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KNOWLEDGE, HABIT, PRACTICE, SKILL

My father was an anthropologist who wrote his dissertation on the Gikuyu. He lived in Kenya in the late 1950s and was based at Makerere University in Uganda, where many future Kenyan leaders were educated. Among his research subjects, as well as his research assistants, were sophisticated, western educated intellectuals, who had attended Alliance High School and Makerere, and were familiar, as was Kenyatta of course, with western Anthropology in the mid-20th century. My father would often relate the following story about his research assistant. His research assistant had a sophisticated western education. This education taught him that the local witch doctor in his community could not place a curse on him, that such practices were superstition. Nevertheless, he was placed into a panic by the news that a curse had in fact been placed upon him, a panic which no amount of rational discussion could alleviate.

The theoretical point my father was making with this story is one that has come to be associated with the sociologist Pierre Bourdieu, when he writes about praxis, using his concept of the habitus. Practices and habits are outside the realm of rationality. My father was making the point that someone growing up Gikuyu was introduced into habits and practices not as rational beliefs, but as behavioral dispositions that signaled belonging in a tribal group. Exposure to western education did nothing to undermine or expose these practices as irrational, because immersion in a practice was not a matter of adopting a set of beliefs. To borrow terminology from John McDowell, social practices stand outside the space of reasons. They cannot not be confronted or challenged by the acquisition of knowledge of true propositions. Social practices are patterns of behavior, rather than acquisitions of beliefs.

But what psychologically mediates participation in a habitus? One route into this question is via the works of Merleau-Ponty.<sup>1</sup> Merleau-Ponty draws our attention to the case of Schnieder, who because of brain trauma was not able accurately to point to objects in his immediate environment. However, Schnieder was able to reach out and grab these objects. This led Merleau-Ponty to the view that there are two kinds of engagement with the world. One kind of engagement with the world is guided by visual representations. Presumably, it is visual representations of objects that guide us in pointing. Another kind of engagement with the world is sensory-motor engagement, the paradigm case of which would be grabbing. Sensory-motor representations may not even best thought of as representations at all, but rather as bodily interactions with the objects in the environment.

In *Sein und Zeit*, Heidegger makes a similar distinction to the one Merleau-Ponty draws between visual and motor intentionality. Heidegger notes that our relation with a tool, such as a hammer, takes one form when we are merely perceiving it; presumably, Heidegger means that it is some kind of visual representation. He then observes that when we use the hammer, our relation to it is fundamentally different in character.

The observation that there are sensory-motor representations and visual representations by itself does not amount to much. That there are two different kinds of ways of representing the world, visually and bodily, does not obviously yield much of philosophical significance. To take a mundane example, I may think of the combination to the lock for my bicycle in two ways. For example, I may think of it symbolically, as the numbers “11-44-36”. Or I may only remember how to open the lock by manually operating it with my fingers - letting my fingers go to these numbers, but without being able to recollect the numbers in linguistic, symbolic form. Insofar as Merleau-Ponty and Heidegger are just making the point that there are different kinds of conceptual representations of objects (be they physical

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<sup>1</sup> Maurice Merleau-Ponty, The Phenomenology of Perception (New York: Humanities Press, 1962).

objects or numbers), it is genuinely not clear there is much philosophical weight to hang on their distinctions.

But many theorists have read into Merleau-Ponty and Heidegger's discussions a significantly more dramatic claim. The claim concerns the ancient topic of the relation between *Techne* and *Episteme*. The more dramatic claim later figures have drawn from Merleau-Ponty and Heidegger is that *Techne* is either prior to, or at the very least independent of, *Episteme*.

I don't think it is quite accurate to take Plato and Aristotle's use of "episteme" to be knowledge in the sense of contemporary epistemology. One reason is that the contemporary doctrine of propositions, which is presupposed by much of contemporary epistemology, only reaches full fruition in the works of Frege, Moore, and Russell (a claim I can obviously not substantiate here). But it won't obscure my points today if we do take "episteme" to mean propositional knowledge.

It is obviously a matter of difficult scholarship to say what "Techne" meant for the ancients. But it is not too far off to suggest that *Techne* is a certain class of skilled human action in the world. Its manifestations can take multiple forms. Medicine is of course an arch example of *Techne* - the skilled doctor intervenes in natural processes in an attempt to make the patient better. So are the crafts, like ship-building. Sports too are examples of skilled human action in the world. Professional tennis players and football players are exhibiting skilled action, affecting the course of events. Social skills, like the skill of conversation, counts as an example. Skill at politics is another such example. But there are also some more mundane examples. Navigation is a skill, but so is navigating a path to Larissa.

In contemporary terms, what emerges from the work of Merleau-Ponty and Heidegger is the view that that skill is *prior to, or independent of*, knowledge. The argument from Merleau-Ponty and Heidegger's points about differences between sensory-motor representation and visual representation to the conclusion that skilled action is rarely clearly developed. But presumably the idea is that our

bodily interactions with the world do not constitute conceptual representations that can be the constituents of a propositional structure. Skills of whatever sort involve the kinds of bodily interactions to which Merleau-Ponty and Heidegger draw our attention. So skills are not based on a body of propositional knowledge. Skills are not even based on *beliefs* with propositions as their content.

It is yet a further step to the conclusion that skills precede knowledge. But once it is granted that skills are independent of propositional knowledge, the temptation is irresistible to put them to use in the analysis of other philosophical notions, such as the notion of knowledge and the notion of virtue. Out of this come traditions such as virtue epistemology, most prominently as exemplified in the work of Ernest Sosa and Linda Zagzebski, as well as certain versions of virtue ethics.

We may think of there being different traditions in 20th century philosophy, but it is not an exaggeration to say that there is a single overarching agreement between these traditions on these points. When eminent philosophers as diverse in their thought as Martin Heidegger, Maurice Merleau-Ponty, David Lewis, and Ernest Sosa all agree with a point, it is fair to say that it transcends perceived differences between philosophical traditions.

The view that skills and habits are prior to or at least independent of states like knowledge and belief, which have propositions as their objects, is not just influential in philosophy. Primarily via Bourdieu, but also Hubert Dreyfus, it has become immensely influential throughout the human sciences. Feminist theorists have told us that female occupations such as midwifery are practices in Bourdieu's sense, ones not guided by universal theoretical principles or based on theoretical knowledge. Anthropologists have urged that tribal customs be understood on this model, as habits emerging from bodily engagement with the world, a point that is used to explain their persistence in the face of apparent counter-evidence; if tribal customs and practices are not systems of belief, then they are not subject to

rational revision and evaluation in the way that is characteristic of belief.

In the cognitive sciences, the view that skills and habits are not based upon states with propositional content, be it knowledge or belief, has resulted in a certain view of motor skills, from more mundane skills such as finding one's way through a maze, to less mundane ones like tennis and basketball. The view is that these skills exemplify a different kind of cognitive state entirely, which in neuroscience has been called *procedural knowledge*. Procedural knowledge is taken to be functionally independent and indeed capable of being disassociated from propositional knowledge, as shown by the famous patient H.M. In short, as anthropologists have come to the conclusion that social practices and habits are not based on systems of beliefs or knowledge, cognitive scientists have come to the conclusion that motor skills are not based on beliefs or knowledge.

The view that skills, be they the social skills that mark group membership in a culture, tribe, or class, or the practices that constitute tasks like midwifery, or the motor skills that allow us to drive a car or find our way home, are independent of cognitive states like knowledge and belief may be the only uniform 20th century point agreed upon by philosophy of every tradition, and adopted across the disciplines, from sociology to neuroscience. My philosophical project over the last decade and into the future has been to argue that what is arguably the main moral of 20th century philosophy is thoroughly incorrect. Furthermore, I think that it is importantly incorrect, incorrect in a way that endangers the very structures it is meant to explain, such as cultures, societies, and polities.

It is worthwhile reflecting on the radical nature of the view that skills are independent of knowledge. In the *Meno*, Plato introduces the problem of the value of knowledge - what distinguishes knowledge from mere true belief. As you all know, his example involves knowing the way to Larissa, in other words, knowing how to get to Larissa. This is Plato's paradigm example of knowledge, and it is to be contrasted with merely having a true opinion about the way to Larissa. But knowing how to get to Larissa is like skill at navigating a maze (in

fact, some scholars hold that the example was deliberately chosen for this reason). In short, Plato's paradigm example of propositional knowledge is not knowing that  $2+2 = 4$ . It is rather the kind of knowledge that leads to *Techne*, to the skill to navigate one's way to a destination. Plato is suggesting that it is possession of knowledge that explains the skill; that what makes knowledge valuable is that it results in skill at finding one's way to Larissa.

To say that a widely held contemporary view contradicts a natural reading of Plato's *Meno* is not a very powerful argument against that view. Are there arguments that do not appeal to the authority of ancients that show that skills depend upon cognitive states like knowledge and belief? I have presented such arguments in my work in recent years, especially in my 2011 book *Know How*.<sup>2</sup> Obviously I do not have the space to summarize all of them here. But I nevertheless will attempt the briefest of sketches of some of these arguments.

Let us begin with the view that the kinds of practices that exhibit membership in a tribe or social class are not to be thought of as systems of beliefs, susceptible to rational revision in the ways characteristic of belief. What is the argument for this claim? As the vignette about my father shows, the idea is that someone who is part of a practice that exemplifies membership in a cultural group, or traditional tribe, does not abandon their practice in the face of Western Education that provides counter-evidence of the usual sort. As we have seen, Bourdieu uses this kind of point to argue that social practices are not based on cognitive states like belief. But how could one draw this conclusion?

The dominant model for the rational revision of belief is the one found in the theory of rationality in economics, rational choice theory. The cognitive states of rational choice theory are not knowledge states or belief states. Instead, the fundamental cognitive state of rational choice theory is the notion of a *credal state*. A credal state is a subjective assignment of probability to a proposition. The rational

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<sup>2</sup> Jason Stanley, *Know How* (Oxford: Oxford University Press, 2011).

choice theorist assumes that any cognitive attitude towards an empirical proposition is a credal state, an assignment of probability to that state. When we receive counter-evidence to one of our credal states, we respond by reducing the probability we assign to that proposition accordingly. Bourdieu is absolutely correct that this is not at all a plausible account of what happens when someone inculcated into a traditional practice acquires counter-evidence in the classroom. But it simply does not follow that the practices are not constituted by cognitive states. All that follows, assuming that the agents are rational, is that the cognitive states that constitute practices are not credal states.

There is good evidence that what guides us in action are not the rational choice theorists' credal states, but rather what social psychologists call *settled belief*, and philosophers call *full belief*. A full belief is not one we take to be infallible. But in forming a full belief, we simply treat it as a premise, often tacit, in reasoning about what to do. We simply do not consider the possibility that it is false. As the epistemologist Gilbert Harman has emphasized, if we did act like the agent of idealized rational choice theory, we could not ever act. We would be paralyzed by indecision. We simply must assume that many of our beliefs are settled in order to act. A settled belief is, by its nature, one that is especially resistant to counter-evidence. It is especially resistant to counter-evidence, because it is the kind of belief we are used to relying on in guiding our everyday actions. Those who have grown up in a society are used to acting on the settled beliefs that guide behavior in the community. Because these are not credal states, but settled beliefs, we are used to simply not considering possibilities in which they are false. It is for this reason that standard models of rationality do not apply to them.

My father's experience with his Gikuyu research assistant in the 1950s does show that the practices of a community are not built out of credal states. But his research assistant's behavior is perfectly consistent with the hypothesis that membership in a community requires adopting a set of *settled beliefs*. By their very nature, settled beliefs are resistant to counter-evidence. Their function in our mental lives is to allow us to exploit them automatically and immediately in action, without

considering the possibility that they are false. But settled beliefs are no less beliefs, despite not being credal states.

In short, it is wrong to conclude that practices are outside the domain of rationality. The right conclusion is rather that the application of a hyper-idealized and psychologically implausible conception of rationality is thoroughly inappropriate to explain the behavior of non-ideal agents such as we humans are.

Settled beliefs are those the contents of which we treat as having probability 1. And rational choice theory does in fact predict that if we assign probability 1 to a proposition, we cannot rationally revise it. Notoriously, rational choice theory has no account of how we rationally operate with settled or full belief. The right conclusion to draw is that rational theory is an incorrect model of rationality, and not that practices are outside the realm of the cognitive. A much more natural description of someone engaged in a practice that is constituted by settled beliefs, and who later learns and accepts counter veiling evidence in a classroom, is that they have contradictory beliefs. This is vastly more natural a description than one that posits a non-cognitive or pre-cognitive practice and an unrelated set of theoretical beliefs.

We have now seen that there is no obstacle to treating practices as systems of cognitive states, such as beliefs. The problem is rather with an over-idealized and psychologically implausible model of rationality. But what about motor skills, such as tennis, archery, and navigation through a maze? Western philosophy has lost touch with the notion of skill and craft that was present from the ancients through to 1960s. To see why motor skills depend upon propositional knowledge it is necessary to remind ourselves of some of this rich history.

In the *Nicomachean Ethics*, in response to the *Hippias Minor*, Aristotle has this to say about the distinction between Virtue and Skill:  
“...in a craft, someone who makes errors voluntarily is more choiceworthy; but with prudence, as with the virtues, the reverse is true” (Aristotle, 1140b20)



What does Aristotle mean here? Consider a skill, such as playing tennis, and a virtue, such as kindness. Someone who has the capacity to deliberately making errors in tennis thereby demonstrates her skill at tennis. Only a very skilled tennis player can make a shot intentionally just land outside the baseline. So making a voluntary error is a sign of the possession of a skill. In contrast, making a voluntary error is not a sign of possession of virtue. Someone who voluntarily refuses to give food to a hungry child does not thereby exhibit the virtue of kindness.

Elsewhere, Aristotle, in *Metaphysics* [1046b] expands on this point:

[1] it is clear that some of the potencies (*dunameis*) also will be irrational and some rational. Hence all arts, i.e. the productive sciences, are potencies; because they are principles of change in another thing, or in the artist himself qua other.

Every rational potency admits equally of contrary results, but irrational potencies admit of one result only. E.g., heat can only produce heat, but medical science can produce disease and health. The reason of this is that science is a rational account, and the same account explains both the thing and its privation, though not in the same way; and in one sense it applies to both, and in another sense rather to the actual fact. Therefore such sciences must treat of contraries -essentially of the one, and non-essentially of the other; for the rational account also applies essentially to the one, but to the other in a kind of accidental way, since it is by negation and removal that it throws light on the contrary. For the contrary is the primary privation, and this is the removal of that to which it is contrary. And since contrary attributes cannot be induced in the same subject, and science is a potency which depends upon the possession of a rational formula, and the soul contains a principle of motion, it follows that whereas “the salutary” can only produce health, and “the calefactory” only heat, and “the frigorific” only cold, [2] the scientific man can produce both contrary results. For the rational account includes both, though not in the same way; and it is in the soul, which contains a principle of motion, and will

therefore, by means of the same principle, set both processes in motion, by linking them with the same rational account. Hence things which have a rational potency produce results contrary to those of things whose potency is irrational; for the results of the former are included under one principle, the rational account.

Aristotle's point is that our skilled actions are always under our rational control; a point that may have been lost to those of us now who appeal or seek to analyze the notion of skill in philosophy, cognitive psychology, and cognitive neuroscience, but it is front and center in Ryle's *The Concept of Mind*.<sup>3</sup> As he writes (Ryle, 1949, p. 33), "The cleverness of the clown may be exhibited in his tripping and tumbling. He trips and tumbles just as clumsy people do, except that he trips and tumbles on purpose and after much rehearsal and at the golden moment and where the children can see him and so as not to hurt himself."

It is natural to explain this otherwise puzzling feature of skill by appeal to the fact that manifestations of skill possession are (typically? invariably?) *intentional actions*. My playing the piano is a manifestation of my having skill at piano playing and the playing itself is an intentional action. It is an act about which, in Anscombe's famous characterization (Anscombe, 1963, p. 9), "a certain sense of the question 'why' is given application; the sense of course that in which the answer, if positive, gives a reason for acting." Something is an intentional action, if it makes sense to ask the agent why he did it. The manifestations of what we would colloquially describe as skills are *paradigm examples* of intentional action, and are hence under our rational control. Take, for example, archery. An agent who has skill at archery manifests her skill *by deciding* to pick up a bow. That is, whether or not to manifest her skill is under her rational control.

Paradigmatically, skills manifest in intentional actions. Conversely, paradigm cases of movements that are not intentional actions are also quite clearly not manifestations of skill; to give some of examples

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<sup>3</sup> Gilbert Ryle, *The Concept of Mind* (Chicago: University of Chicago Press, 1949).

from Anscombe (1963, p.13), “the peristaltic movement of the gut”, and withdrawal of a hand “in a movement of involuntary recoil”. The direct manifestations of perceptual ability are also not intentional actions. Rather the manifestations of perceptual ability are belief states, the formation of which, as Bernard Williams (1970) has shown, is not under our direct voluntary control. If a normally sighted agent perceives a table in front of him under normal lighting conditions, it’s typically not possible for him to avoid forming the belief that there is a table in front of him. More generally, if one has strong evidence that *p*, it is difficult to avoid forming the belief that *p*. Perception is therefore not a skill.

The neuroscientist John Krakauer and his colleagues have coined the expression “motor acuity” to describe speed-accuracy trade offs in a task that are not due to the acquisition of knowledge. Increases in motor acuity correlated with the ability to go faster and be more accurate at the task. An increase in motor acuity is a reduction in movement variability that is not due to the employment of a novel method to accomplish that task. They argue that increases in motor acuity on the neural level are very much like the recruitment and tuning of neurons found in perceptual improvement. In short, there is something perception-like relevant to bodily engagement in the world. However, motor acuity itself cannot be viewed as a skill. To manifest an intentional action, one’s motor acuity must be deployed for some purpose, for example to begin or carry out a task. The deployment of this capacity is a deliberate decision, one guided by the agent’s knowledge.

So far I have argued that neither perception nor motor acuity are skills. Rather, they are capacities that a skilled agent exploits when making decisions based on knowledge about the task. Anything that is a motor skill is a combination of knowledge about the task, and motor acuity and perceptual competence. Improvements in motor skills can be due solely to improvements in motor acuity, or they can be due to the acquisition of additional, often situation specific knowledge. But crucially, *there is nothing that is a skill that is simply motor acuity or perceptual competence*. Any motor skill is the combination of

knowledge of facts about an activity together with motor acuity and/or perception competence.

Of course, someone skilled at an activity cannot always verbalize or articulate the knowledge that guides them. A skilled boxer might not be able to verbalize his knowledge of his craft. But this poses no problem for the claim that any skilled actor has to have a significant body of knowledge about his craft. Knowing something does not entail being able to articulate the content of one's knowledge. As Wittgenstein writes in the *Investigations*:

78. Compare 'knowing' and 'saying':

How many feet high Mont Blanc is –

How the word 'game' is used –

How a clarinet sounds.

If you are surprised that one can know something and not be able to say it, you are perhaps thinking of a case like the first. Certainly not of one like the third.<sup>4</sup>

So possession of any skill requires knowledge about the activity, knowledge that is used to intentionally act. What would a counterexample to this thesis look like? It would be something that we would intuitively call a skill, but does not manifest itself as the result of decisions based on knowledge. One might think that wine-connoisseurship is an example. One might think of wine-connoisseurship as an improved perceptual capacity. However, this is not a plausible account of wine-connoisseurship. Wine-connoisseurship requires improvements in perceptual capacities. But that does not at all exhaust the skill. The wine-connoisseur has collected a vast body of knowledge, which she exploits in combination with her improved olfactory capacity to make correct judgments. So wine-connoisseurship is not a counterexample.

It is thus immensely plausible that any motor skill depends upon knowledge of facts about an activity. Knowledge comes before skill.

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<sup>4</sup> Philosophical Investigations (Oxford: Blackwell Press, 2001), translated by G.E. Anscombe.

Anything that is a skill involves brute innate capacities like perception and motor acuity, and knowledge. What are the consequences, both inside and outside philosophy, of this fact?

According to one kind of virtue epistemologist, skill is used as a tool in a reductive analysis of knowledge. On the face of it, our discussion undermines the project of virtue epistemology. However, upon closer investigation, the most sophisticated virtue epistemologist, Ernest Sosa, appeals mainly to perceptual capacities rather than anything skill-like, in his account of knowledge. There is therefore no direct threat posed by our discussion to his view. However, one might worry that mere perceptual capacities are not enough to do the full explanatory work Sosa wishes them to do. Insofar as Sosa can only appeal to capacities more basic than skills, one might worry that there is nothing plausibly describable as a virtue in his account of knowledge.

One important consequence of the view of practices and skills I have described is for the division often drawn between practical and theoretical pursuits. Practical pursuits are supposed to involve the employment of skills, usually motor skills, and theoretical pursuits are supposed to be ones guided by knowledge. Yet the arguments I have given show that *there is no such distinction to be drawn*. Humans have primitive capacities, such as perception and olfaction and motor acuity. Humans also have the capacity to attain knowledge of truths. Any activity humans engage in that is done intentionally involves both propositional mental states such as belief or knowledge, and perception and motor acuity. Proving any complex theorem involves motor acuity, and plumbing involves lots of knowledge of facts. There is so simply no coherent distinction between practical and theoretical pursuits that can be drawn.

The incoherence of the distinction between practical and theoretical pursuits is a cause for rejoicing. What it means is that the plumber and the midwife are just as imbued with mentality as the mathematician or historian. A common tactic of the powerful is to diminish the mindedness of ordinary citizens, to make room for alleged experts to make decisions supposedly on our behalf. Once we realize that

knowledge is employed in every skill, perhaps we can use the fact that we have achieved skill in our own chosen domains to call out those who seek to make political decisions on our behalf on the basis of false claims of expertise.

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