite not knowing how to V, but does not negatively evaluate someone who knows how to V, but gives false instructions about how to V (either due to an innocent mistake, or an intention to mislead). There does seem something inappropriate about a case in which I know how to get to Edinburgh castle, but give you false instructions, and it seems plausible that this is a negative evaluation that ought to stem from our epistemic norm on teaching (much as the evaluation of false assertions stems from the norm of assertion). We can modify KNT to cover such cases by adding that an episode of teaching must *express* knowledge-how (Turri, 2011), since mistaken instructions concerning how to V will not express knowledge how to V. I leave this complication implicit below.

1.1. Conversational Evidence for KNT

Buckwalter and Turri appeal to four pieces of conversational evidence in support of KNT, which closely parallel arguments for KNA (Williamson, 2000, Chapter 11; Turri, 2010, 2011, 2014):

- i. The fact that we can request someone to teach us by asking them about their knowledge-how;
- ii. The fact that claiming that one doesn't have knowledge-how can function as an excuse from a request to teach;
- iii. The fact that offering to teach opens one up to questions about whether one has knowledge-how;
- iv. The existence of Moorean sentences for offers to teach.

First, they point out the possibility of requesting someone to teach¹⁵² you by asking about whether they have knowledge-how.¹⁵³ For example, it is possible to request someone to teach you how to make a campfire by asking ‘do you know how to make a campfire?’. They argue that this conversational move is possible because in general one can request someone do something by asking about whether she is in a good enough position to do so permissibly.¹⁵⁴

Secondly, they observe that one can excuse oneself from a request for instruction by claiming that one lacks the requisite know-how. If you ask me to show you how to tie a Sheepshank knot, I can excuse myself by saying that I don’t know how to tie one. They explain this by pointing out that the knowledge-norm predicts that ignorant instruction is inappropriate, meaning that claiming ignorance functions to excuse.

Thirdly, they point out that someone offering to teach how to do something opens up the possibility of challenging whether they have know-how. If I offer to teach you how to make soufflé you can challenge me by saying ‘I didn’t realise you knew how to make soufflé!’ or ‘are you sure you know how to make soufflé?’. KNT predicts this, since if showing were governed by a knowledge norm, someone who offered to teach would represent themselves as having know-how, which might be challenged by a hearer who has doubts.

Finally, Buckwalter and Turri claim that there are sentences involving knowledge-how analogous to Moorean sentences for assertion (*p*, and I don’t believe/know that *p*). Their example of such a sentence is:

(2) I don’t know how to do this, but [watch me now:] this is how it’s done (2014, p. 18).

¹⁵² Buckwalter and Turri generally frame the conversational phenomena as concerning demonstration or showing, but in order to avoid confusion, I will present these phenomena as concerning teaching (see footnote 149).

¹⁵³ This relates closely to the idea that a standard pragmatic function of know-how ascriptions is to implicate that the target is a good teacher. See chapter 4, §3

¹⁵⁴ (Searle, 1979; McGlynn, 2015, p. 93).

They claim that the oddness of this sentence stems from the fact that the speaker's offer to demonstrate represents her as having some know-how that she denies that she possesses.

I don't think that we need to take these arguments as definitive, but it is true that they provide a good preliminary case for KNT, especially when put alongside *Pooling Skills*, which provides a more general reason for thinking act knowledge-how is the norm of showing,

The fact that the conversational arguments parallel the conversational case for KNA raises the question of whether a supporter of KNT needs to endorse the package of both norms. Strictly speaking, it is possible to endorse one norm, but not the other. However, the fact that the arguments for KNA and KNT work in parallel provides a further reason for thinking that the two norms ought to come in a package, in addition to the reasons considered in the last chapter, which concerned the function of KNOWS, whether KNA and KNT might be instances of the more general norm KNP, and whether teaching is a special kind of assertion (see chapter 4 §3 especially note 132).

2. Alternatives to KNT

In this section I consider some alternatives to KNT. First, I consider what the alternative conditions in a norm of teaching might be, arguing against Buckwalter and Turri that there are a number of alternatives to knowledge-how that might figure in the norm on teaching. Secondly, I consider some ways to distinguish different kinds of teaching, leaving us with some fall-back positions that claim that knowledge-how is the norm on some specific kinds of teaching

2.1. What are the Alternatives to Knowledge?

In the case of assertion, the task for the supporter of a knowledge-norm is not only to show that the knowledge-norm is plausible, but that it is more plausible than alternative norms that posit different conditions on permissible assertion, such as truth, belief, and

justification. Buckwalter and Turri claim that supporters of KNT do not need to take up this task:

We see no hope for straightforward analogous alternatives when it comes to the norm of instructional demonstration [teaching]. Truth and justification do not straightforwardly pertain to procedural knowledge. If there is a standard common to both main forms of human pedagogy – telling and showing – then it is knowledge (Buckwalter & Turri, 2014, p. 19).

Buckwalter and Turri's argument for the uniqueness of the knowledge-norm doesn't work. For one thing, it is an open question whether truth, belief, or justification pertain to knowledge-how. It is easy to find views on which knowledge-how is connected to truth (Stanley & Williamson, 2001), belief (Brownstein & Michaelson, 2016), and justification (Hawley, 2003; Brogaard, 2011). Putting this issue to one side, even if it turned out that these conditions do not pertain to knowledge-how, this would not rule them out as candidates for an epistemic norm on teaching. The plausibility of a norm on teaching turns on whether the relevant condition pertains to *teaching*, not whether it pertains to knowing-how. It is pretty clear that truth, belief and justification do pertain to teaching. The kind of teaching we're interested in is teaching-how, and it is true that the interrogative phrase 'how to V?' is not the kind of thing that can be true, believed, or justified. However, if we follow the linguistic evidence to take seriously the thought that interrogative phrases are systematically related to their answers — propositions of the form *w is a way to V*—we can take these propositions to figure in the relevant norms. This suggests the following truth (TNT), belief (BNT), and justification (JNT) norms on teaching:

TNT: One must: teach (how to *V* in way *w*), only if *w* is a way to *V*.

BNT: One must: teach (how to *V* in way *w*), only if one believes that *w* is a way to *V*.

JNT: One must: teach (how to *V* in way *w*), only if one has a justified belief that *w* is a way to *V*.

As in the case of assertion, these norms need not be mutually exclusive. If knowledge-how turns out to be a kind of propositional knowledge which entails justified true belief, then KNT will entail all of these norms. As in the case of norms of assertion, the proponent of one of these norms is not just interested in the truth of the normative claim, but in the claim that their norm is the logically strongest norm on showing; that the condition that they care about is the one doing the work of explaining out evaluations. For example, the proponent of TNT not only thinks that *truth* is a condition on appropriate teaching, but that truth is the strongest condition on appropriate teaching.

With these norms on the scene, it is fairly easy to generate analogues to any of the putative norms on assertion. Adding in higher-order belief or knowledge condition to JNT or KNT gives norms analogous to the higher-order norms considered by Williamson (2000, pp. 260–3). There will be a version of the reasonable-to-believe norm, which shifts from the doxastic justification in JNT to propositional justification (Lackey, 2008). One might also think that the condition on permissible teaching is safe success in teaching (Pelling, 2013). There will even be norms that have no analogue in the case of assertion, such an *ability* norm, and a *knowledge of ability* norm.

KNT is not even the only possible knowledge norm on showing. In the introduction of this paper, I made the point that both Intellectualists and Anti-Intellectualists think that there is a distinction between practical knowledge and the class of knowledge picked out by sentences involving ‘knows how’. KNT works with the narrow notion of practical knowledge. However, one might think that appropriate teaching requires non-practical knowledge about how to V, yielding the following norm:

KNT*: One must: teach how to V in way w , only if one knows that w is a way to V.

KNT* is a knowledge norm on showing, but it is not a knowledge-*how* norm on showing, in the sense that it does not claim that permissible showing requires knowledge with the distinctive practical properties associated with knowing how.¹⁵⁵

KNT* negatively evaluates agents who show how to V, but have no beliefs about how to V, or have only beliefs about how to V which are unjustified, false or Gettiered.

¹⁵⁵ In fact, there are many possible knowledge-norms on teaching. One might think that knowing that it is possible to V is a condition of appropriately teaching someone how to V. In the interests of space, I will concentrate on the norms which have the most prima facie plausibility.

However, as soon as someone knows any proposition about how to V, by the lights of KNT* they are in a position to appropriately show (all other things being equal).¹⁵⁶ The kind of propositional knowledge which KNT* deals in is extremely easy to come by. If Jared reads his skiing manual, and learns that the way to ski is to bend your knees and lean forward, then he knows of some way that it is a way to ski. In fact, even before he has read the skiing manual we might think that Jared knows the relevant kind of proposition, so long as he knows that *skiing* is a way to ski. According to KNT* Jared is in a position to appropriately teach having read the skiing manual – or even before he has read the manual. But, Jared seems like exactly the kind of teacher who ought to be negatively evaluated by the epistemic norm on showing. KNT* does not provide this negative evaluation because the kind of propositional knowledge it deals in is too easy to come by.¹⁵⁷ I take this observation to demonstrate that that KNT* does not state a sufficiently demanding standard on teaching.

The existence of alternatives to KNT is significant for two reasons. For starters, it means that the supporter of KNT needs to argue that not only can a knowledge-how norm explain the conversational data, but also that this norm can explain the conversational data *better* than the alternatives. I will not embark on the somewhat lengthy process of comparing how these different norms do in explaining the conversational data; this is an argumentative burden that the supporter of KNT needs to take on. Furthermore, the existence of alternatives means that any view about the norm of assertion can be extended to a unified norm of pedagogy, thereby gaining the virtue of generality that Buckwalter and Turri claim is distinctive of the knowledge norm. For example a supporter of a justification norm of assertion can endorse JNT, thereby getting her to an epistemic norm of pedagogy with the same virtue of generality as KNP.

¹⁵⁶ KNT* says that knowing is necessary for appropriate teaching, but not that it is *sufficient* for appropriate teaching. This means that it is compatible with KNT* that even when an agent has knowledge, their showing can be inappropriate for some reason other than ignorance. For example, we might think as the cases of assertion and action there are *high-stakes* teaching cases, in which *more* than knowledge is required for appropriate teaching (J. Brown, 2008b, pp. 174–81, 2012, pp. 555–6).

¹⁵⁷ The supporter of KNT* might argue that there is some other explanation for the inappropriateness of Jared's teaching (see footnote 156) but it is difficult to see what that explanation might be: Jared's teaching seems to be a paradigm case in which teaching fails precisely because it does not meet the relevant epistemic standard. Jared's case certainly seems rather different from the high-stakes cases in which knowledge is insufficient for assertion.

2.2. What is Teaching Anyway?

Pooling Skills predicts that knowledge-how is a norm on teaching in general getting us KNT, which connects to a general knowledge norm on pedagogy. However, it is also an option to think that although knowledge-how is not the norm on teaching, there is a specific species of teaching which knowledge-how is the norm of.

In order to get clear on the options, let's introduce some stipulative terminology to distinguish different species of teaching. Skill teaching is heterogeneous (Hawley, 2010, pp. 400–1). One can teach skills by giving instructions, by engaging in guided practice, by explaining principles, by giving constructive criticism, or even by *telling* someone how to do it. We are calling the general species of pedagogy involved in skill-transmission *teaching*, which involves all of the kinds of pedagogy listed above. Within this general category, we can distinguish a category of *showing*, which excludes testimony, but includes all non-linguistic representations, such as the use of diagrams and teaching by doing. Finally, let's distinguish a category of *demonstration*, which picks out only teaching by doing, of which the paradigm will be doing the activity whilst saying '*this* is the way to V'.

These are by no means the only distinctions which we can make between different kinds of teaching, but they do yield two knowledge-how norms which have at least some plausibility: a knowledge-how norm on *showing* (KNS), and a knowledge-how norm on *demonstration* (KND):

KNS: One must: *show* how to *V*, only if one knows how to *V*.

KND: One must: *demonstrate* how to *V*, only if one knows how to *V*.

If the general knowledge-norm faces problems, then KNS and KND will be natural fall-back positions for someone who is interested in defending a normative connection between knowledge-how and teaching. Below, I will argue that KNS faces problems with generative teaching, and that the data that appears to support KND can be explained away by general connections between knowledge-how and intentional action.

3. Against Knowledge Norms for Teaching

Having distinguished various knowledge norms relating to teaching, I want to argue that all of these norms are false. The more ambitious norms — KNT and KNS — face counterexamples of teachers who know how *to teach* but not *to do*, who can successfully and appropriately teach their students how to do something. The narrower norm on demonstration — KND — avoids worries about generative teaching, but the apparent normative connection between knowledge-how and demonstration can be explained away by general connections between knowledge-how and action, leaving the norm unmotivated.

3.1. Generative Teaching

Let's first focus on the broadest norm: KNT. I will argue against this norm in two stages: first arguing that it is *possible* to teach someone else how to V without knowing how to V by considering some real-life examples of generative teachers, and secondly contending that generative teaching can be *epistemically permissible* by considering a hypothetical example of generative teaching.

It is not that uncommon to find people teaching others how to do things that they themselves do not know how to do. A prominent example from music is Carmine Caruso, one of the most celebrated brass teachers of the last century. Julie Landsman, a famous Caruso student and proponent of the 'Caruso Method' describes Caruso thus:

Although he played Saxophone, Violin, and Piano, his specialty was *teaching*, and he particularly specialised in teaching brass players to have great chops.¹⁵⁸

The important point is that although Caruso was a specialised brass teacher, he did not play—or know how to play—*any* brass instruments. In an interview, Landsman reports that Caruso would take her to musical conventions in order to demonstrate his

¹⁵⁸ (Landsman, 2014).

exercises for brass instruments, because Caruso couldn't play any of his own exercises.¹⁵⁹ Caruso's teaching was generative: he taught his students skills that he did not himself possess. Caruso's case is striking because he is a legendary teacher who developed a whole school of brass teaching and many of his students were world-class musicians. However, I take that it is not at all unusual for young children to be taught by someone who doesn't play that instrument. An online guide to the Suzuki method makes this point nicely:

Do parents need to learn how to play first? No. Parents are not required to learn to play the violin first, [...] My job as a teacher is to teach the parent how to teach the child. My goal is to prepare the parent for this challenging task, and the musically inexperienced parent can become an excellent home teacher.¹⁶⁰

There are also examples of sports coaches engaging in generative teaching. Many para-sports coaches are non-disabled. For example, a wheelchair rugby team might be taught by a non-disabled coach who doesn't even know how to get about in a wheelchair.¹⁶¹ Competitors in artistic gymnastics often have coaches of the opposite gender, although the male and female disciplines involve different apparatus and scoring systems. This means that a male coach might teach a female competitor how to use apparatus that he has not himself mastered.¹⁶² It is also common to find coaches who switch sports during their coaching career, coaching in sports that they haven't competed in. For example, Team Sky's performance manager Tim Kerrison started out competing in rowing, before going on to coach Olympic swimming, then cycling. Plausibly Kerrison teaches cyclists various high-level techniques which he does not himself know how to do: for example, how to descend mountains on a bicycle at speeds over 90km/h.

Just as the cases of skilled sportspeople who are unable to teach others considered in the previous chapter show us that being skilled at *doing* does not entail being skilled at *teaching*, the cases given in the previous paragraph show us that being skilled at *teaching* does not entail being skilled at *doing*. Following Noë (2005: 283-4) and Stanley (2011:

¹⁵⁹ (HipBoneMusic, 2016).

¹⁶⁰ (Maine Suzuki School, n.d.).

¹⁶¹ In a piece about the role of non-disabled athletes in para-sports, Chuck Aoki relates that whilst he was playing for the US wheelchair rugby team, half of the coaches were non-disabled (Aoki, 2013).

¹⁶² Of the female artistic gymnasts currently profiled on the British Gymnastics webpage, 3 of 13 have male coaches. (Gymnastics, 2017) (Accurate October 2016).

128), I suggest that some teachers know *how to teach* without knowing *how to do*. Although in some cases successful teaching may be informed by knowledge how to do, in other cases successful teaching can be informed by merely knowing how to teach.¹⁶³ When a teacher who knows how to teach V-ing, but not how to V teaches a student how to V their teaching will be generative, because the teacher will inculcate in their student knowledge which they themselves do not possess.

We can get further support for the distinction between knowing how to do and knowing how to teach from the empirical literature on the psychology of skill (Brownstein, 2014, pp. 557–8; Montero, 2016, pp. 87–91). (Flegal & Anderson, 2008) found that skilled golf players who describe their performance before acting end up performing less well, whereas novice golf players are not adversely affected by describing their performance (see also (Beilock, Carr, MacMahon, & Starkes, 2002)). Flegal and Anderson explicitly connect this result to teaching, saying:

To the extent that instructors themselves are skilled in what they teach, the recurring need to reflect upon and articulate the basis of their skill [in order to teach] may pose costs to their performance. (2008, p. 931)

Their thought is that at a certain level of skill, teaching actually *undermines* skilful performance; meaning that those who teach can't do. This suggests that skill at doing and skill at teaching are distinct capacities. There is also evidence suggesting that the more a skill is proceduralised, the less an agent is able to describe or remember their performances (Keele & Summers, 1976; T. Brown & Carr, 1989; Beilock & Gray, 2012). If we think that the ability to describe—or at least decompose—one's own performance is an important part of being a successful teacher, this suggests that being highly skilled at doing also presents a barrier to teaching.

The existence of cases of generative teaching is interesting, but the question that matters to the supporter of KNT is whether there are cases in which generative teaching is *epistemically permissible*. Prima facie, there is nothing inappropriate about the teaching in the

¹⁶³ Here's a recipe for counterexamples to KNT. Whatever one thinks of the distinction between skill at doing and skill at teaching, take a case of someone who is skilled at teaching something but not at doing it, and ask whether that agent's teaching is epistemically permissible. I take it that there be at least some cases in which this kind of teaching is permissible.

cases discussed in above, but to get clear on this issue let's consider a cleaned-up hypothetical example of a teacher who doesn't know how to do:

COACH: Janine is a trampoline teacher who specialises in teaching advanced students to perform a double back somersault. This is a difficult move to learn, and requires a good deal of careful practice. Janine is very skilled at giving instructions and constructive criticism and has a very high success rate at teaching this move. However, although she has the physical capacity to perform the move, Janine has never taken the time to learn to do it herself, because of her heavy teaching load.¹⁶⁴

This case is structurally similar to the real-life cases considered above. Janine has mastered the activity of teaching other people to do a double back somersault, and she can successfully teach her students to do this move. However, she has never actually learnt to do it. The fact that Janine hasn't learnt to do the move—together with the reasonable assumption that this knowledge is not innate—means that it is built into the case Janine does not know how to do a double back somersault. Janine lacks one of the necessary conditions for knowing how to do the move: having *learnt* to do it. Furthermore, there seems to be nothing at all inappropriate—epistemically or otherwise—about her teaching. Janine's teaching is intuitively just as permissible as that of her colleagues who do know how to do the move. This means COACH is a counterexample to KNT: it is a case of someone who doesn't know how to do something successfully and crucially *permissibly* teaching someone else how to do that activity.¹⁶⁵

There are three ways in which a supporter of KNT can respond to COACH. They can argue: i) that Janine really *does* know how to do the move, ii) that Janine's teaching is not properly generative, or iii) that her teaching is impermissible.

¹⁶⁴ (see Stanley, 2011b, p. 128).

¹⁶⁵ Here is another recipe for counterexamples to KNT. If one thinks that knowledge-how can be undermined by Gettier-type luck (Stanley & Williamson, 2001, p. 435; Poston, 2009; Cath, 2011; Carter & Pritchard, 2015b), then there will be cases in which someone lacks knowledge how due to the presence of luck, but is otherwise well-placed to teach.

3.1.1. Response 1: Teachers Have Know-How

First, the claim that Janine knows how to do a double back somersault. This line can seem pretty appealing. It would be natural to say:

(3) Janine knows how to do a double back somersault.

and unnatural to say:

(4) Janine *doesn't* know how to do a double back somersault.

which we might take as evidence that Janine really does know how to do a double back somersault. In thinking about this issue we need to bear in mind the limitations of conversational evidence for determining whether an agent has genuine knowledge-how. As Stanley and Williamson observe, Sentences of the form 'S knows how to V' admit of a number of readings, and it is widely accepted that at least some of these readings do not pick out the philosophically distinctive kind of propositional knowledge (Stanley & Williamson, 2001, pp. 422–5; Noë, 2005, n. 4), instead picking out knowledge how *one* can do something, or knowledge how something *ought* to be done (see chapter 1 §4.4.). This is just one of many respects in which the concept of knowledge-how is messy. The ambiguity of 'knows how' ascriptions means that when we are interested in finding out whether someone has know-how, what matters is not just whether we can utter a truth by saying that they know how, but whether their knowledge has the properties distinctive of practical knowledge. If the supporter of KNT starts saying that any knowledge picked out by 'knows how' counts as practical knowledge, then they quickly end up working not with KNT, but with KNT*, which claims that appropriate teaching requires only non-practical propositional knowledge. As observed above, KNT* is implausible because it does not provide a sufficiently demanding standard on teaching.

Intellectualists and Anti-Intellectualists will have different things to say about what makes knowledge-how distinctively practical. Intellectualists typically claim that practical knowledge requires knowing a proposition under a *practical mode of presentation*, whereas Anti-Intellectualists often claim that practical knowledge requires the *ability* to perform the activity known. Either way, Janine's knowledge about the double back somersault fails to

qualify as practical knowledge. Janine can recognise a double back somersault and she can distinguish good instances of the move from bad ones. But it seems implausible that she thinks about a way of doing the move in the distinctively practical way. After all, she's never done the move. Janine also seems to lack the kind of ability that might be associated with practical knowledge. As things stand Janine is not in a position to do a double back somersault: she's never learnt to do one. Both Intellectualism and Anti-Intellectualists ought to agree that Janine does not know how to do a double back somersault. There is an appealing general explanation for this fact - we can say that she doesn't have practical knowledge because she has not gone through the right kind of process of practical learning.

It's worth stressing that Janine's case is significantly unlike the cases of ageing teachers in which an agent has learnt how to do something but can no longer do it because of physical incapacity (Carr, 1981, p. 53; Stanley & Williamson, 2001, p. 416, Snowdon, 2004, p. 9-10; Noë, 2005, p. 283-4). An ageing teacher is *in a sense* able to act,¹⁶⁶ in that in the closest worlds in which their epistemic state is kept the same, but they have relevant physical capacities, and external conditions for performance are met, they will successfully act. In the actual world their ability is masked by external conditions or bodily incapacity. Janine meets all of the physical and external conditions for doing a double back somersault in the actual world: she is strong enough, she has access to a trampoline, she isn't afraid of bouncing, and so on. What stands in the way of her doing the move is not some environmental barrier or physical impairment, but just not having done enough practice. I suggest that not having done practice presents an *epistemic barrier* to success, rather than masking Janine's underlying ability. What Janine acquires by practicing is not greater physical strength—we can imagine that she is already strong enough to do the move—but *knowledge how to do the move*. One way to put the general point is that both Intellectualists and Anti-Intellectualists ought to think that at least some practical knowledge—such as knowing how to do the double back somersault—require a process of learning or deliberate practice.¹⁶⁷ Since Janine hasn't done the practice, she doesn't count as having practical knowledge.

¹⁶⁶ In the sense of having what Glick calls 'internal' ability (Glick, 2012).

¹⁶⁷ I don't want to suggest that *all* practical knowledge requires practice; only that some does (Hawley, 2010, p. 401). There is a large body of empirical evidence stressing the importance of deliberate practice for skill acquisition. (Ericsson, 2006; P. Ford, Coughtan, Hodges, & Williams, 2006).

If Janine does not have practical knowledge, why does it seem intuitively correct to ascribe knowledge-how to her? Janine does have lots of non-practical knowledge about the double back somersault, some of which can be picked out by the non-practical readings of ‘S knows how to V’. She might have non-practical propositional knowledge about *how the move is done*, *how one ought to do it*, and *how to learn to do it*. It is also not at issue that she knows how—in the practical sense—to *teach* others how to do the move. The fact that Janine has these pieces of knowledge allows us to explain our intuitive judgements about sentences (2) and (3). We can truly ascribe knowledge to Janine by using (2), but only insofar as we are picking out her non-practical knowledge about *how the move is done*, or about *how one ought to do it*. Similarly, we might think that the denial in (3) can be read either as saying that Janine knows nothing about the double back somersault, or as implicating that she is not well placed to teach the move.¹⁶⁸ Since she does know something about the move, and certainly knows how to teach it, we might trace the weirdness of the sentence back either to the false claim that she knows nothing about the move, or the false implicature that she does not know how to teach it.

One might worry that even though COACH poses a counterexample to KNT when this norm formulated with our ordinary concept of knowledge-how, the supporter of *Pooling Skills* can avoid this counterexample by endorsing a revisionary account of knowledge-how. We have seen from the previous chapter that there is reason to think that our concept of knowledge-how is inconsistent. This means that the sophisticated supporter of *Pooling Skills* can treat their view as a revisionary account of KNOWS-HOW, solely anchored in our need to flag up good teachers. The supporter of *Pooling Skills* can admit we ordinarily judge that generative teachers like Janine don’t know how to do what they teach others to do, whilst maintain that we *ought* to judge that they do have know-how on the grounds that our concept of knowledge-how ought to be answering to our need to flag up good teachers. It is true that the revisionary supporter of *Pooling Skills* has this option, but I think that it is an unattractive one. I have appealed not just to our extensional intuitions about whether Janine and the other teachers mentioned above have knowledge-how but also to our intensional intuitions about the nature of knowledge-how—in particular to the claim that knowledge-how requires a process of practical learning. By

¹⁶⁸ Asserting ‘S knows how to V’ often implicates ‘S can teach you to V’ (see chapter 4 §3), and denying it can plausibly generate the opposing implication.

endorsing the revisionary account of knowledge-how, the supporter of *Pooling Skills* loses this important intuition about knowledge-how.¹⁶⁹

3.1.2. Response 2: Teaching is Not Generative

A second response to COACH is to argue that although Janine doesn't know how to do the move, her teaching fails to be generative. This response comes in several flavours.

One might say that Janine only gives her students *beliefs* about how to do the double back somersault. This way of reading the case is pretty implausible, since it is clear that Janine's students end up not just having justified beliefs about how to do a double back somersault, but actually *knowing* how to do this move. This knowledge seems to have its source in Janine. Consider Janine's colleague Lucy, who knows how to do the double back somersault but is unable to do it. Lucy might employ the same teaching methods as Janine to teach her students. If Lucy employs these methods, we would certainly want to say that she inculcates knowledge of how to do a double back somersault in her students. Since Janine's methods are the same there seem to be no grounds for denying that Janine also generates knowledge in her students.

Another possibility is that Janine does not teach her students anything at all. One might think that Janine is like a swimming teacher who pushes their students into the pool in that she merely causes her students to learn (or perhaps to teach themselves). It is a difficult question where to draw the line between teaching and merely causing to learn, but I think that it is pretty clear that we should think of what Janine does as genuine teaching. In the case of the swimming 'teacher', there are a number of indications that teaching has not taken place. For example, the students do not rely on the teacher's judgement, and the teacher cannot claim any credit for the students' knowledge. By contrast Janine's students will rely on her judgement and Janine can take credit for her students learning to do the move. It seems wrong to think of her students as being self-taught.

¹⁶⁹ In §3.2., we consider a different kind of counterexample to KNT, which appeals to the intensional claim that knowing how to do something requires knowing how to do all of the activities that are intentional parts of that activity. The revisionary response would also require losing this intuition.

One reason for thinking that Janine does not teach her students anything at all comes from the idea that successfully teaching someone how to do something is just a process of the transmission of a skill from one person to another. We can find appeals to this picture of skill teaching in Small (2014, p. 91), and Ryle (1971, p. 217, 2009a, p. 465). Although this picture of teaching has some intuitive appeal, calling on it will not get the supporter of KNT off the hook with COACH. Both COACH and the real-life cases of generative teaching considered above are just as much counterexamples to the claim that teaching is the transmission of skill as they are to the claim that knowledge-how is the norm of teaching. If we take seriously the existence of cases of generative teaching, then we cannot assume that skill teaching is just the transmission of skill from teacher to student.

A final strategy is to fine-grain the content of what Janine teaches. Although Janine doesn't know how to do a double back somersault, as I pointed out above she plausibly knows how *one ought* to do this move. The supporter of KNT might say that what's going on in this case is that Janine is teaching her students *how one ought to do the move*, meaning that her teaching is not generative, since she knows how one ought to do the move. Although this is a true description of Janine's teaching that is non-generative, there remain many other descriptions of her teaching that are generative. We can legitimately describe Janine as simply teaching her students *how to do a double back somersault*. Presumably the supporter of KNT would also want to say that Lucy – Janine's knowledgeable but unable colleague – teaches her students how to do a double back somersault. Since Lucy and Janine employ the same methods, it is difficult to see how to deny that Janine teaches her students the same things as Lucy.

3.1.3. Response 3: Generative Teaching is Inappropriate

We are left with the claim that Janine's teaching is inappropriate. I think that this line is pretty much a non-starter. Unlike in the cases of generative teaching, where there might be thought to be a sense in which the testifiers are being deceitful, or breaking an epistemic rule in order to achieve a worthwhile result (Lackey, 2008, pp. 115–9), Janine's teaching seems impeccable.

3.1.4 Summing up

Real-life cases of generative teaching, together with empirical evidence for the distinction between skill at teaching and skill at doing demonstrate that it is possible to successfully teach other people how to do something without knowing how to do it. This result in itself is interesting, since it undermines a picture of skill teaching as the transmission of skill. In cases of generative teaching, the teacher does not have the knowledge inculcated in the students. However, the important result for the debate about epistemic norms is that the teaching involved in COACH whilst generative is nonetheless epistemically permissible. This shows us that knowing how to V is not a condition on permissible teaching, meaning that KNT is false. In at least some cases merely knowing how to teach can be good enough for appropriate teaching. This result is bad news for the supporter of *Pooling Skills*, since this picture of the function of KNOWS-HOW predicted KNT would be true. The falsity of KNT also means that the general knowledge-how norm on pedagogy KNP is false.

3.2. Generative Instruction

Since COACH involves teaching via testimony and constructive criticism, this case does not function as a counterexample to KNS and KND, which concern particular kinds of teaching. Let's now consider the narrower norm KNS, which concerns the category of non-linguistic skill-teaching which we are calling *showing*:

KNS: One must: *show* how to V, only if one knows how to V.

In order to find a counterexample to KNS, we need to find a case in which a teacher appropriately teaches her student how to do something by showing without herself knowing how to do it. Consider the following case:

TWISTER: Laura is a diving coach. She had a fairly distinguished county career, but got badly injured meaning that she never learnt to do some of the more difficult moves. For example, she never learnt to do a back somersault. After her injury, she

immersed herself in coaching and has become a distinguished coach. She is currently teaching Tom a move called *The Twister*. Laura knows that the Twister is a fiendishly complicated move involving two and half back somersaults together with two and half twists. Tom already knows how to do the twists and somersaults separately, and Laura draws up a diagram explaining how to put the two moves together. Tom quickly gets it, and has soon mastered the move.¹⁷⁰

In this case, Laura instructs Tom on how to do The Twister by drawing up a diagram explaining how the various parts of the move fit together. We are to imagine her teaching to be successful, and it certainly seems that there is nothing inappropriate about Laura's teaching. However, I think that we should deny that Laura knows how to do the Twister. In order to know how to engage in any complex activity – in the practical sense – one needs to know how to do the intentional sub-activities that make up that activity. To know how to make lemon drizzle cake, one needs to know how to make lemon icing. To know how to cycle from Edinburgh to Aberdeen, one needs to know how to cycle from Edinburgh to the Forth road bridge. Although Laura knows how to put the different parts of the Twister together, she does not have practical knowledge about one of the basic parts of the move: the back somersault. Hence she doesn't know how to do the Twister. As in COACH, Laura might be said to 'know how to do the Twister', in the sense that she has non-practical propositional knowledge about what one needs to do in order to perform this move, but she does not know how to do a Twister in the practical sense. As with COACH, this judgement is not merely based in our extensional intuitions about knowledge-how, but is grounded in a significant feature of knowledge-how.

This lack of knowledge does not stand in the way of Laura's teaching. Since Tom knows how to do all of the basic parts of the Twister, all he needs to learn is how the different parts of the move fit together, which is something that Laura can teach him. Crucially for this example to function as a counterexample to KNS, there doesn't seem to be anything inappropriate about Laura's demonstration: she knows how the various parts of the move go together and fully understands the system for representing dives on a whiteboard, and she need not deceive Tom about her ignorance of how to do a back

¹⁷⁰ There are interesting variants of this case concerning the instruction of group agents. A coach who has never played Rugby might instruct her team how to do a particular move—say, a Springbok Loop—without knowing how to do any of the sub-activities involved in that move.

somersault. Laura successfully and permissibly shows Tom how to do a move that she doesn't know how to do.

A supporter of KNS has the same moves to respond to this case that we saw in response to COACH: they can argue that Laura really knows how to do the Twister, that her teaching is not properly generative, or that her showing is impermissible. As with COACH, none of these responses are compelling.

Once we have the distinction between practical knowledge and the knowledge picked out by 'knows how' in mind, it is implausible that Laura has the interesting kind of practical knowledge about the TWISTER. She has practical knowledge about teaching the move, and knows many facts about how to do it, how one ought to do it, and so on. However, she does not in the relevantly practical sense know how to do it, because she lacks practical knowledge about one of its sub-activities.

Pushing the line that Laura's teaching is not generative also seems implausible. Tom ends up not only with beliefs about how to do the Twister, but *knowing* how to do it. Laura's contribution to Tom's learning also seems properly to be called *teaching*. Tom relies on her showing for as grounds for his beliefs about what moves make up the Twister, and Laura can take credit for Tom's knowledge. One could also try the fine-graining move here. For example, one might insist that Laura only shows Tom the proposition *one does a Twister by doing a two and half back somersault and two and a half twists*. This might be a true description of what's going on in this case. However, as above it is difficult to see how one can possibly avoid saying that she also teaches him to do the Twister.

Finally, the defender of KNS might try claiming that Laura's teaching is epistemically impermissible. As above this move seems like a non-starter. Laura is teaching beyond what she is competent to do, but not beyond what she is competent *to teach*. She does not need to mislead Tom: she can be quite open about the fact that she doesn't know how to do a back somersault, and this would not detract from the appropriateness of her teaching.

COACH relies on the fact that practical knowledge about some activity sometimes requires practicing performing that activity, whereas knowing how to teach an activity

does not requiring practicing that activity (although it might require practice at teaching). TWISTER relies on the fact that practical knowing about some complex activity requires practical knowledge of how to engage in the relevant sub-activities, whereas knowing how to *teach* some complex activity does not require practical knowledge about these sub-activities. This gap between knowing how to do and to teach provides us with another recipe for constructing examples of generative showing in which teachers who don't know how to V nonetheless appropriately teach others how to V, including teaching by showing. Notice that because showing is a kind of teaching, TWISTER is also a counterexample to KNT. At this point, I think that we should conclude that the prospects for a knowledge-how concerning a broad notion of teaching are poor.

3.3. Demonstrating, Knowing How, and Intentional Action

In this section, we will consider a knowledge-norm on a much narrower notion kind of teaching, teaching by doing, which we have been calling *demonstration*. The norm under consideration is:

KND: One must: *demonstrate* how to V, only if one knows how to V.

There are a couple of reasons to be interested in this norm. First, like KNS, KND is a fall-back position for someone who wanted to defend an epistemic norm relating some kind of teaching to knowledge-how. Secondly, the examples which Buckwalter and Turri use in their conversational arguments above involve demonstrations, and one might suspect that the conversational evidence that they claim supports KNT really only supports KND.

Since demonstrating to someone else how to V involves intentionally V-ing, a straightforward counterexample to this norm would involve an agent demonstrating how to V by intentionally V-ing without knowing how to V. It is difficult to find compelling cases in which someone acts intentionally without know-how, so I won't push this line. Instead, I will argue that this norm only looks plausible because of more general connections between knowing how and intentional action.

There are two ways to explain away the appeal of KND: by appealing to the idea that knowledge how to *V* is *necessary* for intentionally *V*-ing, and by appealing to the idea that knowledge how is the norm of intention.

One explanation of why it is so difficult to find cases of intentional action without knowledge-how is that knowing how is a necessary condition for the intentional action. Let's call this principle NEC-A:

NEC-A: If *S* is intentionally *V*-ing, then *S* knows how to *V*.

Note that NEC-A is a necessity claim about the conditions entailed by action, and not a norm on appropriate action. This principle is contentious: it has some prominent supporters,¹⁷¹ but it faces some serious problems.¹⁷² I don't want to adjudicate the debate about the truth of NEC-A here, and I will remain neutral on this principle. I want to make a conditional claim: that if NEC-A is true, then the demand that one demonstrate only what one knows how to do becomes trivial. Since demonstrating how to *V* involves intentionally *V*-ing, if NEC-A is true then demonstrating how to *V* entails *knowing how to V*, meaning that it becomes impossible to flout KND. Since a genuine norm requires the possibility of acting without fulfilling the relevant condition, if NEC-A is true then KND is *not* a genuine norm.¹⁷³ This is just an example of the way that epistemic norms and the corresponding necessity claims crowd one another out.

An alternative strategy for explaining away KND is to posit a norm connecting knowledge-how and intending. In the previous chapter, we pointed out a supporter of *Mutual Reliance* might claim that knowledge-how is the norm on intending:

¹⁷¹ (Anscombe, 1957, p. 89; Gibbons, 2001, pp. 597–8; Stanley & Williamson, 2001, pp. 442–3; Stanley, 2011b, pp. 185–90; Hornsby, 2016, opp. 8-10).

¹⁷² For example, NEC-A has trouble with luckily successful action (Setiya, 2008, 2009, 2012), and seems to rule out the possibility of learning to do something by practicing doing it. (Bengson & Moffett, 2011b, p. 33). Assessing NEC-A is made much more complex by the context-sensitivity of knowledge-how ascriptions. If the truth-value of a 'knows how' ascriptions varies depending on the context, then one can create counterexamples or confirming instances to NEC-A by shifting the context.

¹⁷³ Although it is tempting to think that NEC-A *entails* KND (albeit a trivial version of KND), that is not the lesson that I want to draw. Instead, my contention is that if NEC-A is true, then KND *cannot* be a genuine norm.

KNI: One must: intend to *V*, only if one knows how to *V*.

I want to put off making the case of KNI until the next chapter. The point I want to make is again conditional: if KNI is correct, then there is something normatively deficient about ignorant demonstrations because the intention to perform the activity being demonstrated will fail a standard on intentions. The point isn't that KNI entails KND. These norms relate to different activities—KNI to intending, and KND to demonstrating—and a negative evaluation of an intention need not be inherited by the activity that one intends to do. Rather, if KNI is true, then it is not permissible to *intend* to demonstrate how to *V* without knowing how to *V*. If knowledge-how is the norm of intention, ignorant demonstrations will be accompanied by normatively deficient intentions, meaning that an offer to demonstrate something which one doesn't know how to do will have something deficient about it. A nice feature of this norm is that it predicts that intentions to teach or show will be evaluated by knowing *how to teach*, which fits well with the cases of generative teaching above.¹⁷⁴

With NEC-A and KNI in play, we are in a position to explain Buckwalter and Turri's original motivation for KNT. I will do this in two steps: by pointing out that the conversational phenomena hold up only when there is an assumption that teaching will involve demonstration, and by observing that the phenomena in the case of demonstration can be explained by either NEC-A or KNI.

In support of the first point, consider activities that one cannot teach by demonstrating. Returning to COACH, let us suppose that a back double somersault is something that one can *only* learn to do by engaging in guided practice. If both participants in a conversation know this fact, then Buckwalter and Turri's conversational evidence breaks down. Asking 'do you know how to do a double back somersault?' in this context would *not* function as a request to teach. It would not be plausible for a student who knew that guided practice was the only way to learn the double back somersault to challenge Janine's offer to teach by pointing out that she doesn't know how to do the move. It would

¹⁷⁴ For the same reason KNI does not entail a pedagogical knowledge-how norm on teaching (requiring that one know how to teach in order to appropriately teach). Rather it entails a pedagogical knowledge-how norm on *intending* to teach.

also be no excuse for Janine to say – truly – that she didn't know how to do a double back somersault. Janine could even felicitously utter the supposedly Moorean sentence:

(5) I'll teach you how to do a double back somersault, but I don't know how to do one.

This suggests that the conversational evidence given in §1.1. only concerns *demonstration*. However, the conversational dynamics concerning demonstration can be explained by either of the two knowledge-action connections suggested above.

If knowledge-how is a necessary condition on intentional action, then we can explain the possibility of requesting a demonstration by asking about know-how by claiming that this question functions as an indirect request which picks out a necessary condition for demonstration (much as one can ask someone to pass the salt by asking them whether they are able to (Searle, 1979)). Similarly, we can explain challenges and excuses that appeal to know-how by observing that if NEC-A is true, then it is not possible to demonstrate how to do something without knowing how to do that activity. On this line, the conjunction of an offer to demonstrate with a denial of know-how is odd because it involves offering to do something while saying that one won't be able to fulfil that offer.

If knowledge-how is a norm of intending, then we can explain the conversational phenomena by putting them in the context of broader phenomena relating to offers to act. Just as we can solicit demonstrations by asking whether someone knows how, we can ask people *to do* stuff for us by asking them whether they know how. Asking someone whether they know how to prune an apple tree can function as an indirect request for them to do so. Similarly for challenges and excuses: if I offer to lead us to a restaurant, you can challenge my offer by asking me whether I know how to get there, and if you ask me to, I can excuse myself saying that I don't know how to get there. We might also put the Moorean sentences concerning offers to demonstrate into the context of other sentences involving offers to do stuff, which seem just as bad:

(6) I'll prune your apple tree, but I don't know how to prune apple trees.

(7) I'll lead us to the restaurant, but I don't know how to get there.

These more general phenomena can be explained by KNI, without the need to posit a specific norm relating to demonstration.

In this section I've shown that although there is some reason to think that there is an interesting connection between knowledge-how and demonstration, this connection can be explained by the idea that knowledge-how is a necessary condition on intentional action, or the idea that knowledge-how is the norm of intending. These principles leave no room for a knowledge-how norm specifically on demonstration, since NEC-A blocks KND from being a genuine norm, and KNI explains the badness of ignorant demonstration in terms of the badness of the underlying intentions. This discussion suggests that in general we ought to be cautious in offering arguments for epistemic norms stemming from their ability to explain conversational data, since conversational data can admit of multiple explanations appealing to different normative principles.

4. Conclusion

One consequence of the recent focus on the question of whether knowledge-how is a species of propositional knowledge has been a neglect of the respects in which knowledge-how is interesting *qua* species of knowledge. In this chapter I have contributed toward redressing this balance by paying attention to the normative role of knowledge-how. I have argued against one picture of the normative role of knowledge-how – the knowledge-how norm of showing. I have argued that the conversational evidence which seemed to support the norm admits of multiple explanations, that versions of the norm concerning teaching and instruction are subject to counterexamples, and that positing a norm on demonstration is undermined by general connections between knowledge and action.

Our discussion has a number of interesting consequences.

- i. Cases of generative teaching show that it is mistaken to think of teaching-how as the transmission of skill from teacher to student.

- ii. Since there is no plausible knowledge-how norm relating to skill-transmission, one cannot appeal to KNT in order to establish the general knowledge-norm relating to pedagogy.
- iii. The failure to find a normative connection between know-how and showing puts pressure on *Pooling Skills* as an account of the function of KNOWS-HOW, which predicted the truth of KNT, which as a consequence puts pressure of Pooling Epistemic States as an account of the function of KNOWS.
- iv. Finally, the fact that know-how is not the norm of teaching-how has some interesting educational consequences. If KNT were true, the dictum 'those who can't do, teach' would have serious normative bite, casting aspersions on the credibility of those who teach what they do not know. By contrast, I have suggested that what matters for successful skill teaching is *knowing how to teach* rather than *knowing how to do*.

Chapter 6: Knowledge-How is the Norm of Intention

Introduction

Skipper is having his French neighbours over for lunch. He really wants to impress them, so he decides to make them Coq au Vin, in a traditional rustic French style. He informs his neighbours about his culinary plan, buys all the required ingredients, and gets up early to make sure that he has plenty of time to make the dish. But disaster strikes! Skipper realises that he does not *know how* to make coq au vin; let alone in the rustic French style. In frustration he changes his plan, cobbles together a cottage pie. His guests leave disappointed.

Skipper's plan is clearly criticisable, but why? Making Coq au Vin does not seem practically irrational. Making an authentic French dish is a good way to impress your French neighbours, meaning that Skipper's intention was supported by his reasons. Skipper might well also *know* his reasons, meaning that he cannot be criticised for his epistemic position regarding his practical reasoning. Coq au vin is also not a difficult dish to make – providing you know the recipe – meaning that the dish was something that was within Skipper's power to make. Skipper didn't intend to do something beyond his physical capabilities.

In this chapter, I want to make the case that Skipper's intention is rationally deficient because he didn't know how to do what he intended to do. I will argue that there is a norm on intentions with something close to the following form:

KNI: One must: intend to V, only if one knows how to V.

I will call this normative claim the *Knowledge-how Norm on Intention*. This norm is intended to parallel the much-discussed knowledge norms on assertion, belief and practical action, which claim that knowledge is the condition on epistemically appropriate assertion, belief and action (Williamson, 2000, Chapter 11; Hawthorne, 2004; Sutton, 2007; Bach, 2008; Hawthorne & Stanley, 2008; Fantl & McGrath, 2009). Unlike these norms, I will think of KNI as a norm of rationality, in part because I find it difficult to isolate a specifically epistemic sense of evaluation of intention. I deliberately formulate this norm as

a necessity norm, not a sufficiency norm, since merely having knowledge-how is by no means sufficient for having a rational intention. Nonetheless, there will be something good about an intention accompanied by appropriate know-how: it will be in accordance with a norm of rationality, namely KNI.

The idea that there is a distinctive normative connection between knowledge-how and intention is not entirely novel. Setiya claims that forming an intention to *V* is only epistemically justified when one knows how to *V*, because knowledge-how provides the entitlement to the beliefs that are tied up with intentional action (Setiya, 2008, pp. 406–9, 2012, pp. 300–4).¹⁷⁵ Stanley also comes close to endorsing KNI, appealing to an analogy between acting unskillfully and acting on the basis of ignorance to explore similarities between the debate about the condition which is the norm of action and the conditions required for skill (Stanley, 2011b, pp. 175–81).¹⁷⁶ Whilst acknowledging that KNI has important relations to debates about the epistemology of intention, epistemic norms and the nature of skill, I want to put these debates to one side, and avoid making commitments in them. My hope is to make the structural claim that whatever kinds of things knowledge-how and intention are, they are connected by a rational norm that is importantly distinct from other epistemic norms.

¹⁷⁵ Setiya also endorses a restricted necessity claim about intentional action:

K: If *A* is doing *V* intentionally, *A* knows how to *V*, or else he is doing it by doing other things that he knows how to do. (2008, p. 404)

K is compatible with KNI, since K makes a claim about the necessary conditions on acting, whereas KNI states a *norm* on intending. What would cause problems for KNI would be if *intending to V* entailed knowing how to *V*. However, this claim is extremely implausible. For the same reason KNI is also compatible with the stronger principle NEC-A noted above:

NEC-A: If *S* is intentionally *V-ing*, then *S* knows how to *V*

Note that if we deny that there is a distinction between intending and acting, following (Ferrero, MS.; Thompson, 2008; Moran & Stone, 2011), then NEC-A and KNI *are* incompatible. However, on this view NEC-A is extremely implausible, since knowledge-how is not a necessary condition for intending.

¹⁷⁶ I say comes close, because Stanley suggests a norm on acting, not intending. Stanley suggests that acting without skill involves norm violation, and he claims that skill requires know-how (Stanley, 2011b, p. 175). This commits him to a knowledge-how norm on action:

KHNACT: One must: *V*, only if one knows how to *V*.

Unlike KNI, KHNACT is incompatible with NEC-A.

As I noted above, KNI is predicted by *Mutual Reliance*, which is a view of the function of KNOWS-HOW connecting knowledge how to our need for responsible practices of co-operation. The plausibility of KNI is a point in favour of *Mutual Reliance* as an account of the function of KNOWS-HOW.

The plan of action is as follows. In §1, I lay out the case for KNI, showing that versions of the arguments used for other knowledge norms can be adapted to fit the case of intention. In §2, I work through some problem cases in which it appears that we can appropriately intend without having the requisite know-how. In order to deal with these cases, I will offer a revised version of KNI, which appeals to Michael Bratman's notion of a partial plan (Bratman, 1987) to make clear what the know-how requirement of a given intention is. In §3, I consider the worry that the knowledge-how norm is reducible to some other norm of intention. In §4, I consider alternative conditions which might figure in a norm on intention, and argue that the alternatives to a know-how norm are either unattractive, or face significant problems of implementation.

1. The Case for the Knowledge Norm on Intention

In the case of other knowledge-norms, there is a range of arguments that make the case that the relevant activity or state — be that action, belief, or assertion — is governed by a requirement for knowledge. At the centre of this case are the following phenomena:

- i. The naturalness of using knowledge ascriptions to evaluate the relevant activity;
- ii. The existence of a range of conversational phenomena which are explained by the knowledge-norm;
- iii. The unacceptability of asserting, reasoning from, or believing lottery propositions, such as *my ticket will lose the lottery*.

In this section, I will show that these phenomena also occur in the case of intention, and that endorsing KNI provides a nice way to explain them. I will not try to offer a systematic defence of each of these arguments, or to respond to all potential objections. I cannot hope to categorically convince those who are sceptical about this battery of

arguments. In fact, we've already seen some reasons to be sceptical about some of the arguments from conversational phenomena that come under ii) in the previous chapter. The goal of this section is to establish a cumulative case for KNI, based on a broad range of arguments.

1.1. Evaluative Knowledge-how Ascriptions

We've seen in chapter 4 that knowledge-how ascriptions have various conversational functions. Saying that someone knows how can be a way of flagging them up as a good teacher, or a way of flagging them up as someone who can be relied upon to do something. In addition to these functions we can use knowledge-how ascriptions to evaluate plans and intentions. If Skipper explains his misadventure to a friend, it would be natural for them to chide him by appealing to his lack of know-how, asking 'why did you plan to make Coq au Vin; *you don't know how to make it!*'. We also find cases in which this evaluation works prospectively: if I say that I'm planning to build a bike from scratch, you might knock me down a peg by saying 'why are you planning to do that? *You don't know how to make a bike!*' This kind of evaluation can also apply to group actions: if Matti and Lisa express their plan to lift a piano up the stairs to their new apartment, it would be completely natural for their friends to say: 'that seems like a bad plan; *you guys don't know how to safely lift a piano up a staircase.*' We can also read this kind of evaluative knowledge-how ascription into Hawthorne and Stanley's restaurant case, which they use as evidence for the knowledge-that norm of action (2008, p. 571). After Hannah leads her and Sarah down the wrong street, it would be quite natural for Sarah to criticise Hannah by saying: 'why did you offer to lead? *You don't know how to get to the restaurant!*.'

This function of knowledge-how ascriptions suggest that knowledge-how is normatively bound up with the evaluation of intentions, just as the use of knowledge-that ascriptions to evaluate practical reasoning and assertion suggests a normative connection between knowledge and practical reason and assertion (Williamson, 2000; Hawthorne & Stanley, 2008, pp. 572–4; Gerken, 2015).

Although this kind of argument is suggestive, I have some reservations about it. For one thing, knowledge-how is just one of many conditions which can be used to evaluate intention.¹⁷⁷ We can also appeal to the agent's abilities, their skills, their competences, and myriad other conditions. Another worry is that it is a bit murky exactly what is being evaluated in these cases. On the face of it, these ascriptions negatively evaluate *intentions*. However, there is a case to be made for different kinds of evaluation: perhaps the negative evaluations in these cases targets the acts which the agents are intending to perform, the agents' cognitive habits, or the agents themselves. One way to work around this worry is to give a case in which the agent is uncriticisable, except with respect of their lack of knowledge-how. I won't try to formulate such a case, because it's just difficult to know what the other norms relating to intentions are. Moving to a more *recherché* case also undermines the ordinariness of using knowledge-how ascriptions to evaluate. In line with my general strategy in this section, I take the evidence from evaluative knowledge-how ascriptions to be suggestive, but by no means definitive.

1.2. Conversational Dynamics

A second kind of argument for KNI comes from conversational phenomena that suggest that knowledge-how bears a normative relation to intentions. There are four conversational phenomena that are central to this kind of argument: uses of know-how ascriptions to challenge intentions, to excuse from requests, and to solicit action, and the existence of analogues to Moorean sentences for the expression of intention. All of these phenomena can be nicely explained by the hypothesis that knowledge-how is the norm of intention.

1.2.1. Challenging Intentions

It has been frequently observed that asserting something opens the speaker up to challenges to their knowledge. If S asserts the proposition 'p', it is open to her interlocutors to ask the questions 'how do you know that p?', or more directly 'do you really know that

¹⁷⁷ (J. Brown, 2008a, p. 170).

p?’ (Unger, 1975, pp. 263–4; Slote, 1979; Williamson, 2000, p. 252). Expressing an intention opens up the agent to parallel questions. If I say ‘I intend to make a bike from scratch’, you might ask me ‘how are you going to do that?’, or more directly ‘do you know how to make a bike?’ The same goes for various other ways of expressing an intention, for example by saying ‘I will make a bike’, and ‘I am making a bike’.

The proper answers to both *how will you V?* and *do you know how to V?* involve appealing to knowledge-how. A direct answer to the question *do you know how to V?* will involve claiming that one knows how to V, since this question directly targets the possession of knowledge-how. Although the question *how will you V?* targets an agent’s plan rather than their know how, one can only satisfactorily answer this question by expressing knowledge-how. If I answer *how are you going to make a bike?* by explaining my plan then I will be *expressing* — or at least purporting to express — my knowledge of how to make a bike. Detailing a plan for making a bike opens up the further question of whether I *know* that following that particular plan is a way to make a bike. Saying that I’ve just made a guess about a plan does not answer the challenge, even if my guess happens to be correct. Taking a lead from Anscombe’s discussion of why-questions, we might suggest that intentions are the kinds of things to which the question ‘how are you going to do that?’ has application, where in the standard case answering this question will involve exercising knowledge-how.¹⁷⁸

One might worry that there are ways of getting out of these questions without expressing knowledge-how. If you ask me how I am going to make a bike, I might respond by saying ‘I haven’t decided yet’, ‘I’m going to look it up’, or ‘I’m going to work it out as I go along’. I take it that these responses involve expressing complex plans, and that these complex plans are only legitimate if accompanied by knowledge-how. If I say ‘I haven’t decided yet’, then I claim that there are several options for making a bike open to me, that I have know-how relating to several of the options, but I haven’t decided which of them to pursue. If I say ‘I’m going to look it up’, or ‘I am going to work it out as I go along’, then I am expressing a plan to pick up knowledge as I go along. This kind of plan will only be legitimate if I have sufficient general know-how to count as knowing *how to learn how to*

¹⁷⁸ On the close relations between ‘how?’ and ‘why?’ questions in an Anscombean theory of action, see (Hornsby, 2005). The idea that this question has application (rather than just receiving an answer) is doing work, because in the case of basic actions, there will be no answer to the ‘how?’ question, just as at the top of the chain of rationalisation there is no answer to the ‘why?’ question.

make a bike by looking it up, or knowing *how to work it out as I go along*. Saying ‘but you don’t know anything about bikes’ would be a legitimate challenge to these plans because it would challenge my knowledge of how to work it out as I go along. (I will address a general worry for KNI stemming from these responses in §2.1.)

If knowledge-how is the norm of intention we can nicely explain the felicity of responding to expressions of intention with questions that target knowledge-how. If KNI is correct, in expressing an intention to *V* one represents oneself as having the requisite knowledge how for that intention to be rationally adequate. Asking questions about what one’s plans are, or asking directly about knowledge-how can thereby function as challenges to this intention, challenging whether it is normatively adequate.

Interestingly, directive speech acts – such as commanding, offering, and advising – also open up questions about knowledge-how. If you tell me to make you a macchiato, I can respond by asking how to make one, or by observing that I don’t know how to make one.¹⁷⁹ The same goes for non-commanding directives. If I’m at a dinner party, and you say ‘have an oyster’ (meaning to offer me one, not to command: it’s a *polite* dinner party), I could respond ‘I’m sorry, but I don’t know how to eat an oyster’. The standard function of a directive speech act is to get someone else to form an intention, which suggests that we can challenge a directive by challenge the appropriateness of the intention it aims at. If knowledge-how is the norm of intention, then questions about knowledge-how challenge the appropriateness of the directive in this way. If the target does not know-how, then the intention which the directive aims at is inappropriate, and the directive itself inherits that inappropriateness.¹⁸⁰ Supposing that assertoric and directive speech acts play analogous conversational roles – of adding propositions to the common ground, and adding tasks to the to-do list (Portner, 2007) – we get a neat symmetry between the conversational roles of the knowledge norms of intention, and assertion. Just as the norm of assertion checks

¹⁷⁹ Strictly speaking the parallel question would be ‘do I know how to make a macchiato?’. However since most people know what they know how to do, it is more normal to simply deny knowledge.

¹⁸⁰ Directives are typically associated with an asymmetry of power, and it may be that the person issuing the directive responds to the challenge by simply ignoring the challenge and reissuing the directive. I don’t think that this detracts from the inappropriateness of the intention that may be formed. Just as someone in a position of power can use their authority to override moral norms, they can use this authority to override rules of rationality. Cases of knowingly overriding KNI raise the tricky issue of whether it is possible to knowingly flout KNI, or whether knowing that you don’t know how to do something makes it impossible to form a full intention.

updates to the common ground, the norm of intention checks updates to the conversational to-do list.

1.2.2. Excuses

One can excuse a request to answer a question by claiming that one doesn't know the answer to that question: if you ask me how long naked mole rats live, I can legitimately respond by saying 'I don't know', (Turri, 2011, p. 38). Rather than answering the question, this kind of response functions as an excuse from the request to make an assertion. The hypothesis that knowledge is the norm of assertion can nicely explain this kind of excuse, claiming that without knowledge, an assertion would be epistemically inappropriate. We find a similar phenomenon in the case of requests to do stuff. If Tariq asks Joan whether she could mow lines into his lawn with her lawnmower, Joan could legitimately respond by saying 'I don't know how to mow lines into a lawn.' As in the case of assertion, this response doesn't directly answer the request, but it does seem to function as an excuse. According to the supporter of KNI, Joan's response functions as an excuse by claiming that she is not in a position to form a rational appropriate intention to mow lines into Tariq's lawn.

1.2.3. Soliciting Intentions

Questions about knowledge can also function as indirect requests to perform certain kinds of action. The question 'do you know what the capital of Mali is?' can function as a request to make an assertion answering the question of what the capital of Mali is (Turri, 2011, p. 38). This phenomenon fits into a wider set of cases in which asking a question about a normative or necessary condition for some action can function as an indirect request to perform that action (Searle, 1979; McGlynn, 2015, p. 93).

We find cases in which a question about knowledge-how can function as a request to form an intention. If Baird and Jana are going on a drive, and Baird is worried that he might get a migraine making him unable to drive, he might ask Jana 'do you know how to drive a manual?'. In this case, this question functions not as a request *to drive* — Baird

wouldn't expect Jana to get in on the driver's side — but rather as a request for Jana to form a conditional intention to drive *if* Baird gets a migraine.¹⁸¹ Similarly, if Hailey is injured and is looking for someone to climb with when she's recovered in six months time, she might ask Daman 'do you know how to climb?' meaning not to ask him to climb, but rather to form the intention to go climbing with Hailey once she's recovered. If knowledge-how is the norm of intending, then these requests to form intentions fit nicely into the wider phenomenon of indirect requests based on questions about normative conditions.

1.2.4. Moorean Sentences

Another conversational phenomenon which has been stressed by supporters of knowledge-norms is the existence of Moorean sentences involving knowledge (Williamson, 2000, pp. 254–5). The *ommissive* Moorean sentence 'p, but I don't know that p' seems bizarre to assert. According to the supporter of the knowledge-norm of assertion, this is because uttering this kind of sentence involves *asserting* the proposition in the first half of the sentence, whilst claiming that one is not in an adequate epistemic position to assert this proposition because one doesn't know it.

There are a number of candidates for an analogous Moore sentence for expressions of intention:

- (1) I intend to V, but I don't know how to V.
- (2) I will V, but I don't know how to V.
- (3) I am V-ing, but I don't know how to V.

Some cases with this kind of structure seem bad, although perhaps not quite as bad as the original sentences for belief and knowledge. Consider

¹⁸¹ We are interested in cases of requests to intend, rather than straight requests to do, because KNI is a norm on intending, not on acting. The phenomenon of questions about know-how which are used as requests to act can also be explained by the hypothesis that knowledge-how is necessary for action, which makes these cases less useful in arguing for KNI.

- (4) I intend to find a hyacinth on my walk today, but I don't know how to recognise one.
- (5) I will perform a Salchow tomorrow, but I don't know how to do a Salchow.
- (6) I am making a computer program for finding nth roots, but I don't know how to code

However, others seem to be acceptable. Consider:

- (7) I intend to make a bike, but I don't know how to make one.
- (8) I will prune your apple tree, but I don't know how to prune an apple tree.
- (9) I am supposed to be taking us to the restaurant, but I don't know how to get there.

The difference between these sets of cases seems to stem from differences in whether it is possible to learn how to perform the relevant activities before the time of the intention. It isn't possible to learn how to recognise hyacinths simply by looking at plants, but it is possible to learn to make a bike from scratch by muddling through, and exercising general problem solving skills. In fact, sentences 7, 8 and 9 seem to carry the implicature that the agent intends to learn how to do the relevant activity. In response to either claim, it would be natural to ask 'so when do you intend to learn?' The hypothesis that knowledge-how is the norm of intention is nicely placed to explain the badness of sentences like 4, 5, and 6. Cases in which an agent's plan includes the intention to learn are puzzling for this norm, but I will postpone extended discussion of such cases until §2.1.

1.3. Lottery Intentions

A final argument for knowledge norms stems from the unacceptability of asserting, believing, or reasoning from lottery propositions. (We'll focus on assertion). It is no surprise that it is epistemically amiss to assert that you have won a fair lottery, if the result has been drawn but not announced. If there are a reasonable number of tickets then winning a fair lottery is unlikely, meaning that a belief that you have won is unjustified, and most likely false. However, the interesting case is the fact that there is something amiss in asserting that you have *lost* a fair lottery. With enough tickets, the probability of losing may be rather high, meaning that it seems possible to have a justified belief that one has

lost. However, one cannot *know* that one has lost (plausibly because the belief that one has lost is unsafe). The supporter of a knowledge norm can explain the inappropriateness of asserting that one has lost, whereas the supporter of other norms – such as truth, belief or justification norms – cannot, meaning that Lottery propositions give the knowledge norm one up on its competitors (Williamson, 2000, Chapter 11; Hawthorne, 2004, pp. 21–36; Hawthorne & Stanley, 2008, p. 572).

We find the same pattern with intentions related to lotteries. An intention to *win* a lottery is inappropriate. One can explain this by appealing to knowledge-how, since one cannot know how *to win* a fair lottery (Gibbons, 2001, pp. 287–9; Setiya, 2012, pp. 286–7). However there are various alternative explanations for the badness of this intention: buying the winning ticket in a large fair lottery is overwhelmingly unlikely, meaning that one ought to have low credence in the proposition that one will win.¹⁸²

As with assertion, the interesting case is the intention to *lose* the lottery. An intention to lose will be overwhelmingly likely to be successful, and one ought to have a high degree of credence in the proposition that one has lost. Nonetheless, there is something extremely strange about intending to lose the lottery. In normal cases, intending to lose is strange because the value of one's ticket being a loser is negative. However, it is easy to set up cases where losing the lottery has positive value: say if a losing lottery ticket functions as an invitation to the *Lottery Losers party*, the value of which outweighs the cost of a lottery ticket. To see the inappropriateness of an intention to lose in the case where losing has positive value, consider the following piece of practical reasoning:

P1: If I lose the Lottery, I'll be able to go to the Lottery Losers party

P2: The Losers party will be a lot of fun

C : I'll lose the Lottery

The premises of this argument are true, and it is an instance of a valid schema for practical argument. These premises might also be known, avoiding violations of the

¹⁸² Furthermore, in most real-world lotteries buying a lottery ticket has negative expected value because the cost of a ticket is larger than the value of the prize divided by the number of tickets. In a case where the value of the prize is sufficiently large, *buying a lottery ticket* can be practically rational.

knowledge-that norm of practical reasoning. Nonetheless, forming the intention expressed by the conclusion of this syllogism is obviously inappropriate.¹⁸³ We cannot explain the inappropriateness of this intention by appealing to the low chance of losing the lottery, or a low credence in the proposition that one will win, since I know that it is very likely that I will lose. However, we can explain it by appealing to the knowledge-how norm. Despite the overwhelming probability of losing, one cannot know how to lose a fair lottery because it's just not something one has any control over. Hence, even when one employs a sound argument, and the value of having a losing ticket is positive, lack of knowledge how makes an intention to lose the lottery inappropriate.

1.4. Summing up

In this section, we have seen that the phenomena which supporters of knowledge norms of belief, assertion, and action appeal to also occur in the case of intention. Although there is considerably more to be said about each of these phenomena, and I have noted a number of worries above, the combination these phenomena provides a plausible cumulative argument for the knowledge-how norm of intention.

2 The Knowledge-How Norm of Intention

The phenomena that we considered in the previous section seem to support the simple knowledge norm stated in the introduction. To reiterate, this norm is:

KNI: One must: intend to V, only if one knows how to V.

In this section I will address some cases in which it seems appropriate to intend to do something without knowing how to do it, which will address the worries raised in §1. I will consider a number of fixes for these problem cases, and then offer a revised account of the knowledge-how requirements on a given intention, which appeals to the notion of a partial plan.

¹⁸³ Although it would be appropriate to intend *to buy a ticket*.

Before we turn to the problem cases for KNI, it is worth making some clarificatory observations about its normative import. KNI claims that at any time at which one is in the state of intending to V, one better also be in the state of knowing how to V. KNI evaluates intentions prospectively: one violates this norm if one forms an intention to V without knowing how to V even if one picks up this knowledge before the time of action. If one intends to V and only later learn how to V, then the intention becomes appropriate at the time of learning, but it remains inappropriate before this time. This feature means that KNI can seem overly conservative, requiring considerable knowledge before one intends. KNI is not violated if one merely intends to *try* to V. *Trying to V* is just another of activity which can be substituted into KNI, meaning that an intention to try to V requires knowing *how to try to V*, rather than knowing *how to V*. I might know how to *try* to dress fashionably, without knowing how to dress fashionably, meaning that by the lights of KNI I ought only form the intention to *try* to dress fashionably.

KNI can also be overridden by other kinds of considerations. In a case in which an intention not accompanied by know-how is morally required, the supporter of KNI is committed to saying that there is *something* rationally inappropriate about that intention, although it might be all things considered rational.¹⁸⁴ In the case of other knowledge-norms, it is common to fix in on the evaluation given by the knowledge norm by considering a distinctively *epistemic* sense of evaluation. I find it difficult to isolate an epistemic sense of evaluation of intentions, and will stick with the claim that KNI is a norm of rationality.

2.1. Problem Cases for KNI

There are a number of cases that cause problems for KNI as formulated. I will focus on three kinds of problem cases: i) intentions to work out how to do something as you go along, ii) intentions to practice, and iii) intentions concerning life plans.

¹⁸⁴ KNI can also be overridden by practical considerations. If I don't know how to climb a 6c climb, but want to get half way up, the best way to buttress my resolve might be to form the intention to climb the whole way up. This is a case involving practical reasons to break a norm of rationality.

The knowledge-how norm of intention demands that if we intend to do something, we know how to do it at the time we form that intention. As suggested by the excuses to the epistemic challenges to intention considered in §1 one might think that there is an easy way to get out of this demand. When one forms the intention to do something, one can simply form the additional intention to acquire the requisite know-how before the time of action. If Kieran does not know how to dance the Tango, but forms the intention to dance the Tango at his wedding in six months time, we might think that he can avoid negative evaluation by forming the supplementary intention to *learn* how to dance the Tango in time (Setiya, 2008, p. 406).¹⁸⁵ In this case it seems that Kieran appropriately intends to dance the Tango despite not knowing how to do it. Intentions to V which are accompanied by the combination of ignorance about how to V, together with an intention to learn how to V appear to be counterexamples to KNI. Setiya suggests that an agent in this kind of case really intends to *learn to dance the tango*, meaning that their intentions are consistent with KNI (as long as they know how to learn to dance the Tango). However, as Paul points out (2009b, p. 556), this description of Kieran's intentions is rather strained: it seems much more plausible to say that Kieran *both* intends to learn, and intends to dance the Tango, and that he has the first intention *because* he has the second.

A second kind of problem case concerns practicing. As we saw in the previous chapter, Knowledge-how is associated with various distinctive kinds of learning including *practicing*, whereby one engages in an activity to learn how to do it. According to KNI, when one intends to practice V-ing, that intention is inappropriate, since the point of practice is to gain knowledge-how.¹⁸⁶ This is a strange result, meaning that for activities that require practice, the only way to get oneself in a position where one's intentions are appropriate according to KNI is to repeatedly form intentions that break that very norm. This would be bad enough if practicing was a brief stage at the beginning of the life-cycle of a skill. However, the importance of *continuous improvement* to skilful activity (Ericsson, 2006; Montero, 2016, Chapter 6) suggests that practicing is an important part of all levels of skill, meaning that KNI predicts a host of norm violations associated with skilled activities.

¹⁸⁵ For related examples, see (Hawley, 2003, pp. 20–26; Setiya, 2012, p. 297).

¹⁸⁶ (Setiya, 2009, n. 23).

A final kind of problem case concerns life-plans. Up until this point, I have been concentrating on one-off intentions to perform discrete action. However, intentions can also structure our lives in more complex ways over the longer term, and if KNI is to be a general norm, it should also cover these cases. However, many long-term intentions will involve such complex and long-term plans that no one can properly claim to know how to pull them off. Consider a new parent's intention to bring up his child to be a happy, flourishing person. Plausibly, no new parent can claim to know how to cope with the many and varied challenges which can occur during the course of ten or twenty years of a child's life. Perhaps a parent of multiple children, who has faced a range of parental challenges can claim to know how to bring up a child, but it is not obvious that this knowledge could be condensed into a form which could be easily transmitted to a new parent. So, according to KNI, a new parent's intention to bring up their child to be a happy and flourishing individual breaks a norm of rationality. It is easy to multiply examples of this kind: staying faithful to one partner for a lifetime, living a worthwhile and fulfilling life, or taking care of another human being are all activities which no-one — except perhaps people at the end of their lives — has a claim to know how to do. This means that it appears that the supporter of KNI seems committed to saying that many life-structuring intentions are inappropriate.

2.2. Potential Fixes for KNI

There are a number of responses to these problem cases.¹⁸⁷

One option is to stick with the evaluations given by KNI, and say that in the above cases our intuitive judgements are tracking a different dimension of evaluation of intentions. For example, perhaps intentions to practice are always inappropriate, as KNI predicts, it's just that we allow this inappropriateness because it is in pursuit of the epistemically worthwhile goal of gaining more knowledge-how. Although there is

¹⁸⁷ One option that I don't have space to develop is to develop a graded norm, which claims that the strength of one's intention ought to match one's degree of knowledge-how. For example, we might combine Holton's notion of partial intention (Holton, 2008) with Pavese's notion of *partial* knowledge-how (Pavese, 2017), to give:

PKNI: One must: have a partial intention to V, only if one knows at least in part how to V.

Setiya alludes to this kind of norm (Setiya, 2016, pp. 12–3), although in his framework degrees of intention correspond to degrees of belief.

something to be said for this line, it would be a considerable cost of KNI if the kinds of intentions in the previous section have something inappropriate about them.

A more concessive response is to say that in the above cases full intentions are inappropriate, although intentions to *try* are appropriate. This seems like a plausible line for intentions to practice. When a novice is practicing some activity for the first time, she should be open to the possibility that she will fail. It would be strange to be practicing giving a philosophy talk perfectly, and to make plans based on the assumption that one will perform it perfectly first time. One should intend to *merely try* to give the talk perfectly, and form back-up plans conditional on messing up. We might say something similar about experts who are practicing new skills. However, this line is less plausible in some of the other problem cases: it seems strange to say that Kieran is (or that he ought to be) intending to only *try* to dance the Tango at his wedding, or that we ought only to form intentions to *try* to achieve our life goals.

Another option is to appeal to contextual dependence in the condition involved in the norm to yield a theory where the appropriateness of intention varies depending on contextual features. There are a number of possible contextualist theses about knowledge-how, but one view that can do some interesting work here is the task-indexed contextualism suggested by Hawley (2003, pp. 21–2) (see chapter 3 §3.3). Hawley suggests that knowledge-how ascriptions are made relative to a contextually supplied set of tasks, the idea being that for ‘S know how to V’ to be true in some context S needs to know how to perform the set of V-related tasks salient in that context. This allows us to say in some contexts – ones where *learning* is a salient task – merely knowing *how to learn* is sufficient to count as knowing how to do. If *learning how to speak Russian* is a salient task in a particular context, someone who knows that one can speak Russian by taking a class, can be truthfully said to know *how to speak Russian*, (Hawley, 2003, pp. 19–20).

Putting this contextualist view of knowledge-how together with KNI gives us a view where the conditions on appropriate intention vary by context. If the salient tasks are easy or few in number, it doesn’t take much knowledge to have an appropriate intention, but if the salient tasks are hard or numerous, one needs more knowledge. And if *learning* is a salient task, then knowing how to learn is sufficient to know how, and thus to appropriately intend. Although this line promises to get the right result about the

appropriateness of Kieran's intentions, it faces a number of problems. The contextualist explanation of the Tango case relies on learning the Tango being a salient task in our conversational context. But, it's difficult to see why all of the contexts in which we say Kieran's intention is appropriate should have this feature. In fact, when I introduced the Tango example above, I did *not* make learning to dance the Tango salient meaning that we made the judgement that Kieran did *not* know how to dance the Tango. However, we still judged that Kieran's intention was appropriate, suggesting that our judgements about the appropriateness of his intention was not tracking which tasks were contextually salient.

2.3. Know-how and Partial Plans

I think appealing to intentions to try nicely explains intentions to practice. However, to explain the appropriateness intending to work things out, and intentions regarding life-plans I think that we need a more fine-grained framework for understanding intentions. To get this framework up and running, I will connect KNI with Bratman's idea that intentions are *partial plans*.¹⁸⁸

Bratman points out that when we form intentions, our plans are typically rather coarse-grained and partial, leaving various practical issues open to be decided later on (Bratman, 1987). When I form the intention to make lasagne for dinner, I leave open what kind of lasagne to make, how to cook the different parts of the dish, and what time to start cooking. I will fill in these holes in my plan when I have enough situational knowledge to make an informed judgement about which more fine-grained plan to pursue. The idea of filling in helps to understand Kieran's plan: his initial coarse-grained plan leaves open how he will dance the tango, and this plan gets filled in by an intention concerning how to get himself in a position to dance the Tango.

It is plausible that the epistemic requirements on an intention vary depending on how filled in one's intention is (Bratman, 1987, p. 31). Consider the way in which plans for making a lasagne vary depending on the cook's culinary know-how. An experienced cook can plan to make a lasagne without needing to plan ahead, leaving open a host of practical

¹⁸⁸ This connection ought to be unsurprising given the connections between *Mutual Reliance*, and the Planning theory of intention noted in chapter 5.

issues to be filled in later, whereas a more inexperienced cook will need to make a detailed plan that fills in the details. I suggest that the experienced cook's know-how puts her in a position to fluidly fill in a coarse-grained plan by exercising her knowledge how to perform various culinary tasks, whereas the inexperienced cook's knowledge does not put her in a position to fill out her plans as she goes along, meaning that she needs to make a detailed plan ahead of time which fills her plan in to the level of her knowledge-how.

In order to explain this idea, we can build a connection between know-how and partial plans into the know-how norm, relativising the know-how norm to the open issues in an agent's plan.¹⁸⁹ This gives us the following norm:

KNI-PP: One must: intend to V , leaving open a set of how-to issues {how to $V1$, how to $V2$, ... how to Vn } only if for all of the open how-to issues in that set one knows how to perform those tasks.

This revised norm is able to explain both the cases of intending to work things out as one goes along, and the cases of intentions relating to life plans.

In the case of intending to V when one forms the intention to work out how to V whilst ignorant about how to V , I suggest we should think of the supplementary intention as *filling in* the partial plan. The initial coarse-grained plan – to V – gets filled in by some more complex plan – learn to V , then exercise this knowledge. This more complex plan does not leave open the issue of how to V , but rather the issue of *how to learn to V* , so requires not knowing *how to V* knowing *how to learn to V* . This is the result that we want in these cases: an intention to work it out as you go along requires *less* know-how, but it still requires some knowledge.

In the case of life plans, I suggest that we should think of a plan to bring up a happy child not as an extraordinarily coarse-grained plan – which would require a great deal of know-how – but rather as a *policy* (Bratman 1987, 56–57). Policies have a conditional structure which allows us to affect our future behaviour in predictable ways

¹⁸⁹ This idea is even more attractive if we think of partial plans as question-relative (Snedegar, MS), since if we think of a partial plan as leaving open practical questions the knowledge-how requirements will be knowledge of the answers to those practical questions.

without knowing much about future circumstances. For example a policy to give up smoking will involve a plan like: *if there is an opportunity to smoke, then I won't take it*. A parent's plan to bring up a happy child involves a bundle of conditional intentions: *if I have a decision to make, I'll put my child first; if there's an opportunity to find out about how to bring up my child, I'll take it; and if my child isn't happy, I'll review my parenting practices*.¹⁹⁰ The crucial point is that these conditional plans leave open smaller issues than a coarse grained plan to bring up a happy child, requiring only knowing how to follow the conditional plans, rather than knowing how to bring up a child. Again, these policies will require *some* knowledge-how; the point is that they will require less knowledge-how than the corresponding coarse-grained plan.

The overall lesson of this section is that in order to tell what the epistemic conditions on intention are, we need to know quite a bit about the structure of intentions. I suggested that practicing ought to involve merely intending *to try* to succeed, meaning that one can intend to practice, without know how to succeed, as long as one knows how to try. I have claimed that intentions to work out how to do something involve forming fine-grained intentions to fill in one's partial plan, and offered a revision of this norm – KNI-PP – which makes the epistemic requirements on intention relative to the open issues in the partial plan. I have claimed that intentions to pursue life-plans plans are policies, and suggested that intending to follow a policy require knowing how to follow a bundle of simple conditional plans rather than how to resolve an extremely complex practical issue.

3 The Knowledge-How Norm is not Reducible

One might worry that although knowledge-how is normatively connected to intending, this is only true in virtue of more general normative principles concerning intending. This thought comes in a few different guises, appealing to various different norms relating to practical reasoning. I will consider three: i) the ought-implies-can principle, ii) the principle of instrumental rationality, and iii) the knowledge-that norm of practical reasoning. The goal of this section is to show that the knowledge-how norm on intention is not entailed by any of these norms.

¹⁹⁰ I focus on policies suited to single parenting. The two parent case will involve more complex policies.

3.1. Ought Implies Can

It is a common thought that there is a connection between what one ought to do, and what one can do, which is often expressed in the slogan that *ought implies can* (which I will understand as the necessity claim: one ought to V, only if one can V). The important point for our purposes is that if we think that there is a connection between what we *can* do, and what we *know how* to do (Vranas, 2007, p. 169), it would be natural to think that the ought implies can principle also entails what we might think about as an ought implies know-how principle.

This connection is controversial. For starters, the ought implies can principle is controversial (Littlejohn, 2009a; Graham, 2011), meaning that appealing to this principle is not a uncontentious way to motivate the know-how norm. A second issue is that the connection sketched above requires that there is some connection between know-how and what we can do; in particular that being able to do something entails that one knows how to do it. But, we've seen in chapter 1 that there are a host of counterexamples to the connection between knowledge-how and ability.

Another worry is that the claim that ought implies know-how just looks independently implausible. Consider again cases of intending to V by learning how to V. Imagine that Kieran forms the intention to dance the Tango because it will make his partner happy. On the face of it, Kieran *ought* to dance the Tango because of this fact, despite the fact that he doesn't know how to dance the Tango. Because he can easily learn how to dance the Tango, he is not excused from the ought-claim, despite not having knowledge how.

A final problem with the attempted reduction is that the ought implies can principle has a narrower application than the know-how norm. The know-how norm concerns intentions *in general*, meaning that it negatively evaluates intentions even if they concern actions that are *not* what one ought to do. For example, if I intend to break a promise not to ride my bike by cycling to the shops but I don't know how to ride a bike, then according to the know-how norm I have broken a norm of rationality. However, the ought implies can principle says nothing about this intention, because breaking a promise is not

something which I ought to do. This means that appealing to the ought implies can principle will not get us a competence norm on intentions in general.

3.2. Instrumental Rationality

A somewhat different tack is to appeal to norms of instrumental rationality to explain the connection between intending and knowing-how. One way to motivate this line is to observe cases in which a failure to have knowledge-how is accompanied by a failure of instrumental rationality. If Skipper forms an intention to make Coq au Vin without knowing how to make it, he will not be in a position to form any further intentions concerning the means of making Coq au Vin. One thing that is bad about his position is that he has an intention to do something, without having a corresponding intention about a means to reach that end, meaning that he breaks some norm of instrumental rationality. The suggestion would be that there is a requirement that intentions be accompanied by knowledge-how, only because not having knowledge-how entails having a belief which is in violation of some version or other of the principle of instrumental rationality.

The core idea behind the principle of Instrumental Rationality is that there is some kind of rational failure associated with having the following combination of attitudes: intending to *E*, believing that *E* requires intending to *M*, and not intending to *M*. There is a good deal of controversy about how to formulate this principle, and why the principle holds, which I will simply put to one side.¹⁹¹ We'll use Broome's version of this norm as a stalking horse (Broome, 1999, 2005) but the considerations which pull apart Broome's principle apart from the knowledge-how norm of intention generalise.

Broome argues that the principle of Instrumental Rationality takes the form of a wide-scope rational requirement connecting intention with believed means:

Instrumental Rationality: Rationality requires that: if one intends to *E*, and believes that one will *E* only if one intends to *M*, then one intend to *M*.

¹⁹¹ (Bratman, 1987, 2009a, 2009b, Broome, 1999, 2005, 2013; Brunero, 2009; Schroeder, 2009)

A couple of clarifications about this principle. First, the sense of ‘means’ at issue in this norm is *intended* means, rather than the conditions and tools which are required for achieving E (Setiya, 2007, pp. 668–9). In the relevant sense, merely having knowledge how to E is not an required means for intending to E. Secondly, this norm is best thought of as applying to the special case in which there is one means to achieve E (or at least, that the agent thinks that there is). This means that this principle does not say anything about cases in which there are various possible means available. In order to explain why knowledge-how is a requirement in other cases in which there is no necessary means, we will need some generalisation of this principle (such as Bratman’s means-ends coherence principle, considered below).¹⁹²

The question to consider is whether failing to have knowledge-how entails violating *Instrumental Rationality*. I think that it does not. Not knowing how to E will in some cases go along with having *no* beliefs about the required means for achieving that end. But, someone who has no beliefs about the necessary means for achieving E has a set of attitudes that are consistent with *Instrumental Rationality*. If one does not fulfil the antecedent of the conditional given in this norm — either by not intending E, or by not having a belief about its required means — then it is not possible to violate the principle. There will also be cases in which an agent does not know how to E, has a *false* belief about the necessary means for achieving E, and has intentions which are consonant with those beliefs. For example, I might intend to make the perfect cup of tea, mistakenly believe that the perfect cup requires soya milk and intend to use soya milk. This combination of attitudes also does not violate *Instrumental Rationality*, because the intention is constituent with the (false) belief. However, it does violate KNI, because anyone that believes that the way to make a perfect tea is to use soya milk does not know how to make a perfect cup of tea. Although the relation between knowledge-how and false belief is somewhat fraught, it is not at all controversial that there are some cases in which agents fail to know how to do something, and also have false beliefs about how to do that activity. These cases demonstrate that it is possible to violate the knowledge-how norm without violating *Instrumental Rationality*. Although I won’t push this point, it seems reasonable to think that the majority of cases in which an agent lacks knowledge-how, they will either have no

¹⁹² A further complication is that *Instrumental Rationality* requires time-indexing to allow an agent to form an intention to perform the means at some time after forming the intention to E, but before the time at which they would need to M (Setiya, 2007, p. 668). Implementing this change entails a further difference to KNI-PP that evaluates intentions at the time of formation.

belief, or a false belief about how to perform the relevant activity. This suggests that in the majority of cases, lacking knowledge how *does not* involve violating *Instrumental Rationality*.

One move a supporter of the reduction of the know-how norm might want to pursue is to say that fulfilling *Instrumental Rationality* requires *true* beliefs about necessary means, or perhaps just forming a means-intention which is in line with the facts about how to achieve the relevant end. However, these tweaked versions of the principle of Instrumental Rationality would not entail the knowledge norm of intention either. There are cases in which an agent lacks knowledge-how to E, takes a lucky guess about how to E, forming the true belief that M as a means to achieve E, and thereby intends to M. For example, Skipper might in a panic write down a random series of cooking tasks, which by sheer fluke happen to constitute a fairly reliable way to make Coq au Vin. With no other option, he forms the belief that this recipe constitutes a way to make Coq au Vin, forms the appropriate intentions and follows the recipe successfully. In this kind of case Skipper lacks knowledge how to make a Coq au Vin, but fulfils *Instrumental Rationality* in the best way possible: by having true beliefs about the means to his ends, and intending those means. These cases of lucky true belief are important, because the combination of intention to E, true belief that intending to M is necessary to achieve E, and intention to M is the central case in which an agent *fulfils* the norm of Instrumental Rationality. Because one can fulfil instrumental rationality via a lucky guess whilst lacking knowledge-how, failing to have knowledge-how does not entail violating the norms of instrumental rationality. Instrumental Rationality makes no requirement about the epistemic provenance of the belief about the means, whereas knowledge how to V does, meaning that the knowledge-how norm will systematically diverge from the requirements of practical rationality.

To see how these considerations against Broome's version of the principle of Instrumental Rationality generalise, consider Bratman's more general requirement, which he calls the *Means-Ends Coherence Principle* (Bratman, 1987, pp. 31–5). This principle is formulated within the framework of partial plans, and says that our partial plans must at the appropriate time be filled in with sub-plans that specify means to achieving our goals. *Means-Ends Coherence* is more general than *Instrumental Rationality*, in that it applies to ends with multiple possible means, and does not require that we form subplans ahead of time. It is easy to come up with cases in which agents fulfil *Means-Ends Coherence* without knowing how to V. Although it is not possible to form a subplan while lacking a belief, it is clearly

possible to fill in a plan based on a false belief about possible means, meaning that it is possible to fill in a plan to E, without knowing how to E. Even focusing on cases in which the subplan is a possibly successful one, there will be cases in which the agent lacks knowledge how to E, takes a guess about how to E which luckily comes out true, and fills out their plan based on that lucky guess. This means that lacking knowledge-how does not entail violating the Means-Ends coherence principle, even focusing on forming potentially successful subplans.

It appears that the prospects for getting the knowledge-how norm out of some version of the principle of Instrumental Rationality are not good. This does not undermine the important connections between knowledge-how and instrumental rationality. As I noted in §2.2., it is extremely plausible that exercising our knowledge-how is one of the primary ways in which we form beliefs about the required means to our ends, and more generally fill out our plans. The point to take away from this section is that it is also possible to fill out our plans in other ways that have less good epistemic credentials but are impeccable from the point of view of achieving our ends.

3.4. Knowledge-That Norm of Action

If Intellectualism about knowledge-how is correct then we might expect that the properties of knowledge-that — including its normative properties — would carry across to knowledge-how. This means that the Intellectualist who is committed to a knowledge-that norm on action might think that they can explain the epistemic norms concerning knowledge-how by appealing to the knowledge that norm of action. In this section, I will show that the combination of Intellectualism knowledge-that norm of action does not entail the knowledge-how norm.

McGlynn points out that there are two versions of the knowledge norm of action, depending on whether one is required to know only the propositions which one treats as reasons, or all of the premises of practical reasoning (McGlynn, 2015, p. 132). This distinction gives us the knowledge norm on treating as a reason for action (KNRA), and the knowledge norm on premises of practical reasoning (KNPR):

KNRA: One must: treat p as a *reason for action*, only if one knows that p .¹⁹³

KNPR: One must: employ p as a *premise* in practical reasoning, only if one knows that p .¹⁹⁴

The importance of this distinction becomes clear when we notice that practical reasoning includes not just *reasons* which favour performing the action in the conclusion, but also means-ends propositions, as well as propositions which *modify* reasons without themselves being reasons, such as enablers, intensifiers and attenuators (Dancy, 2004, Chapter 3). KNRA does not require knowledge of means-ends premises, enablers, intensifiers, and attenuators, whereas KNPR does.

The question is whether we can derive some version of KNI from either KNRA or KNPR. There are two ways to connect KNI to these norms: i) by appealing to the fact that means-ends premises figure as premises in practical reasoning and ii) by appealing to the idea that knowledge-how is an enabler. It's worth noting that because both connections rely on premises of practical reasoning that are not reasons, they only go through under KNPR. Let's consider the two connections in turn.

If Intellectualism about knowledge-how is true, then knowledge-how is knowledge of a certain kind of proposition: plausibly a means-end proposition, or a proposition about a way of performing some act. One way to derive a requirement for knowledge-how from a propositional knowledge norm is if the relevant kind of proposition figures as a premise in practical reasoning. Consider the following piece of practical reasoning:

P1: I need to be in Hoxton for a meeting

P2: I am in Bloomsbury

P3: To get to Hoxton, from Bloomsbury, one needs to take the number 35 bus

C: I'll take the number 35 bus

¹⁹³ (Hawthorne & Stanley, 2008)

¹⁹⁴ (Williamson, 2000, p. 231; Hawthorne, 2004)

If KNPR is correct, then in order to be epistemically appropriate, this piece of reasoning requires that I know *that taking the number 35 is a way to get from Hoxton to Bloomsbury*. And, if Intellectualism is true then knowing the proposition expressed by P3 is sufficient for knowing *how to get to Hoxton from Bloomsbury*.¹⁹⁵ Putting the two claims together means that this piece of practical reasoning is appropriate only if I know *how to get from Hoxton to Bloomsbury*. Generalising, we can say that whenever there is a means-ends premise in practical reasoning, KNPR predicts that this means-ends premise must be *known* for the reasoning to be epistemically appropriate, and that assuming Intellectualism, we can identify this means-end knowledge with knowledge of how to achieve the end.

Although KNPR predicts that practical reasoning requires some knowledge-how, it does not mean that KNPR entail KNI. For one thing, in order to get a general know-how requirement on all pieces of practical reasoning, we would need an argument that all pieces of practical reasoning involve a means-end premise. This is a substantial commitment in the theory of practical reasoning. A more serious problem is that the requirement to know means-ends premises of practical reasoning yields a requirement for different knowledge-how to KNI. Applied to the piece of practical reasoning above, KNI claims that in order to pursue this piece of practical reasoning, I better know *how to take the number 35 bus*. By contrast, KNPR predicts that I better know *how to get from Bloomsbury to Hoxton*. One way to put the point is to say that KNI requires knowledge-how relating to how to perform the conclusion of practical reasoning, whereas the requirement to know means ends premises gets us to a requirement for knowledge-how concerning the premises of practical reasoning.

The second way to get a knowledge-how requirement out of KNPR is to appeal to the idea that knowledge-how plays an enabling role in practical reasoning. The idea of an enabler picks out conditions which do not themselves speak in favour of a certain action (meaning that they are not reasons), but without which other considerations *could not* speak in favour of that action (Dancy, 2004, pp. 38–43). To get a grip on enablers, consider promising. Marcella has promised to make Mohammed dinner. The fact of having promised is a reason for Marcella to make Mohammed dinner. By contrast, the fact that her promise was not coerced is not a reason for her to make Mohammed dinner. It does

¹⁹⁵ The claim that in some cases knowledge of a means-ends proposition suffices for knowledge-how is Anti-intellectualists can also get on board with. See (Hornsby, 2005, p. 113)

not speak in favour of making dinner. Rather, the fact that the promise was unconcerned *enables* the fact of having promised to function as a reason for Marcella. One might think that knowledge how to V plays a similar role, enabling reasons to count in favour of V-ing without itself actually favouring V-ing.

There are two ways to appeal to enablers to get the claim that fully appropriate reasoning requires knowledge-how: i) one might think that knowledge how to V is an enabler for reasons to count in favour of V-ing, or ii) one might think that the content of knowledge how to V is an enabler for reasons to count in favour of V-ing. In both cases, there are plausible routes from the claims about enablers to the knowledge-how norm of intending, but the underlying claims about enablers are implausible.

Let's start with option i). If know-how is an enabler, then someone who does not know how to V cannot have any reasons to V. This claim does not by itself establish a norm which is broken if one forms an intention without knowledge-how; rather it tells us that if one engages in practical reasoning to a conclusion which one does not know how to do, one will have no reasons supporting the intention which the conclusion of that practical reasoning. In order to get a knowledge norm we need to appeal to KNPR. If KNPR holds, then we must *know* all of the premises of practical reasoning, including enabling conditions. This combination of claims does not get us directly to KNI, but rather to the claim that we must *know* that we have knowledge-how in order to have appropriate intentions (KKNI for short):

KKNI: One must: intend to *V*, only if one *knows* that one knows how to *V*.

By contrast to KNI, which claims that appropriate intentions requires first-order knowledge, KKNI claims that appropriate intentions require *second-order* knowledge. However, the fact that a given epistemic norm entails a set of weaker norms, concerning the conditions entailed by the condition in the original norm (so that a knowledge norm on assertion entails a truth norm on assertion, and so on), together with the factivity of knowledge, means that KKNI entails KNI.

Although the suggestion that knowledge-how is an enabler provides a neat route from KNPR to KNI, the suggestion that in general knowing how to V is an enabler for

reasons to favour V-ing is implausible. Consider the Tango case. Kieran does not know how to dance the Tango, but he nonetheless forms an intention to dance the Tango. If knowledge how to V were an enabler for reasons to count in favour of V-ing, then Kieran's intention to dance the Tango would be unsupported by reasons. But Kieran's intention to dance the Tango might be extremely well supported by reasons, despite his lack of knowledge-how. Cases of intending to do something by learning it as one goes along provide us with counterexamples to the claim that knowledge how to V is an enabler for reasons to count in favour of V-ing.

Given the failure of option i) let's consider option ii), which appeals to the idea that the propositions which figure in knowledge how to V are enablers. Unlike appealing to means-ends premises in practical reasoning, this proposal concerns propositions about how to engage in the *conclusion* of practical reasoning. In our above example of practical reasoning, the idea would be that some fact about how to take the 35 bus functions as an enabler for reasons to count in favour of catching the number 35 bus. Given KNPR, appropriate practical reasoning requires knowing that all enablers obtain, getting us the claim that appropriate practical reasoning to the conclusion to V requires knowing that some means-ends proposition about how to V holds. Given Intellectualism, we can identify knowledge of this means-ends proposition about how to V with knowledge how to V.

The problem with option ii) lies in the suggestion that a particular means end premise is an enabler. It is plausible that being able to V is an enabler for V-ing (Dancy 2004: 40). If there were *no* way to get to the bus stop, then one would not be able to get to the bus stop, and I would have no reasons to get to the bus stop. However, with most practical tasks, the means-ends premises that we know are not unique, so that a particular means-ends proposition can be false, without it being the case the one is unable to perform the relevant action. Suppose that walking to the stop on Tottenham court road is a way to catch the number 35 bus. Is that fact an enabler for me taking the 35? A plausible test for an enabler is to consider whether if the fact failed to obtain whether I would have any reason to perform the relevant action. If Tottenham court road was the *only* stop for the number 35, then if walking to that stop was not a way to catch the bus, that would mean that I was unable to catch the 35, which would stand in the way of my having reasons to take the bus. However, in a more ordinary case, there will be many ways to catch the 35, such that the falsity of one of the means-end propositions does not undermine my ability to

catch the 35, or my having reasons to catch it. In this ordinary kind of case, any particular means-end proposition does not function as an enabler. This means that option ii) faces the same problem as option i), being based on an implausible general claim about enablers.

4 Alternative Norms on Intention

In the debates about the norm of belief, assertion, and practical reasoning — which I will call the propositional case — the knowledge norm is not the only possible norm on intention. In the propositional case, the standard alternative conditions are: truth (Weiner, 2005), safe success (Pelling, 2013), belief (Bach & Harnish, 1979; Bach, 2008), justification, (Douven, 2006; Lackey, 2008; Kvanvig, 2011), or various higher-order conditions (Williamson, 2000, pp. 260–3). In this section I consider analogies to each of these norms in the case of intention, as well as a ability norm of intention, and show that the alternatives to a knowledge-how norm on intention face problems.

4.1. Success

The analogy to a *truth* norm in the case of intention would be a success norm of intention (SNI):

SNI: One must: intend to V , only if one V s.

We need to restrict the variable in this norm to intentional actions, otherwise the norm would positively evaluate success down to deviant causal chains. Even with this restriction, SNI makes some rather strange predictions. If I form the intention to make a cup of tea, but change my mind and have a coffee, then SNI claims that my initial intention is inappropriate. Similarly, if I start to make a cup of tea, but get prevented by a sudden intruder, SNI claims my intention was inappropriate.¹⁹⁶ SNI also does poorly in evaluating the effects of luck. If I form the intention to win a fair lottery, and happen to win, then SNI claims my initial intention is appropriate, which seems like the wrong result. The underlying problem with SNI is that it evaluates intentions retrospectively with

¹⁹⁶ One way to avoid these problems would be to switch to a no-failures norm, where changing one's mind, and outside interference do not count as failures.

regards to success, whereas we want our evaluation of the appropriateness of intention to function *prospectively*, so that we can know whether an intention was appropriate before we know how things turn out.¹⁹⁷

4.2. Safety

The analogy to a *safety* norm on assertion (Pelling 2013) would be a safe success norm of intention (SSNI):

SSNI: One must: intend to V , only if one could not easily fail to V .

SSNI does much better than SNI on cases of lucky success: SSNI predicts that a lucky lottery win involves an inappropriate intention, because the success will not be safe. It also gets the right result about intentions to lose the lottery. Although these intentions are overwhelmingly likely to be successful the success will not be safe, because there is a close world in which the ticket wins, meaning that according to SSNI, these intentions are not appropriate.

However, SSNI is an implausible standard on intentions. There are many ordinary intentions which are unsafe (Hawley, 2003, pp. 23–4). Kayetan is a skilled baker, and knows how to bake a perfect loaf of bread, but that does not mean that he always produces a perfect loaf — there are just too many variables to get it right every time. This means that even when Kayetan bakes a perfect loaf, there is a close world in which something goes wrong, and his intention fails.¹⁹⁸ Nonetheless, his intention seems appropriate. Although in this case the number of failure worlds is fairly small, we might think that we can appropriately intend when there are many close failures. Consider cases of *difficult* action (Marušić, 2012, 2015): quitting smoking, staying faithful to a partner for a lifetime, or running a first marathon. Plausibly these are acts which we can at least sometimes

¹⁹⁷ This is not to say that success is irrelevant to the normative evaluation of intentions. Plausibly success is the constitutive *aim* of intention, meaning that only a successful intention will meet its constitutive aim.

¹⁹⁸ One way to avoid this problem is to tweak the safety condition to allow some error possibilities in close worlds (Pritchard, 2005). However, allowing *any* errors in close worlds means that SSNI loses its explanation of the inappropriateness of intending to lose the lottery.

appropriately intend to perform, but involve great many close worlds in which we fail, simply because these tasks are extremely challenging.¹⁹⁹

4.3. Belief

The analogous norm to the belief norm is a norm that one believes that one will succeed (BNI):

BNI: One must: intend to *V*, only if one believes that one will succeed in *V-ing*.

The supporter of BNI can appeal to many of the conversational arguments which support KNI; for example, saying ‘do you think that you will succeed in making a soufflé?’ can function as a challenge to someone who has just expressed an intention to make a soufflé.

An initial problem for BNI comes from cases in which an agent intends to do something without believing that she will. These cases are familiar from the debate about Cognitivism about Intention (Bratman, 1987, pp. 38–9; Holton, 2008, pp. 28–9). Michael might intend to take a book back to the library, but in light of his general absent-mindedness suspend on the question of whether he will take the book back, forming a back-up plan to renew the book online if he cycles past the library. There seems nothing inappropriate about his intention to take his book to the library, although it is not accompanied by the belief that he will succeed.²⁰⁰

Another issue concerns why we should think that mere belief in success is an interesting condition for determining the appropriateness of intentions. BNI makes no restrictions on the epistemic status of the belief in success, meaning that it predicts that

¹⁹⁹ Since we can know how to bake bread, and know how to perform difficult actions, although our success in these activities will be unsafe, these cases provide counterexamples to the claim that knowing how to *V* entails safe success in *V-ing*.

²⁰⁰ In order to explain these cases Holton floats the suggestion of a *partial belief* norm on intention (Holton, 2008, pp. 56–8) where the notion of partial belief that *p* is a doxastic state which takes both *p* and not-*p* as live possibilities. This yields the following norm:

PBNI: One must: intend to *V*, only if one partially believes that one will succeed at *V-ing*

unjustified beliefs based on wishful thinking or guesses can render intentions appropriate. This seems like a bad prediction. I do not appropriately intend to climb a difficult bouldering problem just because I wishfully think that I will climb it.

4.4. Justification

We might think that the condition for appropriate intention is having justification for believing that one will succeed in one's plan. This gives us the analogue to a justified belief norm for the case of intention (JBNI). (I'll run with a doxastic justification norm, but one could also work with propositional justification):

JBNI: One must: intend to *V*, only if one has a justified belief that one will succeed in *V-ing*.

JNBI seems attractive – we might think that there is something seriously amiss with an intention to do something which is not accompanied by a justified belief that one will succeed (Marušić, 2015, Chapter 2). However, the question of how we gain epistemic justification for believing that we will succeed in our intentions is a hugely controversial one, intersecting in fairly complex ways with the debate about our knowledge of our own actions.²⁰¹ The connections between these two debates means that the predictions of JBNI will depend on which account of the justification for believing that one's intentions will succeed one takes up. The available views of this justification vary drastically in their predictions (my discussion here follows (Setiya, 2016, pp. 12–3)). On the one hand, there are *sceptics* about practical knowledge, who claim that belief in success is only justified when properly based on prior empirical evidence.²⁰² If scepticism turns out to be correct, then JBNI is a pretty restrictive norm, having the consequence that intending to perform difficult action is inappropriate, because one will not have sufficient prior empirical evidence to believe in success. On the other hand, there are *permissivists* about practical knowledge, who claim that merely forming an intention is sufficient to grant justification to believe that one will succeed, so long as one knows that this belief will be true and justified

²⁰¹ See (Anscombe, 1957; Velleman, 1989; Moran, 2004; A. Ford, Hornsby, & Stoutland, 2011)

²⁰² (Grice, 1972; Langton, 2004; Paul, 2009a).

once formed.²⁰³ If permissivism is correct, then a majority of intentions will be appropriate according to JBNI. Which view we take of nature of the justification for belief in success also determines whether JBNI is a genuine alternative to KNI. As I noted in the introduction to this chapter, Setiya suggests something rather close to KNI, on the basis of the thought that knowledge-how grants an epistemic entitlement to the beliefs which are tied up with intentional action, including the belief that one's intention will be successful (Setiya, 2008, pp. 206–8, 2012, pp. 300–4). On Setiya's view, having a justified belief that one will V requires knowing how to V, meaning that if Setiya's view is right, then JBNI entails KNI and is not an alternative to it. These considerations do not constitute a direct criticism, but they do show that the supporter of JBNI needs to make commitments in a contentious debate to fill their account out.

4.5. Ability

If knowledge-how and ability come apart, one might think that it is ability which is the condition on appropriate intention, giving us an ability norm on intention (ANI):²⁰⁴

ANI: One must: intend to *V*, only if one is able to *V*.

One problem for ANI concerns how to understand the notion of ability in ANI. In ordinary language 'can', 'is able to', and 'could' are extremely context-sensitive (Kratzer, 1977; Lewis, 1996). This means that if ANI employs the ordinary notion of ability, it entails that the appropriateness of intention tracks the contextual features which determine the meaning of phrases like 'is able to', which seems unlikely.

The supporter of ANI therefore needs to offer an independent and context-insensitive account of the kind of ability they are interested in. They have a number of options here, ranging from reliable ability to mere physical capacity. All of these options face problems explaining lottery intentions. The only way that an ability norm can explain the inappropriateness of intending to *lose* the lottery is by opting for an extreme version of a reliable ability condition that comes close to a safety condition. But as we noted above in

²⁰³ (Harman, 1976, n. 8; Velleman, 1989, nn. 56-64).

²⁰⁴ This norm has not been defended in the propositional case, but behaves something like an objective probability norm.

connection with safety conditions, this kind of condition does not provide a plausible norm on intentions, because there are lots of ordinary intentions (as well as intentions to perform *difficult* actions) that are appropriate despite not meeting this standard.

4.6. Higher-Order Norms

In §1 I argued that the possession of knowledge how is significant for the normative status of intention. One way to go along with this idea while resisting KNI is to claim that it is our epistemic status regarding our knowledge-how that is the norm on intending. One might endorse a higher-order norm, such as a belief that one knows how norm (BKNI),²⁰⁵ or a knowledge that one knows how norm (KKNI):

BKNI: One must: intend to *V*, only if one believes that one knows how to *V*.

KKNI: One must: intend to *V*, only if one knows that one knows how to *V*.

Our epistemic standing with respect to our knowledge-how seems significant to the evaluation of intentions. Someone who *does* know how to do something but has misleading evidence that they *do not* seems poorly placed to intend, and someone who *does not* know to do something, but has misleading evidence that they *do* seems well placed to intend. These kinds of worries have also arisen in the propositional case, where they appear to support the move from a first-order knowledge norm to a second-order norm (Williamson, 2000, pp. 258–63).

In the propositional case, there are a family of moves available to the supporter of a first order norm to allow them to explain the normative significance of the higher order conditions without moving to a higher-order norm. These views endorse *Separabilism* (Boyd, 2015) which is the view that any norm involves two separate dimensions of evaluation: one concerning whether the agent fulfilled or violated the norm, and another concerning whether the agent was epistemically well placed with respect to whether they fulfilled the norm. There are a number of views about the normative significance of one's

²⁰⁵ (Paul 2009, p. 555) BKNI shares with BNI the problem is that it does not distinguish whether the belief is well-supported or not.

epistemic position with respect to having fulfilled an epistemic norm: one might appeal to the idea of excusable norm violation (Williamson, 2000; Hawthorne & Stanley, 2008; Littlejohn, 2009b), the distinction between agent and activity evaluation (Williamson, forthcoming; Lasonen-Aarnio, 2014) or the distinction between primary and secondary propriety (DeRose, 2002). Endorsing any of these Separabilist views allows the supporter of KNI to claim that in cases of misleading higher-order evidence, these two dimensions of evaluation of intentions come apart. One might think that in a case where an agent intended to do something innocently thinking that they did know how to do it, they violated the knowledge-how norm, but did so excusably, with secondary propriety, or whilst exercising a good cognitive habit.

With Separabilism on the table the supporter of KNI can explain the importance of second-order evidence without endorsing a second-order norm. Given that KNI and KKNi are on par with respect to the relevance of higher-order evidence, I think that we ought to prefer the simpler norm – KNI – on the grounds that it is more likely to be the norm governing our ordinary interactions of intentions. It is also worth pointing out that endorsing KKNi doesn't release us from the need to appeal to the distinction between norm violation and excusable norm violation: just as one can have misleading evidence that one knows-how, one can also have misleading evidence that one knows that one knows how.²⁰⁶

5. Conclusion

In this chapter, I have explored the normative role of knowledge-how in the mental economy, arguing that knowledge-how is the norm of intention. I have developed a strong cumulative case for this norm based on extensions of argument for other knowledge-norms, and shown that this norm can explain some tricky problem cases if it is formulated within a sufficiently rich framework for understanding intentions. Although the knowledge-how norm is related to other norms of practical reasoning, and the knowledge-that norm of action, I have argued that it cannot be reduced to any of these norms. Finally, I have also argued that the alternatives to a knowledge-how norm are unattractive: either

²⁰⁶ Another worry is that higher-order knowledge of competence is rare. See (Kruger & Dunning 1999).

facing serious problems, or requiring serious philosophical development to count as a genuine alternative to the knowledge-norm. Whereas philosophers have often stressed the role of knowledge-how in guiding intentional action,²⁰⁷ I have tried to show that knowledge-how has an important role to play in practical reasoning. Just as according to the knowledge norm of action, we must know the premises of our practical reasoning, according to the knowledge-how norm of intention, we must know *how* to enact the conclusions of practical reasoning.²⁰⁸

In closing I want to tie up two loose ends.

One might wonder how our discussion of epistemic norms bears on the debate between Intellectualism and Anti-Intellectualism. If we cannot reduce epistemic norms relating to knowledge-how to norms relating to knowledge-that, or if the standard norms relating to knowledge-that cannot be extended to the case of knowledge-how, it might seem like a strike against Intellectualism (this would be an example of what (Fantl, 2008) calls a normative argument against Intellectualism). I take this kind of argument to be an instance of the kind of problematic divergence argument that we considered in chapter 2 §3 in connection with the idea that knowledge-how does not require justification. In general, it is open to Intellectualists to think that knowledge-how and knowledge-that are both species of propositional knowledge, but that they are two species of propositional knowledge with *different* epistemic properties.

We ended chapter 4 with two pictures of the function of KNOWS-HOW: *Pooling Skills*, which connected knowledge-how with teaching, and predicted KNT, and *Mutual Reliance*, which connected knowledge-how with competence, and predicted KNI. I suggested that our concept of knowledge-how lies somewhere between these two functions, leading to inconsistencies in the extension of knowledge-how. The question was whether to revise our concept of knowledge-how toward *Pooling Skills*, or toward *Mutual Reliance*. COACH and TWISTER demonstrate that some important intensional intuitions about knowledge-how are in tension with KNT. By contrast, KNI fits fairly well with our everyday concept of knowledge-how. The revisions to the simple norm KNI to the more

²⁰⁷ (Kumar, 2011; Stanley, 2011b; Cath, 2015)

²⁰⁸ This might not be the only role for knowledge-how in practical reasoning. One might think that knowing how to V is a norm on treating V-ing as an option in practical reasoning. On the norms for options, see (Hedden, 2012, 2015).

complex norm KNI-PP only required giving a more fine-grained framework for understanding intentions. In the interests of revising toward the minimally revisionary account of knowledge-how, we ought to favour *Mutual Reliance*, and use judgements about *knowing how to teach* as a standard on teachers. The connection between this view of KNOWS-HOW and the Planning theory also suggests that we have deep practical interests which favour working with a concept to evaluate competence.

Part 3: Bringing Linguistic and Philosophical Considerations Together

Chapter 7: Knowledge-How, Abilities, and Questions

Introduction

In this chapter, we will connect up the linguistic and philosophical considerations from previous chapters to set out a positive account of the nature of knowledge-how. This account is a compromise position, combining the Intellectualist claim that knowledge-how is a relation to a question with the Anti-Intellectualist claim that knowledge-how is a kind of ability, yielding what I will call the *Interrogative Capacity* view. This view claims that knowledge-how is a relation to a question, making it semantically implementable within the standard linguistic treatments, but it also claims that knowledge-how involves a certain kind of abilitative relation, making it able to explain the distinctive practicality of knowledge-how. This account also has the virtue of providing a unifying explanation of the relation between knowledge-how, the ability to act, and propositional knowledge, and identifies knowledge-how with a state that is a good candidate for the norm on intending.

The plan of action is as follows. In §1, I set up a picture of the dialectic between Intellectualists and Anti-Intellectualists as centring on the tension between the semantic implementability constraint and the idea that knowledge-how is a distinctively practical kind of knowledge. In §2, I distinguish between object and relation claims, offering a richer picture of the logical space of this debate. In §3 I develop the Interrogative Capacity view, identifying knowledge-how with an ability to answer a question *on the fly*. In §4, I argue that this account does well on the desiderata for an account of knowledge-how, and in §5 I compare this view to Dickie's and Stanley and Williamson's views of skill.

1. Linguistics and Practicality

The previous chapters have established a number of conditions on an adequate account of knowledge-how. Chapter 1 argued for a (defeasible) semantic implementability constraint on accounts of knowledge-how, and chapters 1 and 2 together provided us with a pretty solid argument for thinking that the how-to complement in 'knows how'

ascriptions functions as an interrogative phrase denoting a question. This linguistic evidence together with the semantic implementability constraint appeared to give the Intellectualist the upper hand. However, chapter 3 argued that Intellectualists face a problem in picking out a species of knowledge that is plausibly sufficient for knowledge-how. I noted two aspects of this sufficiency problem: the Practicality problem, and the Generality problem. In that chapter we focused on the Generality problem, but the practicality problem is just as serious an issue for Intellectualists. In this section, I want to sketch out a picture of the dialectic between Intellectualists and Anti-Intellectualists as centred on the need to give an account of knowledge-how that both resolves the practicality problem, and is semantically implementable.

As noted above, when we talk about knowing-how, we have in mind a species of knowledge with a distinctively practical set of properties, and not just any knowledge which we pick out with the words 'knows' and 'how'.²⁰⁹ Although there is no consensus about these properties, there are a number of candidate features for cashing out the practicality of knowledge-how:

- *Directness*: knowing-how is exercised directly in intentional action, not via some intermediate act of mental contemplation (Ryle, 2009b, pp. 17–20; Stanley, 2011b, Chapter 1);
- *Necessity*: knowledge-how is in some sense a necessary condition for intentional action (Anscombe, 1957, p. 89; Gibbons, 2001, pp. 597–8; Stanley & Williamson, 2001, pp. 442–3; Stanley, 2011b, pp. 185–90; Hornsby, 2016, pp. 8–10);²¹⁰
- *Flexibility*: knowing-how involves an ability to react flexibly to a wide range of possible situations (Ryle, 1976; Hornsby, 2011, pp. 89–95; Stanley, 2011b, pp. 181–5; Wiggins, 2012; Fridland, 2013).

The fact that knowledge-how has these practical properties poses a challenge for Intellectualists. Other types of propositional knowledge do not seem to be practical in the way that knowledge-how is, which means that the burden of proof is on Intellectualists to show that a propositional theory can explain the practicality of knowledge-how. For

²⁰⁹ But see (Braun, 2011) for dissent.

²¹⁰ I am hesitant about endorsing the strict version of this claim (NEC-A) for reasons detailed above (see chapter 5 §3.3). However, I do think that it is plausible that in central cases intentional action of V-ing will involve knowledge how to V.

example, if there is some metaphysical connection between knowledge-how and intentional action, then an Intellectualist ought to be able to explain why the relevant kind of propositional knowledge has this special connection with intentional action (Setiya, 2012, pp. 290–3).²¹¹ Stanley and Williamson try to meet this challenge by claiming that knowledge-how involves a distinctively *practical* first-person mode of presentation, relying on the thought that first-person thought in general has a distinctive connection with action (Stanley & Williamson, 2001, pp. 429–30; Stanley, 2011b, pp. 109–10, 182–3). Critics of Intellectualism have contended that the notion of a practical way of thinking is at best obscure, challenging its ability to explain the practicality of knowledge-how (Glick, 2015), Intellectualists have responded by developing accounts of the nature of practical ways of thinking (Pavese, 2015b) and the debate about the legitimacy of appealing practical modes of presentation is on-going.²¹²

We can see the debate between Intellectualists and Anti-Intellectualists as centring on the Semantic Implementability Constraint and the Practicality Problem. This picture is an oversimplification in a few ways — in particular it focuses on Abilityist versions of Anti-Intellectualism²¹³ — but it does represent an important thread in the debate about the nature of knowledge-how.

Intellectualists start with the linguistic evidence. Observing that an account of knowledge-how ought to be semantically implementable, they read off an account of knowledge-how from the standard semantics for the ‘knows+wh’ construction given by the Answer theory of knowledge-wh, yielding an account on which knowledge-how is a species of propositional knowledge. By contrast, Anti-Intellectualists take the practical features of knowledge-how as their starting point, claiming that in order to explain the practicality of knowledge-how, one needs to identify knowledge how to do something with some kind of ability to do that thing. Since capacities to act intrinsically have a tight

²¹¹ A possible exception is *directness*. Stanley stresses that on his conception of propositional knowledge, *all* knowledge is exercised directly in action (Stanley, 2011b, Chapter 1; Stalnaker, 2012).

²¹² Pavese’s account of knowledge-how is in my view the Intellectualist account best able to explain the practicality of knowledge-how. However, her account is complex, and reasons of space prevent me from giving it proper consideration. That said I take it that (Pavese, 2015b) would be the first place to go for an Intellectualist challenger to the Interrogative Capacity view.

²¹³ Does Bengson and Moffett’s view (2011a) do any better than Abilityism in meeting these desiderata? Their notion of an action-guiding conception holds out hope to explain the practicality of knowledge-how, but as I argued in chapter 2 their account is not semantically implementable.

relationship to action, the hypothesis that knowledge-how is a kind of ability is well placed to explain the distinctive practicality of knowledge-how.²¹⁴

Each kind of account has a positive feature: Intellectualism is semantically implementable, and Anti-Intellectualism can explain the practicality of knowledge-how. However, each account has trouble with the evidence that motivated the other account. Because Intellectualists identify knowledge-how with garden variety knowledge-that, they have trouble explaining the practicality of knowledge-how. And, because Anti-Intellectualists identifies knowing how with relation to an activity rather than a question, their view is not semantically implementable. This overview has been extremely brief, and I haven't argued that neither kind of view is able to resolve the challenge facing their view. However the fact that the established views face symmetric challenges suggests that we might make progress by looking for a compromise between Intellectualism and Anti-Intellectualism.

2. Objects and Relations

In thinking about knowledge we need to carefully distinguish claims about the *object* (or *relatum*) of knowledge from claims about the nature of the knowledge *relation*. Claims about what knowledge-how is knowledge *of* are often confused with claims about what kind of relation is involved in knowing how. Reflecting on this distinction helps us to clarify the disagreement between Intellectualism and Anti-Intellectualism, and opens up space for a compromise between these two positions.

Both Intellectualism and Anti-Intellectualism can be understood as claims about either the object of knowledge-how, or about the knowledge-how relation. Glick points out that the Intellectualist claim that knowledge-how is a species of propositional knowledge can be understood in two ways (2011, sec. 4) (See chapter 1 §4.2.5.):

²¹⁴ Consider the ability to swim: this ability is exercised directly in swimming, is a necessary condition for intentionally swimming, and can manifest in a wide range of different kinds of swimming.

Weak Intellectualism: Know-how is knowledge which has a proposition as a relatum.

Strong Intellectualism: Know-how is knowledge which *both* has a proposition as a relatum, and involves the theoretical knowledge relation.

Weak Intellectualism is just the claim that the object of knowledge-how is propositional. Strong Intellectualism encompasses both the claim that the object of knowledge-how is propositional, and the claim that the relation involved is the same theoretical knowledge relation which is found in knowing that p (i.e. JTB plus Gettier proofing). Although Strong Intellectualism entails Weak Intellectualism, the converse entailment does not hold (Glick, 2011, pp. 412–5). Weak Intellectualism is compatible with views that claim that the knowledge-how relation is something other than theoretical knowledge. For example, one might think that knowledge-how has as its object the set of propositions which answer the question *how to V?* but think that it is a distinctively *practical* knowledge relation to those propositions. The distinction between Weak and Strong Intellectualism is crucial for understanding the significance of the linguistic evidence. In chapter 1 I argued — following (Glick, 2011) — that the linguistic evidence only provides evidence for the claim that knowledge-how is a relation to a question, and not for the claim that the semantic value of ‘knows’ picks out only the theoretical knowledge-relation, meaning that it supports Weak Intellectualism, and not Strong Intellectualism.

Turning to Anti-Intellectualism, the claim that knowledge-how is *not* a species of theoretical knowledge can also be understood in two ways:

Weak Anti-Intellectualism: know-how involves a relation other than theoretical knowledge.

Strong Anti-Intellectualism: know-how involves a relation other than theoretical knowledge, and has a non-propositional relatum.

Weak Anti-Intellectualism is the claim that the knowledge-how relation is something other than theoretical knowledge. Strong Anti-Intellectualism endorses both the claim that the knowledge-how relation is a non-theoretical one, and the claim that knowledge-how is a relation to something other than a proposition. Strong Anti-Intellectualism entails Weak Anti-Intellectualism, but Weak Anti-Intellectualism does not

entail Strong Anti-Intellectualism. Weak Anti-Intellectualism is compatible with the claim that the object of knowledge-how is a proposition or a set of propositions, so long as the relation is something other than theoretical knowledge.

Just as the linguistic evidence supports only Weak Intellectualism, the idea that knowledge-how is a distinctively practical kind of knowledge supports only Weak Anti-Intellectualism. The argument I sketched above rested on the idea that one can explain the practicality of knowledge-how by identifying it with a kind of ability, since abilities have the right kind of practical properties to explain the practicality of knowledge-how. At this point it is indubitably tempting to endorse the *Abilityist* view that knowing how to V is just the ability to V, which is a Strongly Anti-Intellectualist view because an activity is a non-propositional item. However, the view that knowledge-how is ability is compatible with various views about what knowledge how is an ability to do. For example, one might think the Craigian considerations in favour of *Pooling Skills* support the idea that knowing how to V is the ability *to teach others to V*, which we have seen is quite some distance from being able to V. In fact, the majority of Anti-Intellectualists steer clear of identifying knowledge how with the plain ability to act. Setiya argues that knowledge-how is the ability to enact intentions to V (Setiya, 2008, 2012), and Wiggins suggests that knowing how is a *sui generis* intellectual capacity relating to V-ing (Wiggins, 2012). Even Ryle stops short of the ability theory, claiming that knowing how to do something is the ability to apply criteria to action, or think what one is doing (see chapter 1 §2). Because there are various views about what kind of ability knowing-how might be and what it is an ability to do, the argument from practicality sketched above only establishes the Weak Anti-Intellectualist claim that the knowledge-how relation is something other than theoretical knowledge.

We've distinguished two kinds of disagreement about the nature of knowledge-how: disagreement about whether the object of knowledge-how is propositional or non-propositional, and disagreement about whether the knowledge-how relation is theoretical knowledge or something else. Putting these disagreements together gives us the following picture of the logical space of this debate:

		Object	
		Propositional (i.e. <i>that w is a way in which one can V</i>)	Non-Propositional (i.e. Activity, way of acting, predicate)
Relation	Theoretical knowledge (i.e. JTB+)	Strong Intellectualism	—
	Something other than theoretical knowledge (i.e. practical knowledge, understanding, ability)	Weak Intellectualism; Weak Anti-Intellectualism.	Strong Anti-Intellectualism.

Table 1: Logical space in the knowledge-how debate.

Strong Intellectualism is associated with the *Propositionalist* theories held by Stanley and Williamson (2001), and Stanley (2011b). Strong Anti-Intellectualism encompasses *Abilityism*, Bengson and Moffett’s *Objectualism*, (which appeals to a non-theoretical relation and a non-propositional object) (2011a), and *Actism* (which claims that knowledge-how is a knowledge relation to an activity) (Carr, 1979, 1981; Hornsby, 2011; Wiggins, 2012). There are a number of views which might occupy the compromise position at the bottom left: the view that knowledge-how is a practical knowledge relation to a proposition (Glick, 2011; Cath, 2015), and the view that knowledge-how is a seeming relation to a proposition (Cath 2011). It is an interesting question whether there are any views which might take occupy the top right position. I think that there are two which might: Brogaard’s view that knowledge-how is a JTB-type relation to a predicate (Brogaard, 2011), and the view that knowledge-how is a theoretical knowledge relation to a way of acting.

Let’s relate this picture of the logical space to the impasses between the linguistic evidence and the practicality of knowledge-how. The argument from linguistics concerned the *object* of knowledge-how, pushing us from the right column to the left column. The argument from practicality concerned the knowledge-how *relation*, suggesting that knowledge-how involves some kind of ability pushing us from the top row to down the bottom, and suggesting that the relation was some kind of abilitative one. Putting the two arguments together suggests that knowledge-how involves an abilitative relation to the set of propositions which answer a question of the form ‘how to V?’.

What would a view that claimed that knowledge-how is an abilitative relation to a question look like? There are several ways to be related to a proposition or question by an ability. For example one might be *able to remember* that Wayne came for dinner last week, or *able to ask in German* where the toilet is. These kinds of abilities are not plausibly identified with knowledge-how. However, there is an abilitative relation that is a good candidate for being identified with knowledge-how: the *able-to-answer* relation. Let's call the view that identifies knowledge-how with an ability-to-answer relation to a question the *Interrogative Capacity* view of knowledge-how.²¹⁵ According to this kind of account knowing how to V is standing in the *able-to-answer* relation to the question 'how to V?'.²¹⁶

It is worth getting clear on how to understand the notion of an *ability to answer a question*. I am interested in the sense of 'answering' where it is a success term, which means that the kinds of answers we are interested in are *correct* answers to the question. Additionally, we are not interested in the 'quiz show' notion of answering (Radford, 1966, pp. 2–3), where luckily producing a correct answer counts as answering. Rather we are interested in an ability to answer a question in the epistemically right way. Rather than attempting to give an account of 'in the right way', I will rely on the idea of an ability *to know* answers, with the thought being that knowing an answer will entail having got to the correct answer in the epistemically right (i.e. non-Gettiered, non-lucky) way.²¹⁷ Being able to answer is also not to be understood as being able to engage in the speech act of answering.²¹⁸ Rather, the idea is that one has an ability to be in a certain mental state: the state of knowing. Although in the majority of cases an ability to know will consist in an ability to gain new pieces of knowledge, I want to leave open the possibility that an ability to know might involve repeated exercise of one piece of propositional knowledge. I might be able to answer the question *what are the 4th roots of 16?* in virtue of being able to follow an algorithm for calculating nth roots. However, I might be also able to answer the question *what is 2+2?* simply in virtue of having standing knowledge that $2+2=4$. To capture this idea,

²¹⁵ One way to understand this view is that it claims that knowledge-how is like wondering, in that it is primarily a relation to a question, rather than to the propositions that answer that question. On relations to questions, see (Friedman, 2013).

²¹⁶ For some suggestive comments along these lines, see (Hornsby, 2005, p. 117; Setiya, 2009, pp. 135–6, 2012, p. 296).

²¹⁷ On abilities to know, see (Kelp, forthcoming.; Millar, 2009; Miracchi, 2015).

²¹⁸ Hyman criticises White's account of knowledge for equating knowledge-that with the ability to give an answer in language (Hyman, 2015, pp. 165–6). This criticism is somewhat wide of the mark, since White claims that one can exercise the ability to answer in question in acts other than saying, such as showing (1982, p. 29), and distinguishing (1982, p. 120).

we can understand an ability to know to be an ability to *activate* knowledge (Williamson, 2013, pp. 5–10), where one activates knowledge just in case one either learns a proposition, or exercises standing knowledge of that proposition.

3. The Interrogative Capacity View

In the previous section I suggested that we might take knowledge-how to be an ability to activate knowledge of answers to the question ‘how to V?’. However, knowledge-how is not identical with just any kind of ability to answer a how-to question. Someone who has read a book on skiing is *in a sense* able to answer the question of how to ski, but we don’t want to say that they thereby know how to ski. Just as the simple ability account faced the problem of isolating a kind of ability to V that is plausibly identified with knowledge-how, this account faces the problem of isolating a kind of ability to answer a question that is plausibly identified with knowledge-how. Whereas the simple ability theory only had to deal with the issue of what kind of situations one needs to succeed in in order to have the relevant kind of ability, the interrogative capacity view needs to address three questions:

- i. What kinds of question does one need to be able to answer?
- ii. What kinds of situations does one need to be able to generate those answers in?
- iii. What kind of answering process is involved?

In this section, I address this challenge by isolating a kind of interrogative capacity that is plausibly identified with knowledge-how, which I will call the ability to answer a question *on the fly*.

First, let’s consider the kinds of questions which are involved knowing how to do something. Following Stanley and Williamson, we will take these to be how-to questions, like *how to swim?*. Although these questions seem simple, we saw in chapter 3 that there are many propositions which can answer a question like *how to swim?*, ranging from coarse-grained propositions like *one can swim by splashing about in the water* to fine-grained propositions which specify an exact technique for swimming in a particular situations,

leading to a generality problem for any theory which appealed to questions concerning which kinds of answers are the relevant ones. In order to respect the connection between knowledge-how and a capacity to react to the particular situation, and resolve the generality problem, I will take an ability to generate answers on the fly to be an ability to activate knowledge of arbitrarily fine-grained answers to a how-to question, which specify a method that is sensitive to a token practical situation. In some cases, these fine-grained questions will have many different answers: consider the fine-grained answers to the question *how to dress fashionably?*. However, I want to remain open to the possibility that there are some fine-grained questions which receive very similar or even identical answers in different situations: consider the fine-grained answers to the question *how can one put one's trousers on?*.

Secondly, we need to get clear on what kinds of situations the ability relates to. There are many different kinds of situations in which one might be able to generate practical answers. For example, a skiing teacher may be able to generate answers to the question of how to perform various moves in the classroom, but not out on the slopes. Since knowledge-how is a kind of practical knowledge, I will take an ability to answer *on the fly* to involve the ability to activate answers in a contextually supplied set of practical situations. I introduce the element of context-sensitivity to explain the shiftiness of knows-how ascriptions discussed in chapter 3 §3.3, and chapter 6 §2.2. Hawley points out that the truth of knows-how ascriptions seems to be sensitive to conversationally salient tasks (Hawley, 2003, p. 22). For example, in a US context in which *only* driving an automatic car is salient then someone who only knows how to drive an automatic car will count as knowing how to drive, whereas in a UK context in which *both* driving a manual and driving an automatic are salient, then only people who know how to drive both types of car will count as knowing how to drive. On the account under consideration this shiftiness is to be traced back to the salient set of practical situations, with the thought being that in a US context, the set of salient practical situations is somewhat narrower than in the UK context.

Appealing to context-sensitivity allows the Interrogative Capacity view to explain why being in a position to answer how-to questions is sometimes not sufficient for knowledge-how. Someone who is good at figuring things out might be in a position to work out how to fix a dishwasher just by exercising their general engineering know-how.

Do they know how to fix a dishwasher? Having an element of context-sensitivity in the picture allows us to say: *it depends*. If the salient set of practical situations include having sufficient time to work it out from first principles, then someone who only has general engineering know-how will count as knowing how to fix a dishwasher, but if the salient set of situations is time-restricted, then such a person will not count as knowing how. Although this can sound a little weird, I think that this shiftiness matches the way that we ordinarily use 'knows how' ascriptions (for examples, see (Hawley, 2003, p. 26)).

Finally, let's consider the way in which questions are answered. There are various ways in which one can answer a question: by looking it up on the Internet, by engaging in deliberation, or by asking someone else. I want to pick out an action-oriented process of activating knowledge. In the cases where knowing how involves gaining new knowledge, I think that one acquires this knowledge by doing. Consider the way in which one might solve a difficult maths problem. Although it might be possible in some cases to just 'see' what the method for solving a problem is, the more usual way is to work how to solve it out as one goes along. Depending on the problem, one might either split it into sub-problems and work on them in turn, or one might just try out different techniques and see what sticks. I suggest that we should think of both *seeing the solution*, and *working it out as one goes along* as involving the exercise of an ability to answer a question. In the former case, one engages in a mental action in order to generate an answer to the question of how to solve the question, and then exercises that knowledge in solving the problem. In the latter, one answers the question by getting going on solving various parts of the puzzle in turn, meaning that one may not have knowledge of how to solve the puzzle until one has almost solved the puzzle.²¹⁹ In cases of working it out as one goes along it is difficult to distinguish the processes of doing and working out, and it may be more accurate to think of the two as aspects of the same process. The kind of answering process I have in mind is one Ryle has in mind when he says that a skilled mountaineer walking in difficult conditions "is concomitantly walking and teaching himself how to walk," (Ryle, 2009b, p. 30). Such an agent is not just applying pre-learned techniques to a situation they have dealt with before, in part they are engaged in a process of *self-teaching* (Ryle, 1971, 2009a). I take it that this kind of answering process is a familiar one: consider the way in which one might exercise one's knowledge of how to fix a bike by engaging in a mixture of diagnosis, trial and error,

²¹⁹ For in-depth discussion of this kind of action-based problem solving in motorcycle maintenance, see (Crawford, 2010).

and experimentation. In the cases where knowledge-how involves activating knowledge by exercising standing knowledge, the idea that one answers the question by acting plays out slightly differently. Rather than learning by doing, the idea will be that one activates knowledge of the answers to the question by exercising standing knowledge of propositions in action.

Putting these three ideas together, we have the idea that knowing-how involves an ability to activate fine-grained propositional knowledge in practical situations, where one activates this knowledge by doing the relevant kind of activity.

The *ability to generate answers on the fly* comes apart from the ability to express those answers and communicate them to others. There are a number of reasons why someone who has the ability to answer a question *on the fly* might not be able to articulate it in explicit linguistic terms. For one thing, the agent may not be in the right kind of practical situation to activate knowledge of an answer to the question. A climber who has learnt to scale a difficult wall might be unable to activate knowledge of how to climb the wall without having the holds in front of her as a prompt. Even in the relevant kind of practical situation, an agent may only be able to express their knowledge in indexical terms (Stanley & Williamson, 2001, pp. 428–9). I might only be able to express and communicate my knowledge of how to tie a Cat’s paw knot by making one and saying ‘*this* is the way to tie it’. I want to take seriously the idea that using this kind of demonstrative can express knowledge of a method for making the knot, but I want to treat it in a rather different way to Stanley and Williamson. Stanley and Williamson take this kind of demonstrative to pick out a general method involving a method-type (2001, n. 29). On the Interrogative Capacity view, since answers are extremely fine-grained propositions, we can say that the way picked out is a method-token. This is good feature of this view because whereas it is difficult to see how to secure reference to a method-type by pointing at a token which instantiates many different types (see chapter 3 §3.4.), securing reference to a method-*token* via a demonstrative is unproblematic. Even allowing that one can express knowledge-how via demonstratives, there might be cases in which an agent who is able to generate answers but not to *express* those answers. It is hard to point at yourself – or speak – while you are swimming.

With these clarifications in place, we can formulate the Interrogative Capacity view of knowledge-how:

Interrogative Capacity View:

S knows how to *V* if and only if for some contextually relevant class of practical situations $\{F1, F2 \dots\}$ *S* has the capacity to activate fine-grained answers to the question *how to V in Fn?* in the process of acting.

I will call this view *the* Interrogative Capacity view, but strictly speaking it is only one version of the Interrogative Capacity view: there might be other views which claim that knowledge-how is a different kind of capacity to answer a question. On the framework above, this view is both Weakly Intellectualist — because it claims that knowledge-how is a relation to the set of propositions which answer the question ‘how to *V*?’ — and Weakly Anti-Intellectualist — because it claims that the knowledge-how relation is an abilitative one, rather than the theoretical knowledge relation.

The central cases for the Interrogative Capacity view will be ones where knowledge-how is constituted by the capacity to generate an open-ended and complex body of propositions. However, this account is also able to deal with cases in which the answers to a how-to question are homogeneous, meaning that one can have the ability to activate knowledge of the answer to a question in virtue of having standing knowledge of the answer. For example, one might think that the answers to the question of how to open a particular safe are uniform, meaning that all it takes to have a capacity to answer the question how to open the safe it is the ability to enact standing knowledge of a proposition about what the code is.²²⁰ In this case the answer is uniform, and the ability is grounded in standing knowledge. There may also be cases in which one answers a uniform question by re-learning the same proposition again and again in action, or cases in which one answers a complex question by exercising a larger body of standing knowledge. If in some cases an Interrogative Capacity can be grounded in standing knowledge, then something like Stanley and Williamson’s account (minus practical modes of presentation) comes out as a special case of the interrogative capacity view, although crucially this account requires not just propositional knowledge, but the ability to activate that knowledge in action. My

²²⁰ (Lewis, 1999; Snowdon, 2004, pp. 9, 12; Glick, 2011, p. 427).

suspicion is that the cases in which knowledge-how is constituted by standing knowledge will primarily be cases of basic, or habitual action, meaning that most of the interesting cases – such as knowing how to swim, play an instrument, or engage in conversation – will involve substantial elements of acquiring new knowledge on the fly.

Whereas the Intellectualist account built in a knowledge-action connection via the idea of first-person thought, the Interrogative Capacity view captures this connection via a distinctive kind of capacity to answer questions in acting. This might lead to the worry that I haven't said enough about Interrogative Capacities to avoid the charge of mysteriousness which is often levelled at the appeal to practical modes of presentation (Glick, 2015). It is true that there is a great deal more which ought to be said about how it is that we come to have various putative ability to answer questions on the fly. However, I don't think that there is anything very mysterious about the idea of an ability to answer a question on the fly. All that we require to get this account going are fine-grained questions, a pinch of context-sensitivity, and a kind of action-based problem solving which ought to be familiar to anyone who's tried to fix a bike. The difficult questions don't concern the *nature* of interrogative capacity, but rather the question of what *grounds* them. I am tempted to be disjunctivist about the grounds of knowledge-how (Bengson & Moffett, 2011a, n. 5), allowing that this kind of capacity can be grounded in a mix of mental conditions, including propositional knowledge, general planning ability, and various domain-specific competences.

4. Benefits of the Interrogative Capacity View

The Interrogative Capacity view has four key philosophical payoffs. First, this view explains the meaning of habitual knowledge-how ascriptions. Secondly, it resolves the tension between semantic theory and the practicality of knowledge-how. Thirdly, this view elucidates the relationship between knowledge-how, propositional knowledge, and the ability to do. Finally, this account is in a good position to explain why it is that knowledge-how is the norm on intending.

Habitual sentences – like ‘Jane runs’ – express a generalisation about an agent fulfilling a certain verb across a range of situations. This kind of sentence is to be distinguished from a non-habitual sentence like ‘Jane is running’ which makes a singular claim about Jane being engaged in running right now. Typical knowledge-how ascriptions are not habituals. Consider:

- (1) Bilal knows how to spell ‘DOG’.

This sentence makes the singular claim that Bilal has standing knowledge of the answer to the question ‘how does one spell “DOG”?’. However, there are some knowledge-how ascriptions which are plausibly habituals (Pavese, 2013, n. 59, 2016b, pp. 656–7; Stanley & Williamson, 2016). Consider:

- (2) Elsa knows how to calm people down.

Sentence (2) has a reading which says that in situations in which someone needs to be calmed down, Elsa knows how to calm the relevant person down. Rather than ascribing a single piece of standing knowledge with a general content, this reading makes a generalisation about Elsa’s possession of different pieces of situation-specific knowledge in different situations.²²¹ What might make this generalisation true? Well, it might be that Elsa has some clever way to acquire knowledge of how to calm people down (maybe she has an app). However, the simplest hypothesis is that the sentence is made true by Elsa’s *ability* to generate situation-specific knowledge in the necessary situation. If this is right, then the sentence is made true *not* by the agent’s standing knowledge of answers to the questions but by her ability to answer the question.

We should be careful not to overstate the significance of this linguistic evidence as support for the Interrogative Capacity view. The slipperiness of the habitual reading makes it difficult to tell how many ‘knows how’ ascriptions have this reading, but my sense

²²¹ One can find a similar reading in ascriptions with a quantifier in the complement. Consider:

- (1) Jonah knows how to please *everyone*.

Although this sentence has a singular reading (Jonah knows one method for pleasing everyone), it also has a generalising reading (for every person, Jonah knows a method for pleasing that person), which plausibly might be made true by an ability to generate knowledge of how to please people.

is that they are at best a somewhat limited class. In fact, not even all habitual ‘know how’ ascriptions pick out the relevant kind of ability to answer a question on the fly, because a generalisation could be made true by other features of an agent besides the on the fly abilities, such as having an app (Pavese, 2016b, p. 644).

One way to semantically implement the Interrogative Capacity would be to agree with Stanley and Williamson’s semantics for ‘knows how’ ascriptions and posit a GEN operator scoping over ‘knows’ for all ‘knows how’ ascriptions. This view is implausible, because the majority of ‘knows how’ ascriptions appear to not have a habitual reading. My preferred semantic implementation for the Interrogative Capacity view would be to put it as a claim about the semantics of the ‘knows’ relation, claiming that ‘knows’ can in some cases pick out a certain kind of *able-to-answer* relation. Although this view does posit a somewhat revisionary semantics for ‘knows’, it does not rely on the linguistically implausible claim that all ‘knows how’ ascriptions involve a habitual reading.²²²

In the first section, I argued that an account of knowledge-how ought to respect both the standard propositional semantics for knowledge-how ascriptions, and the intuition that knowledge-how is a distinctively practical kind of knowledge. The Interrogative Capacity view meets both criteria.

This view takes knowledge-how to be a relation to a question — the question *how to V?* — and understands that question as being identical to a set of possible answers. So, this view is compatible with the standard linguistic treatments for Interrogative complements. Where this account diverges from Stanley and Williamson’s linguistic argument for Intellectualism is in the application of the Answer theory to knowledge-how. Whereas Stanley and Williamson claim that knowledge-how involves the standing knowledge relation to one answer to a how-to question, the Interrogative Capacity view claims that knowledge how is an abilitative relation to *many* true answers to a how-to question. It is true that this view might involve positing a somewhat disjunctive semantic value for ‘knows’, but philosophical accounts of knowledge are already in the game of giving philosophically-motivated semantics for ‘knows’, meaning that there is nothing suspicious about the Interrogative Capacity view making this move.

²²² This position might be thought to be in tension with uniformity arguments for Intellectualism, however, in chapter 1 §4.1. I argued that we shouldn’t take these arguments too seriously.

The Interrogative Capacity view is also able to vindicate the intuition that knowledge-how is a distinctively practical kind of knowledge. In §1 I split this idea into three parts: *directness*, *necessity*, and *flexibility*. Let's take these ideas in turn.

The idea that knowledge-how is exercised directly in action is explained by the fact that answering a question on the fly involves activating knowledge by engaging in the relevant activity. One of the distinctive features of answering a question on the fly is that the process of doing and the process of answering are intertwined. On this view, if I know how to dance, then I can exercise the capacity to activate knowledge of the answers to the question of how to dance directly in dancing. Since this view posits no intermediary between knowledge-how and action, it seems well placed to explain the idea that knowledge-how is exercised directly in action.

The interrogative capacity view also explains the connection between knowledge-how and intentional action. If we think about doing something intentionally as involving answering a practical how to question, then it would be natural to think that just as the standard case of acting involves the agent having some kind of fairly robust ability to act, the standard case of answering a question involves the agent having some kind of fairly robust ability to answer that question.²²³ There might be tricky cases in which someone answers a question by luck without possessing ability, but this just flags up the issue that it is unclear whether the connection between knowledge-how and intentional action is strict necessity or something weaker.

We can also explain the flexibility of knowledge-how by appealing to the fact that an interrogative capacity can produce different propositional knowledge for different situations. Whereas Intellectualists identify knowing how to do something with a fixed body of propositional knowledge, on the Interrogative Capacity view certain pieces of knowledge-how can be identified with an ability to generate an expanding set of situation-

²²³ It is important that the idea that acting answers a how-to question is restricted to the descriptions under which action is *intentional*. When I raise my arm, I don't necessarily answer concerning non-intentional aspects of my movement, such as the tightening of my muscles.

specific propositional knowledge.²²⁴ Someone exercising an Interrogative capacity is both doing and learning. If we think of the process of learning as being keyed in to the particular features of the practical situations at hand, then it will be natural to think of this expanding body of knowledge as being fairly heterogeneous, generating different knowledge to meet the needs of different situations.

The Interrogative Capacity view also explains the connections between knowledge-how, propositional knowledge, and the ability to do. Although the universal claims that knowledge-how always entails propositional knowledge or the ability to do are controversial, it is plausible that in central cases knowing how is connected with both being able, and knowing facts about the activity in question. It would be good to have explanations of these connections, and the Interrogative Capacity view is well positioned to do this. According to this view, knowledge-how will produce propositional knowledge as a product of its exercise. When someone who knows how to swim exercises their ability to generate answers to the question *how to swim?*, the result will be a piece of propositional knowledge about how to swim. This propositional knowledge may be temporary, and need not ever be consciously articulated, but it is plausible that at least some of the time it will make its way into an agent's standing knowledge. As I pointed out above, there may also be cases in which having standing knowledge of an answer to a question suffices for having an interrogative capacity, meaning that knowledge-how is grounded in propositional knowledge. This view also predicts that knowledge-how has a close connection with a certain kind of ability to act. Since generating an answer to a practical question on the fly will involve successfully engaging in the relevant activity, an ability to generate practical answers will entail a certain kind of ability to successfully pull off the relevant kind of action.

The Interrogative Capacity view also vindicates the idea that knowledge-how is the norm on intending. The idea behind KNI is that KNOWS-HOW should pick out a state that is a plausible standard of competence relating to enacting an intention. Although this standard need not guarantee that an agent will always succeed in pulling off their intentions, it should be the kind of thing that entails that an agent will *normally* be

²²⁴ Stanley claims that first-personal knowledge involves a disposition to acquire new propositional knowledge (2011b, pp. 182–3), but it is not clear that there are any non-know-how examples which display this phenomenon.

successful in normal environmental conditions. The capacity to answer a how-to question on the fly is a good candidate for this kind of state. Although one can be able to answer a question, and still fail to act, in normal environmental conditions, someone who has an ability to answer a how-to question on the fly will succeed in performing the relevant activity. If we buy Bratman's idea that Intentions are typically partial plans, then the connection between KNI and the Interrogative Capacity view is even clearer. When we form an intention to V, we will typically leave open a set of how-to questions, concerning the fine details of our plan to V. What the combination of KNI and the Interrogative Capacity says is that when we leave open these how-to issues, we better right now be in a position to generate fine-grained answers to those smaller how-to questions, as part of our ability to answer the overall question *how to V?*.²²⁵

5. Comparison

In this final section, I compare the Interrogative Capacity account to some related views that appeal to abilities in order to understand knowledge and skill. I first consider how the Interrogative Capacity view relates to other views that understand knowledge to be a species of ability. I then compare this view to the views of skill offered by Dickie (2012) and Stanley and Williamson (2016).

Although the most popular approach to analysing propositional knowledge has taken it to be a species of belief, there is an alternative approach that takes propositional knowledge (or even knowledge in general) to be a species of ability. Wittgenstein and Ryle both seem to claim that knowledge is a kind of ability (Ryle, 2009b, p. 117; Wittgenstein, 2009 §150), and there are a number of views which develop this insight into an account of propositional knowledge. Kenny takes propositional knowledge to consist in the ability to adjust one's behaviour to reach one's goals (Kenny, 1989, p. 108), Hetherington identifies knowing that *p* with a concatenation of *p*-related abilities (Hetherington, 2011), and Hyman takes propositional knowledge to be the ability to act for the reason that *p*

²²⁵ What is the relation between the open how to questions, and the question *how to V??* Following (Snedegar, MS.), I take them to be subquestions of *how to V?*

(Hyman, 1999, 2015). Alan White even proposes that propositional knowledge in general is the ability to answer a question (White, 1982, pp. 29, 115–21).

The existence of ability-based accounts of propositional knowledge opens up the possibility of a general account of knowledge in terms of ability. For example, putting together White’s ability-based view of knowledge-that with the Interrogative Capacity view would yield a general account of knowledge in terms of the ability to answer questions (see White, 1982, p. 29). Alternatively, if we take the ability to be guided by the facts to subsume the ability to answer a question (Hyman, 2015, p. 170), then we can pull a similar move with Hyman’s account, offering an account of knowledge in terms of a general kind of ability to be guided by the facts. These views have the virtue of explanatory unity, allowing us to posit a unified semantic value for ‘knows’ but I don’t think that the supporter of the Interrogative Capacity view need be committed to either view. Instead, one might think that knowledge is a somewhat disjunctive kind which encompassing both doxastic states, and abilities to answer questions.²²⁶

Putting knowledge-that to one side, it is worth noting that there is a good case for taking other kinds of knowledge-wh to consist in the ability to answer the embedded question. This kind of account is noted by Masto (2010) and Michaelis (2011), and developed by Farkas (2016). As some first-pass linguistic evidence for this view note that it is easy to find habitual knowledge-wh ascriptions. Consider:

(3) Paula knows where the best clubs are.

Sentence (3) plausibly has a reading that says that Paula has the ability to generate knowledge of where the best clubs are in various locations.²²⁷ This seems to be good grounds for taking at least some knowledge-wh ascriptions to be made true by an interrogative capacity relating to the relevant wh-question. If knowledge-how and

²²⁶ Does the disjunctive view of knowledge need to be committed to the claim that ‘knows’ is ambiguous? I don’t think so. As Glick points out (2011, pp. 431–2) the claim that there are two kinds of knowledge does not entail the claim that ‘knows’ is ambiguous. Perhaps ‘knows’ has a semantic value which encompasses both doxastic and abilitative states.

²²⁷ See (Stanley & Williamson, 2016). Farkas also gives cases in which it seems felicitous to assert that an agent knows-wh in cases in which they can easily access the answer to the question (Farkas, 2015, p. 112). I might say that A knows what his partner’s number is even if he can easily look it up. We might well think of the ascription as strictly false but pragmatically conveying that A will be *able* to tell you what the answer is. (Hawley, 2011, pp. 288–9; Stanley, 2011b, p. 180).

knowledge-wh turn out to be abilities to answer questions, then knowledge-wh turns out to be continuous other attitudes which are primarily attitudes to *questions* such as inquiry, wondering, and curiosity (on attitudes to question, see Friedman, 2013).

Turning back to knowledge-how, let's compare the version of the Interrogative Capacity view to the accounts of skill offered by Dickie and Stanley and Williamson. Both views appeal to certain kinds of abilities to generate propositional knowledge, but identify these capacities with *skill* rather than knowledge-how.

Dickie (2012) sets out to defend a *skill-first* picture, on which skills are explanatorily prior to propositional knowledge. She endorses Stanley and Williamson's Propositionalist account of knowledge-how — making her a Strong Intellectualist — but understands this knowledge as the by-product of the exercise of a skill. On her view, a skill at V-ing is a capacity to select reliable ways to V, and an act of V-ing counts as skilled just in case the agent Vs in way *w* because she recognises that acting in that particular way is a reliable way to V. Although on this view a skill is strictly a capacity relating to V-ing and thus not an Interrogative Capacity in my sense, Dickie argues that such a capacity will involve the generation of propositional knowledge as a by-product. The basic idea here is that skilled action of V-ing will involve a recognition which can be thought of as a belief of the form *w is a reliable way to V*, and that the reliability of a skill at V-ing provides a kind of practical justification for that proposition, doing the epistemic work of making that belief into knowledge.²²⁸ One way to think about this view is as a Strong Intellectualist account of knowledge-how combined with a virtue-theoretic account of knowledge-that, according to which knowledge-how is grounded in the exercise of skill.

There's a lot to unpack here, but this sketch of Dickie's view should be enough to show her how view differs both from standard Strong Intellectualism, and from the Interrogative Capacity view. Whereas standard Strong Intellectualism treats knowledge-how as a self-standing epistemic state, on Dickie's view knowledge-how depends on skill. In this account, the notion of skill picks up the explanatory slack of explaining the distinctive practicality of knowledge-how, since for her skill has close connections to action. The crucial difference between Dickie's view and the Interrogative Capacity view

²²⁸ See (Brogaard, 2011, pp. 147–9).

is that whereas Dickie claims that *skill* is a capacity that generates propositional knowledge (which she calls knowledge-how), on the Interrogative Capacity view, *knowledge-how* is a capacity that generates propositional knowledge. Although this can seem like a mere verbal disagreement about what label to give to the relevant capacity to generate knowledge, I think that there are important issues that hang on this choice. For one thing, Dickie's view entails that knowledge-how and skill are explanatorily connected, since for her knowledge-how is the product of the exercise of a skill. She is also committed to the claim that knowing how to do something entails having the skill of doing it. By contrast, the Interrogative capacity view doesn't make any commitments about the relation between know-how and skill, and is compatible with there being cases of knowledge-how without skill, and vice versa.²²⁹

Dickie's equation of knowledge-how with the product of skill also causes problems for making sense of the temporal profile of knowledge-how, and threatens to make knowledge-how epiphenomenal.

Knowing how to do something is a standing epistemic state. Someone who has learnt to V knows how to V throughout the time after learning, unless they forget. Dickie's view has difficulty explaining this fact. It is clear that for her *skill* is a standing epistemic state: someone who has learnt the skill of V-ing will be able to select reliable methods for V-ing at any point afterwards, even when they are not actually exercising that capacity. However, on Dickie's view knowledge-how is a by-product of the exercise of skill, generated at the time of action. There doesn't seem to be any reason to suppose that this situation-specific knowledge will be maintained after action has finished, especially if this knowledge relies on first-person thought about one's own action. On Dickie's view, knowing how to do something looks a lot like knowing what you had for breakfast — you

²²⁹ What should the supporter of the Interrogative Capacity view think about the connection between knowledge-how and skill? According to what I take to be the default view of skill, being skilled at V-ing is just being able to V to some contextually supplied standard of goodness. In a certain sense, having the capacity to answer the question of how to V will be necessary for this kind of ability (at least if the contextual requirements for 'know how' are suitably low), but it will not be sufficient for it, (at least in cases where contextual standards are reasonably high). (Pavese, 2016a, p. 646, 2016b, sec. 4). Other accounts allow for cases of knowledge-how without skill and vice versa. (Stanley & Krakauer, 2013) suggest that skill consists of propositional knowledge together with motor acuity, meaning that knowledge-how is not sufficient for skill, and (Weatherson, 2016) argues that skills and propositional knowledge come apart in both directions (meaning that if knowledge-how is propositional knowledge, then it is neither necessary nor sufficient for skill).

can't help but know what you are having for breakfast while you are eating it, but this knowledge is lost soon afterwards, simply because there is no reason to keep hold of it. The problem is that if knowledge-how is transient in this way, it is difficult to make sense of the idea that knowledge-how is a standing epistemic state that persists when the agent isn't acting.²⁵⁰ If a skilled swimmer is sitting on the sofa, then their capacity to generate answers will be dormant, meaning that Dickie seems committed to thinking that they do not have occurrent knowledge how to swim. The Interrogative capacity view also has the consequence that the propositional knowledge that is the product of an interrogative capacity will be transient, but since this knowledge is not identified with knowledge how, its transience doesn't undermine the idea that knowledge-how is a standing epistemic state.

Dickie's account also has trouble making sense of the explanatory significance of knowledge-how. It is a plausible Rylean thought that knowledge-how is the kind of state that one can use to explain intelligent action. The standard way for Intellectualists to understand this idea is by appealing to the idea that knowledge-how *guides* an agent toward successful action in virtue of representing a way to act successfully (Bengson & Moffett, 2011b; Stanley, 2011b, pp. 175–7; Stanley & Williamson, 2016). Dickie explicitly repudiates the idea that knowledge-how guides intelligent action, instead explaining intelligent action in terms of skill. However, she doesn't offer any other account of the explanatory significance of knowledge-how, which leaves knowledge-how looking like a mere epiphenomenal by-product of skill. Effectively this means that she ends up with the same problem about accounting for the distinctive practicality of knowledge-how that is faced by standard Strong Intellectualism. If the connection between knowledge-how and intelligent action is meant to be constitutive of the state of knowing-how, then we should identify knowledge-how with whatever explains skilful action. If Dickie is right, and it is the interrogative capacities which are the explanatorily significant states, then we should identify these states with knowledge how.

Stanley and Williamson also offer a Strong Intellectualist view that gives a central role to skill (Stanley & Williamson, 2016). Like Dickie, Stanley and Williamson claim that skill generates propositional knowledge, and they identify this propositional knowledge with knowing how. However they treat a skill as a capacity *to know*, rather than as a

²⁵⁰ See also (Farkas, 2016).

capacity *to do*, meaning that they explicitly treat skill as a kind of interrogative capacity. On their view a skill at *V-ing* generates propositional knowledge about *V-ing* relating to both how, and other *wh*-questions, and this propositional knowledge then guides action, meaning that skill only manifests indirectly in action. For example, if I am a skilled conversationalist on this view, I possess a capacity to generate knowledge of the answers to range of practical questions — when to speak, how to be polite, and so on — and while speaking, I will generate knowledge to these answers which will guide me in what I say. One way to think about this view is as a kind of particularism about intelligent judgement (Stanley, 2011b, pp. 181–5). This view allows that intelligent action requires situation-specific judgements that cannot be subsumed under general rules, but it still claims that these situation-specific judgements are expressed in propositional knowledge and that intelligent action is guided by propositional knowledge encapsulating these judgements. As with Dickie’s view, the notion of skill seems to play the role of filling in missing element of practicality in the Strong Intellectualist view, downplaying the significance of knowledge-how in explaining skilled action.

Although Stanley and Williamson’s updated view is even closer to the Interrogative Capacity view than Dickie’s, I think that there remain important differences that provide reason to prefer the Interrogative Capacity view. Stanley and Williamson face the same worry as Dickie about explaining the temporal profile of knowledge-how, and their account relies on the controversial idea that intelligent action is guided by propositional knowledge.

Stanley and Williamson’s view shares with Dickie’s the commitment to thinking that skill is a standing general epistemic state, whereas knowledge-how is fine-grained propositional knowledge produced to meet the demands of the situation.²⁵¹ Since this knowledge is not possessed before one encounters a practical situation, there does not seem to be reason for thinking that it will be maintained after one leaves these situations, making this knowledge transient. This means that Stanley and Williamson also face the problem of explaining the idea that knowledge-how is possessed at every time after

²⁵¹ Stanley and Williamson don’t directly discuss the granularity of this knowledge, but they do make comments which suggest that they take it to be fairly fine-grained. They say: ‘the manifestations of skill are *situation specific*. Skill at conversation is a disposition when one is in a conversation *s* to know *at the time of s* facts appropriate to guiding actions relevant to *s*.’ (Stanley & Williamson, 2016).

learning, rather than just at the times at which an agent is actually exercising her skill. I cannot see any way for them to resolve this problem, other than to offer an argument for the implausible claim that this highly situation-specific knowledge is retained after it is generated to meet the demands of a particular practical situation.

One respect in which Stanley and Williamson's account does better than Dickie's is that they do have an account of the relation between knowledge-how and intelligent action: they can appeal to the standard Intellectualist idea that intelligent action is action guided by propositional knowledge (Stanley, 2011b, p. viii). Although Stanley and Williamson seem happy to endorse this claim as a means of displaying their robustly Intellectualist credentials, it remains extremely controversial. By contrast, because the Interrogative capacity view identifies knowledge-how with the interrogative capacity that generates propositional knowledge, it can remain neutral about whether skill is action guided by propositional knowledge. The Interrogative Capacity view can allow both cases in which an agent generates knowledge of a method that guides their action, and cases in which the agent muddles through and only generates knowledge of the method once action is finished. Consider again the various ways in which one can work out how to solve a maths problem. Sometimes it is possible to just see what the method for solving a maths problem is, but in other cases one needs to work through various parts of the problem in order to work out how to solve it. On the Interrogative capacity view it is possible to say that the agent in the first case is being guided by her propositional knowledge, whereas the agent in the second case is not guided by propositional knowledge, but is intelligent in virtue of the exercise of her capacity to generate answers to the question of how to solve this class of maths problems.²³²

6. Conclusion

The debate about the nature of knowledge-how has contrasted understanding knowledge-how as a kind of ability and understanding it to be a relation to a set of propositions. In this chapter, I have shown that the impression of a fundamental disagreement between these two views is misleading, and is driven by a failure to clearly

²³² This is rather different to the standard criticism of Intellectualism about skill, which suggests that intelligent action is *never* guided by propositional knowledge. See (Dreyfus, 2014).

distinguish between claims about the object and relation of knowledge-how. This two-debate framework allows us to see that the logical space in this debate is somewhat richer than has often been supposed, and opens up the space for various compromise positions. The second half of this chapter develops a compromise account of knowledge-how: the Interrogative Capacity view, which claims that knowledge-how is an ability to activate knowledge of the answers to how-to questions on the fly. I have argued that this account is a happy compromise between standard versions of Intellectualism and Anti-Intellectualism, combining the strengths of each, whilst avoiding their respective problems.

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