

Review of Scott Sturgeon's *The Rational Mind*, by Anna Mahtani

The Rational Mind spans a broad field in epistemology and the philosophy of mind, offering a new approach that integrates a wide range of familiar concepts and ideas. It introduces the reader to fundamental issues, draws out interesting relations between them, and offers a new perspective that links them all together in an original way. Sturgeon aims to make the book accessible to the beginner, and there are a wealth of illustrative examples and creative visualizations designed to explain key ideas in an intuitive way. For example, probability theory is explained using a scenario where balls are thrown into a box; transition theory is explained using a marble game; and complex dialectics are spelt out using flow-charts.

The book begins by describing the Bayesian framework, and highlighting two shortcomings: the original framework leaves no room for imprecise credences – or ‘thick confidence’ as Sturgeon puts it – and it takes conditional credence to be fixed by unconditional credence, which Sturgeon argues compellingly is a mistake. This is related to transition theory – i.e. how an agent moves, and should move, from one epistemic state to another – and rules of inference. The book then shifts to a discussion of outright belief. Again, a standard framework is introduced and then criticised: amongst other points, Sturgeon argues that facts about disbelief and suspension of belief do not simply reduce to facts about belief. Part I of the book ends with a discussion of conditionals within both frameworks.

While Part I of the book explores the Bayesian framework and models of belief more-or-less separately, part II of the book investigates their inter-relations. Sturgeon considers a variety of attempts in the literature to either reduce credence to belief, or reduce belief to credence, and he finds problems for each such attempt. He then presents his own account of ‘force-based attitudes’. On this view, credence and thick confidence can be defined in terms of forces, and belief, disbelief and suspended belief can similarly be defined on this framework. Sturgeon demonstrates some of the fruits of this new framework, and ends with an investigation into rational inference.

Sturgeon claims that the book does not aim to establish a single major perspective, but for me the natural centrepiece of the book is Sturgeon’s original theory of force-based attitudes. The idea is that your attitude towards a given claim is a blend of three forces – repulsion, attraction and neutrality. You might for example be strongly attracted towards a claim, also somewhat repulsed by it, and a little bit neutral. The forces here are (as Sturgeon puts it) ‘intellectual’ forces – in contrast to gustatory forces, for example, which might be present when you contemplate a particular food.

Using this framework, Sturgeon then defines credence and confidence more generally. A sharp credence of 0 arises in cases where the only force that the relevant claim exerts on you is repulsion; a sharp credence of 1 arises in cases where the only force is attraction; and other sharp

credences (between 0 and 1) arise in cases where the forces acting on you are some mixture of repulsion and attraction with no neutrality at all. Whenever a claim exerts some neutral force (perhaps as well as some measure of attraction and/or repulsion) then your attitude towards the claim will be one of thick confidence.

From here Sturgeon argues for a new view about how degrees of confidence (credences and thick confidence) and coarse-grained attitudes (such as belief, disbelief and suspension of belief) inter-relate: this is his account of 'force-based Lockeanism'. On this view, whenever the forces that a claim exerts on you are dominated by attraction, then you believe that claim; whenever the dominant force is repulsion, you disbelieve the claim; and whenever the dominant force is neutrality, then you suspend your judgment. This view has some advantages over the standard Lockean account, on which you believe a claim if and only if you have a sufficiently high credence in that claim. In particular, it allows you to believe a claim even if you do not have a (precise) credence in that claim, but only thick confidence. This then is a new framework on which various familiar concepts (credence, thick confidence, belief and so on) can be defined and their inter-relations clarified.

Though this is a new framework, it is presented as an intuitive one. Certainly it seems that we can be attracted and repelled to one and the same food and also feel a bit neutral about it – so perhaps we can similarly make sense of having analogous epistemic attitudes towards a claim. It takes some getting used to, however. If I have a credence of 0.5 that a coin will land heads, then am I attracted and repelled by this claim in equal measure? What does this mean? How should the levels of these different forces be measured? On Sturgeon's view, each force promotes certain behaviour – so intellectual attraction to a claim promotes acting and reasoning as though it were true, intellectual repulsion promotes acting and reasoning as though it were false, and intellectual neutrality promotes refraining from using the claim in action or reason as though it were either true or false. What behaviour then should we expect when a claim (such as that a coin will land heads) exerts equal measures of attractive and repulsive forces? My credence of 0.5 in this claim does not lead me to act as though it is true, nor as though it is false: should we say that my behaviour is somewhere in the middle? But how exactly? There are many different ways that we might 'average' dispositions to behave. I was left wondering how exactly these different forces combine to create specific epistemic states. But as Sturgeon warns, some do encounter his theory without a feel for cognitive force, and he urges such readers to work through the theory and note its theoretical virtues.

Let us turn then to the reasons to accept this new theory. What problems can it solve? What mysteries can it explain? Sturgeon explores a wide range of such positive results. Above all, the theory unifies a variety of different epistemic concepts, for definitions within the theory are given for credence, thick confidence, belief, disbelief and suspension of belief. Sturgeon argues

throughout the book that none of these concepts should be eliminated – for all have causal-explanatory power – and further that these concepts are all inter-related. Previous attempts to reduce coarse-grained states to fine-grained states, or vice versa, have all faced serious problems, but this new theory promises to unify these concepts successfully. In addition, Sturgeon describes how his theory fits well with ordinary language use, and with a range of epistemic phenomena. He also uses his theory to illuminate issues around dilation, rationality and accuracy. I cannot here do justice to this wide range of applications, so here I focus just on his discussion of dilation.

The problem of dilation arises in cases where an agent has a precise credence in some claim – a credence of 0.5 in HEADS, let's say – and thick confidence in some other unrelated claim – a range of $(0, 1)$ in P, let's say. Then the agent receives evidence which forces her confidence in HEADS and P to be one and the same. For brevity let's suppose (though more detailed and convincing examples are available, including Sturgeon's) that someone knowledgeable about both HEADS and P informs the agent that HEADS obtains iff P obtains. Then it seems that either the agent's credence in HEADS must dilate, or the agent's confidence in P must become precise. Both possibilities are discussed in the literature, with the general (but not unanimous) consensus being that a rational agent will dilate his or her credence in HEADS.

Sturgeon then points to an interesting phenomenon. The claim that your credence in HEADS ought to dilate in these circumstances – though often accepted – is at least prima facie counterintuitive. And yet in other related cases we can happily acknowledge that a rational agent will shift and/or dilate his or her credence in HEADS on learning that HEADS iff P. Sturgeon notes that broadly, the thicker your initial confidence in P, the stronger the intuitive resistance to dilating your confidence in HEADS to the extent needed to bring your final confidence in P and HEADS into line. Sturgeon uses his force-based theory to explain this pattern. On his theory, thick confidence in some claim arises when the mixture of forces exerted by that claim include a neutral force: the higher the proportion of neutral force in the mixture, the thicker the confidence. In cases where an agent must bring her confidence in two claims into line, Sturgeon argues that the neutral force should have no power in the 'tug of war'. Thus in particular in the case where your initial credence in P is maximally thick (the range $(0,1)$), on learning that P iff HEADS, your credence in HEADS should not thicken at all, but rather your credence in P should become precise to match your initial credence in HEADS.

This is an original and interesting approach to the problem. Why though, should the neutral force have no power in these sorts of tug of war? Sturgeon argues that where a claim exerts a neutral force, this indicates that your evidence for the claim is somehow defective – either because there isn't much of it, or because it is unruly, or because it undercuts itself – and so it is only right that it should not hold much sway. Here Sturgeon argues that when levels of confidence are formed rationally, the level of the forces exerted by a claim (attraction, repulsion and neutrality) reflect

analogous levels of forces exerted by the relevant body of evidence: supporting force, counter-support, and evidential defect. This raises some questions about how these different evidential forces should be measured. We cannot simply divide a body of evidence into parts and look at the force of each, for the different pieces of evidence may inter-relate in important ways (e.g. two parts might be individually supportive but counter-supportive as a pair, without being defective). And at first sight, at least, it seems that the thickness of confidence a rational agent should have in a claim might not always match up well with how defective his or her evidence is – unless the measure of defectiveness is carefully designed for the purpose at hand. This is one point where there could fruitfully be further investigation into this framework.

This original framework is just one part of this wide-ranging book, for *The Rational Mind* ranges over a broad landscape of topics, problems and concepts, drawing links between different areas and offering, as Sturgeon aimed, a ‘deep and pleasing vision’ over the whole.