

ORIGINAL ARTICLE

The unity of knowledge

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1 | INTRODUCTION

Intellectualists, in one sense of the term, hold that knowing how to do something (knowing how) is reducible to knowing that something is the case (knowing that), while their opponents deny this. Intellectualists therefore believe in the unity of knowledge—at least where these two forms of knowledge are concerned—whereas anti-intellectualists generally believe that there are at least two irreducibly different kinds of knowledge. But it is quite possible to deny the intellectualist claim about reduction while insisting on the unity of knowledge, either on the grounds that knowing that is reducible to knowing how or on the grounds that the unity of knowledge can be defended without relying on either kind of reduction. I shall defend a position of the latter kind, but since my argument depends on the theory that knowledge is an ability, and since knowing how is commonly regarded by anti-intellectualists as an ability, it has an affinity with the former position as well.

I shall approach my topic by discussing an unorthodox defence of intellectualism by Natalia Waights Hickman (2019), unorthodox because Ryle is usually the intellectualists' whipping-boy, but Waights Hickman's intellectualism is inspired by Ryle, especially by his claim that 'when a person knows how to do things of a certain sort [...] his performance is in some way governed by principles, rules, canons, standards or criteria.' (1946a, p. 8). This may not be true without exception, but it is true in a large variety of cases, and these are the cases I shall focus on, particularly performances that are governed—or better, guided—by rules. So, like Waights Hickman, I shall argue for the unity of knowing that and knowing how, at least to the extent that knowing how is exercised in performances that are guided by rules; but unlike Waights Hickman, I shall not defend an intellectualist position. The principal claim I shall defend is that knowledge of facts and knowledge of rules are one thing and not two things, not because rules are facts—which they are not—but because knowledge in general is

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an ability, which we exercise when we are guided by or respond rationally to the things we know.

2 | KNOWING IN THE ‘EXECUTIVE WAY’

Waights Hickman defines intellectualism as the doctrine that ‘knowledge how to φ is propositional or factual knowledge’ (2019, p. 312). She adds that the ‘core contention’ of intellectualism is that the differences between knowing how to φ and knowing that p are not differences between the kinds of content or object they take, since this content or object is a proposition or a fact in both cases, but between the *ways* in which their object or content is known or ‘grasped’. According to the intellectualist, knowing how to φ is a different ‘way of knowing’ something from knowing that p . Her own position is distinctive in two respects. First, she has an original view about the content or object of knowledge how, about the kind of proposition or fact it is; and second, she postulates a distinctive ‘way of knowing’, a distinctive *relation* to its object or content, which she says is characteristic of knowledge how.

Waights Hickman explains that her variety of intellectualism is suggested by Ryle’s writings, especially by the following two passages, the first from a 1946 article ‘Knowing How and Knowing That’ and the second from *The Concept of Mind*. Here is the earlier passage:

When a person knows how to do things of a certain sort (e.g. cook omelettes, design dresses or persuade juries) his performance is in some way governed by principles, rules, canons, standards or criteria. (For most purposes it does not matter which we say.) It is always possible in principle, if not in practice, to explain why he tends to succeed, that is, to state the reasons for his actions. (Ryle, 1946a, p. 8)

And here is the later passage, which is about a boy who knows how to play chess:

His knowledge *how* is exercised primarily in the moves that he makes, or concedes, and in the moves that he avoids or vetoes. So long as he can observe the rules, we do not care if he cannot also formulate them. It is not what he does in his head or with his tongue, but what he does on the board that shows whether or not he knows the rules in the executive way of being able to apply them. (Ryle, 2000, pp. 29–30)

Drawing on these two passages among others, Waights Hickman claims that the *objects* of knowledge how to φ are ‘the rules, principles, methods or procedures that characterise φ -ing itself’. (This is a partly different list from Ryle’s ‘principles, rules, canons, standards or criteria’.) And the *way* in which a person who knows how to φ knows these things is ‘the executive way of being able to apply them’ (Waights Hickman, 2019, p. 324). That is the definition of knowledge how Waights Hickman says she has ‘extracted from reflection’ on Ryle’s writings on the topic.¹ Here is a slightly more expansive statement of it:

¹ Waights Hickman’s definition excludes knowledge of the manner in which something is done as opposed to the means by which it is done. Means are covered by the phrase ‘methods or procedures’, but manner is not. For example, the manner in which a petition should be made to a sovereign is humbly, and if you know this, then you know how to make a petition to a sovereign, in other words, you know the *way* to make it, where the *way* is the manner rather than the means.

Knowledge how to φ is knowledge of the rules, principles, methods or procedures that characterise φ -ing itself; rules, principles, methods or procedures that, if one knows *how*, one typically ‘knows ... in the executive way of being able to apply them’, but whose explicit formulation plays a significant role in the teaching, moderation and evaluation of φ -ing. (p. 311)

Waights Hickman’s proposal is interesting for several reasons. First, this is the first time it has been argued in print that Ryle’s views about knowing how are compatible with the doctrine that knowledge how to do something is factual knowledge.

Second, Waights Hickman’s use of the idea of an ‘executive way’ of knowing rules and procedures allows her to acknowledge that knowing how to do something is usually ‘manifested not in the reporting of facts, but in the successful execution of tasks and performances’, without making use of the ‘notoriously nebulous notion’ (as she puts it) of a practical mode of presentation, which Stanley and Williamson introduced in their article ‘Knowing How’ (2001).

Third—I shall explain this point at slightly greater length—Ryle’s positive doctrine about knowing how is that it is a multi-track disposition, in other words, a tendency or capacity or ability, but not one that corresponds to or can be defined in terms of a single type of act.² Its exercises, Ryle says, are ‘indefinitely heterogeneous’ (2000, p. 44), and he illustrates this idea with the example of knowing how to tie a particular kind of knot:

You exercise your knowledge how to tie a clove-hitch not only in acts of tying clove-hitches and in correcting your mistakes, but also in imagining tying them correctly, in instructing pupils, in criticising the incorrect or clumsy movements and applauding the correct movements that they make, in inferring from a faulty result to the error which produced it, in predicting the outcomes of observed lapses, and so on indefinitely. (2000, p. 54)

If Ryle is right about this, knowledge how cannot be assimilated to factual knowledge unless factual knowledge is also a multi-track disposition, and as Waights Hickman points out, this rules out many theories of knowledge, in particular, theories that distinguish between states and dispositions and treat knowledge as a state. But it is compatible with the theory that factual knowledge is the ability to be guided by the facts, which is a development of some of Ryle’s remarks in *The Concept of Mind*. According to this theory, to know a fact is to have the ability to be guided by it, in other words, to respond to it rationally, in what one thinks, or feels, or does.³ As Waights Hickman says, this aligns well with the rough profile Ryle gives for knowing how. It does so for three reasons.

First, abilities are dispositions, in Ryle’s broad sense of the term. Second, the ability to be guided by a fact is not the ability to perform a specific kind of act. It is the ability to do (or think, or feel)

² Ryle does not use the term ‘multi-track’ in *The Concept of Mind*. He distinguishes between ‘single-track’ dispositions and dispositions ‘the exercises of which are indefinitely heterogeneous’ (Ryle 2000, p. 43–44). Ryle also advances a conditional analysis of statements ascribing dispositions, which I do not mean to endorse, but he does not explain the distinction between ‘single-track’ and ‘indefinitely heterogeneous’ in terms of conditionals (as for example Barbara Vetter does (Vetter 2013)), but purely in terms of a disposition’s exercise.

³ Here, and throughout this article, I do not use the word ‘rationally’ as an approbative term, meaning reasonably or intelligently, but simply to refer to the capacity to recognise and respond to reasons, whether this capacity is exercised well or badly. For a defence of the theory that knowledge of a fact is the ability to be guided by it, see Hyman, 2015, Chapter 7.

things for a specific reason, or in the light of a specific fact. Hence, what it is an ability to do is captured by an adverb, rather than a verb. Hence, it is a multi-track disposition. Third, abilities are defined by what they are abilities to do, just as a power is defined by its exercise. And the various ways of exercising knowledge identified by Ryle are indeed ways of being guided by a reason, as he points out himself, in a passage already quoted above:

When a person knows how to do things of a certain sort (e.g. cook omelettes, design dresses or persuade juries) his performance is in some way governed by principles, rules, canons, standards or criteria. (For most purposes it does not matter which we say.) It is always possible in principle, if not in practice, to explain why he tends to succeed, that is, to state the reasons for his actions. (1946a, p. 8)

So, what's not to like? I shall discuss three problems. First, rules and facts. Are rules, principles, methods and procedures facts (regardless of whether facts are propositions)?⁴ And is knowledge of a rule, principle, method or procedure factual knowledge? Second, ways of knowing. Is being able to apply a rule a way of knowing it? Third, knowledge itself. After pointing out how neatly Ryle's conception of knowledge dovetails with the theory that knowledge of a fact is the ability to be guided by it, Waights Hickman backs away from the theory, and explains why she thinks it may be false. How plausible is her argument on this point?

I shall focus on these three points, so I shall not discuss the question of how the phrase 'knows how to ...' should be construed. This seems to me much less interesting than the questions that animated Ryle—questions (roughly) about the relationship between theory and practice or thought and action, and about behaviour that is guided by procedures, principles and rules. I shall argue that Waights Hickman's position is not convincing in detail, but that the unity of knowledge—which motivates her as it does intellectualists of every stripe—is plausible independently of whether one variety or another of intellectualism is true. However, the right way to demonstrate the unity of knowledge is not to focus on how the phrase 'knows how to ...' should be construed. It is to conceive of knowledge quite generally as an ability, which we exercise when we are guided by or respond rationally to the things we know. So, I am in sympathy with the spirit of Waights Hickman's article, but critical of the letter.

3 | RULES AND FACTS

I shall begin with the first problem, that is, with rules and facts. Waights Hickman considers the following objection to her position:

Some philosophers have urged that knowledge of rules [...] is not knowledge that is propositional, among other things because rules are not 'truth-apt': they may obtain or not, but are not true or false. There is evidence that Ryle too thought there is a substantive rule/proposition distinction. (2019, p. 321)

This, she concedes, raises the question whether her view that knowing how to φ is knowing the rules, etc. for φ -ing 'in the executive way' is compatible with intellectualism. But her reply

⁴ For the purposes of this argument, it is not necessary to insist on the distinction between facts and propositions, or to explain how they are related. On this matter, see Hyman, 2017, pp. 276ff.

to the objection is puzzling. She accepts that if rules are not ‘truth-apt’—i.e. if they are not propositions—then knowledge of a rule cannot be propositional knowledge. But she points out that some knowledge *that* is also knowledge of rules, for example, knowledge that the bishop in chess moves diagonally. So, if rules are not propositions, then knowledge that need not be propositional either. Hence the ‘rule/proposition distinction’ does not drive a wedge between knowledge that and knowledge how.⁵

This is a puzzling reply, because if knowing how to φ is knowing the rules, etc. for φ -ing, then this is a retreat from intellectualism—the doctrine that ‘knowledge how to φ is propositional or factual knowledge’. But in fact there is no reason to concede even this much to the objection. There are three points to be made. First, Waights Hickman says ‘there is some evidence’ that Ryle distinguished between rules and propositions. But there is more than evidence. The distinction lies at the heart of Ryle’s philosophy of logic. Second, Ryle is right: rules are not propositions. However, third, from this it does not follow that knowledge of rules is not propositional or factual knowledge. I shall enlarge on these three points in turn.

- (1) First, Ryle insists on the distinction between rules and propositions in ‘Why are the Calculuses of Logic and Arithmetic Applicable to Reality?’ Formal logic, he explains there, consists mainly of explanatory material written in ‘ordinary prose’ and ‘formulations of rules of inference or consistency rules’ (1946b, p. 22). These rules are, he says, ‘performance-rules’:

references to them are references to criteria according to which performances are characterized as legitimate or illegitimate, correct or incorrect, suitable or unsuitable, etc. (1946b, p. 22)

Ryle acknowledges that it is ‘often convenient to express rules of inference in sentences of the pattern “if ..., then ...”, for example, *if p implies q then not-q implies not-p*.’ However, rule-formulations do not express propositions or state facts:

People who construe the logicians’ rule-formulae as descriptions of the spine and ribs of the world [...] assume that a logician’s rule-formula ‘says’ something informative. The mistake is not peculiar to them. Other people think that such a rule-formula ‘says’ something uninformative. (Ryle, 1946b, pp. 28–29)

Ryle maintained that a rule is a guide to conduct and a standard by which performances can be assessed as legitimate or illegitimate, correct or incorrect, etc., and this remains the case regardless of how it gets expressed. Like Wittgenstein, Ryle held that what distinguishes a rule-formula from a statement of fact is not its form, but its use.

Ryle’s conception of logic can be faulted. To mention one point only, it is probably a mistake to think of inferences as performances (see Anscombe, 1989). But the cardinal idea that logic is primarily concerned with rules rather than facts or truths is now generally and rightly accepted, and it is easy to forget how radical it was when Ryle defended it. Frege and Russell had conceived of logic as an axiomatic system of logical truths, and natural deduction was only developed in the 1930s. As Michael Dummett points out (1981, pp. 433–434), Gentzen was the first person to abandon the analogy between a formalization of logic and an axiomatic theory. In natural deduction,

⁵ I use the phrases ‘knowledge how’ and ‘knowledge that’ in this paragraph instead of ‘knowing how’ and ‘knowing that’ in order to conform to the language in the quote. Nothing turns on the difference in phrasing.

Dummett writes, ‘the recognition of statements as logically true does not occupy a central place [...] The generation of logical truths is thus reduced to its proper, subsidiary, role, as a by-product, not the core, of logic’. Ian Rumfitt elaborates the point nicely:

A deductive capacity is an intellectual ability, [which] can be turned on itself to yield knowledge of logical truths. [...] But that knowledge is a by-product of a deductive capacity: it is not what pilots the capacity. A thinker could have a deductive capacity even if he had never turned it on itself. (2011, pp. 358–359)

Thus, rules of inferences are not themselves logical truths. Rumfitt says at one point that rules of inference *presuppose* logical truths. For example, *Contraposition*, which can be represented thus

Contraposition

$A \rightarrow B \vdash \text{not-}B \rightarrow \text{not-}A$

or thus

$A \rightarrow B$

$\text{not-}B \rightarrow \text{not-}A$

would not be a valid rule of inference if *per impossibile* the corresponding logical law were not true. But we can capture better the priority of the rule (which Rumfitt acknowledges in his ‘by-product’ remark) if instead of saying that rules of inference *presuppose* logical truths, we say, for example, that the Law of Contraposition

The law of contraposition

Whenever A implies B, the negation of B implies the negation of A

is deducible from the statement that *Contraposition* is a valid rule of inference. Making this deduction is, as Rumfitt nicely puts it, turning the deductive capacity on itself.

- (2) Waights Hickman does not commit herself on the question whether rules are ‘truth-apt’, whether they can be true or false. But the answer is that they cannot, and so they are not propositions. Consider the rule that the bishop in chess moves diagonally. Waismann claims that ‘nobody would call a rule either true or false’ (1965, p. 142), which is not a compelling argument, even if it is true. But he continues as follows:

In regard to true and false, one might say, we think of agreement and disagreement with reality, and there is no question of this in the case of a rule. But if I regard an actual move in the game as the reality to which the rule refers, then there is an agreement (and disagreement), and it is just this that makes me call the move correct or incorrect. (1965, p. 142)

This is a difficult passage to interpret. The second sentence seems to contradict the first—at first there is ‘no question’ of agreement and disagreement between a rule and reality, and then there is. Still, the passage is suggestive. For Waismann seems to be saying that we should not think of

rules as true or false, because they have the wrong ‘direction of fit’. (We are not speaking here of the direction of fit of mental states and states of affairs, but of a proposition and a rule.) That is to say, if a proposition and ‘reality’ do not agree, we fault the proposition, and call it false; whereas if a rule and an actual move in the game do not agree then we do not fault the rule, or call it false, we fault the move and call it incorrect or wrong, because the rule is the standard we require moves to conform to. This is vague, because the idea of agreement is vague; and of course, rules can be faulted too. But we generally fault them because they are difficult to interpret or enforce, because they interfere with the progress of the game, and so on—not because they do not ‘agree with reality’ or fit the facts; in other words, not because they are false.⁶

In *Norm and Action*, von Wright claims that rules of a game ‘obviously *cannot* be false’:

We may be mistaken in thinking that there is a rule to such and such effect, or that, according to the rules, such and such a move is or is not permitted in a certain game. What is false is then a proposition *about* the rules. The false proposition is not itself a rule—not even a false one. (1963, p. 103)

Thus, a proposition *about* a rule (or a supposed rule) can be false, but a rule cannot be. But von Wright is not as categorical about the idea that a rule can be true as he is about the idea that a rule can be false:

Since rules of a game obviously *cannot* be false, does it follow that they must be true? Some would, I think, call them analytic (or necessary) truths. I would myself not call them truths at all; and I should be inclined to take the same attitude to rules generally. (1963, p. 103)

The reason for calling the rules of a game analytic truths, von Wright explains, is that they ‘*determine* [the moves of the game]—and thereby also the game “itself”’ (1963, p. 6). In other words, the rules of chess, for example, define the game of chess, and so it is true by definition that the bishop in chess moves diagonally. For if the rule were different, the game would not be chess, or would be a variant of chess.

This may seem plausible. The idea is sometimes expressed by calling the rules of chess ‘constitutive’ rules. They do not regulate an activity that exists independently of these rules; they ‘as it were create the very possibility of playing [chess]’ (Searle, 1969, p. 33). By contrast, the rule that military operations may only be directed against military objectives is *not* a constitutive rule; it *does* regulate an activity that exists independently, in the same way as the Highway Code regulates driving, and it is possible for military conflict to be governed by different rules, or perhaps no rules at all. (As a matter of fact, this rule has been widely but not universally accepted.) So, while it may be plausible to say that the rules of chess are analytic truths, it certainly is not plausible to say that it is an analytic truth that military operations may only be directed against military objectives.

It may be plausible to say that the rules of chess are analytic truths, but even in this case it is a mistake. For the thought that a rule is true confuses the rule and the proposition that there is such a rule in exactly the same way as the thought that a rule is false does. The confusion is evident if we ask what the truth condition of a rule would be, if a rule *could* be true. For example, under what

⁶ Games which purport to represent real-life situations realistically may represent a partial exception, but they do not call the distinction between rules and propositions into question.

circumstances is the rule that the bishop in chess moves diagonally true? The only answer that suggests itself is that the rule is true if, and only if, the bishop in chess *does* move diagonally—in other words, if, and only if, moving diagonally is the way the bishop is permitted to move, according to the rules of chess. But now it should be obvious that this is the truth condition of the proposition that there *is* a rule to this effect (as von Wright puts it), in other words, of the proposition that this rule exists. Thus, if we think that a rule of a game is true (or false), we are indeed confusing it with a proposition *about* the rule, as von Wright suggests.

(Von Wright also points out that a similar confusion can occur with respect to permissions, because an indicative sentence used to grant permission can also be used to state that a permission exists. For example, if I say to a friend ‘You may park your car in front of my house’, I may *either* be giving her (or purporting to give her) permission to park her car there *or* giving her (ditto) information concerning existing parking regulations (von Wright, 1963, pp. 104–105). Thus the sentence ‘You may park your car in front of my house’ can be used to say something true or false, even though a permission itself cannot be true or false.)

- (3) So, (1) Ryle does distinguish between rules and propositions, and (2) he is right to do so: rules are not propositions. The third point I said I would enlarge on is that it does not follow from (2) that knowledge of rules is not propositional or factual knowledge.

It is not hard to see that if a certain kind of thing is not a proposition or a fact, it does not follow that knowing it is not factual knowledge. The price of butter is not a proposition or a fact. But knowing the price of butter is knowing what the price of butter is—for instance, that the price of half a pound of butter is so many dollars or pounds—and this certainly is factual knowledge. The same applies to knowing the maximum penalty for burglary, the voting age in Sweden, or the offside rule in football. A rule is not a fact or a proposition, as we have seen, but knowing the offside rule in football is knowing what it is, which is factual knowledge. It is like knowing the population of Helsinki or Lionel Messi’s age, rather than knowing (i.e. being familiar or acquainted with) Helsinki or Lionel Messi themselves. Or so one might think. What reason could there be to deny this? In ‘Knowing How and Knowing That’, Ryle does take the further step from denying that rules are propositions to denying that knowing a rule is factual knowledge in the specific case of rules of inference. His argument, which draws on Lewis Carroll’s paper ‘What the Tortoise Said to Achilles’ (1895), is as follows.

Ryle first claims that a pupil faced with a certain *modus ponens* argument might accept the proposition that if its premises are true then its conclusion is true while failing ‘to see that the conclusion follows from the premises’ (1946a, p. 6). This is already puzzling. Perhaps Ryle means that the pupil might accept both the premises and the proposition that if the premises are true then the conclusion is true while failing to *draw* the conclusion—an egregious case of failing to put two and two together, but conceivable, since, as Russell puts it (in an earlier comment on Lewis Carroll’s paper), the notion of *therefore* is different from the notion of *implies* (Russell, 2010, p. 36). Ryle describes the pupil’s predicament as a case of accepting a rule in theory without applying it in practice, which supports this interpretation, since one applies a rule of inference by making an inference. Ryle then claims that the lesson of the example is that knowing a rule of inference such as *modus ponens* is not a matter of ‘knowing an extra fact or truth’, it is a matter of knowing *how*—‘how to move from acknowledging some facts to acknowledging others’, in other words (i.e. Ryle suggests that this is another way of saying the same thing),

‘being able to perform an intelligent operation’ (1946a, p. 7) of this particular kind. In short, Ryle writes:

Knowing a rule is knowing how. It is realised in performances which conform to the rule, not in theoretical citations of it. (1946a, p. 7)

Ryle’s argument has been criticised on several grounds. Inferring is *not* invariably moving from acknowledging some facts to acknowledging others. Sometimes a premise is a supposition for *reductio* or simply a proposition whose implications we want to explore. Furthermore, our knowledge of a rule of inference *can* be realised in stating it—in theoretical citations of it—and commonly is when we are teaching logic.⁷ But these objections can easily be met by more cautious, less expansive, wording. Even the objection that Ryle has misunderstood the semantics of ‘knows how to’ has a whiff of scholasticism about it and misses the nerve of his argument.

The real problem with Ryle’s argument is this. It is true that the pupil in his story could fail to make an inference despite knowing both that the premises are true and that if the premises are true then the conclusion is also true, but he could also fail to make the inference despite knowing how to make it and being able to make it, whether or not these should be equated.⁸ The fact that someone has an intellectual ability does not guarantee that they will exercise it. So, the pupil’s failure to make the inference does not prove that factual knowledge is contemplative rather than active or theoretical rather than practical, or that it is ‘directly exhibited’ only in ‘theoretical citations’ or the ‘recitation of formulae’, as opposed to ‘intelligent performances’ such as the ‘execution of valid inferences’.

In sum, rules are not facts or propositions, but knowledge of a rule—such as *modus ponens*—is factual knowledge: knowing a rule is knowing what the rule is. But there is no reason to assume, and Ryle’s example of the pupil does not show, that factual knowledge is purely contemplative or inert, and hence that making an inference depends on another kind of knowledge, which is ‘realised in performances’ as opposed to ‘theoretical citations’. In fact, as we shall see in the next section, there is just as much reason to think of knowing that as an ability or skill—and as a multi-track disposition—as there is to think of knowing how in this way, whether these are distinct kinds of knowledge or not.

4 | THE UNITY OF KNOWLEDGE

I shall now turn to the idea that being able to apply a rule, or being able to follow a procedure, is an ‘executive way’ of knowing it.

On the face of it, this is not a plausible proposal. In the ordinary sense of the phrase, a way of knowing something is a *means* of knowing it, in other words, a way of learning or confirming it. For example, a way of knowing whether a custard has set is to see whether it wobbles when you jog it. Being able to apply a rule or follow a procedure is evidently not a way of knowing it in *this* sense, if only because an ability is not a means of doing anything. Is being able to apply a rule or follow a procedure a way of knowing it in the sense of a manner or a mode?⁹ There is cer-

⁷ For criticism and defence, see Stanley, 2011, p. 31; Rumfitt, 2011, p. 338; Hornsby, 2011, p. 85.

⁸ Stanley, 2011, p. 31

⁹ Williamson uses the phrase in this sense: ‘If one knows that A, then there is a specific way in which one knows; one can see or remember or ... that A.’ (Williamson, 2000, p. 34; cf. Hyman, 2014)

tainly a close connection between knowing and being able to apply the rules of chess, and between knowing and being able to perform the Heimlich Manoeuvre. But the connection is surely that applying the rules or following the procedure is a way in which knowledge of them can be exercised or expressed, and not that being able to apply or follow them is a manner or mode of knowing them. Compare desire. There are various ways in which a desire for ice-cream can be expressed, including buying ice-cream, asking for ice-cream, and dreaming about ice-cream. But none of these are manners or modes of desiring ice-cream, and neither is the ability to do any of them. Perhaps there are ways (i.e. manners or modes) of desiring. If so, they are normally described by means of adverbs: ardently, obsessively, and so on. But ways of desiring are one thing, and ways of expressing desire are another.

Having said that, I believe there is something right about the idea Ryle and Waights Hickman both convey, that knowledge of a rule has a more direct connection with action, or with action of a certain kind, than factual knowledge normally does. And perhaps their idea of an ‘executive way of knowing’ is best (or most charitably) interpreted as expressing this idea. So I do not want to reject it entirely. The nature of this connection between knowledge and action can be explained, I suggest, if we adopt the theory that factual knowledge is the ability to be guided by the facts, which I mentioned earlier. But before enlarging on this, I shall briefly explain the theory, which I have defended elsewhere in recent years.¹⁰

Suppose we accept the idea, mooted by both Wittgenstein and Ryle, that factual knowledge is an ability. What is it an ability to do? In other words, what kinds of thought, feeling, or behaviour express a person’s knowledge of a fact? Obviously, thought, feeling and behaviour do not express a person’s knowledge of fact whenever they are explained by that fact. For example, someone with diabetes might feel despondent because her blood sugar is low without knowing that her blood sugar is low. Feeling despondent is simply an effect low blood sugar sometimes has.

But suppose she worries about episodes of low blood sugar, checks her blood sugar level, discovers that it is low, and feels despondent for this reason. In this case, her despondency *does* express her knowledge that her blood sugar is low, and the statement that she feels despondent *because* her blood sugar is low is a different kind of explanation. It is the same kind of explanation as we would give of an intentional act, for instance, if we explained that she ate a biscuit because her blood sugar was low. It presents the fact that her blood sugar is low as her reason for feeling despondent—and not merely the reason why she feels despondent—in other words, it presents it as a fact she responds to rationally, a fact she is guided by, or takes into consideration or account.

If we accept this theory of factual knowledge, it is not hard to perceive the unity of knowing *that something is the case*, knowing *how to do something*, and knowing a *rule* or a *procedure*. Knowledge of all these kinds is an ability that gets exercised when we are guided by or respond rationally to the things we know. Hence, if someone knows a fact, including the fact that such-and-such is *how to* or *a way to* do something¹¹—for example, that eating a biscuit is a way to raise her blood sugar—then she can be guided by it, in both thought and deed. Notably, if she knows that eating a biscuit is a way to raise her blood sugar, this fact can be her reason for eating one when her blood

¹⁰ See Hyman, 2015, chapter 7. For criticism and defense, see Williamson, 2018, and Hyman, 2018, pp. 254–261.

¹¹ Bengson and Moffett argue that knowing a way to do something is necessary but not sufficient for knowing how to do it on the grounds that it is possible to know a way to do something without conceiving of it as a way to do the thing in question (Bengson & Moffett, 2011, pp. 185–186). But if this is right, it does not follow that knowing that such-and-such is a way to do something is not both necessary and sufficient for knowing that it is how to do it.

sugar is low. And if a boy knows the rules of chess, he can be guided by them, as Ryle points out, primarily in the moves he makes or concedes, and in the moves he avoids or vetoes. And so on.

How does this help us understand the idea that knowledge of a rule has a more direct connection with action, or with action of a certain kind, than factual knowledge normally does? The answer is simple. The most direct way in which my knowledge of a rule gets exercised or expressed is when I do what the rule mandates, in other words, when I follow it or comply with it. Could we say instead that complying with a rule and flouting it are equally direct? It is true that I cannot flout a rule I do not know, just as I cannot disobey an order I am not aware of. But there is a difference between knowledge being required in order to do something, and doing that thing being an exercise or expression of knowledge. Speaking French is a way of exercising knowledge of the French language, whereas refusing to (or choosing not to) speak French is not, despite the fact that only a Francophone can refuse to (or choose not to) speak French. (The same applies to every other ability, from the ability to hop to the ability to play chess.)

So, to repeat, the most direct way in which my knowledge of a rule gets exercised or expressed is when I do what the rule mandates or comply with it. As Wittgenstein points out, a rule is like a signpost. Suppose the sign to Larissa points left at a fork. The most direct way in which a traveller can be guided by the sign is by taking the left fork.

Now this remains true whether the traveller thinks of herself as complying with the conditional order or instruction to take the left fork if she is *en route* to Larissa or as being guided by the fact that that is where the left fork leads. But *most* factual knowledge does not correspond in this way to a single kind of act—except for the communicative act of stating it—because the way in which factual knowledge gets expressed in action depends on what the agent wants or values. To take a well-known example, knowledge that it is raining may get expressed in covering one's head or in uncovering it, depending on whether one wants to keep dry or to get wet.

This is what Ryle was driving at in the remark about the boy who knows the rules of chess, which I quoted earlier:

His knowledge *how* is exercised primarily in the moves that he makes, or concedes, and in the moves that he avoids or vetoes. So long as he can observe the rules, we do not care if he cannot also formulate them. It is not what he does in his head or with his tongue, but what he does on the board that shows whether or not he knows the rules in the executive way of being able to apply them. (2000, pp. 29–30)

Thus, if we adopt the theory that knowledge is an ability, specifically, the ability to be guided by or respond rationally to the things we know, then we can explain the unity of knowledge, which intellectualists including Waights Hickman rightly insist upon, and also Ryle's and Waights Hickman's idea that knowledge of a rule has a more direct connection with action than factual knowledge normally does. Nevertheless, a person's knowledge of a rule can get exercised or expressed in indefinitely many ways, just like their knowledge of a fact. Multi-track rational responsiveness is the thread that runs through knowledge of *abstracta*, and multi-track responsiveness is the thread that runs through cognition, including sensory perception, in general. I believe this encapsulates Ryle's conception of knowledge, and he was right.

With this in mind, it is worth recalling Stanley and Williamson's opening statement of the position they oppose:

According to Gilbert Ryle, to whom the insight is credited, knowledge-how is an ability [...] Knowledge-that, on the other hand, is not an ability, or anything simi-

lar. Rather, knowledge-that is a relation between a thinker and a true proposition. (Stanley & Williamson, 2001, p. 411)

It is not obvious how we are supposed to parse this. Are the claims that ‘knowledge-that [...] is not an ability’, and that it *is* ‘a relation between a thinker and a true proposition’, being attributed to Ryle? Or are they claims the authors wish to make themselves? Either way, they are mistaken. Ryle argues that factual knowledge *is* an ability, or something similar, and he is right. Furthermore, being an ability does not prevent knowledge from being a relation. The implication that these views are incompatible is false.¹² For example, the predicate ‘*x* is able to climb *y*’ expresses a relation that obtains between Edmund Hilary and Everest. So, if factual knowledge is a relation between a thinker and a fact, this does not prevent it from being an ability. (This holds regardless of whether a fact is a true proposition.) But notice that while the verb phrase in the sentence ‘Hilary is able to climb Everest’ expresses a relation between Hilary and Everest, what it says Hilary is able to do is *climb* Everest. Similarly, the predicate ‘*x* is able to be guided by *y*’ expresses a relation that obtains between Plato and the fact (say) that Larissa is north of Athens. But what the verb phrase in the sentence ‘Plato is able to be guided by the fact that Larissa is north of Athens’ says Plato is able to do is *be guided by* this fact; it is not the fact itself. Factual knowledge is a relation between a knower and a fact (arguably, but not in my view, a proposition), and knowing a fact is being able to be guided by it, in one’s thought and feeling and conduct; but what is known is not the same as what the knower is thereby able to do.¹³

Furthermore, knowledge how to do something is an ability as well. It is an ability whether or not it is reducible to knowledge that something is the case. The mistake is to think that knowledge how to do something is the ability to do it. But although Stanley and Williamson attribute this view to Ryle (2001, p. 416), and the passage from ‘Why are the Calculuses of Logic and Arithmetic Applicable to Reality?’ quoted above (p. 000) suggests it, he explicitly rejects it in the passage I quoted earlier about knowing how to tie a clove-hitch. His considered view is, as we have seen, that knowing how to do something is a multi-track ability or disposition, which is exercised or expressed in thought and behaviour that is guided (Ryle says ‘governed’, but perhaps this metaphor is too stern) by principles, rules, canons, standards or criteria, in other words, performances in which principles and rules figure as the agent’s reasons.

In sum, intellectualists believe in the unity of knowledge, and in this I believe they are quite right, whether or not Ryle’s distinction between knowing how and knowing that is incompatible with the unity of knowledge, as they mostly claim. But the way to demonstrate the unity of knowledge is not to assimilate rules to facts, or to postulate practical modes of presentation or executive ways of knowing. It is to conceive of knowledge as the ability to be guided by or respond rationally to the things we know—including both facts (which in turn include facts about how to do something) and rules. It is certainly interesting to consider why knowledge of a rule and knowledge how to do something have a more direct connection with action than factual knowledge generally

¹² But factual knowledge is a relation between a thinker and a fact, and a fact is not a proposition. I shall not dwell on this point here. See above, note 4.

¹³ Similarly, believing is commonly thought to be a disposition: e.g., according to Braithwaite (1932), believing that *p* is the disposition to act as if *p* were true. Whatever the merits or demerits of this theory, it is not inconsistent with the observation that believing is a relation between a thinker and a proposition. Equally, there is no reason why a propositional attitude or an intentional state (terms that are commonly applied to believing) cannot also be a disposition.

does, but the directness of the connection need not be incorporated into a definition of knowledge how or knowledge of rules as such.

5 | THE ABILITY TO RESPOND RATIONALLY TO WHAT WE KNOW

The last point I shall comment on is Waights Hickman's reason for thinking that knowledge may *not* after all be an ability that gets exercised when we are guided by or respond rationally to the things we know. She writes:

Ultimately, the main contentions I want to develop from Ryle's work are independent of the identification of knowledge with a complex ability or disposition. ... And indeed, I have some reservations about embracing Hyman's view ... principally [because] I am not yet convinced that every case of drawing on knowledge is one of reasons-guidance. (2019, p. 326)

An example offered by Erasmus Mayr in discussion is that of acting *despite* the fact that *p*. This is something which one can only do if one knows that *p*, and indeed the fact that *p* must have been taken into consideration or account. But clearly *p* is not here one's reason for φ -ing, for presumably *p* speaks against φ -ing but one has opted to φ anyway. If there are cases of this sort, where knowledge is drawn upon but without being a guiding reason, then it appears that one can exercise knowledge that *p* without exercising the *ability to be guided by the fact that p*. (2019, p. 326, n. 28)

It is certainly true that one can decide to do something, and actually do that thing, despite being aware of a fact that counts against do it. In fact, every difficult decision is like this, and many easy ones as well. For example, I may leave the house without a jacket on a sunny morning, despite knowing that it will probably rain later in the day. But the claim that one cannot do an act despite knowing a certain fact unless one takes it into consideration is not quite right. I may or may not take it into consideration: I may weigh the risk of getting wet against the fact that I will be more comfortable while it remains sunny, or I may ignore the fact that it will probably rain, say, out of carelessness or impatience. But neither kind of case shows that 'one can exercise knowledge that *p* without exercising the ability to be guided by the fact that *p*'.

In the first case, where I *do* take the fact that it will probably rain into consideration, my knowledge of it *does* get exercised and it *does* play a guiding role, in my deliberation, when I infer from the fact that it will probably rain that I shall probably get wet—despite the fact that I set this consideration aside, and it does not affect my conduct. This remains true whether I deliberate well or badly, and whether or not I explicitly rehearse the sentence 'But it will probably rain' in my mind. Remember: knowledge does not only get exercised in conduct. It also gets exercised in thought and feeling, for example, in deliberating about whether to take a jacket, in feeling a flicker of trepidation or bravado as one sets out without one, and so on. Again, the flicker of trepidation I experience may not affect my conduct, but it is still guided by—in other words, rationally responsive to—my thought that it will probably rain later in the day.

By contrast, in the second case, where I do not take the fact that it will probably rain into consideration—in other words, where I ignore or disregard it—my knowledge of it does *not* get exercised, and I am not guided by it in any way. It is true that I cannot ignore or disregard a fact unless I know it, but there is a difference between knowledge being required in order to do some-

thing, and doing that thing being an exercise or expression of knowledge. I mentioned earlier that only a Francophone can choose not to speak French. Similarly, one can only disregard or ignore a fact of which one is aware, just as one can only flout a rule of which one is aware. Nevertheless, ignoring or disregarding a fact or a rule is not an exercise or expression of knowledge of it—or even a way of drawing on such knowledge, although admittedly the metaphor is vague—any more than choosing not to speak French is an exercise of or a way of drawing on one's knowledge of French.

Hence, neither kind of case provides a counterexample to the theory that factual knowledge is the ability to be guided by or respond rationally to the facts known.

6 | CONCLUSION

I have not attempted to decide whether knowledge how to do something is knowledge of rules, etc., as Waights Hickman claims it is, or whether it is reducible to knowledge of facts or truths. The principal claims I have defended are these:

- (1) Rules are not facts, but knowing a rule, such as the offside rule in football, is factual knowledge.
- (2) There is no need to explain how we make inferences by postulating a special kind of knowledge that is 'realised in performances' as opposed to 'theoretical citations', because factual knowledge is not purely contemplative or inert, and can be realised or expressed in both these ways.
- (3) There is no such thing as an 'executive way' of knowing a rule, although the most direct expression of knowledge of a rule is following, conforming to, or complying with it.
- (4) Waights Hickman's reason for doubting the ability theory of knowledge is unconvincing.

Finally, I agree with Waights Hickman that it is possible to defend the unity of knowledge—which intellectualists about knowing how are keen to insist on—by drawing on Ryle's own writings. But the key to doing so is not equating rules and facts. It is rather conceiving of knowledge in general as an ability, which we exercise when we are guided by or respond rationally to the things we know.¹⁴

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