University College London
Department of Philosophy

Master of Philosophical Studies in Philosophy

Knowing Ways of Acting

MPhil Stud. Thesis of:
Julian Bacharach

Supervisors:

Prof. L. O'Brien
Prof. C. A. B. Peacocke

September 2015

I, Julian Bacharach, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

In *The Concept of Mind* and the earlier Presidential Address, Gilbert Ryle posed the question, What is it for qualities of mind to be displayed in an agent's overt behaviour? This thesis takes up this Rylean question concerning the relation between the mental and embodied physical action. I understand the question as asking primarily about the psychological explanation of action — what kinds of psychological states causally explain features of an agent's behaviour in such a way as to justify the characterisation of that behaviour as intelligent. Following a recent proposal by Jason Stanley and Timothy Williamson, I explore and defend the view that intelligent action is action guided by knowledge of ways of acting. However, I depart from Stanley and Williamson in claiming that this knowledge is non essentially propositional. I make a case for an ineliminable role for nonpropositional, acquaintance-like knowledge of ways of acting in psychological explanations of action.

Acknowledgements

I would like to thank first and foremost my main supervisor Lucy O'Brien for her continuing guidance and support in the development and expression of the ideas discussed in this thesis; and also Christopher Peacocke for his input to the earlier stages of my exploration of issues discussed here. Thanks are also due to Elizabeth Fricker for her insightful comments on a draft of chapter 2.

Further thanks to my fellow graduate students who commented on an early version of the core positive part of the thesis, now chapter 3: Vanessa Carr, Pete Faulconbridge, Alec Hinshelwood, Ed Nettel, Edgar Phillips, and Lea Salje, to name a few. I am especially grateful to Alex Geddes, whose penetrating commentary on the material, in detail and in overall conception, helped me to shape it far better to what I wanted to say than I otherwise would have managed.

Contents

1   Introduction: Some Rylean Themes

In *The Concept of Mind* and the earlier Presidential Address, Gilbert Ryle posed the question, What is it for qualities of mind to be displayed in an agent's overt behaviour? He was concerned with 'the logical behaviour of the several concepts of intelligence, as these occur when we characterise...activities as clever, wise, prudent, skilful, etc.'[1] (1945, p. 1) Part of this investigation into 'logical behaviour' is epistemological: what justifies us in treating what we see of an agent's observable behaviour as evidence on the basis of which to ascribe intelligence and mentality? But another part is metaphysical, and concerns the relation beween the mental qualities we regularly attribute to agents, and the observable bodily changes that we take to exhibit those qualities. Ryle's emphasis (probably acquired from Wittgenstein) on criteria as a starting-point of philosophical enquiry meant he often did not clearly distinguish these questions — but it is the metaphysical question that will concern me here.

The investigation into intelligent action was, for Ryle, part of a project of understanding our nature as embodied subjects, and how mind and agency fit into a physical world. He aimed to show that 'when we describe people as exercising qualities of mind, we are not referring to occult episodes of which their overt acts and utterances are effects; we are referring to those overt acts and utterances themselves.' (2000, p. 25) Whatever one makes of Ryle's more specific arguments, this programmatic statement nicely encapsulates a laudable anti-Cartesian agenda. The idea that the intelligence or mindedness of an agent's behaviour should be in some way an immanent quality of the act itself, rather than conferred on it by some anterior, not essentially connected process, is one we might hope for a philosophy of mind and action to deliver. For if the mentality of action derives entirely from inner processes, it would seem that the embodied nature of our lives is somewhat accidental. If this resultant picture is not explicitly dualist, it shares with dualism some unattractive features. It suggests that we act only indirectly, as it were at arms length; and it creates a mystery surrounding how we could have non-inferential

---

[1]Ryle presumably meant agents' *performances* of these activities, rather than the activities themselves.

knowledge of the intelligence of others' actions. The result is a distortion, described by John McDowell:

> Our powers as agents withdraw inwards, and our bodies with the powers whose seat they are — which seem to be different powers, since their actualizations are not doings of ours but at best effects of such doings — take on the aspect of alien objects. It comes to seem that what we do, even in those of our actions that we think of as bodily, is at best to direct our wills, as it were from a distance, at changes of state in those alien objects. (1994, p. 91)

Nobody wants to be a dualist, or at any rate not Ryle's caricature of one. A more vexed philosophical question, though, concerns the relation between intelligent action and core semantical notions such as truth and representation. Ryle famously rejected the view that intelligent action is 'piloted by the...grasp of true propositions.' (ibid., 26) Ryle thought that the assertion of this kind of link between action and truth could only be motivated by dualist presuppositions. He writes,

> Since doing is often an overt muscular affair, it is written off as a merely physical process. On the assumption of the antithesis between 'physical' and 'mental', it follows that muscular doing cannot itself be a mental operation. To earn the title 'skilful', 'cunning', or 'humorous', it must therefore get it by transfer from another counterpart act occurring not 'in the machine' but 'in the ghost', for 'skilful', 'cunning' and 'humorous' are certainly mental predicates. (ibid., 32-33)

On the assumption that this 'counterpart act' is an act of theorising, or considering propositions, the dualist picture pushes towards the view that intelligent action is piloted by the grasp of propositions.

This kind of reconstruction should strike us as oversimplifying. But the question of the role of propositions in guiding action does suggest a substantial divide between a conception of the mind as a representational system, describable fundamentally in terms of propositional bearers of truth-values; or as an active, striving faculty, directed onto the world rather than replicating it. These two conceptions are not exclusive, and it seems likely that a good philosophical picture of the mind's place in nature should incorporate them both. But those sympathetic to Ryle's overall project may harbour the suspicion that an overreliance on the former conception, and the resultant tendency to extend it

beyond the sphere of purely theoretical activity, is symptomatic of a residual Cartesian alienation.

Ryle meant something quite broad by 'intelligence', as one can see from his open-ended list of adjectives: 'clever', 'methodical', 'inventive', 'experimental', 'scrupulous' all feature, as well as negative epithets 'dull', 'rash', 'illogical', 'injudicious'. (ibid., 25) The relations between these various terms is complex, and it is not at all clear they can be given a uniform treatment.[2] Many of them appear to introduce complex character or personality traits, which interact in subtle ways with more basic attributions of mentality.

The ambitions of my investigation are more modest. I assume there is some core positive epistemic feature of actions, namely intelligence, reference to which is essential to the elaboration of the other terms of Ryle's list (including the negative ones — an action's being stupid is not the same as its being non-intelligent or mindless.) I hope that by focusing on the paradigm case of intelligently well-executed action, we may shed some light on the more wide-ranging phenomena in which Ryle was interested, and in turn on the relation between mind and action. To some extent 'intelligence' as applied to action is a term of art, in that I do not pretend my use of it tracks the many different ways in which actions are in fact described as intelligent. I understand intelligence as the positive feature displayed by an agent's behaviour when things go well for them in a way that is creditable to their good cognitive standing.

The investigation of intelligent action intersects with a more familiar question in contemporary epistemology, that of 'knowing how'. Since knowledge how is a kind of state uniquely poised to guide action, the standard question whether knowledge how is propositional is closely linked to the question whether intelligent action is 'piloted by the...grasp of true propositions' (this was, certainly, Ryle's motivation for considering knowledge how.) Accordingly, much of this thesis is devoted to unpacking and assessing a recent proposal by Jason Stanley and Timothy Williamson (2001a), subsequently developed by Stanley (2011b; 2011a), that knowing how to ϕ is equivalent to knowing a proposition of

---

[2]Some of these relations are briefly remarked upon by Bengson and Moffet in their 2011b.

the form: some way of acting w is a way to ϕ. I take from their proposal the notion of a way of acting, and of intelligent action being guided by knowledge of ways. I argue that ways of acting are indispensible to the understanding of intelligent action, but that we need to recognise a role for a form of non-propositional knowledge — practical acquaintance with ways of acting.[3] As well as a critical examination of their proposal, this thesis presents a positive case for the significance of ways of acting in explaining action.

Chapter 2 focuses on obtaining a working definition of intelligent action, sufficient to get a grip on what the Rylean question is. I clarify how this question intersects with that of knowing how, and introduce Stanley and Williamson's proposal about ways of acting as a possible answer to Ryle's question. I identify skilled action as *prima facie* problematic for explanations of intelligent action by reference to means-end knowledge, and suggest how ways of acting may be relevant to tackling that problem.

Chapter 3 aims to provide a substantial positive account of ways of acting. In doing so I draw on work in the philosophy of mind to discuss the relation between action and the body. I advance the thesis that bodily change properties are ways of acting.

Chapter 4 considers how knowledge of ways of acting might serve to explain intelligent action, and in particular skilled action. I argue that in a significant range of cases it is objectual knowledge of the way, rather than knowledge of any proposition about it, that plays the relevant explanatory role; I outline a more general case for the significance of acquaintance-like knowledge of ways for embodied agency.

---

[3]My proposal is quite similar to that of Bengson and Moffett (2011a), although my motivation is somewhat different: their arguments mainly proceed on the basis that their view comes up with the right verdicts to various tricky Gettier-style cases of knowledge how, whereas my concerns are to do with which mental states are best placed to causally explain modal features of an agent's behaviour.

2   Intelligent Action

This chapter aims to delineate the Rylean question about intelligent action, and sketch out some lines of approach. In section 2.1 I outline a sense in which intelligently acting agents have control over their actions, as a core property that a philosophical account of intelligent action should explain. I introduce a notion of safety, parallel to one that applies to belief in epistemology, and propose that intelligent action is safe action whose safety is explained by knowledge.

In section 2.2, I introduce the question of knowledge how, and Ryle's arguments against the reduction of knowledge how to knowledge that. I suggest that these arguments fail, but that they raise some important constraints on the explanation of intelligent action.

In section 2.3 I present Stanley and Williamson's analysis of knowledge how, and introduce ways of acting. Section 2.4 develops ways of acting in more detail, distinguishing two different general notions of a way, a specificational and an explanatory one. I suggest that the specificational sense might be helpful to understanding how action can be intelligent without reference to the purposive structure of means and end, and that this is particularly relevant for cases of basic action and skilled action. This paves the way for a positive account of specificational ways of acting in chapter 2.

2.1   Safety, Control, Knowledge

One thing we mean when we say an agent acted intelligently is that they were in control of what happened. In this respect, Ryle and his imagined intellectualist opponents can both agree that intelligent action possesses modal features that distinguish it from outwardly similar behaviour. When we say of a performance that it was intelligently or skillfully done, we mean more than that it was actually successful. We mean, amongst other things, that its success was not a fluke, and that it would have been successful across a range of relevantly similar circumstances. These counterfactual judgements can be regarded as an expression of the thought that, if an agent acted intelligently, they were in control of the

action. Note that this sense of 'control' is different from that in play in debates about free will, according to which an agent is control of their actions only if they could have done otherwise had they decided to. The sense of control I am concerned with holds fixed an agent's intentions and decisions, questioning their ability to execute a decision once it is made.

This constraint parallels a familiar one in epistemology, that a belief constitutes knowledge only if it is *safe*. Belief in a proposition p is safe if and only if the following counterfactual is true: if one were to believe p, one's belief would be not be false.[4] Or, alternatively, in the nearby possible worlds where one believes p, p is the case.[5] This suggests an analagous condition on action:

> *Safe action* (**SA**): Where a is the token actual-world event of one's peforming some act ϕ, in nearby possible worlds where a exists, a is a successful ϕ-ing

The *act* ϕ here is understood to be a thing done by the agent on the occaision of their acting, not to be confused with the event of their doing it; an abstract entity analagous to a propositional content, not to be confused with the mental state of entertaining that content. This ideology is adapted from Rumfitt (1994); I say a little more about it in section 3.1.

The formulation of (**SA**) is intended to avoid the following difficulty. For some acts, we can make sense of success as excellence, further to the mere performance of the act. But many types of act are such that it is a contradiction to suppose that they might be performed unsuccessfully; for example, if one fails to hit the bull's-eye, no action of hitting the bull's-eye occurs, not even an unsuccessful one.

More precisely: say that any act ϕ determines some notion of what it would be for that action to be successful, which we can represent as a success-condition S_ϕ. S_ϕ is some objective state of the world that results from a successful ϕ-ing. There is a siginificant

---

[4] The counterfactual is interpreted without a strong centring requirement, so that it is not trivially validated by holding in the actual world.

[5] These classic formulations of safety are due to Sosa (1999). Most subsequent epistemologists have endorsed a safety condition on knowledge. Some doubts have been voiced by Hawthorne and Gendler (2005), and Fricker (Forthcoming). Zalabardo in his recent book (2012) drops a safety requirement in favour of sensitivity.

class of acts — call them *success-acts* — such that no token action that is a ϕ-ing exists unless the success-condition S_ϕ is satisfied. The act of *hitting the bull's-eye* is such an act. Its success condition S_ϕ is the state of affairs that the bull's-eye is hit; no action of hitting the bull's-eye occurs unless that condition obtains. Accordingly, if the action mentioned in (**SA**) is essentially a performance of some act ϕ, and ϕ is a success-act, then (**SA**) will be trivially satisfied.

The answer to this difficulty is that a must be construed as a token event that is not essentially a performance of any act ϕ (at any rate, not of any success-act ϕ.) Thus the identity of a itself does not determine any success-condition: what it is for a to be successful is relative to the act ϕ also given in (**SA**). This has the consequence that the action a is only intelligent or unintelligent *qua* some act ϕ of which it is a performance. This makes sense: the same action can be an intelligent ϕ-ing but a stupid, or unintended, or accidental ψ-ing.

Not all acts are success-acts. Many actions, such as performing a piece of music, can be more or less well-executed, according to the internal standards of the practice of which they are a part. It is only if the execution is extremely bad that that we should be inclined to regard the action as not a genuine ϕ-ing at all. For the purposes of (**SA**), let us count success in these cases as meeting a sufficiently high standard. In other cases, a successful ϕ-ing might be one with a sufficiently high probability of being a ψ-ing — I address this possibility below.

It should now be clearer that the relevant sense of control is distinct from the sense at stake in discussions of free will. (**SA**) makes no reference to decisions or intentions, so its satisfaction is independent of the condition that the agent could have done otherwise had they decided otherwise. That condition concerns what would have happened had the agent decided not to ϕ; safety just concerns the success or failure of the token occurrence a with respect to some act ϕ, regardless of how a depended upon the agent's decisions. In cases where, for instance, a weak-willed agent is unable reliably to prevent themself from ϕ-ing by deciding not to, it could still be the case that their successful ϕ-ing is at

least partly a matter of 'luck', if they are not a competent ϕ-er. Conversely, if an agent lacks the expertise to reliably ϕ, this does not impugn their power to refrain from ϕ-ing by deciding not to. So the satisfaction of the safety condition is independent of whether agents control their actions by willing them.

Additionally, strong versions of determinism according to which no agents ever make genuine decisions do not prejudge (**SA**), again for the reason that agent's decisions do not enter into the formulation. All that is required for the non-triviality of safety is that token actions can be individuated in such a way that a token ϕ-ing a could have failed to be a (successful) ϕ-ing. And this is independent of the question of agents' power of will to determine their deicision whether or not to ϕ; it just requires, minimally, that determinism leave open the intelligibility of counterfactual evaluation.

Is (**SA**) necessary for an agent's behaviour to be intelligent? It seems likely. For if the action could easily have failed or been poorly executed, its actual success was a matter of luck. And if the action was lucky, the agent lacked the kind of control characteristic of intelligent action.

One reasonable objection to the necessity of (**SA**) concerns cases where an agent succeeds at some difficult endeavour by bringing to bear all their skill, but success was not thereby guaranteed.[6] A good example is a tennis player serving an ace: aces are a comparatively uncommon occurrence in tennis, and yet we are not usually inclined to regard them as unintelligent or as lucky windfalls. This is an instance of a more general fact that in difficult skill-requiring activities — competitive sport is a particularly apt example — there is too much uncertainty and chance involved for any amount of skill to guarantee total success all the time. Skilled agents are on the whole good at shaping their behaviour to deal with a chancy environment; to minimize the probability of the bad outcomes and maximize the probabiltiy of the good, and to adopt more or less risk-taking strategies as appropriate to the situation.[7]

---

[6]Thanks to Elizabeth Fricker for raising this point.
[7]The element of chance here is not necessarily genuine indeterminacy: rather it just reflects that from

This probabilistic side to intelligent action appears to be in tension with the idea that all intelligent action is safe action. I say that it should enjoin us simply to take care with how (**SA**) is applied. To continue with the serving example, most good tennis players serve faster and at the lines on their first serve, so that the serve is more likely to be unreturned or poorly returned but also more likely to be a fault, and more conservatively on their second serve. It is natural to think that a good, intelligent serve reliably has a certain chance of being in and being returned, and that its intelligence consists in these chances being to a reasonable extent under the control of the player, in accordance with their planning. The actual outcome of the serve is only indirectly and imperfectly under the control of the player, via their control over the chances.

This suggests the thought that the act ϕ involved in evaluating the safety of a serve should be something like *serving an ace with x chance of being unreturned and y chance of being a fault*; an ace counts as an exercise of intelligence rather than a fluke only if it had a sufficiently high chance of being an ace antecedently to the responses of the opponent, and those chances are preserved across counterfactually nearby cases. Generally, in chancy cases the acts that are candidates for being performed intelligently, and thus determine the conditions for counterfactual safety, are best individuated not in terms of actual outcomes, but in terms of probabilistic distributions of outcomes. Slicing things up in this way permits the separation of the probabilistic elements involved in skilled agents' calculations from the modal notions involved in (**SA**).[8] In any case, for now I will set these complications aside and assume that (**SA**) generally holds as a necessary condition on intelligent action.

Just as safety is often doubted to be sufficient for knowledge, it is implausible that

---

the point of view of what the agent can control, there is no guaranteed outcome. This is analogous to subjective epistemic probability, where there from the point of view of what the agent knows or believes, no determinate state of affairs is guaranteed to obtain. We might think of the element of chance in action as 'subjective practical probability'.

[8]There are close analogies here with inexact knowledge: when what is known is not some precise value but a range of possible values, similarly to when what is under the agent's control is not a definite outcome but a range of possible outcomes. Much of Williamson's work (2000; 2011; Forthcoming) uses epistemic logic to model the interaction of the subjective probabilities with modal notions such as safety in these kinds of cases. Given the parallels between action and knowledge, it is not unreasonable to suppose that a similar treatment might be given of action in uncertain environments, although I attempt no such thing here.

(**SA**) suffices for intelligent action. Since (**SA**) says nothing about what mechanisms ensure the truth of the counterfactual, it is open for an action to be safe as a result of some deviant feature of the agent's psychology or circumstances. Perhaps I have no idea how to defuse the bomb, but suffer from a nervous compulsion to sever all protruding red wires I see, which in this case turns out to be the right way to defuse the bomb. Or perhaps whenever I am about to make a mistake with my golf swing, a benevolent angel interferes and corrects my preparation.[9] These are hardly exercises of intelligence. In both cases, I have no idea what I am doing; my success is not a result of my good epistemic standing. But in both cases my action satisfies (**SA**). Further examples are easy to come by.[10]

These cases suggest that if the safety-ensuring feature is beyond the agent's cognitive and practical grasp, there is a definite sense in which they are not in control of their actions. Ryle expresses a similar thought when he writes,

> Part of what is meant [by intelligence] is that, when [agents] perform these operations, they tend to perform them well...But this is not enough. The well-regulated clock keeps good time and the well-drilled circus seal perform its tricks flawlessly, yet we do not call them 'intelligent'. We reserve this title for the persons responsible for their performances. (Ibid., 29)

The clock and the seal do not, as Ryle would say, 'think what they are doing'. The reliability of their behaviour is not an index of the involvement of thought, but of mere mechanism (whether this is really the correct judgement to make about trained animals is, of course, open to question.) Similarly with the inept bomb disposer and the charmed golfer: although the safety-ensuring features are not simply mechanical, neither is their success due to the presence of thought in their actions.

Ryle's phrase 'thinking what one is doing' suggests that intelligent action is not just

---

[9]This is a variant on the cases famous from Frankfurt (1969). In a classic Frankfurt case, whenever I decide not to ϕ, an external factor ensures that I ϕ anyway. In the cases I am considering the decision is held fixed, but the ways I behave in attempting to act on the decision are varied. Both kinds of case drive a wedge between counterfactual and normative evaluations: Frankfurt cases purportedly show that modal freedom is not necessary for responsibility; my cases suggest that modal safety is not sufficient for control.

[10]A problematic kind of case is when safety is ensured by a subpersonal module whose operation the agent is not in conscious control of. This is in effect Stanley's view; I discuss some problems for it in section 4.3.

safe, but safe as a consequence of features of an agent's psychology. The invocation of responsibility suggests the thought that these features play some kind of normative, not merely causal, role in the production of action. Although the safety of the bomb disposer's action is explained by a psychological feature — his neurotic compulsion — this does not justify or vindicate his actions, and this is surely connected with our judgement that he is not in control of what he is doing. And this normative requirement is linked to the fact that judgements of intelligence and control are, in some important sense, epistemic judgements.

This all points to the idea that it is *knowledge* that plays the crucial role in guiding intelligent action. Knowledge, intuitively, is what is missing from behaviour that satisfies (**SA**) but nevertheless fails to be intelligent. The thought is especially compelling when we reflect that knowledge is well-placed to explain the relevant modal features of intelligent action. According to most theories, knowledge requires safety, which is to say that knowledge obtains only if it also obtains in counterfactually close cases. And if the successful behaviour is guided by knowledge, then the same behaviour in counterfactually nearby cases will be guided by the same knowledge, and thus also successful. So the safety of knowledge can explain the safety of intelligent action. Moreover, it can do so in a way that is normatively satisfying, since the safety-ensuring feature of the action will be an epistemically creditable aspect of the subject's psychology, namely a piece of knowledge.[11]

I would like to propose, without further defence, the following, fairly weak, principle connecting intelligent action with knowledge.

---

[11]Essential connections between action and knowledge have been discussed by a number of philosophers in different ways. Anscombe, in her *Intention*, claims that non-observational knowledge of what one is doing is partly constitutive of the concept of intentional action. More recent writers in this Anscombean tradition include Ford (2008); (2011), Haddock (2011), Hornsby (2011a), McDowell (2010), Setiya (2008), and Thompson (2008). A more recent strand of thought, primarily associated with the work of Williamson (2000), defends the idea that knowledge is the central norm for practical reasoning. Stanley and Hawthorne (2008), for example, defend the idea that knowledge is equivalent to Bayesian subject credence 1, and hence that a knowledge norm is compatible with rational decision theory. In more recent work, Williamson has claimed that 'the central feature of intelligent life is acting on what one knows'. (**?**,) Furthermore, some writers have stressed the connections between these two ways in which knowledge relates to action. (Gibbons, 2001; Gibbons, 2010; Setiya, 2008; Setiya, 2012; Hornsby, 2011b)

> *Intelligent Action-Knowledge Principle* (**AK**): An action is intelligent if and only if it is safe (i.e., satisfies (**SA**)), and is guided by knowledge in such a way that the knowledge explains its safety, and justifies[12] the action

(**AK**) says nothing substantive about the nature of the action-guiding knowledge, and little about the guidance relation. The rest of this essay is devoted to saying something more about these matters.

One key question, mentioned earlier, of whether the knowledge that plays the action-guiding role described by (**AK**) is necessarily propositional, or might have some other form. I will consider the prospects for the following thesis:

> *Intelligent Action Propositionalism* (**AP**): intelligent action is action guided by knowledge of propositions, in the manner described in (**AK**)

The question of (**AP**)'s truth interacts closely with a more familiar question in the literature, one concerning the nature of knowledge how. Typically, philosophers have affirmed (**AP**) by arguing that knowing how is a species of knowing that, or denied it by arguing that it is not. However, as I shall urge, these questions are not quite the same: one is first and foremost a question about the semantics of natural language, the other concerns psychological explanations of agency.

A thesis sometimes attributed to Ryle just identifies the knowledge that explains an agent's successful ϕ-ing with their ability to ϕ. As we have seen, this is clearly inadequate, for agents' abilities can be explained by features of their situation or of they psychology of which they are unaware, or for which they are not responsible. Moreover, it is plausible that one could have a piece of knowledge apt to guide action but lack the relevant ability: for example, an injured skiing instructor may know how to perform a complex jump, but themself be unable to execute it.[13] This suggests an important constraint implied

---

[12]I intend 'justifies' to be understood in as neutral as possible a way, so an action is justified just in case it was appropriate for the agent to act in that way, and a bit of knowledge justifies an action just in case that bit of knowledge is involved in the explanation of why the action was appropriate. This is compatible with externalist conceptions of justification, and doesn't require that an agent be able to articulate the knowledge that justifies their action, or offer any verbal defence of having acted the way they did.

[13]This example is from Stanley and Williamson. Many more examples can be found in Snowdon (2004).

by (**AK**): the knowledge that guides an agent's ϕ-ing must be such that it could in principle be retained in the absence of their ability to ϕ. Call this the *constraint of ability-independence*. Clearly one way of meeting the constraint is by affirming (**AP**).

Ryle's actual view was more sophisticated — he regarded knowledge as a complex bundle of personal-level dispositions and abilities. For him, one difference between intelligent and unintelligent action is that intelligent actors can learn, adapt their practice to new situations, impart their knowledge to others, and so on. It is unlikely he would have denied the constraint of ability-independence, as knowing agents who lack the core ability still possess some or many of these auxiliary abilities. Ryle understood these abilities as aspects of the rich, personal level 'multi-track dispositions' attributed by intelligence concepts.[14]

It is worth noting that (**AP**) is strictly speaking consistent with such Rylean or neo-Rylean ability-based accounts of the mental. If knowledge of propositions is, ultimately, reducible to certain complex behavioural dispositions and abilities, it is still true to say that knowledge of propositions plays the action-guiding role.[15] Equally, Rylean views can accomodate a distinction by viewing action-guiding knowledge as a different kind of ability or disposition from propositional knowledge. This should suggest to us that the question of the basis of intelligent action is separate from these questions concerning whether the mental can be reduced to clusters of dispositions and abilities.

This point is important, because debates about knowledge how are often posed in terms of a dichotomy between propositionalist and dispositionalist accounts of how mind relates to action. But the dichotomy elides two different decisions.[16] On the one hand is the question whether states of intelligence, whether propositionalist or of some other form, are to be ultimately analysed in terms of dispositions; on the other is whether the states that guide action are necessarily propositional. Recognising the separateness of

---

[14]A prescient contemporary critic of this 'behaviourist' strain of thought was Peter Geach (1971, §§2-5)

[15]Some classic functionalist accounts of belief are like this. (Stalnaker, 1987) A neo-Ryean view of knowledge has recently been proposed by John Hyman, on which personal propositional knowledge is an 'ability to do things...for reasons that are facts' (1999, p. 441); more generally, knowledge is an ability to be guided by the facts (2006).

[16]Bengson and Moffett, for example, frame things this way in the introduction to their collection on knowledge how. (2011b)

these decisions admits the possibility that action is guided by a kind of nonpropositional knowedge, but which nevertheless may not reduce to an ability or disposition. This is in effect the view that I argue for in chapter 4.

2.2   Knowledge How and Intellectualism

The most straightforward definition of knowledge how is that it is whatever is ascribed by sentences of the form 'S knows how to ϕ'. Given this definition, it follows that the question of knowledge how is primarily a question about the semantics of the verb 'know'. This intersects with our concerns because it is clear that these attributions have a distinctive role in evaluations of whether or not an action was intelligent; for example, the bomb disposer did not know how to defuse the bomb, and so we are reluctant to regard his actions as intelligent. It has often been suggested that one can only intentionally do something that one knows how to do.[17] Whether or not this is ultimately correct, the weaker thesis that one can only intelligently do something that one knows how to do is surely right, and suggests that the knowledge referred to in (**AK**) is typically knowledge how. Thus there is a close connection between questions concerning the nature of intelligent action, and those concerning the semantics of knowledge how.

I want to note at this stage, however, that these questions are not identical. We should not assume without argument that the correct semantics for 'knows how' ascriptions will decide for us the truth of (**AP**). Whether or not it does will depend upon the best way to understand the relevant notion of guidance. If the notion is sufficiently strong, the fact that knowledge how attributions are used to evaluate the intelligence of action will not entail that the attributed knowledge is the relevant guiding state, in the sense of being primarily causally responsible for its counterfactual success; so if semantic theory tells us that 'knows how' ascribes knowledge of a proposition, this will not entail the truth of (**AP**).[18] This is a point that I will return to in chapter 4.

Ryle is perhaps best-known for arguing that 'knowledge how cannot be reduced to

---

[17]Versions of this claim are made by Gibbons (op. cit.) and Setiya (op. cit.)

[18]Imogen Dickie (2012) exploits a similar gap in logical space when she argues that skilled action manifests, but is not guided by, propositional knowledge how.

knowledge that', which presumably means that the knowledge ascribed by 'S knows how to ϕ' is not propositional knowledge. However, as Paul Snowdon (2004) has pointed out, most of Ryle's arguments are directed against an 'intellectualist legend', a somewhat different thesis whose relation to the question of knowing how is not obvious. Ryle characterises the legend thus:

> Champions of this legend...try to reassimilate knowing *how* to knowing *that* by argu-
> ing that intelligent performance involves the observance of rules, or the application
> of criteria. It follows that the operation which is characterized as intelligent must
> be preceded by an intellectual acknowledgement of these rules or criteria; that is,
> the agent must first go through the internal process of avowing to himself certain
> propositions about what is to be done...only then can he execute his performance in
> accordance with those dictates. He must preach to himself before he can practise.
> (2000, p. 29-30, original emphasis)

What seems most distinctive about the legend is not that the relevant bits of knowledge are propositional in form, but that the way in which they guide the action is through a temporally prior act of consciously considering some propositions. Ryle's famous regress argument then proceeds on the basis that 'The consideration of propositions is itself an operation the execution of which can be more or less intelligent, more or less stupid. But if, for any operation to be intelligently executed, a prior theoretical operation had first to be performed and performed intelligently, it would be a logical impossibility for anyone ever to break into the circle.' (ibid., 31)

It is not clear how this argument bears on the idea that knowledge how is propositional knowledge, or that intelligent action is guided by knowledge of propositions. There is no obvious bar to behaviour being guided by propositions without any kind of intervening mental action. Indeed this appears to be commonplace: it is hard to deny that my driving on the left hand side of the road is at least partially guided by my (propositional) knowledge that in the United Kingdom one should drive on the left, and yet there is no identifiable period of time during which I can plausibly be said to be considering this proposition.

Ryle generates his regress in effect by assuming that the guidance relation connecting propositional knowledge to intelligent action must consist in the prior performance of

a mental action, which must itself be intelligent in order for the knowledge to properly guide the action. Laid bare, this assumption looks totally unjustified. Moreover, it is implausible on the basis of introspection alone: often (usually, even) when one acts skilfully or intelligently, one does not need to do some thinking before one begins the action.[19]

Nevertheless, Ryle's argument does pose the challenge of characterising the appropriate guidance relation in such a way that the regress does not arise. Even if the conscious consideration model is a non-starter, it may be that other putative mechanisms of guidance fall foul of similar problems if they make too strong cognitive or epistemic demands on the subject — if they require some intervening operation that itself is in need of guidance. This has led parties to the debate to stress the undemanding nature of these mechanisms: they are unintentional, automatic, unintelligent.[20] But as Jason Stanley has correctly pointed out, this constraint on the guidance relation applies regardless of whether or not the guiding knowledge is propositional in form — whether or not knowing how is a species of knowing that. (Ibid., 18)

The apparent lack of asymmetry between knowing how and knowing that with respect to their relevance for action brings us to a further problem for Ryle, which is that although the knowledge attributions involved in evaluating an action's intelligence are often attributions of knowledge how, they are also often attributions of knowledge that. I turn left because I know that the restaurant is that way, I go to the bank today because I know it will be closed tomorrow, I cut the red wire because I know that cutting it will defuse the bomb. These straightforward cases seem to undermine the idea that knowledge how has a privileged role in explaining and justifying action — they are, on the face of it, instances of actions being intelligent in virtue of being guided by knowledge of propositions. Of course, from each of these an attribution of knowledge how can be recovered: I know how to get to the restaurant, I know how to ensure I get to the bank

---

[19]Hubert Dreyfus (2005) makes heavy weather of this uncontroversial observation in his attack on the 'myth of the mental'.

[20]Stanley and Williamson, for instance, appeal to the idea that the operations of the relevant mechanisms are not intentional actions. (2001b, p. 415-416) Stanley, in his subsequent book, makes use of the notion of the automatic triggering of representations. (2011a, pp. 15-16, 25-26)

before it shuts (admittedly this is a little awkward), I know how to defuse the bomb. But this should suggest to us that knowledge how, rather than being a distinctive kind, is just a way of attributing propositional knowledge in a way that immediately signals its relevance to the explanation of action.

This often works the other way round, too: a bit of propositional knowledge is recoverable from a 'knows-how' attribution. I know how to turn the computer on, but this just means I know that one turns it on by pressing the power button.[21] In most cases where propositional knowledge is not easily recoverable, this is just because it is a feature of 'knows how', just like 'knows who', 'knows when', 'knows where', and other similar locutions, that it allows the ascription of a piece of knowledge that the ascriber does not themself possess.

This observation fits with the standard account of the semantics of embedded questions, according to which the aforementioned 'knows-wh' locutions are a quantificational device over propositions, the embedded question denotint the set of all propositions that are true answers to the question.[22] So, the complement 'who the president is' in the sentence 'Guthrie knows who the president is' denotes the set of true propositions of the form $\ulcorner x$ is the president$\urcorner$, and the whole sentence is true if and only if, for each proposition p in that set, Guthrie knows p. (In this case, the set is a singleton.) Accordingly, one might think that 'S knows how to ϕ' attributes to S knowledge of some propositions[23] that are answers to the question 'How to ϕ?'. This would certainly make sense of the examples we have covered so far where it appears that the same piece of knowledge can be ascribed as knowledge how or as knowledge that.

2.3   Stanley and Williamson on Knowing How

This is, in essence, the account of knowledge how proposed in Stanley and Williamson (op. cit.), and further developed in Stanley (2011a; 2011b), although there are many

---

[21] This example, along with other similar ones, is from Snowdon (2011).

[22] This model is due to Lauri Karttunen (1977).

[23] Usually the quantifier here is existential, not universal. This point is covered by Stanley and Williamson in some detail.

more semantic subtleties I will not address here. The core of their account is the following reductive schema:

S knows how to ϕ

$\implies$ There is some way of acting w such that S knows, of w, that it is a way to ϕ

Two questions immediately arise for our purposes. First, what kind of thing are ways of acting?; and secondly, how might knowledge of propositions involving ways of acting guide action in accordance with (**AK**)? Stanley and Williamson give partial answers to both these questions. They suggest, in Davidsonian spirit, that ways of acting are 'properties of token events' (presumably the values of adverbial modifiers of action sentences.) And they propose, in Fregean spirit, that knowing how involves grasp of a way of acting under a *practical mode of presentation*,[24] where having a practical mode of presentation of a way of acting essentially involves having certain dispositions relating to that way of acting, thus establishing a link between the propositional knowledge and the behaviour it guides. I discuss this role for practical modes of presentation in chapter 4. For now I want to focus on the ways of acting.

In cases where there is a clearly recoverable proposition from a knowledge how attribution, this proposition expresses a relation of means to end. When one knows how to defuse the bomb, one knows that one can defuse the bomb by cutting the red wire; when one knows how to turn the computer on, one knows that one can do so by pressing the power button, and so on. (Although earlier examples were given of pieces of propositional knowledge that do not have this form, their relevance to explaining action consists in the fact that they generally imply one that does: I know that I can get to the restaurant by turning left, or that I can ensure I get to the bank by going today. If I am unable to make the inference from some environmental information, such as the location of the

---

[24]In his 2011 book, Stanley abandons talk of modes of presentation in favour of ways of thinking. I stick with modes of presentation in order to avoid such unfortunate locutions as 'ways of thinking of ways of acting', but the choice is purely stylistic and should not be taken to indicate any theoretical commitment.

restaurant, to some bit of means-end knowledge, such as a means by which I can arrive at the restaurant, the information is largely useless to me.) Correlatively, the question 'How to ϕ?' invites an answer of the form 'By ψ-ing'. This suggests that the relevant ways in Stanley and Williamson's analysis should be something like properties of *being achieved by means of...*, or more simply *by ψ-ing*, and hence that the knowledge ascribed is means-end knowledge. This interpretation would tie their propositionalism to the Aristotelian idea, famously developed by G. E. M. Anscombe in her *Intention*, that the structure of means and ends is essential to the nature of agency.

Whatever the merits of the Anscombean thought, the thesis that intelligent action is always guided by means-end knowledge would be implausibly strong. There are two main sources of counterexample: *basic action*, and *skilled action*. Regarding the first: assume that an act is basic if and only if one doesn't perform it by means of performing some other act. Thus if ϕ is basic, there is no proposition to be known of the form ⌜I can ϕ by means of ψ-ing⌝. So if knowledge how is means-end knowledge, this would appear to have the consequence that basic actions cannot be intelligently performed.[25]

It is, of course, open to be denied that basic actions *are* intelligent. But this seems quite implausible — *performing a pirouette*, for example, is clearly something that can be more or less intelligently done. And it appears to be basic, insofar one does not do it by means of doing anything else. Of course there are more detailed descriptions of the pirouette available — one moves one's legs and torso in such-and-such a way, and so on — but it is strange to say that these movements are the means by which one performs the pirouette, or that the knowledge of any such means-end relation is what makes the performance of the pirouette intelligent.[26]

---

[25]An alternative proposal is that knowledge how to ϕ is knowledge of one's basic ability to ϕ. But this is not means-end knowledge; and in any case has its own problems. See Setiya (op. cit.)

[26]An alternative approach is to deny that any action is basic — that all acts are performed by means of some other act. (Thompson, 2008; Lavin, 2013) The pressure towards this view, as I see it, arises from a combination of the desire to preserve the mindedness of action with the commitment that mind can only be present in action via the purposive structure of means to end. The account of ways of acting I propose suggests a way out of this dilemma of either denying the intelligence of basic action, or denying basic action altogether.

This case overlaps with the second kind of counterexample, skilled action. Consider a surfer riding a wave. There is, of course, a series of movements they go through that constitute their riding of the wave. We might even, in some contexts, be inclined to say that they ride the wave *by* performing those movements. But the idea that in doing so they employ means-end knowledge concerning how to ride waves rings false, for two reasons. First, their performance of the action is *direct*, not mediated by the performance of some intervening act in the way that the notion of means and end suggests.

Secondly, there is no *general* bit of means-end knowledge plausibly identifiable with their knowledge how to surf. The specific movements they make are a feature of that token occurrence, not of the general activity of surfing; but the knowledge how they employ in riding the wave is supposed to be a standing state, exercisable on different occasions. This is the case for any kind of skill-requiring activity that requires subtle responses to changes in one's environment. In general, when ϕ is such a skill-requiring activity, there is no proposition of the form $\ulcorner$One can ϕ by means of ψ-ing$\urcorner$ to be known. (This account for the peculiarity, in most contexts, of questions such as 'How does one surf?') In this sense at least, much skilled action *is* basic action. This thought will receive some further justification in section 3.3.2.

Stanley and Williamson's analysis does not, of course, commit them to the idea that knowledge how is means-end knowledge, and this is one of its principal virtues. It just says that one knows, of some way w, that w is a way in which one could ϕ. The skilled surfer clearly rides the wave in some particular way; this is just to note that they make some specific movements that constitute their performance. Furthermore, their performance is successful in virtue of the fact that they do it in that way, and not some other, worse way. Finally, a psychological explanation of their success that also ensures their counterfactual success in nearby cases is that they *knew* to do it that way. In the following section I aim to bring out what is both attractive and puzzling about this story by considering a very general distinction between two notions of a way.

2.4   Two Kinds of 'How'-Question

There are two different kinds of qualification that might be demanded by a 'how'-question. Consider the following two dialogues:

Q1: How did you open the door?

A1: Very carefully.

Q2: How did you open the door?

A2: With this skeleton key.

The first answer might be appropriate if the respondent wants to assuage the questioner's concern about the creaky door waking the neighbours. The second might be appropriate if the questioner had the locks changed and wants to know how the respondent managed to get in. The first question asks about the *manner* of the action; the second asks for its *means*. We can think of a manner as that which is given by a specification of the details of an action; we can think of a means as given by an explanation.

Another instance of the same contrast is to be found a recent debate between Timothy Williamson and Quassim Cassam about 'ways of knowing'.[27] Williamson writes,

> ...if one knows that A, then there is a specific way in which one knows; one can see or remember or...that A. Although that specific way may happen to lack a name in our language, we could always introduce such a name, perhaps pointing to the case as a paradigm. We may say that knowing that A is seeing or remembering or...that A, if the list is understood as open-ended, and the concept *knows* is not identified with the disjunctive concept. (Williamson, 2000, p. 33)

Williamson supplements his thought with an account of 'factive mental state operators' (FMSOs). FMSOs are characterised by the following features: 1) they are *factive*, 2) they are *stative* 3) they *ascribe propositional attitudes*, and 4) they are *semantically simple*. If ϕ is an FMSO, then 'S ϕs that A' entails 'A' as a deductive consequence (factivity); 'S is ϕ-ing that A' is linguistically improper (stativity); 'S ϕs that A' entails 'S grasps the proposition that A' (propositional attitude). The fourth condition is there to rule out

---

[27]The following few paragraphs mainly adumbrate Craig French's (2014) clear-sighted discussion of this exchange.

conjunctions of 'knows' with some further element, or of some non-factive operator with a veridicality condition (i.e. 'knows *a priori*' and 'guesses correctly' are both not FMSOs); and to deny that FMSOs should be understood as such conjunctions. Furthermore, 'knows' is the most general FMSO: if ϕ is an FMSO, 'S ϕs that A' entails 'S knows that A'.

This structure is intended to capture Williamson's thought that knowledge is the 'most general factive mental state', and that the more specific FMSOs denote states that are 'ways of knowing'; analagously to how *being coloured* is the most general colour property, and more specific colour adjectives denote properties that are ways of being coloured.

Cassam's competing account is much more inclusive regarding what counts as a way of knowing. Ways of knowing on his conception do not have to be factive, nor stative, nor propositional attitudes (it is less clear what happens to the requirement of semantic simplicity.) Cassam offers counterexamples to each restriction: the way I know that Quine was born in Akron, Ohio, is that I read it in his autobiography (not factive); the way I know the truth of a mathematical theorem is by proving it (not stative); the way I know that the lighter is under the table is by seeing it (not a propositional attitude.) Additionally, it follows from the claim that ways of knowing are not always factive that Williamson's entailment from a way of knowing to knowledge does not hold (since knowledge is factive, if ways of knowing entail knowledge, then ways of knowing are factive. But on Cassam's account, some ways of knowing are not factive. So ways of knowing do not entail knowledge.)

Clearly something different is going in these two conceptions. It is unlikely Williamson would deny that, for example, seeing the lighter is a way of knowing that the lighter is under the table, in the sense that one can come to know where the lighter is by seeing it; or that reading it in his autobiography is a way of knowing where Quine was born, in the sense that one can come to know where he was born by reading his autobiography. But these kinds of cases do not specify the character of one's knowledge, in the way that Williamson's more specific FMSOs do. Rather, as Cassam would have it, they give

explanations of knowledge: they give an answer to the question 'how do you know?'. These explanations reveal the source of one's knowledge, and as such carry justificatory force. Cassam writes,

> When it comes to what counts as a way of knowing the explanatory conception is pretty relaxed. The most that it insists on is that ways of knowing are expressible by sentences of the form 'S verbs'. It doesn't insist that a satisfactory explanation of someone's knowledge that P must always be something of the form 'S verbs that P'. It doesn't insist on this because it wants to allow that reading books and talking to people are also ways of knowing about the world around us. (Cassam, 2007, p. 347)

Cassam's conception is more inclusive than Williamson's because explanations of how one knows cite sources and grounds, which need not be restricted to the specific factive mental states (this is not to rule out that specific factive mental states might also be grounds for knowledge.) Additionally, although Cassam is not committed to it, it is plausible that the entailment from knowledge to ways of knowing should hold for his explanatory conception. This is just to say that whenever a thinker knows something, there is some epistemically respectable explanation of how they know.

These alternative conceptions point towards a kind of polysemy in the locution 'is a way of'. There is a clear contrast between a way given as a specification, and one given as an explanation. The distinction is well-applied to action. I have suggested that, in the case of action, the explanatory 'how?'-question is a question of means: its answer will give two acts, related as means to end. An answer to the specificational question need have no such structure — it gives a more detailed description of the action, without any requirement to reveal its teleological structure.

On a weak reading of the specificational question, the explanatory one will count as an instance of it, since stating by what means an action was performed is one way of further describing it. But there is a stronger, more philosophically interesting, reading available of the specificational question. Taking a hint from Williamson, 'some specific way that one knows' is clearly not meant to include knowing on Wednesday, or knowing and being Prime Minister. (These are ruled out by the semantic simlicity condition.) It is not merely to add some additional property to one's state of knowing. Rather, one knows

in some specific way with respect to *what kind of knowledge one has.* Ways of knowing are related to knowing as determinates to determinables, just as *scarlet* is a determinate of the determinable *red.* Similarly, the stronger form of the specificational question, as applied to an act ϕ, asks for a specific way of ϕ-ing with respect to what kind of ϕ-ing it was. Again the determinable/determinate relation seems a useful way of capturing this, and I will revisit it in the following chapter.

Note that this contrast is not clearly marked in the Davidsonian treatment of action sentences, according to which adverbial clauses function semantically as predicates of an individual — of the token event that witnesses the hidden existential quantifier in the main verb. (1980e) It seems likely that it is this Davidsonian predication that Stanley and Williamson have in mind when they say that ways of acting are properties of token events. On this understanding, there is no distinction with respect to logical form between those modifications that give a means, and those that give a manner. So as far as semantic theory goes, the distinction may not be relevant. But given that we are concerned here with the nature of the states that guide action, we may need to look further than the logical form of the sentenes that ascribe them.

A consequence immediately emerges for our understanding of Stanley and Williamson's proposal as an elaboration of (**AK**). In the cases of basic and skilled action, where there did not seem to be a readily apparent piece of means-end knowledge to hand, we can now see that the sense in which there is a way in which those actions are performed is the specificational, not the explanatory sense. This is an attractive and liberating feature about their proposal, in that it permits the thought that the structure of means and end is not the only model for the presence of thought in action. An agent's action, guided by knowledge of (specificational) ways, can manifest intelligence without being expressed on the final line of a practical syllogism. This is surely something Ryle would have been sympathetic to; it captures an important sense in which thought is *directly* present in intelligent action.

But it is also puzzling, for how are we to understand an agent's knowledge of a way acting, understood specificationally? And how is this knowledge supposed to guide their action? This is a question I will return to in chapter 3. But before contemplating that question, I want to first develop a positive account of ways of acting, as (something close to) determinates of determinable actions.

3   Ways of Acting and the Bodily Basis of Action

In this chapter, I take up the notion of a way of acting, considered as distinct from the notion of a means of achieving one's goals. When a skilled surfer rides a wave, there is some particular way in which they ride the wave on that occasion; their skill is manifested in their choice of that way, with its various features that recommend it as a way of riding the wave (good balance, posture, angling of the sail, etc.) But the fact they ride the wave in some way does not imply that they ride the wave by doing something else. And in particular, the above observations give us no reason to think that the way in which the windsurfer rides the wave is their means of riding a wave. The thought that the windsurfer rides the wave in a particular way has a different structure from the thought that I replenish the water-supply by operating the pump; their way of riding the wave is an answer to the specificational, not the explanatory, 'how?'-question.

In what follows I elaborate a conception of a way of acting as an answer to the specificational 'how?'-question. I focus just on physical action, and the role of the body in it. I defend the thesis that ways of acting are dynamic bodily change properties, and we can use the determinate/determinable relation to capture the sense in which to instantiate one of these properties is to act in some specific way. The idea is that these ways of acting have a role to play in the explanation of intelligent action, and in particular in cases of skilled action where means-end explanations are not forthcoming.

Section 3.1 frames the specificational question in terms of *acts* and their performances; when someone performs an act, they do so in some particular way, and the specificational question asks after that way. In section 3.2 I look at some work by Stephen Yablo and others on the determinate/determinable relation in connection with the mind-body problem, and suggest that the relation provides an apt framework for thinking about ways of acting. In section 3.3 I propose that bodily change properties are ways of acting, and advance two key theses on them. I conclude that in the end their relation to acts is not quite that of the determinate/determinable relation, but is something very close to it.

3.1   Acts and Actions

The previous chapter briefly invoked an ideology of acts; abstract contents of actions analagous to the propositional contents of discursive attitudes. Saying a little more about acts will help us get a handle on what the specificational 'how?'-question is asking, and provide a point of departure for an account of ways of acting.

The basic idea behind acts is that when an agent acts, there is something that they *do*. Acts are things done. Ian Rumfitt writes, 'In characterizing an act as that which is *done* by an agent, I meant to distinguish acts from particular *doings* of them; a doing (or *actions*, as we might call it) will have a determinate agent and occur at a particular time, while one and the same *act* may be done by different individuals and at different times.' (op. cit., p. 619) Acts are things done in the following sense: they are entities corresponding to (the senses of) action-predicates, governed by the identity-condition that two action-predicates express the same act if and only if they have the same sense.[28] The action-predicate is the part of action-sentence that says what the agent did; the same action-predicate may be satisfied with respect to different occasions of action, and different action-predicates may be satisfied with respect to the same occasion of action.[29] Moreover, since the same predicates occur in sentences that ascribe intentions and report tryings, attempts, and orders, we can view these sentences as ascribing psychological and communicative relations to acts. In the material mode, intentions and tryings and so forth are attitudes to things to be done, and actions are the doings of those things. Rumfitt's ideology of acts gives us a unified way of dealing with these contents. And, as noted, an agent's behaviour is subject to evaluation for intelligence with respect to the acts of which the behaviour was a performance, and hence which determine the conditions for actual and counterfactual success or failure.

---

[28]The idea of sameness of sense here is that captured by Gareth Evans's 'Intuitive Criterion of Difference' (1982, p. 18-19): two expressions *a* and *b* differ in sense if and only if a speaker could rationally accept a sentence containing an occurrence of *a* whilst rejecting a sentene formed by replacing all occurrences of *a* with occurrences of *b*.

[29]'Satisfied with respect to' rather than 'satisfied by' because on this model action-predicates are of agents, in contrast to the Davidsonian approach that treats them as predicates of events. There is a tension between these two semantic approaches, and a corresponding metaphysical tension between actions as properties of agents and actions as token events. I will revisit this later in the chapter.

The point I wish to explore begins with Rumfitt's observation that the same act can be done, or intended, or commanded, by different agents on different occasions. If I take the dog for a walk in Burgess Park on Monday, there is an act that I engage in on Monday in Burgess Park, namely taking the dog for a walk. But I could also take the dog for a walk on Tuesday, or on Peckham Rye, or you could walk it for me. Furthermore, in the case of actions or doings, it is not just the time, place, and agent that can vary, but also the manner: I could walk the dog more briskly, or with a slight limp. And this connects to the thought behind the specificational 'how?'-question; when the surfer rides the wave, they do so in a particular way, in that their body makes some particular movements that constitute or realize their riding of the wave.

The more interesting version of the specificational question asks for not just any old detail about a situation, but for detail that in some way reveals how a property is exemplified with respect to that property's kind. Just as if one knows that A, then there is a specific way in which one knows *qua* knowledge, when one ϕ-s, then there is some specific way in which one ϕ-s *qua* ϕ-ing. I suggested briefly earlier that the determinable/determinate relation is an apt way of capturing this thought. I will return to this later. For now, consider the following minimal principle of ways of acting:

(**W**): If an agent S performs some act ϕ, S performs ϕ not just *simpliciter*, but in some specific way w, where w is a way of ϕ-ing

The final clause that w is a way of ϕ-ing expresses the constraint that w is a specification of the manner of the action with respect to its kind — just as seeing that A is a manner of knowing that A with respect to the kind *knowledge*. (The subsequent discussion aims to precisify this constraint.) This constraint is fairly substantial, as it ties (**W**) to the more philosophically demanding sense of the specificational 'how?'-question. As we shall see, there is only a restricted class of acts for which this question is appropriate, and of which (**W**) is true. Note that w here is just a schematic placeholder term: it is not meant to imply that the correct value for w belongs to any particular ontological category — I will later propose that w be identified with the bodily change properties that realize action.

We can add to (**W**) the thought that ways of acting are important to the evaluation of action with respect to skill and intelligence because of their role in specifying the *causal* features of an action. The finer consequences of an action are explained in part by how it was done; for example, the manner of a tennis serve is responsible for the ball's subsequent trajectory, and hence the fact that it ends up being an ace, or a fault. We need to appeal to a more specific level than the act *simpliciter* in order to get these kinds of explanation; the mere fact that the player served the ball is insufficient to explain what happened after the ball left the racket, and thus the success or failure of the serve.[30] Thus, insofar as intelligent agents have control over their actions, this is somehow via their control over the ways in which they act — control obtained through their knowledge of ways.

It will be helpful to frame things in terms of the notion of an action property. Let us define the action property A_ϕ as the property S has over $t_0...t_k$ just in case S performs ϕ over $t_0...t_k$. Action properties are *dynamic*: they are properties of undergoing changes over time, like the properties of *changing colour* or *accelerating*. (They might instead be regarded as ordered temporal sequences of instantaneous properties, but this would result a loss of explanatory generality.) Like all other properties, action properties are general and can be instantiated at different times by different substances. And like many other properties, action properties are not maximally specific: they can be instantiated in a variety of ways. Just as there are many ways of having the property *red*, there are many ways of having the action property *riding a wave*. The specific way in which an action property is instantiated on an occasion is crucial to the causal explanations of what happened on that occasion.

Acts are, broadly speaking, psychologically individuated contents, and so action properties are, broadly speaking, psychological properties. Ways of acting, with their essential role in causal explanations, are a hinge between the psychological and physical dimensions of action: they connect facts of an agent's intentional psychology to facts about what happens out in the world. In what follows, I explore the determinate/determinable

---

[30]In this example the act under evaluation is *serving*, rather than *serving an ace*: recall the earlier discussion in section 2.1 of the care that needs to be taken in choosing the act evaluated for intelligence.

relation, and suggest its aptness to the notion of a way of acting. Although it will eventually turn out that it is relatively rare for ways of acting to be true determinates of the acts they are ways of doing, the relation is nevertheless illuminating for giving an account of specificational ways of acting.

3.2 Determinables and Realization

The question what ways of acting are, and how they relate to action properties, is parallel to a more familiar one, sometimes known as the 'mind-body problem'. Just as we want to know how the psychological category of mental states and processes relates to the physical category of brain states and processes, we want to know how the psychological category of action relates to the category of physical happenings in the world, in particular in and around the agent's body. In this section, I want to outline what I think is the most promising approach to the mind-body problem, with a view to applying the same framework to thinking about action.

When a subject instantiates some mental state property M, what is the relation between that property and the relevant brain state property B they instantiate at the same time? Given a commitment to some form of physicalism, we want there there to be a substantial dependence of their instantiating M on their instantiating B. In particular, since M has causal inputs and outputs in the physical world, we want the dependence of M on B to be such as to ensure that M is causally hooked up to the world in a non-mysterious way. And on the other hand, given that a different sort of creature might have M without having B, the relation cannot be identity.

The approach I want to explore is the idea, defended by Stephen Yablo in an influential paper (1992), that mental properties are related to their physical realizers as determinables to determinates. Yablo suggests the following principle as the core idea behind the determination relation:

(Δ) P determines Q iff: for a thing to be P is for it to be Q, not *simpliciter*, but in some specific way. (p. 252)

The proposal is that brain properties determine mental properties: to have brain property B is to have mental property M, not *simpliciter*, but in some specific way; just as to have the property *vermillion* is to have the property *red* in some specific way. In one way, however, the analogy with more familiar cases of determination such as colour is apt to mislead: Yablo is at pains to note that the implication from P to Q suggested by (Δ) is that of asymmetric metaphysical necessitation (or supervenience), rather than any '*a priori* conceptual entailment', (p. 251) as one might be tempted to infer from the colour case. Just as Kripke (1980; 2011) argued that property identities can be discovered *a posteriori*, without any entailment from one to the other, Yablo urges there is no obstacle to supposing the same is true for determination. This is crucial to his claim that the physical determines the mental, since there does not appear to be an *a priori* route from one to the other.[31]

The determination approach contrasts with the traditional higher-order functionalist approach to the realization of the mental in the physical. The latter treats M as a property whose obtaining is just the obtaining of some physical property B_1 or B_2 or...or B_n that meets a certain condition. Functionalism treats the condition in causal terms, as having a certain profile of inputs and outputs. The leading objection to such approaches is that they render M epiphenomenal, with the realizer B_k doing all the causal work.[32] This point is usually sharpened by pressing a principle of causal exclusion: if P is causally sufficient for x and $P\prime$ is causally sufficient for x, then $P = P\prime$. Since multiple realization teaches us not to identify M with its realizer B_k, then by *modus tollens* either M is not causally sufficient for its putative effects or B_k is not sufficient. And since B_k is *ex hypothesi* a property with a certain causal profile, it must be M that is not causally sufficient. The realizers preempt the causal relevance of the realized properties.

The determinable/determinate relationship helps because attending to its more obvi-

---

[31]Philosophers who resist the reducibility of the mental to the physical insist that such an *a priori* route is in general a necessary condition on metaphysical reductions, and that the 'explanatory gap' between mental and physical concepts blocks most or all versions of physicalism. (Jackson, 1982; Chalmers, 1996; Chalmers and Jackson, 2001) Naturally, such a position would be hostile to Yablo's notion of determination as an *a posteriori* metaphysical relation. See Block and Stalnaker (1999) for some considerations against the legitimacy of the *a priori* entailment demand.

[32]This point has been pressed repeatedly by Kim (1984a; 1984b; 1998); also Block (1996), Sosa (1984).

ous instances shows that determinates do not usually exclude the causal relevance of their determinables. Yablo's example is Sophie the pigeon who is trained to peck at all and only red objects. When a scarlet object is presented to her, and she pecks, the scarlet does not exclude the red from being causally relevant. If a version of the causal exclusion principle does imply this then it is false; and so, Yablo argues, for the determinable/determinate relationship in general. He writes,

> At least as it applies to properties, then, the exclusion principle is badly overdrawn. Not that there is nothing right about it. In some sense of 'separate', it stands to reason, separate properties are causal rivals as the principle says. Then what if someone identifies the appropriate notion of separateness and reformulates the exclusion principle accordingly? Suppose it done. Even without hearing the details, we know that the corrected principle does not apply to determinates and their determinables — for we know that they are not causal rivals...any credible reconstruction of the exclusion principle must respect the truism that determinates do not contend with their determinables for causal influence. (p. 259)

There are really two distinct motivating thoughts here. The first is the idea that determinables and their determinates are *not* separate — unlike the different bullets of a firing squad — and so do not compete. Yablo draws an analogy with how parts do not complete with wholes for causal relevance. Although he does not further explain this nonseparateness, it is reasonable to suppose that there is some account in the offing, and indeed other writers have offered such accounts.[33]

The second thought is that the properties *are* separate insofar as the determinable plays a distinct and non-reducible role in causal explanations. This point is somewhat delicate. It concerns the recognition that determinables are, in some sense, genuine qualities of things, not mere 'logical constructions'. This is the critical contrast between Yablo's approach and a higher-order one. On the higher-order approach, the realized property essentially involves an existential quantifier ranging over the basic properties. It is nothing more than the having of a basic property that fits a certain causal profile.

---

[33]The dominant approach in the literature is to posit some kind of identity between features of the properties or their instances. The 'subset approach' of Wilson (1999; 2009) and Shoemaker (2003; 2007) maintains token identities between causal powers of property instances; trope theorists such as Ehring (1996; 2011) and Robb (2013) identify the property instances themselves, rejecting the determination relation.

What is it for a property to be a logical construction? At worst, the higher-order approach is metalinguistic: it is the *predicates* that are higher-order, quantifying over the basic properties, and there are properly speaking no higher-order properties (to speak of the *properties* as "logical constructions" is a kind of use-mention lapse.)[34] Or perhaps there is a genuine existential property, as suggested by classic functionalist formulations like 'the property of having some property such that...' But in this case we should still ask why the causal standing of the higher-order property is any better than that of any other logical construction, such as the conjunctive property *P and such that* $2 + 2 = 4$, or the disjunctive property *P or not self-identical*. Either option makes the case for causal exclusion compelling: it seems like double counting to consider logical constructions causally relevant in addition to the materials from which they are constructed.

In general, it is a constraint on non-reductive theories of realization that conjunctive properties not realize their conjuncts, disjunctive properties not be realized by their disjuncts, and existential properties not be realized by their witnesses. These three relations all satisfy the formal condition of asymmetric necessitation, so the determination relation had better incorporate some further condition to rule them out. Presumably this should be ensured by the correct interpretation of (Δ), although Yablo does not develop the point in much detail.[35] Looking at some ways this might be done will help bring out what is distinctive about the determination relation.

The 'subset approach' developed by both Jessica Wilson and Sydney Shoemaker (cf. n. 33) is helpful here. On their views, properties are associated with sets of causal powers. One property realizes another just in case the set of causal powers associated with the realizer has as a proper subset that associated with the realized property.[36] Wilson and

---

[34]This appears to be Arthur Prior's view of the determinable/determinate relation: "it is only specific characters or determinates which characterise *objects*, in the strictest sense of "characterise"; when we attribute to an object a generic character like 'colour', this is merely an indirect way of talking about a character of one of its characters...To say that Bob is running is therefore to say that one of his present occurrent states has velocity, though it does not say what velocity." (1949, p. 10)

[35]Ehring (1996) in effect argues that the more substantial notion of determination required to rule out logical constructions has features that are not exemplified by mind-body realization, and thus that mind-body realization is not determination. See Wilson (2009) for a reply.

[36]By 'causal powers' I mean what Shoemaker calls 'foward-looking causal features'. Shoemaker also adds the condition that the set of backward-looking causal features — i.e. typical causes — associated

Shoemaker have in different ways both pressed the point that with genuine realization, if A realizes B, there is no further property C such that A is equivalent to the conjunction of B and C. The metaphysics of causal powers permits the point to be put equivalently in set-theoretic terms: if Γ_A is the set of causal powers associated with A, Γ_B is the set of causal powers associated with B, and A realizes B, then the complement $\Gamma_A\backslash\Gamma_B$ is not itself associated with any genuine property. If this condition holds of determination, this gives us a way of spelling out the natural thought that determination is non-conjunctive: for example, there is no property one can add to *red* to get *vermillion*.[37]

Disjunctive and existential properties are somewhat trickier.[38] Plausibly, for any determinable property we can find a complicated disjunctive property that (necessarily) has all the same causal features. For example, the determinable *red* is causally equivalent to (has the same causal profile as) the infinite disjunction of all maximally determinate shades of red.[39] Yet there is pressure to say that *red* is something beyond the 'mere disjunction' in a way that the disjunctive property of being either scarlet or not self-identical is not.

We want to say that determinables possess a kind of unity that mere disjunctions lack. One way of capturing this unity is by reference to fundamental kinds of property, where property kinds are maximally determinable properties. Determinables and their determinates, being all determinates of the same fundamental determinable, are all properties of the same kind, where the determinates are specific ways of having a determinable with

---

with the realizer is a proper subset of that associated with the realized property.

[37]This same thought is advanced, in different terms, by Ford (2008; 2011)

[38]Wilson in her 2009 does, in a footnote, include a highly compressed argument that sets of causal powers of disjunctive properties are not necessarily subsets of those of their disjuncts; that is, disjunctions may possess causal powers that at least one disjunct fails to possess. However the argument relies on the premise that a property does not possess a conditional power if the antecedent of the conditional is impossible — which is false on the classic Lewis-Stalnaker treatment of counterfactuals. Moreover, the argument is somewhat misdirected: given that determinables are at least causally equivalent (see note below) to disjunctive properties, and that the argument does not appear to trade on any special features of 'mere disjunctions' not shared by, say, the disjunction of two determinable shades of red obtained by arbitrarily partitioning the set of maximally determinate shades of red into two, it would, if sound, lead to the unfortunate conclusion that determinables do not have a subset of the causal powers of their determinates after all.

[39]The point is slightly tricky to formulate correctly. Although it is in some sense true that the disjunction possesses the same set of causal features as the determinable, the disjunction is never causally efficacious because preempted by its disjuncts. So the sense in which it does possess causal powers remains a little obscure.

respect to that fundamental kind. *Red, scarlet* and *vermillion* are all properties of the kind *colour* because they are all determinates of the fundamental determinable *coloured,* and *vermillion* and *scarlet* are both different ways of being red with respect to colour ('with respect to colour' because *red and square* and *red and round* are also, in a weak sense, different ways of being red.)

If something like this is right then a feature of the determination account of mental-physical realization is that it promotes an appealing version of neutral monism: 'mental' and 'physical' properties, whilst being distinct, are of the same fundamental kind. Initial surprise at this claim should be tempered when we recall that determination, like identity, is a metaphysical relation that can be discovered *a posteriori*. So it need not be apparent merely on reflection that A determines B, and thus is a property of the same fundamental kind.

A more detailed discussion of the notion of property kinds is beyond the scope of this essay, as is a defence of the neutral monist thesis that mental states and their realizers are properties of the same fundamental kind. I will just note a few more considerations in support of a robust distinction between determinables and disjunctions. Determinables are often *more* causally relevant than their determinates, supporting a wider range of counterfactuals. This is illustrated by Sophie the pigeon: she would have pecked at a vermillion object too, so citing the property of its being scarlet, rather than merely red, detracts from the causal explanation. By contrast, merely disjunctive properties rarely add explanatory value. Causal explanation is worsened by disjoining *red* with *located in Sweden* when citing the properties responsible for Sophie's pecking.

Of course, ascending from determinates to determinables does not always improve causal explanation: the too-general *coloured* makes for a much worse explanation than the too-specific *scarlet*. But this does not detract from the point that the determinable *red* earns its title as a genuine property by having more generality and supporting more counterfactuals than the disjunction of one of its determinates with some arbitrary other property.

The point about causal explanation is not entirely independent of the suggestion about fundamental kinds of property. To see this, consider a case where Sophie is trained to peck at both red and round things. Now it looks as though the disjunctive property *red or round* is at least as causally relevant as the disjunct *red* — at any rate, it supports more counterfactuals. Why should it not count as a genuine determinable property?

There are two responses here. First, there is room for doubt that the explanation of Sophie's pecking by way of the disjunctive property really is better. Perhaps there is more to causal explanation than counterfactual generality. Part of this more might be the identification of active dispositions. The explanation merely in terms of *red*, we might respond, tracks the relevant disposition of Sophie, a disposition to peck at red things. Her disposition to peck at round things is a distinct disposition, but the explanation by disjunction conflates them. By contrast, her dispositions to peck at vermillion things and to peck at scarlet things are not distinct; they are aspects of the one disposition to peck at red things.

Secondly, cases of disjunctive causation are comparatively uncommon compared with causation by determinables. In fact virtually *every* property cited in causal explanations (perhaps with the exception of those of fundamental physics) is determinable, and in each of these cases the determinable has more causal generality than its efficacious determinate; disjunctions more powerful than their disjuncts are harder to come by.

Now we can see that both these responses rely subtly on the unity claim. The first response adverts to the identities of dispositions, but of course this raises questions of individuation. Why is pecking at scarlet and vermillion things one disposition but pecking at red and round things two? An answer might begin with the distinctness of the physiological and computational vehicles for processing shape and colour, but this alone seems insufficient to provide a condition of nonidentity for dispositions (perhaps the same disposition could be realized by two bits of neural circuitry.) A fuller answer will have to appeal to more holistic considerations about the distinctive roles of sensitivity to colour and shape in psychological theories.

And this relates to the second response, which makes a much more general appeal to the idea that the world is structured in such a way that certain nonspecific properties will crop up systematically in causal explanations but not others. We can avail ourselves of this fact in distinguishing between cases where greater power is gained as it were accidentally (i.e. by disjoining an unrelated property that happens to be also relevant) and where it is gained by identifying some more relevant genuine feature. This strategy at bottom relies on the idea that the world has some kind of fundamental structure, and some ways of describing it get at this structure better than others;[40] the suggestion about kinds of properties is just one way of developing this idea. It is likely that some such heavy-duty metaphysical thesis will in the end be required to sort the genuine properties from the mere disjunctions.

In summary, the determinable/determinate relationship offers a promising way to account for the realization of the psychological in the physical, or more generally of some higher-level phenomenon in a lower level, whilst preserving the causal efficacy of both levels. Three salient features of the determination relation emerge from the above discussion: first, determinables are genuine properties in their own right, posessing a unity that distinguishes them from 'logical constructions' such as disjunctive and existential properties. (The discussion focused primarily on the contrast between determinables and disjunctive properties; the same points could be made regarding existential properties, since existential quantification is logically equivalent to infinite disjunction.) Secondly, determinables and their determinates share causal powers, but not in a way that means they threaten to preempt one another's causal relevance. Determinates are more causally specific than determinables in that they have more causal powers; determinables are more causally general in that they have more typical causes. Thus they serve different explanatory purposes, depending on the generality or specificity of the explananda. Thirdly, there is the speculative thesis that determinables and their determinates are properties

---

[40]The most influential expression of this idea is David Lewis's (1983) theory of naturalness; a recent further development of the theory is Sider (2011). For an overview of the prospects for a metaphysics of naturalness, see Dorr and Hawthorne (2013).

of the same fundamental kind, or determinates of the same fundamental determinable.

3.3   Bodily Changes are Ways of Acting

Much of this accords with what we want to say about action and ways of acting. Clearly it is a welcome result if action properties are genuine properties, not constructions out of more specific ones. And the relation between the causal profiles of determinables and determinates matches our earlier point about the causal relevance of ways of acting: ordinary action-explanation is in terms of determinable acts; explanations of the finer points of a performance advert to the manner of the action. (The further step, which I take up in the following chapter, is the psychological-causal explanation of the manner of the action by reference to knowledge of ways.) Finally, the idea that determinates are of the same kind as their determinables fits the special sense of the specificiational question as asking for the specific way a property is instantiated with respect to its kind.

Thus we have a ready-made framework for understanding ways of acting as determinates of determinable action properties. The principle ($\mathbf{W}$) that acts are always performed in some specific way meshes nicely with Yablo's formulation of the determination relation (Δ). This strengthens the earlier suggestion of how to cash out the loose idea of ϕ-ing in some specific way w: to ϕ in some specific way is to instantiate some property that is a determinate of the determinable action property A_ϕ.

Which properties are ways of acting? Lucy O'Brien suggests the following principle regarding the centrality of the body in bodily action (slightly modified to fit with the above talk of acts):

> ($\mathbf{B}$) For all bodily acts ϕ and agents S, S performs ϕ only if a movement of
> S's body in some way w takes place. (2007, p. 139)

(The restriction to bodily action excludes mental action, and acts of omission. The principle could perhaps be taken as at least partly definitional of bodily action, although this would render it less substantive.) The idea is that, whenever an agent performs an action, something happens with their body; this is connected with the fact that an

agent's body comprises their most basic and immediate arsenal of resources for action. When an agent acts, their body undergoes a package of physical changes, and these changes comprise the core causal story of the difference their action makes in the world. O'Brien's principle (**B**) thus connects with our principle (**W**) that whenever one ϕ-s, there is a specific way in which one ϕ-s, in that the causal significance of the agent's body in ϕ-ing matches that of the agent's way of ϕ-ing.

I want to consider the possibility that the bodily changes that realize action are determinates of action properties, at least for acts which satisfy (**W**), just as mental properties are determined by their physical realizers. The way of acting w mentioned in (**W**) is a bodily change property: a dynamic property of the agent's body undergoing certain changes over a period of time. Thinking of the changes to an agent's body as being the manner in which the agent acts provides a bridge between the psychological and physical sides of action. In the rest of this chapter I expand further on the nature of the relevant bodily change properties, and show how they are apt to serve as ways of acting.

First some remarks on the ontological framework are in order. Thinking about actions and their causal profiles in terms of determination is antithetical to the classic Davidsonian picture, on which agency is the causing of a chain of events in the world by the event of the agent's body moving, in turn caused by a belief-desire pair. (1980a; 1980b) From that standpoint, the events that are actions are maximally specific, redescribable, extensional entities, so to specify the way in which an action was done is just to give a more detailed description of that particular event. Davidson's extensionalist framework is simple and elegant; but if we are to explain the intelligence of skilled action by reference to what agents know, there is pressure towards an intensional idiom that recognises entities such as ways of acting as distinct from the actions themselves, to serve as objects of agents' knowledge.[41]

---

[41]A similar point was raised at the end of section 2.4, where I noted that a Davidsonian semantics of action sentences recognises no fundamental difference between specificational and explanatory ways, since both just correspond to predicates of a token action. With such austere semantic apparatus, it is very difficult to give an account of the content of intelligent agents' knowledge so as to yield a satisfying

This is not to deny the standard view that events are causes, whilst properties are causally *relevant* by being instantiated in the situations in which the events occur.[42] It does however raise the tricky question of how to understand the relation between the primary causal relata, events, on the one hand, and on the other hand the causally relevant properties. On one approach (Kim, 1976), events are just exemplifications of properties by individuals at a time, so causal relata correspond one-to-one with causally relevant properties.[43] But this strategy sits uncomfortably with the natural idea that there is an event, the action, open to redescription at different levels of specificity. I would prefer not to rule these events out of court (in fact I am committed to not doing so, since the formulation of (**SA**) refers to coarse-grained, modally robust token actions.) The matter is further complicated by the fact that I have followed the mind-body problem literature in framing things in terms of relations between properties of *individuals* (i.e. agents) — unlike Stanley and Williamson, who suggest that ways of acting are properties of *events.* The relation between agents and the events that are their actions is notoriously obscure; and this makes equally obscure the relation between an agent's (token) action and the properties they exemplify when they act.[44]

I have no satisfying full response to these ontological subtleties. Instead I will suggest a quick fix: it is plausible to think that actions inherit at least some of the properties of their agents. For example, if I have my arms in the air when I win the race, then my action of winning the race has the property of being done with both arms raised. (Care is needed in specifying the inherited property — obviously the event of my winning the race does not have *its* arms raised.) If ways of acting are inherited in this way, then my proposal that they are bodily change properties is not inconsistent with them also being properties of events.

---

account of the guidance relation in (**AK**).

[42]Lewis (1986) denies that there is ever a single efficient cause: for Lewis, each event is caused by the whole of history; good causal explanations just mention the most salient aspects of that history.

[43]Yablo's paper includes an account of how to extend the account of property determination to determination by individuals, where the individuals concerned are some kind of fine-grained, intensional entity like a Kimian event. Cf. also Fine (1981).

[44]Alvarez and Hyman (1998), for example, are moved by this difficulty to deny that actions are events at all. See ch. 8 of Steward (2012b) for an attempt to square the event-causal picture with the causal efficacy of agents.

3.3.1   Bodily changes and bodily movements

In action theory it is commonplace to talk not of bodily changes but of *movements.* For Davidson, actions are bodily movements. That is to say, an action is an event of one's body moving as a result of certain psychological causes (i.e. a belief-desire pair).

Jennifer Hornsby (1980) develops and challenges Davidson's idea by noting that there is a transitive and intransitive sense to the verb 'move', and accordingly to 'movement'. A movement (trans.) of the body is the event of something moving it (i.e. causing it to move); a movement (intrans.) is the event of it moving. In general, a movement (trans.) is not identical to a corresponding movement (intrans.); rather the former is the cause of the latter. If actions are the events of agents moving their bodies, it follows that they are bodily movements in the transitive, not the intransitive sense. Hornsby goes on to conclude that actions, being bodily movements (trans.), must not be identical to bodily movements (intrans.), but rather their psychological causes. She claims these causes are tryings.

Hornsby's distinction appears to teach the following lesson. Mere movements (intrans.) are not enough for agency, because agency involves causing, and causation only comes in with moving (trans.) Moreover, the causing has to be of the right kind. Consider the hackneyed example of raising my arm. If I raise my arm, my arm rises. But my raising it is only one way it could rise: it could be pulled up by a winch, or caused to go up by a scientist stimulating my motor cortex. For the movement (intrans.) of my arm to bear the marks of agency, it has to correspond to a movement (trans.) of the right psychological kind.

If we think of bodily change properties as properties of the body moving in such-and-such a way, it might be a problem for the thesis that they are determinates of action properties. For the body moving in such-and-such a way corresponds just to the non-causal notion of a movement (intrans.); for action we need the additional fact that I, the agent, *cause* the movement (intrans.) And since movements (intrans.) may or may not be the effects of actions, it seems that I could instantiate the property of my body moving

without necessarily instantiating any action property. Since determination requires asymmetric necessitation, it follows that ways of acting cannot correspond to bodily movements (intrans.) But we wanted to say that ways of acting were dynamic body properties, and these seem a lot like movements (intrans.) of the body.

One option is to understand movements of the body in such a way that it is not the case that they could fail to be actions (or effect of actions), in a strategy that mirros disjunctivism about perceptual experience. Just as disjunctivism about perception denies a type of experience which is neutral with respect to veridicality, disjunctivism about bodily movement denies a type of bodily movement which is neutral with respect to agency.

This strategy has been recently promoted by Adrian Haddock, (2005) in opposition to what he calls the 'standard story of action', according to which the most basic kinds of movements of the body are neutral with respect to whether or not they are actions, and actions are movements of the body plus some further condition, usually the right kind of psychological cause. Haddock writes:

> As with the 'traditional' theory of perception, the standard story of action aims to explain the idea of X in terms of the idea of Y; in its case, the idea of physical action in terms of the idea of bodily movement. This ambition will be thwarted if we take the idea of bodily movement disjunctively, such that the fact that Jane's body moves is constituted either by the fact that Jane moves her body (a physical action) or by the fact that Jane's body merely moves (a mere movement, and therefore not an action). This disjunctive account of bodily movement registers the thought that sometimes people move their bodies (they engage in physical action), and at other times their bodies move but they do not move them (their bodies merely move). But it does not introduce a further fact concerning something that is itself neither a physical action nor a mere movement but which also deserves to be called 'a bodily movement'....The standard story seeks to explain the idea of physical action and the idea of mere movement in terms of this 'further fact'...The disjunctive account denies this possibility, and insists that it is only possible to grasp the fact that Jane's body moves if we appeal to this disjunction. So the disjunctive account stands in direct opposition to the standard story. (p. 163)

For our concerns, we want to recast Haddock's claim in terms of properties. Here is a version of it:

(∨) If B is a bodily change property such that, necessarily, if one has B then
one performs an act, and $B\prime$ is a bodily change property such that, necessarily,
if one has $B\prime$ then one performs no act; then there is no neutral non-trivial
non-disjunctive property N such that, necessarily, if one has B or $B\prime$, then
one has N.

The intuitive idea (∨) aims to express is that there is no non-disjunctive bodily change
property which is common to both an agential property and a corresponding mere move-
ment property. The restriction 'non-trivial' on N is included to rule out properties like
being such that grass is green that obtain anyway, whether or not the agent acts. The
'non-disjunctive' restriction, obviously, is required to rule out the disjunctive property of
B or B\prime.

(∨) is a very strong thesis. It is much stronger than the rejection of the 'standard
story of action'. The weaker thesis, which might be called *non-conjunctivism*, is just that
bodily action is not the conjunction of neutral bodily change with some further property,
for example having been caused in the appropriate way. There are indeed reasons for
thinking that non-conjunctivism is true, first and foremost being the failure of attempts
to identify in a non-circular fashion the missing element required to add to neutral bodily
movement in order to get bodily action.[45] But evidence for non-conjunctivism should not
be confused with evidence for disjunctivism.[46]

On the face of it, (∨) is extremely implausible. When I walk the dog and when my leg
twitches, there do indeed appear to be many properties common between those cases, for
example the property of *one's foot going up*. These are not ruled out by most reasonable
interpretations of the 'non-trivial' restriction. Perhaps we could further restrict N to
more specific properties, even a maximally specific one such that no movement properties
other than B and $B\prime$ necessitate v. Leaving aside the fact that a maximal specificity
clause would render (∨) excessively weak, the restriction does not help. Just as the
nonspecific property *one's foot going up* could give a common factor between an action

---

[45]The so-called 'problem of deviant causal chains' originates with Davidson (1980d).
[46]This point is pressed on disjunctivism about perception by Hawthorne and Kovakovich (2006).

and an involuntary movement, a much more specific property can too; for the obvious reason that any action or mere movement can be described in terms of the body's motion through space as a three-dimensional object, and it is reasonable to think that there are properties corresponding to such descriptions.

We can press the point further by noting a difficulty that emerges when we try to state intelligibly what ($\vee$) is supposed to say. The formulation left it open which pairs B and $B\prime$ are to be matched up in the disjunction (this doesn't directly affect the truth of ($\vee$), since it is a universal negative — it says that *no* pairs of properties meet a certain condition, so doesn't need to specify which pairs in particular fail to meet that condition.) There is an intuitive notion of a bodily action and the mere movement corresponding to it, one that mirrors it precisely. It is the disjunction of *these* corresponding pairs specifically that is claimed to be nothing more than a disjunction. But it is precisely this intuitive notion of similarity between a bodily action and a possible mere movement of the body that the disjunctivist aims to debunk.

Note that there is an important disanalogy here with perception. Disjunctivists about perception can happily pair up cases of veridical perception with their corresponding hallucinations by appealing to the fact that it is impossible for a subject to know which of the two she is in.[47] But there is no analagous move with bodily movement. As soon as we try to find a mere movement of the body that corresponds to an action, we have to help ourselves to the (manifestly cogent) notion of intrinsic spatial similarity. So not only is ($\vee$) false, but the thought it aims to give expression to is somewhat elusive.

So it seems overambitious to deny that there is any neutral level of description pertaining both to actions and non-actions. But a less extreme option is open, which is just to deny that the neutral description identifies any property with much relevance to causal explanations of bodily action. The neutral properties in question were essentially geometrical: transformations of a three-dimensional solid moving through space. But this is not a very natural way of thinking about the body as a causal system. When trying to identify the bodily processes that realize action, it is misguided to focus just on the

---

[47]The importance of epistemic role in pairing up disjuncts is emphasised by M. G. F. Martin. (2006)

body's outer edges. A proper description of what is going on with the body when an agent acts will mention anatomical, physiological, neurological, metabolic properties — terms proper to the sciences for which animal bodies are objects. In short, we should attend to changes in total states of the body, rather than just to the figure desribed by the skin. And given this richer characterisation, plus minimal naturalistic assumptions, it is extremely plausible that action supervenes on the body.

The problem suggested by Hornsby's distinction was that the notion of a movement contains no causal component. x moves just in case x gets from A to B, or from shape C to shape D, regardless of what caused the change. But I suggest that this notion, as applied to the body, is a distortion: the body's moving is a matter of complex causal flows within and around it. The distinction between a movement (trans.) and a movement (intrans.) is misleading because it suggests an artificial division between what happens on the outer edges of the body — the movement (intrans.) — and the internal process that cause it — the movement (trans.) It is reminiscent of McDowell's picture of the disembodied mind acting on an alien body. Perhaps something of this is implicit in the locution 'move one's body', which disguises the essential *reflexivity* of bodily movement (to move one's body is to self-move.) By contrast, the broader notion of a bodily change carries with it a kind of causation internal to the property, given that the properties in question are changes to the dynamic causal system of an animal body.[48]

Properties of the body considered just as a moving geometrical solid do not feature significantly in causal explanations of the interactions between agents and their environments very much more than do, say, properties concerning the agent's distance from Liverpool. (An exception might be, perhaps, a description of the trajectory of a human cannonball.) Good explanations involve limbs as natural body parts with muscular and skeletal structure, the efferent channels that control their movement, afferent channels

---

[48]Hornsby herself has more recently come to recognise this as a consequence of her earlier view, and in particular of the view that a movement (intrans.) is not identical to its corresponding movement (trans.) She now advocates viewing the movement (intrans.) and (trans.) as aspects of the same causative *process*, as a way of capturing the sense in which causation is 'internal to the action'. (2011a; 2012) Although I do not discuss the metaphysics of processes, this proposal clearly has a certain amount in common with my treatment in terms of dynamic properties. See also Steward (1997; 2012a; 2013).

that relay perceptual feedback, and the mechanisms that integrate these channels to form higher-order representations of the body in its environment for the purpose of guiding action.[49] When these systems are taken into account, it is highly probable that there is a substantial class of causally significant bodily change properties that are determinables of action properties, and so can serve as ways of acting.

Does this commit us to the thought that there is some way of specifying the right kind of psychological-causal processes required for a bodily movement to be an action — in other words, to solving the problem of deviant causal chains? There is a sense in which it does, in that actions must have some distinctive physiological basis, and an aspect of this will be causal flows of a certain kind within the body. But this is different from the commitment that deviant causal chains pose a problem for, which is that the concept of action can be given necessary and sufficient conditions, one of which is a causal component. Deviant causal chains tell us that no *general* necessary and sufficient condition can be given for when a causal pathway is sufficient for agency. But attention to the logic of determination shows this requirement to be spurious — there is, for example, no analysis of the concept *red* that yields a necessary and sufficient condition for when a determinate shade falls under it. The point is just that each determinate is sufficient for the determinable, even though the list of determinates is in some sense open-ended and cannot be read off from an analysis of the concept of the determinable.

So talk of bodily change properties as determinates of action properties does commit us to there being a real distinction between right and deviant causation. But this is merely to register that there is some distinctive way in which psychological processes such as action are implemented by somatic properties, and that when these somatic properties — the identification of which is part of the subject-matter of the sciences of the human body — are instantiated, then action is metaphysically guaranteed. And this is just what we should expect from a naturalistic account of action and its basis in the body.

---

[49]There is a growing multidisciplinary body of research within neurophysiology, cognitive neuroscience, and cognitive psychology into these higher-order systems, originally termed 'body schema' by Henry Head (1911). For some overviews of recent literature, see Dijkerman and de Haan (2007); Haggard (Forthcoming); Holmes and Spence (2004); Maravita, Spence and Driver (2003); Maravita and Iriki (2004)

3.3.2   Environmental involvement; primeness; entanglement

The previous section argued that bodily change properties do not stop at the skin: they are properties of the body as a total system. I now want to argue that they do not stop at the skin in the opposite direction either, and that many important bodily change properties are essentially dynamic relations to an external environment.

It is a tempting thought that bodily change properties are just intrinsic transformations in an agent's body. When an agent acts, her body moves in a certain way and that causes changes in the environment. This kind of picture is expressed in Davidson's dictum 'all we do is move our bodies: the rest is up to nature.' The thought then might be to separate the causal story into a change property instantiated by the agent, and one (or a series of properties) instantiated by her surroundings. Then the action property is realized not by the bodily change property alone, but by the conjunction of the bodily change property with properties of the agent's environment.

This separation strategy mirrors one adopted by Shoemaker in response to the following concern:

> Assuming externalism about content, having thoughts about water will require...living in an environment in which there is water. And in that case the total realizer of the thought that there is water in the glass will be partly a relational property that something has only in an environment in which there is, or has been, water. (2007, p. 22)

He responds by distinguishing the *total realizer* — a relation between the thinker and their environment — from the *core realizer*, which he defines just as 'a property whose instantiation is a salient part of the total instantiation of [the realized property.]' (ibid.) Similarly, one might think that an agent's way of acting is just the core realizer of their action — a salient dynamic bodily property that determines the action only in conjunction with their environment.

Note that if the realizers of action properties do separate out in this way, this is a problem for the thesis that action realization is determination. For then the action property is realized not by any property of the agent, but by a property of the agent in

conjunction with a property of their environment. If the states of affairs that realizes action bifurcate into properties instantiated by the agent and those instantiated by her surroundings, this is inconsistent with the realizer being of the same fundamental kind as the action property, and hence with its being a determinate. So the thesis that bodily change properties are ways of acting because they determine action properties may require some tweaking.

But this kind of separation is in any case problematic for many acts. Consider a performance of a relatively simple act such as *tying one's shoelaces*. What is the body's contribution and what is the environment's contribution? We want to draw a line at the spatial boundary described by skin: the changes within that boundary over the relevant stretch of time constitute an instance of bodily property B; everything else in the vicinity constitutes an instance of environmental condition E.

I think this answer is inadequate, and fails to isolate a genuine and explanatory property of the agent, for two reasons. First, B does not feature in any interesting generalizations. The only counterfactual situations in which it might relevantly feature are those in which E, or some environmental condition not relevantly different from E, obtains. In most situations in which some condition $E\prime$ very slightly different from E obtains, it will be impossible for B to be instantiated, since the region of spacetime occupied by the body in B will already be taken up by the environment (e.g. the fingers spatially exclude the shoelaces.) And even if B is coninstantiable with a variant $E\prime$, its range of causal powers will be greatly diminished, since the body fails to interact with the environment in the right way (the fingers do not connect with the shoelaces.) These considerations suggest that the only causal-explanatory significance of B is the way it fits together with E; nothing more. This already points towards the conclusion that there is no meaningful sense in which B is the core component of what realizes the action, since its causal profile is so impoverished.

Secondly, just to specify B in any level of detail requires essential reference to an environmental interaction.[50] This is linked with the fact, argued in section 3.3.2, that

---

[50]A similar point has been argued by Frederick Stoutland (1985), and more recently by Will Small

B is a condition of the agent's body considered as a complete biological system, rather than as an arbitrarily bounded region of spacetime; and that, being a dynamic property, B has a causal profile internal to its duration, as well as forward- and backward-looking causal features. The physiological processes that constitute an instance of B will be, amongst other things, processes of perceptual feedback that guide motor commands — causal pathways from the environment back into the body as well as vice versa. As one ties one's shoelaces, one's fingers relay information about the position, thickness, and resistance of the shoelaces at the same time as themselves moving and causing the shoelaces to move. These feedback processes are not a mere overlay to the bodily changes but rather a part of it, and this becomes clear when we consider the bodily movement holistically, as I am recommending.

If we do think of bodily changes this way, it has the consequence is that it is no longer correct to think of the instance of B as causing (or being causally relevant to) the instance of E. Rather the specification of the changes the agent's body undergoes will be in terms of an ongoing causal transaction between body and environment.[51] So to arrive at a specification of B, as a purely intrinsic change property, we will need to take this whole causal transaction and simply delete from it the changes that occur outside a certain spatial region — so the intrinsic property becomes a sort of mereological construction out of the whole interaction. This makes it a strange kind of property; one might doubt it is a genuine property at all.

This situation bears similarities to a claim made by Williamson regarding the mental. Williamson argues that many mental states are *prime* — they do not factorise into an internal and external component. (1998; 2000, ch. 3) A condition is prime if and only if it can obtain in two situations α and β, but not in a third situation γ which precisely

---

(Forthcoming), that the intrinsic bodily movement cannot be identified without reference to an intention. I think this is too strong, and that bodily change properties are specifiable in terms of physiological processes without reference to intentions; but that the changes thus specified are environment-involving, and pure intrinsic changes cannot be identified except indirectly, by reference to environment-involving changes.

[51]The absence of a dyadic causal relation here is noted by Hornsby (2011a), who distinguishes between an action's being mediately or non-mediately performed, where only mediate actions are explicable in dyadic causal terms.

internally resembles α and precisely externally resembles β.

Primeness is a consequence of multiple realizability, as applied to relations. If a relational condition involving in an internal and external component is multiply realizable, then the contributions by the respective components can differ from case to case. So if both make different respective contributions in a pair of cases α and β where the condition obtains, taking the internal contribution from α and the external contribution from β, then in the resultant case γ the two components can fail to be in the right kind of harmony required for the relation. (For a very simple example, consider a model that assigns internal and external components a natural number numerical value. The condition that the components sum to 10 is prime.) The consequence of this is that there are no interesting generalizations about the role of the internal and external components in realizing the relation.

Almost all action properties that involve the agent's environment are prime. A driver breaks by depressing a pedal; a motorcyclist by squeezing a lever. In a third case, externally like the first but internally like the second, a driver squeezes the gear lever, and fails to break.[52] What matters is that the agent connect with their vehicle so as to engage the braking system. And this requires of any given case not that they make some generally significant kind of movement, but that they make a kind of movement appropriate for the vehicle they are operating.

But this case is, at least roughly, separable into an internal and external component; the movement the agent makes, and the vehicle they are operating. Squeezing a lever is something that can be done in a range of circumstances, in a car or on a motorcycle; it has a kind of generality and unity that I argued was lacking from the internal component in the shoelace case. The feature of ways of acting I am urging is much stronger than Williamsonian primeness. Primeness is in fact a very weak condition; it applies to almost any relation.[53] It says that just a condition is not *in general* factorizable into an internal

---

[52]Obviously the internal and external similarity here is only partial; some license is taken in describing the cases for the sake of vividness. Adapted from Gibbons (op. cit.)

[53]Williamson's claim that the mental is prime is controversial precisely because it is tantamount to the claim that mental states are irreducibly relational.

and external component, either of which is necessary or sufficient for its obtaining. I say that even *individual instances* of bodily change properties do not factorize into a bodily and an environmental contribution. Call this feature *entanglement.*

In action, our bodies become causally entangled with their surroundings. It is because of this that there is no natural separation of an instance of a bodily change property into an intrinsic and extrinsic part. But notice it does not follow from this that no action properties have an external component that can be factored out. Rather, on most occasions of action there is an independent environmental circumstance, and an entangled bodily transaction occurring in that circumstance. In property terms, most action properties are realized by an entangled bodily transaction in combination with an external circumstance.

Stick with the motorcyclist example: we can factor out the circumstance of their riding a motorcycle of a certain model, at a certain speed, and so on. But the bodily change at the core of the action of their braking — their squeezing the lever — itself involves a causal loop between the hand and the lever, as the rider feels the shape of the lever and the resistance it offers, simultaneously modifying the shape and pressure of their hand accordingly. This is the case for many action properties; they are realized by the combination of an entangled bodily change property with an independent environmental circumstance. So it turns out that there is an element of truth to the Davidsonian separation of what we do with our bodies from the rest — it is just that the division is not marked clearly by the spatial boundary of the skin.

This raises the problem noted earlier for ways of acting being bodily change properties. If the changes only realize the action in conjunction with the environment, they cannot be properly regarded as determinates; and nor can their conjunction with an environmental circumstance. This point seems correct in that, for many actions, typically ones whose success-condition is a state of affairs external to the agent, the environmental realizer is a state of affairs that has no particular connection to agency. For example, my replenishing the well has as its environmental realizer the circumstance that the pump is connected

to the water-supply. The conjunction of the relevant change property of my body with this circumstance realizes the action; but the claim that the conjunction determines it is much less plausible. Thus the principle (**W**), that whenever an agent ϕ-s they do so in some way w, where *w is a specific way of ϕ-ing*, is threatened

However, sometimes it is a more delicate matter to separate the environmental circumstance E from the entangled bodily change property B. Consider the act of throwing an peach in the air and catching it. The bodily change property B essentially involves an interaction with an external body of a certain shape, size, weight and hardness. But it seems wrong to say that B essentially involves an interaction *with a peach*; I could exemplify exactly the same changes but throw and catch a nectarine instead. So B alone is not modally sufficient for performing the act *throwing and catching a peach*; it has to be conjoined with the circumstance that the object I interact with is a peach, rather than some similar kind of round object.[54] Consequently, it is not quite right to say that bodily change properties are essentially interactions with environmental objects and properties; they are interactions with *types* of objects and properties, where the type is specified in neutral physical terms such as shape, size, mass, velocity, and so on.

There is an analogy here with Christopher Peacocke's notion of the *scenario content* of a perceptual experience. Scenario content involves neither particular objects, nor even kinds of objects. It is individuated 'by specifying which ways of filling out the space around the perceiver are consistent with the representational content's being correct'; where these 'ways of filling out the space' are given in terms of surfaces, their locations, orientation, magnitude, colour, and so on. (1992, p. 61)

Peacocke's idea of specifying ways of filling out space in a neutral way so as to be indifferent to kind properties is useful here, as this is exactly what we want to do when specifying the causal transactions between an agent's body and environment. What kinds of things the agent is grasping, or catching, or pushing, is irrelevant to the description of how their body is interacting with those things; what matters is just the physical

---

[54]Thanks to Alec Hinshelwood for this point.

properties.[55] This is what makes it possible to learn to do complex activities, such as flying an aeroplane, in a simulated environment: one does not need to actually be in an aeroplane in order to learn the very same ways of interacting with one's environment that one uses when flying an actual aeroplane. All that matters are the causal interactions between one's body and the distribution of neutral physical properties in one's surroundings.

There is a significant split between action properties whose environmental realizers just specify kind properties and those whose environmental realizers involve an independent state of affairs. In particular, when the environmental realizer is just a specification of kinds, this does not undermine determination to the same extent. A way of surfing, considered as an entangled interaction between the surfer's body and a medium with certain physical characteristics, is related to the activity of surfing with a degree of intimacy that is lacking from the relation of the way my hand grasps and moves the pump to the act of replenishing the water-supply. Although a way of surfing is not modally sufficient for surfing, since it could be instantiated in a simulator environment, it is modally sufficient for something very much like surfing (indeed, usually the only apt way to say what someone is doing in a ϕ-ing simulation is just that they are doing simulated ϕ-ing.)

Accordingly, it is is not unreasonable to regard bodily change properties as near-determinates, just short of true determinates, of action properties, in cases where all that is missing for modal sufficiency is a specification of the environmental kinds. Near-determination is not determination; but it is a relation that has all the features that were significant for our purposes about determination: the way of acting has its own unity, it has greater causal specificity than the action property,[56] and it might reasonably be regarded as of the same fundamental kind — an agentive organism interacting with its environment. The only feature missing is the formal condition of asymmetric

---

[55]Close joint action may be an exception; when an agent is interacting with another organism equipped with the same complex feedback systems as them, it may be more problematic to specify the other agent's contribution at the level of a neutral physical type. Relatedly, it is usually difficult or impossible to acquire skill and intelligence in activities requiring close co-operation just through simulations. However I will set these cases aside.

[56]It may however not have a subset of the causal powers of the action property: for instance, it may not have the causal power of tending to disturb marine life. But restricting attention to the causal features relevant to evaluating actions for intelligence, ways of acting that are near-determinates have all of the causal features and more than the action properties they nearly-determine.

necessitation.

When actions are nearly-determined by bodily change properties, we may regard the bodily change properties as ways of acting in the sense specified by (**W**). Actions that are not determined in this way do not satisfy (**W**), because the way w in which they are performed is not a specific kind of ϕ-ing: it is the conjunction of some bodily change property with an independent state of affairs.

Moreover, the division between ways of acting that are near-determinates and those that are not is significant from the point of view of explaining action. In particular, it matches closely with our contrast between specification and explanation. The determination relation was invoked as a way of explicating the demanding specificational sense of a way of acting; when this fails, near-determination is also apt. But when the agent's ϕ-ing is realized by a bodily change property plus an independent state of affairs, we are no longer giving a specification of the nature of the ϕ-ing (at least not in the demanding sense) so much as an explanation of how they came to ϕ. To say that my replenishing the water-supply is realized by my pump-operating movements in the circumstance of the pump being connected to the water-supply is to give an explanation of how I replenished the water-supply — I replenished the water-supply *by* operating the pump.

And this reveals a difference between the kinds of psychological explanation characteristic of the action properties: when the realizer involves an independent state of affairs, this suggests that, if the act was intelligently performed, the explanation will involve a piece of means-end knowledge, such as the knowledge that I can replenish the water-supply by operating the pump, whose truth is grounded in the relevant state of affairs, such as the pump's being connected to the water-supply. As I have argued, this sort of explanation is not comfortably applicable to skilled action, and the present discussion offers a satisfying explanation of this difference. Typically, skilled activities are involve entanglement between an agent and their environment; the only factorizable environmental component is the minimal one that the agent's environment instantiates certain kinds of things. Thus, there is no independent condition the obtaining of which might ground

the truth of a bit of means-end knowledge.

This also makes clearer the idea, proposed in section 2.3, that much skilled action is basic action. In both cases, one's knowledge how to perform the act cannot be a matter of being appropriately appraised of some fact about the world which makes it the case that, if one performs ψ, then one performs ϕ, because there is no such fact: the agent's contribution alone is sufficient for the performance, or for something very like it. It should not be surprising that basic action is not bounded by the body, given that the split between the agent's contribution and the environment's does not have a generally applicable circumscribed spatial boundary.

3.4   Summary

In this chapter, I have developed a conception of ways of acting as an answer to the specificational 'how?'-question, principally by noting the conceptual proximity of the specificational question to the determinate/determinable relation. The specificational, rather than the explanatory question, is appropriate only when asked of a restricted class of actions: those who satisfy (**W**), or whose realizers are determinates or near-determinates. If the realization of the action splits into two components, the agent's contribution and the environment's, then the appropriate kind of way is rather one corresponding the explanatory 'how?'-question, connected to the structure of means and ends. Skilled and basic actions are typical members of the class for which the specificational, and not the explanatory, question is appropriate.

More specifically, I defend the thesis that ways of acting are bodily change properties. These are properties of the agent's whole body, considered as a dynamic causal system; and they are entangled, irreducibly environment-involving, properties of the agent's body embedded in its environment. This identification allows us to account for the causal specificity of ways of acting: since they are the bodily realizers of action, they tell a detailed causal story about the worldly changes wrought by the agent. As such, understanding how an agent was in control of what happened when they acted means understanding

how the agent was in command of their ways of acting.

This sets the stage for a consideration of how intelligent action is guided by knowledge of ways of acting. As I have argued, when the ways are specificational, this knowledge is not comfortably cast as means-end knowledge. The question then stands, what sort of knowledge is it that skilled agents have of ways of acting, and how does this knowledge serve to explain the fact of their acting in those ways? It is to this question that I now turn.

4   Knowledge of Ways and the Guidance of Action

In the previous chapter I have argued for the strong and quite specific thesis that ways of acting, in the specificational sense, are bodily change properties. In this chapter I argue that knowledge of these ways of acting does indeed guide skilled action; however, it is the acquaintance-like knowledge of the way itself, rather than the propositional knowledge that the way is a way to ϕ, that explains the agent's skill and success in ϕ-ing. My positive account of how this knowledge guides action is suggestive and speculative: it is intended as a sketch, since a more robust elaboration and defence lies outside the scope of this thesis.

Although I argue from my claim in chapter 3 that ways of acting are bodily change properties, this is not essential to the overrall strategy. At a more general level, the claim is that entertaining propositions about a way of acting requires an acquaintance with that way of acting; and that this acquaintance is an already substantial practical-epistemic achievement, sufficient to explain an agent's acting in that way across a range of counter-factual cases, and hence to explain an agent's success and skill. Nothing about this point should depend on the specific metaphysics of bodily change properties and determination that I defend in the previous chapter. There are however independent motivations for the view that ways of acting are bodily change properties, which I raise in section 4.2.3.

4.1   Work for Ways of Acting

We are now in a position to appreciate some features of ways of acting that makes them apt to explain features of an agent's behaviour. First, the success-evaluable features of an agent's behaviour depend not just upon which acts they perform, but the ways in which they perform them. This is a consequence of the fact that the way of acting has a richer causal profile than the action property

How this explanation works will depend upon the success-condition of the act whose performance is being evaluated. Sometimes all that is required to be a successful ϕ-ing is to be a ϕ-ing, as in the act *hitting the bull's-eye.* In this case, the instantiation of the

action property entails that the success-condition is met; but the action property is not causally specific enough for its instantiation to yield a satisfying explanation of how the success-condition came to obtain. To get this explanation, we have to look in more detail at the agent's bodily movements in relation to the position of the dartboard, and this information is given by the more specific causal profile of the way of acting.

In other cases, a successful ϕ-ing is one that has a certain probability of bringing about some further consequence — for example, a serve with a certain probability of being an ace. In this case again, the more specific causal features of the way of serving, combined with the physical properties of the ball and the court, and the responses of the opponent, yield an explanation of the probable consequences after the ball leaves the player's racket. And in another range of cases, success depends upon the features of a performance that make it praiseworthy according to the evaluative standards of some practice. In these cases it is not directly the causal features of the way of acting that are relevant to the explanation, but rather the finer physical features that are correlated with higher-level evaluatively significant features.

So in explaining why a ϕ-ing was a successful ϕ-ing, we will want to advert to the specific manner of the ϕ-ing. But it is also the case that we may want to give a more general explanation of the success or failure of a number of distinct ϕ-ings by making reference to their being done in the same or similar ways. We want to speak not just of how an agent ϕ-ed on one occasion, but of their way of ϕ-ing in general. This more general idea of a way of acting is something close to the notion of technique: features of an agent's practice that occur in generalizations across more than one performance.

The determination relation will help us clarify the link between the specific and more general notion of a way of ϕ-ing. The more general way can still be regarded as a bodily change property, but a less specific one. The specification of the property will still make reference to the same bodily systems, but at a higher level of generality. For example, to return to the surfing example: a specification of the specific way the surfer rides a wave might refer to the changing position of their legs on the board in relation to physically sig-

nificant points on the wave, and how this is controlled by particular efferent pathways in response to information relayed about the changing position. A specification of the more general way might be in terms of a constant relation holding between the surfer's centre of mass and the wave, and how this is maintained by the co-ordination of the vestibular, visual and sensorimotor systems in higher-order cognitive systems that integrate multisensory perceptual feedback for the continuing guidance of action — but without reference to any specific positions or neural pathways. These kinds of specifications may be extremely complex, and perhaps beyond the scope of physiological description to actually give. But it is reasonable to suppose there are significant explanatory regularities in the properties surfers instantiate in relation to the waves; this is attested to by the fact they *do* successfully perform complex actions in a constantly changing dynamic environment, and are able to do so by learning a technique that remains relatively constant across a variety of situations. These regularities correspond to a determinable bodily change property.

So there are specific way of actings, which explain what happens on one particular occasion, but have fairly weak explanatory power in terms of its role in generalizations, since it is extremely unlikely a property that specific would be instantiated more than once. And there are more general ways, which have less power to explain the features of the agent's performance on one occasion, but more generality, being instantiated on multiple occasions. To get the generalizations we want, it is necessary to look at the more general ways of acting. These are, like the specific ways, determinates of the action property, but they are more determinable ones, themselves determined by a more specific way of acting on each occasion. It is the relatively determinable ways of acting that are likely to feature in psychological explanations of skilled action by reference to what the agent knows.

4.2   Knowledge of Ways

The notion of a way of acting as a bodily change property that determines an action property can be used to explain not just features of an agent's action on one occasion,

but also regularities in the agents performance. A way of acting in this latter, more general sense, is something akin to technique. So ways of acting can serve to describe general features of an agent's practice; ways of acting are things that one *has*, insofar as one is disposed to act in those ways. But we also want an account of ways of acting as things one *knows*, where dispositions to act in those ways are explained by knowledge of those ways. This is the kind of psychological explanation required to fill out our principle (**AK**).

An agent's way of ϕ-ing, for some act ϕ, has the causal specificity to explain features of their ϕ-ing, going beyond the causal profile of the action property A_ϕ. What psychological explanation by knowledge of ways should give us is causal explanation in the reverse direction: their reliably ϕ-ing in way w in actual and nearby counterfactual situations; and moreover it should do so in a way that credits the agent as epistemically responsible for the manner of their actions. Since ϕ-ing in way w causally explains success in ϕ-ing, this is tantamount to giving a normatively satisfying causal-psychological explanation of the agent's actual and counterfactual success at ϕ-ing by reference to what they know, which is precisely what (**AK**) called for.

According to Stanley and Williamson, attributions of knowledge how have the following form:

> (**SW**) There is some way of acting w such that S knows, of w, that it is a way [for S] to ϕ

The idea mooted in chapter 1 was that one might combine (**AP**) — the thesis that intelligent action is action guided by knowledge of propositions — with the thought that the propositional knowledge in question is of the form given in (**SW**). Understanding ways of acting as I have advocated, as bodily change properties that determine, or nearly-determine action properties, the known proposition is thus equivalent to the proposition that some bodily change property B is a determinate of the action property A_ϕ.

As it stands, the fact that some bodily change property B is a determinate or near-determinate of some action property A_ϕ is not a good candidate for the action-guiding

knowledge mentioned in (**AK**), for two reasons. First, it is an artefact of a recherché piece of metaphysical theory that no agent could reasonably be expected to know. The property B is to be specified in terms of processes within the body, and the causal interactions between these processes and the agent's environment, in a level of detail that outstrips even most explanations given in physiological sciences (the sciences that pertain to bodily action are concerned with specifying at a more general level the causal pathways involved in action, rather than identifying specific values for the processes involved in some particular action), let alone the knowledge of a normal agent.

Secondly, even if the agent were in possession of a specification of the bodily processes involved the performance of some act, and thereby knew that the specified change property B is a determinate of the action property A_ϕ, it is not clear how this knowledge would help them perform the act. For knowledge that some bodily change property is a way to perform some action does not yet make that property available to the agent as a way in which they could act.

Suppose we credit the agent with the knowledge, not just that w is a way to ϕ, but also knowledge that they can ϕ by moving (trans.) their body in way w, where moving (trans.) one's body in way w is understood as causing oneself to instantiate some bodily change property B. The knowledge attributed is thus the future conditional: if I cause myself to instantiate B over $t_0...t_k$, then I will ϕ over $t_0...t_k$. Now in order for this knowledge to guide intentional behaviour, it has to be available to the agent the action to cause themself to instantiate B, as a possible intentional action. But this is problematic, because it is unlikely that causing oneself to instantiate B is the sort of thing one can do intentionally at all. B includes changes within bodily systems that are beyond the sphere of intentional control: contractions of muscles and so on, but also activity of modular, informationally encapsulated cognitive systems involved in the preparation and guidance of action.

These two problems undermine respectively the necessity and the sufficiency for the intelligence of the performance of an act of knowledge of a proposition about which bodily

movement properties determine that act; and suggest two constraints on the knowledge that guides intelligent action. First, it must be knowledge that is reasonably attributable to the agent without thereby attributing an implausible intellectual grasp of the bodily basis of their possible beahviour. Secondly, it must be knowledge that bears essential connections to action; if it is knowledge of a way or of ways of acting, it must be knowledge whose possession thereby makes it available to the agent to act in that way, given the requisite motor capacities. This second constraint relates closely to the Rylean demand that the knowledge which guides an agent's action cannot stand in need of further interpretation by the agent in order to have practical import, on pain of a regress.

This brings us to two related salient features of Stanley and Williamson's analysis of knowing how: the ways of acting feature *de re*; and they do so under a practical mode of presentation. I take each in turn.

4.2.1   Ways of acting *de re*

The most straightforward way of drawing the distinction between the logical form of a *de dicto* attribution and that of a *de re* attribution is that the former is an ordered pair $\langle S, \xi \rangle$ of a thinker S and a complete propositional content ξ, and the latter is an ordered triple $\langle S, x, \xi(x) \rangle$ of a thinker, an object x, and a propositional fragment $\xi(x)$. Since the latter essentially includes x, a *res*, it is an immediate consequence that an attitude cannot be ascribed *de re* unless the relevant object x exists. The attribution ascribes knowledge (or whatever other attitude) of x that it is a certain way; unlike a *de dicto* attribution, the way in which x is specified in the attribution may or may not correspond to the way in which the thinker thinks of it. This indifference to how the thinker thinks of the *res* validates certain inferences from *de re* attributions that are not truth-preserving for *de dicto* attributions; namely the substitution of coreferential terms, existential generalization, and exportation. Related to this is the possibility of a *de re* ascription where the *res* is the value of a variable bound outside the scope of the attitude verb.

It is clear that attributions of the form of (**SW**) are *de re* in this sense. According to the standard semantics for embedded questions, the complement works like a quantifier over all the propositions that are answers to the question. In the case of 'how'-questions, the specific proposal is that the complement quantifies over ways. The sentence ascribes to the ascribee the knowledge *of* one, or many, ways, that it is or they are ways to ϕ; and it designates the way by means of the variable w bound outside the knowledge operator — this accounts for the feature of knowledge how attributions, and more generally of embedded question attributions, that they permit the ascription of knowledge which the ascriber does not themself possess. The form of the underyling attribution that witnesses the quantified attribution is a triple relating S, a way of acting w, and the propositional fragment $\ulcorner x$ is a way [for me] to $\phi \urcorner$.

This notion of *de re* is a semantical one that applies first and foremost to attributions of attitudes rather than to the attitudes themselves. There is a different sense, however, on which an attitude is *de re* if and only if it fundamentally involves a relation between a thinker and a *res*. This is an epistemic, not a semantical notion. The crucial feature of this epistemic notion, for our purposes, is that what makes the thinker's thought be about the *res* is a fact about some relation they stand in to the *res*: let us say that they need to be *acquainted*[57] with it.[58] Canonically this is a perceptual-causal relation, but there may be other ways of being acquainted with objects. (I shall argue that bundles of cognitive-motor dispositions enable acquaintance with ways of acting.)

There is a delicate question of how precisely to characterise the latter distinction. Burge (1977) urges that the core feature of *de re* belief is that the *res* fails to be 'completely conceptualised' by the thinker; that the facts that make the thinker's thought be about the object that it is about lie outside of the thinker's conceptual repertoire. Clearly

---

[57]This is not meant to be a substantial claim, I am just using acquaintance to mean any relation sufficient for *de re* thought.

[58]Most accounts of *de re* thought seek to rule out that if one knows that there is a shortest spy, then one can thereby have *de re* thoughts about the shortest spy. (Kaplan, 1968) Much of the work of Gareth Evans was devoted to explicating what kinds of relations one must stand in to an object if one is to be in a position to entertain thoughts about it, and the remarks in this chapter are offered broadly in that spirit. (1982; 1985) Some recent work by Hawthorne and Manley (2012) has questioned where there are any substantial epistemic constraints on singular thought at all, but I do not have space to consider their challenges here.

this is unexceptionable if it means just that the *res* is not by determined by something entirely in the thinker's head, such as a descriptive specification. But Burge intends it to mean that the facts that make it about the *res* are *nothing more than* 'nonconceptual contextual' factors. This is in effect to deny, contrary to neo-Fregeans such as Evans (op. cit.), Peacocke (1981) and others, that *de re* thought involves concepts of individuals; only general, internally individuated conceptual capacities that pick out different individuals depending on what things the thinker stands in the appropriate non-semantic causal relations to. McDowell (1984) responds by arguing that Burge's denial of individual concepts rests on a conflation of *content* of a concept — the individual *de re* sense it expresses — and its vehicle, an exercise of an internally individuated capacity for singular thought.

My way of talking is more in line with to the Evans-McDowell picture, but this should in principle be translatable into a Burgean idiom. Note, however, that if individual concepts are taken seriously, as McDowell urges, the difference between the two ways of drawing the *de dicto/de re* distinction collapses into a superficial one since, on the McDowell view, every *de re* attribution will be true in virtue of an underlying *de dicto* one, whose components are completely conceptualised by the thinker, albeit in a way that entails the existence of the *res* and their standing in an epistemically significant relation to it. Insofar as a substantial epistemic distinction remains, it is simply that the thinker's thought is about its object in virtue of some irreducibly relational facts about the thinker and the *res.*

These subtleties aside, it is this epistemic conception of *de re* thought that is relevant to meeting the constraint that (**AP**) should not implausibly intellectualise the agent's knowledge. The constraint arose because of the fact that the relevant property which is the agent's way of acting is a highly complex physiological property of the agent's body, and it seemed absurd to require the agent to be in possession of some specification of the property, or some means of articulating which property is their way of ϕ-ing. But if we incorporate the idea that what makes a thinker's thought be about an object is

not some independent bit of knowledge they have (a descriptive specification) but rather an extrinsic relation to the object, the problem disappears. For a thinker could be in a position to entertain the thought about a bodily change property that it is a way of ϕ-ing not in virtue of being able to explicitly specify the property, but rather in virtue of a relation borne by their thought and behaviour to that property. What this relation might be, and how it supports thought about the property, I discuss in section 4.2.3.

There is a parallel here with how environmental objects occur *de re* in the perceptual states invoked in externalist psychological explanations of action. My reaching towards a particular book on my left is explained in part by my perceptual knowledge that that book is on my left. In my perceptual knowledge I exercise a percetual-demonstrative concept *that book*.[59] As with demonstratives in linguistic communication, it is not required that I identify the referent with some description 'the book such that...': it is rather my acquaintance with it, enjoyed in virtue of the contextual facts about my perceptual-causal relation to it (perhaps plus some background enabling cognitive capacities), that does the work. These explanations are able to connect the content of the relevant state with what actually happens because it is the same mind-independent object, the book, which features in the specification of psychological content as features in the causal history of what happened. Explanation by *de re* knowledge of ways of acting seeks to establish a similar connection by exploiting the identity between the object of the agent's knowledge — a way of acting — and the property they instantiate when they act on that knowledge. (I develop this connection in more detail in the following sections.)

This kind of explanation is possible because of ways of acting are bodily change properties. Bodily change properties are more specific that the action properties they determine or nearly-determine, but they are in another way coarser-grained, since not individuated by their psychological role. (Perhaps bodily change properties are individuated by their causal role, although I am not committed to this.) As such, bodily change properties are open to redescription in a way that acts and their corresponding act properties are

---

[59]Cf. Peacocke, 1993. A more recent defence of the relevance of *de re* states to action explanation is given in Crawford, 2012.

not. The prospect of redescription is what makes possible the identity between the way of acting as thought of by the agent and the way of acting as given in the causal history of the agent's behaviour.

This point brings out further the difference between knowledge of ways and means-end knowledge: means-end knowledge deals in acts, which are not redescribable, since to 'redescribe' an act is rather to specify a distinct act. If we want to connect an agent's practical knowledge to what actually happens, we need to introduce objects of thought whose identity is constituted by something beyond their role in the agent's inner world. My proposal is that ways of acting (grasped under a practical mode of presentation — see below) can do this job.

4.2.2   Practical modes of presentation

The second element of Stanley and Williamson's analysis I want to discuss is that the way of acting is thought of by the agent under a practical mode of presentation. Stanley in his book defends a neo-Fregean view of ways of thinking as mental particulars individuated by their functional role; but the less contentious point is that, as long as one accepts that the same object may show up in thought in different ways, then it follows naturally that some of these ways may be distinctively practical, with essential links to past and possible future action.

The notion of a practical mode of presentation originates with a passage from Peacocke, which Stanley quotes:

> Some thoughts have an essential connection with action: for there are action-based ways of thinking of things. A particular type of gesture, which a subject is able to make on demand, even when the limb with which he makes it is anaesthetized, may be thought by the agent in such a way; when thought of in such a way, it may come as a surprise to him to see precisely what shape his limb traces when he makes the gesture thought of in that way...What seems to be constitutive of these ways of thinking is that when a thinker acts on an intention to perform an action thought of in one of these ways, he tries to act in a certain way (and does so in favourable circumstances). We cannot make sense of the possibility that someone is employing just these ways of thinking of a movement in the content of his intentions without such connections obtaining. (1986, p. 49-50; quoted in Stanley, 2011a, p. 123-124)

This suggests the thought: to think a way of acting under a practical mode of presentation is to think of it as a way one does or could act; as a property of one's own actual and possible actions. We can become aware of the ways in which we act — of properties of our actions, or of ourselves when we act — in ways that are distinctively practical. And part of this distinctive practical awareness is the connection with future action: one can form the intention to act in that way, and if things go well one does act in that way as a result of the intention.

This shows the way to solving the problem that instantiating B, or causing oneself to instantiate B, is not the sort of thing one can intend to do or intentionally do, since B is a property specified in terms of changes in one's body that lie outside the scope of intentional control. There is no act *instantiating* B to serve as object of an agent's practical attitudes. But by thinking of a bodily change property under a practical mode of presentation, the agent is able to form the intention to act in that way, without the physiological specification entering into the content of their intention. Similarly, the shape of the gesture in Peacocke's example may be specifiable only by a complicated geometrical description that lies outside what the agent can intentionally to do, when conceived as such. But when this shape is thought of in an action-based way, as a possible property of the agent's future actions, it is this practical mode of presentation, rather than the geometric specification, that enters into the content of the agent's intention.

We might think of a practical mode of presentation of B as a providing the agent with a motor routine whose activation is within their intentional control, and the activation of which causes them to instantiate B.[60] This is not intended as an analysis of the practical mode of presentation, but merely as the element of it that connects its occurrence in the agent's intention to the fact of their instantiating B. This is possible because of an identity: the identity of the referent of the practical mode of presentation, as it occurs in the intention, with the property B specified in terms of the bodily changes undergone by the agent when they act. It is identities like this that permit explanations in terms of

---

[60]This much is suggested by Papineau (2013) as an account of how sportspeople control the fine details of their performance, although he does not use the term 'practical mode of presentation'.

the contents of an agent's psychological states to be connected with causal explanations of what happens with an agent's body when they act.

4.2.3 *De re* attitudes to universals

It is a peculiarity of (**SW**), explicated thus, that it attributes *de re* grasp of a property — a universal-like, repeatable entity, rather than a spatiotemporally located individual. This is clearly required if these attributions are to play the desired role in explaining the intelligence of action. The desired explanation should have as its explanans a piece of knowledge that is a general, standing state of the agent, in principle applicable to more than one episode of behaviour. And this requires that the content of the known proposition be general, not particular — ways of acting need to be the kinds of things that can be instantiated at more than one time, during more than one episode of behaviour.

This raises tricky questions about the possibility of generality in *de re* thought. Canonical cases of *de re* attitudes are those enabled by demonstrative identification of perceptually presented objects; clearly this is not applicable when the *res* is a universal. But in the semantic sense, at least, there is nothing incoherent about the idea that thinkers could bear *de re* attitudes to repeatable entities. The logical form of a *de re* attribution is a triple of a thinker, a propositional fragement, and a *res*; it is at least intelligible that the *res* be an object of thought, but not a spatiotemporally located particular. The cogency of this possibility is supported by the behaviour of natural language locutions about repeatable entities: if, pointing to a certain sample on a colour chart, I can truly say 'Jim wants that colour for his bathroom' and 'Susie thinks that colour is hideous', it is possible to validly infer from my utterances that there is a colour that Jim wants for his bathroom and that Susie thinks is hideous. (Substitivity also seems intuitively valid: if my car is the same colour as the patch, one can infer from this identity that my car is the colour Jim wants for his bathroom.)

Whether or how the corresponding epistemic notion of *de re* is applicable is less clear. It might be thought that the generality of ways of acting is in tension with the *deixis*

involved in the practical mode of presentation. What is needed is some account of how the thinker's relation to the way makes it the case that their thought is about the way. But if this relation is thought of analogously with demonstrative reference to environmental objects, as an occurrent causal-informational link between a thinker and a particular, this will not provide the generality required to explain an agent's repeatable capacity to form the intention to act in that way and so on. If the practical way of thinking means thinking of a way of acting as *the way I am currently acting*, for example, that provides only a temporary link to the way in question, whereas we need a referential link to support a stative, relatively permanent attitude.

Equally, it is unacceptable if the mere fact of an agent's acting some way on an occasion affords her referential access to that way that continues after her token action has ceased. This kind of easy reference to a way of acting via the contextual fact that one is currently acting in that way would overgenerate referential access to a way of acting: if someone flukily hits the bulls-eye, their occurrent link to a way of throwing the dart would put them in a position to know, of that way, that it is a way to score a bulls-eye, and hence to know how to score a bulls-eye. But, clearly, such a person does not know how to score a bulls-eye, and their flukey success does not on its own put them in a position to know.

These considerations suggest that deictic reference to a way of acting, if it is possible, has to involve more than occurrent awareness of how one is acting. These difficulties are not specific to ways of acting, but are attendant on reference to universals in general. A suggestive remark by Gareth Evans brings out this point nicely: "We need a distinction between thinking of the [abstract] object of a thought via a description like 'the type of which this is a token', and thinking of it as *this type*." (Evans, 1982, p. 198-199) Note that the former fails as a semantic analysis, since it does not even refer: it is not a proper definite description, since there is no unique type of which any given individual is a token. The corresponding distinction for us is between a construal of *like this* as *the way I am [currently] acting* (or, possibly *the way I acted then*, *the way I will act at time* t, etc.), or

just as *this way*. The former embeds a (possibly practical) *deixis* to an episode of action or bodily movement in a description; the latter is an immediate nondescriptive *deixis* to the way itself.

What is required for this kind of reference? If *de re* attitudes to universals are possible, they must in general require the presence of capacities that go beyond those required for identifying the particulars that instantiate them. They require, at least, the presence of the standing capacity to identifying instances of the universal *as* instances, to in some way imagine an instance of the universal, and to know what it would be for something to be an instance of it. And these necessarily involve lower-level capacities to be sensitive to regularities in the world; to respond to the significant similarities between distinct situations and disregard the insigificant ones.[61] For instance, if numerical thought involves *de re* attitudes to numbers, these attitudes are surely enabled by lower-level capacities for counting and for recognising equinumerosity.[62]

Applying these thoughts to ways of acting, it is plausible that one must be able to identify instance of that way of acting as such, to imagine acting in that way, and to know what it would be to act in that way. And if the acquaintance is to be distinctively practical, one must be able to imagine *oneself* acting in that way, and know what it would be for one to act in that way such as to underlie one's continuing ability to intend and try to act in that way. Notice that this connects up these constraints on *de re* knowledge of ways of acting as universals to Peacocke's remarks about practical modes of presentation and their constitutive connections to present and future action.

If the capacities that track a way of acting are to make it available for thought in a distinctively practical way, then our line of reasoning suggests they must involve lower-level capacities for behaviour, specifically the behaviour of one's acting in that way. At the core of this is the disposition to try to act in way w, and if things go well to actually

---

[61]This account has been recently advocated by Marcus Giaquinto (2012), in an updated version of Russell's doctrine of acquaintance with universals by abstraction. Giaquinto argues that the empricism of Russell's abstractionism is inessential, and his view actually fits with nativist findings in psychology of innate basic capacities for category recognition.

[62]The role of counting capacities for enabling *de re* numerical thought has recently been stressed by Burge. (2007)

act in way w, when one forms the intention to act in way w, entertained under a practical mode of presentation. This core disposition then has connections to other dispositions, such as the triggering of particular kinaesthetic images when one tries to imagine acting in that way, and so on.

Here is a very brief account of how this works. The disposition to try to act in way w on forming the intention to do so provides a basis for the crucial identity between the referent of the practical mode of presentation and the property one instantiates as a consequence of forming the intention to act in that way. Forming the intention, providing one's body is in working order, causes one to act in accordance with that intention, which means instantiating some bodily change property. The disposition to instantiate that property on forming the intention constitutes an ongoing outward causal connection to that property, which is what underlies one's continuing *de re* referential access to it under a practical mode of presentation — analagously to how the ongoing inward causal connection to an environmental object underlies continuing *de re* referential access to that object under a perceptual-demonstrative mode of presentation. It is standing dispositional causal links, rather than occurrent efficient causal links, that fundamentally enable singular practical thought about ways of acting.

Note that this sketch account of practical acquaintance with ways does not violate the constraint of ability-independence. If one loses motor abilities, naturally one loses the relevant dispositions. But this does not entail that referential access to the way of acting immediately ceases: one still has a conception of what it would be to act in that way, and can imagine acting in that way; possibly one can even still try and intend to act in that way, although if one knows that one lacks the ability this is more doubtful. These continuing connections are enjoyed in virtue of the fact that one once possessed the dispositions, although one no longer does. However it may be the case that although these connections can survive the short-term loss of the dispositions, they eventually cease. Again the analogy with perceptual acquaintance is helpful: one can retain capacity for thought about an object if it is not immediately perceptually available; but the continuing

capacity for thought about it depends on the perceptual links being renewal and if they are permenantly cut off, referential access eventually fades away.

I think we need *de re* attitudes to ways of acting in order to make sense of how agents control the specific manner and character of their actions. The content of the psychological states that explain this control has to involve generality in a way that is not just predicational; this was the motivation for going beyond a sparse Davidsonian ontology of action. But the upshot of the above considerations is that it is not sufficient for being acquainted with a way of acting under a practical mode of presentation merely that one at some point acts in that way; there have to be a range of background capacities and dispositions in play that make that way available for one as a way in which one could act.

4.3   Acquaintance with Ways

The above discussion should make it clear that acquaintance with a way of acting under a practical mode of presentation has a key role in enabling the agent to reliably ϕ across a range of circumstances, and in causally explaining their actual and counterfactual success in ϕ-ing. And this acquaintance is a fairly demanding relation, requiring for its continuation that the subject possess a bundle of capacities and dispositions that connect their thought to that way of acting.

The point I want to now press is that the relation of acquaintance is sufficiently sophisticated and demanding to be properly regarded as a kind of objectual knowledge. And once we admit this it now seems that it is this acquaintance-like knowledge, which makes the bodily change property B available to the agent as a way of acting, that plays the crucial role in explaining their safely ϕ-ing, rather than any proposition they know involving B.

We can make this clear first by seeing that for many skilled activities, achieving practical acquaintance with a bodily change property that is a way of doing the activity is sufficient for learning how to do that activity. Once the agent has this acquaintance,

the further bit of propositional knowledge that the property is in fact a way of doing the activity comes cheap. A surfer finds a way of riding the wave — a relatively determinable property of their body being in a certain equilibrium on the board, maintained by fine adjustments in response to received feedback — and with practice develops the right lower-level dispositions to be able to ride the wave that way intentionally, through exercising their practical grasp of the bodily movement property that is a way of riding the wave. Once they have this knowledge, they know how to surf.

Contrast this with how means-end knowledge works. Suppose that operating the pump is a way to replenish the water-supply. If I have a practical grasp of the act *operating the pump* such that I can intend and try to operate the pump, this clearly does not entail that I know how to replenish the water-supply. I need the further bit of information that connects the acts *operating the pump* and *replenishing the water-supply*. But with skilled action, the propositional knowledge that some bodily change property is a way of ϕ-ing just comes along for free with the acquaintance with the bodily change property. Determination can explain this. Since w, an entangled causal transaction property between the agent's body and environment, is a determinate, or near-determinate, of the action property A_ϕ, there is an intimate connection between the two properties, such that the only way one can come to be acquainted with w is by learning to ϕ. The only way to come to know a way of riding the wave is by attempting to ride the wave; the only way one can come to know a way to serve is by serving, and so on.

Exceptions to this general truth are cases of simulation. A pilot might learn to fly a plane not by actually flying the plane, but in a simulator; presumably one could also learn to surf in a sufficiently sophisticated simulator. As we saw in section 3.3.2, this possibility is a consequence of the fact that the ways of acting are not alone sufficient for the performance of any act ϕ that includes environmental kind properties; w needs to be supplemented by a specification of the kinds of things the agent interacts with. Thus it is in principle possible that an agent might develop acquaintance with a way w of ϕ-ing, but lack the propositional knowledge that w is a way of ϕ-ing. I could learn to surf in a

perfect simulator, without ever being appraised of the fact that the way of acting I am learning is a way of surfing (at least, is a way of surfing when instantiated when I am surrounded by water rather than in a dry simulator.)

But the possibility of this case should reinforce, not undermine, the judgement that it is the acquaintance, not the propositional knowledge, that is the key explanatory state. Once I am practically acquainted with the property that is a way of surfing, *I now know how to surf*, even if I lack the propositional knowledge that it is a way of surfing. The point at which I receive the additional bit of information that the way of acting I learned is in fact a way of surfing does not mark a significant change in my practical-epistemic status. At best it might be characterised as learning that the thing I already know how to do is surfing. And even if this judgement about knowledge how is resisted — if we were to insist that the point at which I learn that w is a way of ϕ-ing, rather than the point at which I become practically acquainted with w, is the point at which I learn to ϕ — it remains the case that the acquaintance with w, and not the propositional knowledge, is the state most relevant to explaining my actual and counterfactual success in ϕ-ing. Thus it seems that the knowledge referred to in (**AK**) is, in the case of skilled action, not a piece of propositional knowledge, but rather objectual, acquaintance-like knowledge.

An analogy with perceptual acquaintance will reinforce and broaden the point. Imagine a fielder catching a ball. As the ball approaches, they manoeuvre themselves into an appropriate position and prepare their hands to receive the ball. And the explanation of their successfully doing so essentially involves the fact that they see, and keep track of, the ball. It is the ongoing perceptual-causal relation with an external object, the ball, that enables them to successfully act on that object. This is not to deny that there are propositions about the ball, its trajectory and location, and so on, that they know, and that these propositions are also relevant to the explanation of their behaviour. But the most powerful and unified explanation of this behaviour has at its core, in addition to any known propositions, their perceptual relation to the ball. This relation anchors the

explanation in that propositional knowledge about the ball both issues from acquaintance with it, and supports the continuation of the acquaintance. Similarly, when an agent acts on their knowledge of a way, there are propositions they know, or are in a position to know, about that way in virtue of their acquaintance with the way, and which support their continuing acquaintance with it. But we should not expect the acquaintance to reduce to any proposition or set of known propositions.

Another different example. I survey a box of apples, wanting to pick the tastiest one. In doing so I consider various propositions about the individual apples, and come to a conclusion about which one to pick. But to represent this just as a process of weighing up various propositions that recommend different apples is a distortion, and leaves out the essential element of my acquaintance with each apple. In inspecting the apples, I attend perceptually to them, and the attentional search is enabled by the fact that I have perceptually available to me a range of apples. And although the acquaintance puts me in a position to entertain true propositions about each apple, the acquaintance itself is the fundamentally explanatory property.

This is somewhat analogous to the situation of skilled agents who know many ways. A tennis player has a range of shots at their disposal, and different styles of executing them. Each of these corresponds to a distinct way of acting. Part of the tennis player's competence consists in the fact they have such a range of ways at their disposal; they select the one they judge most appropriate. In doing so, they may entertain various propositions about those ways that recommend them, for example the likely causal consequences of their acting in those ways. But there is no reason to suppose this process of selection reduces to their entertaining a series of propositions about each way, just as attentional search over an array of apples does not reduce to the consideration of a series of propositions about each apple. Rather, the possibility of their entertaining each proposition about a given way has a unified explanation, namely the fact that they are practically acquainted with that way, and hence know what it would be for them to act in that way.

This picture of acquaintance with ways as analogous with perceptual acquaintance helps solve a problem that arises for Stanley's propositionalist treatment of knowledge how.[63] Many activities are complex and multifarious, and skill in them requires that the agent possess not just one, but many ways of engaging in the activity. And not only this, but the agent has to possess the capacity to select ways appropriate to the occasion of action, and even respond in new ways to novel situations. Stanley writes,

> Of coure, 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
> some counterfactual success in fielding fly balls...What we assert when we assert of a
> skilled outfielder that he knows how to field a fly ball is that he knows *all* of a range
> of relevant ways that give him counterfactual success in fielding fly balls. Hence, to
> say of an outfielder in baseball that he knows how to catch a fly ball is to impart to
> him knowledge of *many* propositions of the form 'w is a way for him to field a fly
> ball'. (2011a, p. 183)

The question then arises, what guides the fielder's selection of one way over another in a given situation? For any two propositions, $\ulcorner w$ is a way [for me] to $\phi\urcorner$ and $\ulcorner w\prime$ is a way [for me] to $\phi\urcorner$, where w is a way that will work in this situation and $w\prime$ is not, how does the agent 'know' that the proposition involving w, rather than the one involving $w\prime$, is relevant here? Stanley's answer to this question *has* to be that the relevant proposition is activated by the operation of a subpersonal, unconscious mechanism, on pain of Ryle's regress. For if the agent needed some bit of higher-order (propositional) knowledge in order to select the w proposition over the $w\prime$ proposition, then the question arises why their selection is guided by *that*, rather than some other, higher-order proposition, and so on. Thus,

> For each of these propositions, knowledge of it structures his behavioural dispositions
> in manifold ways...Each propositional knowledge state results in what Ryle would
> call a *multi-track* disposition. (ibid.)

But this is a somewhat odd result, in that it undermines the sense in which the agent is responsible for the safety-ensuring features of their performance, and thus in control of its outcome. The fielder's selection of w when w is appropriate is explained entirely by

---

[63]The following paragraphs present a version of an objection pressed by Fridland. (2012; 2013; 2014)

the fact that a subpersonal module spits out a proposition involving w at the appropriate time, the triggering of which causes them to act in way w. And the presence of this module is in no way ensured by the semantic content of the proposition, which says only of w that it is a way to ϕ. So on this view it seems as though the safety of the agent's ϕ-ing is explained too little by their knowledge, and too much by an unintelligent, automatic disposition — and it would be strange if intelligent action were just action guided by such dispositions.

What we want is to give an explanation of the agent's selection of w over $w\prime$ whose explanans is itself an intelligent process, without invoking Ryle's regress. Acquaintance with ways provides us with the tools for this. Skilled agents have available to them a range of ways to act, as a consequence of their practical acquaintance with those ways. That availability puts them in a position to compare ways they could act, and select one they judge to be appropriate. And this process of comparison and selection, just like searching for the tastiest-looking apple, is an intelligent one, but not one that is essentially a matter of weighing up propositions.

To say that the process is intelligent is not to imply that it requies conscious attention, for clearly most decisions made by skilled agents are split-second ones, made unconsciously and without deliberation. To describe the process as intelligent is just, minimally, to say that it involves semantic content, and as such is subject to normative evaluations. The selection of an apple involves semantic content in the sense that the features of the apple I select are supposed to match those specified in the content of my desire or intention; and similarly a tennis player's shot selection is supposed to answer to an intentional specification. Normative evaluation comes with semantic content in the usual way, namely that a selection that matches the intention is evaluable as correct, and its correctness is creditable to the agent as a kind of achievement — unlike, for example, having a well-functioning digestive system. Other features of intelligent processes are the holistic links they bear to other contentful states and processes, and the possibility of their being subject to interference by conscious attention. None of this requires that the

processes themselves require conscious attention.[64]

There are of course questions to be asked about the nature of the processes by which we select ways of acting. But the analogy with perceptual attention to objects suggests there is no reason to think they are especially mysterious: they are just an instance of a more general capacity to be sensitive to the salient features of members of a relevant range of entities with which one is acquainted. In the apple case the exercise of this capacity is underpinned by the specific workings of the visual system; but at a general level there is nothing about the capacity for selection of an appropriate object that is peculiar to vision, nor even to the selection of spatiotemporal particulars. I have suggested that for ways of acting it is standing behavioural dispositions that play this role.

Just as perceptual acquaintance with spatiotemporal particulars is a distinctive mental kind, with an irreducible role in psychological explanations, so is practical acquaintance with ways of acting. The significance of this kind is widespread. I have focused primarily on skilled action, where the role of acquaintance with ways is especially salient, and the role of propositional knowledge less so. But the guidance of action by knowledge can in general be seen as an interaction between propositional, mean-end knowledge, and objectual knowledge of ways. In replenishing the well, I exercise my means-end knowledge how to do it. But I also, in operating the pump, exercise knowledge how to adapt my body to manipulate the lever in the right way, and this involves practical acquaintance with the bodily change property I instantiate in doing so.

Objectual knowledge of ways is thus implicated in basic bodily activities. We constantly exercise this knowledge in everyday coping with a complex and changing environment; much of it is so basic as to go mostly unnoticed. Attending to cases of skill helps bring this kind of knowledge into the foreground, but it is an epistemic kind that plays an essential role in our lives as embodied agents.

---

[64]Fridland (Forthcoming) argues that these features are all consistent with the processes being fully automatic.

4.4   Note on the Semantics of 'Know'

I have urged that if we are to make sense of how action is guided by knowledge, we need to recognise a distinctive role for practical acquaintance with ways of acting, as well as propositional knowledge. This is especially the case for skilled action, where the explanatory role of the practical acquaintance is far more significant than that of any propositional knowledge. An outstanding question, somewhat orthogonal to my primary concern, is how this should bear on a compositional semantics for sentences of the form 'S knows how to ϕ'.

The view I have defended, that skilled action is guided primarily by acquaintance with ways of acting, is strictly speaking entirely consistent with a uniform semantic treatment of 'knows how' sentences along the lines of Stanley and Williamson's embedded question analysis. For I have not claimed that intelligent ϕ-ers do not know any proposition of the form $\ulcorner w$ is a way [for me] to $\phi\urcorner$, just that often this knowledge is not explanatory. And if the attribution is *de re*, then it entails that the agent is acquainted with w; and Stanley and Williamson claim that in most contexts it attributes acquaintance under a practical mode of presentation. So the propositional analysis *also* attributes the objectual knowledge which I am claiming is the key explanatory state.

However it might also be claimed that sometimes 'knows how' directly attributes acquaintance with a way of acting, although at other times it attributes propositional means-end knowledge. This is in effect the view suggested by Rumfitt (2003) as a rival explanation of the linguistic data not ruled out by Stanley and Williamson's arguments.[65] He notes that this semantic split fits with cross-linguistic data: other languages have alternative locutions depending on whether what is attributed is more like a solution to a problem or more like competence in a practice.

My claims, if true, offer tentative, though not decisive, support, for a Rumfitt-style bifurcationist view of the semantics of 'knows'. The fact that there are two distinctive mental kinds, means-end knowledge and acquaintance with ways, involved in the expla-

---

[65]It is also tentatively endorsed by Wiggins (2012)

nation of intelligent action, and that explanations by means-end knowledge are different in form from explanations by objectual knowledge, gives us a real distinction that one might expect our locutions for attributing knowledge to track. However, such considerations will need to be weighed up against other linguistic considerations to warrant any firm conclusion. One theme that I hope to have emphasised is the need to separate questions about the correct semantics for knowledge attributions from questions about the psychological and epistemic explanation of action.

References

Alvarez, Maria and Hyman, John, Agents and their Actions. Philosophy, 73 1998:2, pp. 219–245.

Anscombe, G. E. M., Intention. Cambridge, MA; London: Harvard University Press, 1957.

Bengson, John and Moffett, Marc A., editors, Knowing How: Essays on Knowledge, Mind, and Action. Oxford: Oxford University Press, 2011.

Bengson, John and Moffett, Marc A., Nonpropositional Intellectualism. in: **John Bengson and Marc A. Moffett, editors**, *Knowing How: Essays on Knowledge, Mind, and Action*.

Bengson, John and Moffett, Marc A., Two Conceptions of Mind and Action: Knowledge How and the Philosophical Theory of Intelligence. in: **John Bengson and Marc A. Moffett, editors**, *Knowing How: Essays on Knowledge, Mind, and Action*.

Block, Ned, Anti-Reductionism Slaps Back: Mental Causation, Reduction and Supervenience. Philosophical Perspectives, 11 1996, pp. 107–132.

Block, Ned and Stalnaker, Robert, Conceptual Analysis, Dualism, and the Explanatory Gap. The Philosophical Review, 108 1999:1, pp. 1–46.

Burge, Tyler, Belief De Re. Journal of Philosophy, 74 1977:6, pp. 338–362.

Burge, Tyler, Postscript to "Belief De Re" (2006). in: Foundations of Mind. Oxford: Clarendon Press, 2007.

Cassam, Quassim, Ways of Knowing. in: Proceedings of the Aristotelian Society (Hardback). Volume 107, Wiley Online Library, 2007, pp. 339–358.

Chalmers, David, The Conscious Mind: In Search a Fundamental Theory. Oxford: Oxford University Press, 1996.

Chalmers, David and Jackson, Frank, Conceptual Analysis and Reductive Explanation. The Philosophical Review, 108 2001:3, pp. 315–360.

Crawford, Sean, De Re and De Dicto Explanation of Action. Philosophia, 40 2012, pp. 783–798.

Davidson, Donald, Actions, Reasons, and Causes. in: **Davidson**, *Essays on Actions and Events*, orig. 1963.

Davidson, Donald, Agency. in: **Davidson**, *Essays on Actions and Events*, orig. 1971.

Davidson, Donald, Essays on Actions and Events. Oxford: Clarendon Press, 1980c.

Davidson, Donald, Freedom to Act. in: **Davidson**, *Essays on Actions and Events*, orig. 1973.

Davidson, Donald, The Logical Form of Action Sentences. in: **Davidson**, *Essays on Actions and Events*, 1967.

Dickie, Imogen, Skill before Knowledge. Philosophy and Phenomenological Research, 85 2012:3, pp. 737–745.

Dijkerman, H. Chris and Haan, Edward H. F. de, Somatosensory processes subserving perception and action. Behavioral and Brain Sciences, 30 April 2007:02, p. 189.

Dorr, Cian and Hawthorne, John, Naturalness. in: **Bennett, Karen and Zimmerman, Dean, editors:** Oxford Studies in Metaphysics. Volume 8, Oxford: Oxford University Press, 2013 ⟨URL: `http://users.ox.ac.uk/~sfop0257/papers/Naturalness.pdf`⟩, (retrieved 24/10/2013).

Dreyfus, Hubert L., Overcoming the Myth of the Mental: How Philosophers Can Profit from the Phenomenology of Everyday Expertise. UC Berkeley College of Letters and Science 2005.

Ehring, Douglas, Mental Causation, Determinables and Property Instances. Noûs, 30 December 1996:4, p. 461.

Ehring, Douglas, Tropes: Properties, Objects, and Mental Causation. Oxford: Oxford University Press, 2011.

Evans, Gareth; McDowell, John, editor, The Varieties of Reference. Oxford: Oxford University Press, 1982.

Evans, Gareth, Identity and Predication. in: Collected Papers. Oxford: Clarendon Press, 1985.

Fine, Kit, Acts, Events and Things. in: Language and Ontology. Wien: Hölder-Pichler-Tempsky, 1981.

Ford, Anton, Action and Generality. Ph. D thesis, University of Pittsburgh, 2008.

Ford, Anton, Action and Generality. in: **Ford, Hornsby and Stoutland**, *Essays on Anscombe's Intention*.

Idem, Hornsby, Jennifer and Stoutland, Frederick, editors, Essays on Anscombe's Intention. Cambridge, MA: Harvard University Press, 2011.

Frankfurt, Harry G., Alternate Possibilities and Moral Responsibility. Journal of Philosophy, 66 1969:3, pp. 829–39.

French, Craig, Knowledge and Ways of Knowing. Proceedings of the Aristotelian Society (Hardback), 114 December 2014:3pt3, pp. 353–364.

Fricker, Elizabeth, Unreliable Testimony. Forthcoming.

Fridland, Ellen, Knowing-how: Problems and Considerations: Knowing-how: Problems and Considerations. European Journal of Philosophy, 23 2012:2, pp. 1–25.

Fridland, Ellen, Problems with Intellectualism. Philosophical Studies, 165 2013:3, pp. 879–891.

Fridland, Ellen, They've Lost Control: Reflections on Skill. Synthese, 191 2014:12, pp. 2729–2750.

Fridland, Ellen, Automatically Minded. Synthese, Forthcoming, pp. 1–27.

Geach, Peter, Mental Acts: Their Content and Their Objects. London, New York: Routledge and Kegan Paul, 1971, orig. 1957.

Giaquinto, Marcus, Russell on Knowledge of Universals by Acquaintance. Philosophy, 87 2012, pp. 497–508.

Gibbons, John, Knowledge in Action. Philosophy and Phenomenological Research, 62 May 2001:3, p. 579.

Gibbons, John, Seeing What You're Doing. in: **Gendler, Tamar Szabó and Hawthorne, John, editors:** Oxford Studies in Epistemology. Oxford: Oxford University Press, 2010.

Haddock, Adrian, At one with our actions, but at two with our bodies: Hornsby's account of action. Philosophical Explorations, 8 June 2005:2, pp. 157–172.

Haddock, Adrian, "The Knowledge That a Man Has of His Own Intentional Actions". in: **Ford, Hornsby and Stoutland**, *Essays on Anscombe's Intention*.

Haggard, P., Disorders of Body Scheme P. Haggard & DM Wolpert 2. in: **Freund, editors:** Higher-Order Motor Disorders. Oxford University Press, Forthcoming.

Hawthorne, John and Gendler, Tamar Szabó, The Real Guide to Fake Barns: A Catalogue of Gifts for your Epistemic Enemies. Philosophical Studies, 124 2005:3, pp. 331–352.

Hawthorne, John and Manley, David, The Reference Book. Oxford: Oxford University Press, 2012.

Hawthorne, John and Stanley, Jason, Knowledge and Action. Journal of Philosophy, 105 2008:10, pp. 571–590.

Head, H. and Holmes, G., Sensory Disturbances in Cerebral Lesions. Brain, 34 1911, pp. 102–254.

Holmes, Nicholas P. and Spence, Charles, The body schema and multisensory representation(s) of peripersonal space. Cognitive Processing, 5 June 2004:2, pp. 94–105.

Hornsby, Jennifer, Actions. London: Routledge and Kegan Paul, 1980.

Hornsby, Jennifer, Actions in their Circumstances. in: **Ford, Hornsby and Stoutland**, *Essays on Anscombe's Intention*.

Hornsby, Jennifer, Ryle's Knowing How, and Knowing How to Act. in: **Bengson and Moffett**, *Knowing How: Essays on Knowledge, Mind, and Action*.

Hornsby, Jennifer, Actions and Activity. Philosophical Issues, 22 2012:1, pp. 233–245.

Hyman, J., Knowledge and Evidence. Mind, 115 October 2006:460, pp. 891–916.

Hyman, John, How Knowledge Works. The Philosophical Quarterly, 49 1999:197, pp. 433–451.

Jackson, Frank, Epiphenomenal Qualia. The Philosophical Quarterly, 32 April 1982:127, p. 127.

John Hawthorne, Karson Kovakovich, Disjunctivism. Proceedings of the Aristotelian Society, Supplementary Volumes, 80 2006, pp. 145–183.

Kaplan, David, Quantifying In. Synthese, 19 1968:1-2, pp. 178–214.

Karttunen, Lauri, Syntax and Semantics of Questions. Linguistics and Philosophy, 1 1977:1, pp. 3–44.

Kim, Jaegwon, Events as Property Exemplifications. in: **Brand, M. and Walton, D., editors:** Action Theory. Dordrecht: Reidel, 1976.

Kim, Jaegwon, Epiphenomenal and Supervenient Causation. Midwest Studies in Philosophy, 9 1984a:1, pp. 257–270.

Kim, Jaegwon, Supervenience and Supervenient Causation. Southern Journal of Philosophy Supplement, 22 1984b:S1, pp. 45–56.

Kim, Jaegwon, Mind in a Physical World: An Essay on the Mind-body Problem and Mental Causation. Cambridge, MA: The MIT Press, 1998.

Kripke, Saul, Naming and Necessity. Cambridge, MA: Harvard University Press, 1980.

Kripke, Saul, Identity and Necessity. in: Philosophical Troubles: Collected Papers Vol. 1. Oxford, New York: Oxford University Press, 2011, orig. 1971.

Lavin, Douglas, Must There Be Basic Action? Noûs, 47 2013:2, pp. 273–301.

Lewis, David, New Work for a Theory of Universals. Australasian Journal of Philosophy, 61 1983:4, pp. 343–377.

Lewis, David, Causal Explanation. in: Philosophical Papers, Vol. 2. Oxford: Oxford University Press, 1986.

Maravita, Angelo and Iriki, Atsushi, Tools for the body (schema). Trends in Cognitive Sciences, 8 February 2004:2, pp. 79–86.

Maravita, Angelo, Spence, Charles and Driver, Jon, Multisensory integration and the body schema: close to hand and within reach. Current Biology, 13 July 2003:13, pp. R531–R539.

Martin, M. G. F., On Being Alienated. in: **Gendler, Tamar Szabó and Hawthorne, John, editors:** Perceptual Experience. Oxford: Clarendon Press, 2006.

McDowell, John, De Re Senses. The Philosophical Quarterly, 34 1984:136, pp. 283–294.

McDowell, John, Mind and World. Cambridge, MA: Harvard University Press, 1994.

McDowell, John, What is the Content of an Intention in Action? Ratio, 23 2010:4, pp. 415–432.

O'Brien, Lucy, Self-Knowing Agents. Oxford: Oxford University Press, 2007.

Papineau, David, In the Zone. Royal Institute of Philosophy Supplement, 73 October 2013, pp. 175–196.

Peacocke, Christopher, Demonstrative thought and psychological explanation. Synthese, 49 1981:2, pp. 187–217.

Peacocke, Christopher, Thoughts: An Essay on Content. Oxford: Oxford University Press, 1986.

Peacocke, Christopher, A Study of Concepts. Cambridge, MA; London: The MIT Press, 1992.

Peacocke, Christopher, Externalist Explanation. Proceedings of the Aristotelian Society, 67 1993, pp. 203–30.

Prior, Arthur N., Determinables, Determinates and Determinants (II). Mind, 58 1949:230, pp. 178–194.

Robb, David, The Identity Theory as a Solution to the Exclusion Problem. in: **Gibb, S. C., Lowe, E. J. and Ingthorsson, R. D., editors:** Mental Causation and Ontology. Oxford: Oxford University Press, 2013.

Rumfitt, Ian, Frege's Theory of Predication: An Elaboration and Defense, with Some New Applications. The Philosophical Review, 103 October 1994:4, pp. 599–637.

Rumfitt, Ian, Savoir Faire. The Journal of Philosophy, 100 2003:3, pp. 158–166.

Ryle, Gilbert, Knowing How and Knowing That: The Presidential Address. Proceedings of the Aristotelian Society, 46 1945:1, pp. 1–16.

Ryle, Gilbert, The Concept of Mind. Penguin Modern Classics, 2000, orig. 1949.

Setiya, Kieran, Practical Knowledge. Ethics, 118 2008:3, pp. 388–409.

Setiya, Kieran, Knowing How. Proceedings of the Aristotelian Society (Hardback), 112 October 2012:3, pp. 285–307.

Shoemaker, Sydney, Identity, Cause, and Mind (Expanded Edition). Oxford; New York: Oxford University Press, 2003.

Shoemaker, Sydney, Physical Realization. Oxford: Oxford University Press, 2007.

Sider, Theodore, Writing the Book of the World. Oxford: Oxford University Press, 2011.

Small, Will, Bodily Movement and its Significance. Philosophical Topics, Forthcoming ⟨URL: `http://www.cwsmall.com/downloads/wsmall_BMiS_mar14.pdf`⟩.

Snowdon, Paul, Knowing How and Knowing That: A Distinction Reconsidered. in: Proceedings of the Aristotelian Society (Hardback). Volume 104, Wiley Online Library, 2004, pp. 1–29.

Snowdon, Paul, Rylean Arguments: Ancient and Modern. in: **Bengson and Moffett**, *Knowing How: Essays on Knowledge, Mind, and Action*.

Sosa, Ernest, Mind-body Interaction and Supervenient Causation. Midwest Studies in Philosophy, 9 1984:1, pp. 271–281.

Sosa, Ernest, How To Defeat Opposition to Moore. Philosophical Perspectives, 13 1999:s13, pp. 137–149.

Stalnaker, Robert, Inquiry. Cambridge, MA: The MIT Press, 1987.

Stanley, Jason, Know How. Oxford: Oxford University Press, 2011a.

Stanley, Jason, Knowing (How). Nous, 45 2011b:2, pp. 207–238.

Stanley, Jason and Williamson, Timothy, Knowing How. The Journal of Philosophy, 98 2001a:8, pp. 411–444.

Stanley, Jason and Williamson, Timothy, Knowing How. Journal of Philosophy, 98 2001b:8, pp. 411–444.

Steward, Helen, The Ontology of Mind: Events, Processes, and States. Oxford: Oxford University Press, 1997.

Steward, Helen, Actions as Processes. Philosophical Perspectives, 26 2012a:1, pp. 373–388.

Steward, Helen, A Metaphysics for Freedom. Oxford: Oxford University Press, 2012b.

Steward, Helen, Processes, Continuants, and Individuals. Mind, 122 2013:487, pp. 781–812.

Stoutland, Frederick, Davidson on Intentional Behaviour. in: **Brian McLaughlin, Ernest Lepore, editor:** Actions and Events: Perspectives on the Philosophy of Donald Davidson. Volume 17, Oxford: Oxford University Press, 1985.

Thompson, Michael, Life and Action: Elementary Structures of Practice and Practical Thought. Cambridge, MA: Harvard University Press, 2008.

Wiggins, David, Practical knowledge: Knowing How To and Knowing That. Mind, 121 2012:481, pp. 97–130.

Williamson, Timothy, The Broadness of the Mental: Some Logical Considerations. Philosophical Perspectives, 12 1998, pp. 389–210.

Williamson, Timothy, Knowledge and its Limits. Oxford: Oxford University Press, 2000.

Williamson, Timothy, Improbable Knowing. in: **Dougherty, Trent, editor:** Evidentialism and its Discontents. Oxford: Oxford University Press, 2011.

Williamson, Timothy, Very Improbable Knowing. Forthcoming ⟨URL: `http://www.philosophy.ox.ac.uk/__data/assets/pdf_file/0015/19302/veryimprobable.pdf`⟩.

Wilson, Jessica, How Superduper Does a Physicalist Supervenience Need to Be? Philosophical Quarterly, 50 1999:194, pp. 33–52.

Wilson, Jessica, Determination, Realization and Mental Causation. Philosophical Studies, 145 July 2009:1, pp. 149–169.

Yablo, Stephen, Mental Causation. The Philosophical Review, 101 1992:2, pp. 245–280.

Zalabardo, José L., Scepticism and Reliable Belief. Oxford: Oxford University Press, 2012.