

Dispositions and general beliefs – Sketch for IP talk

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Contraposition



On the theory Hugh just set out, the disposition to infer 'Q' from 'P' is just the same disposition is that to infer 'not-P' from 'not-Q', and the sentences 'If P then Q' and 'If not-Q then not-P' are two different ways of representing the same content. A conditional and its contraposition represent the same content. However, it's familiar that in the case of hypothetical conditionals, contraposition is invalid. For instance, suppose Sam is hopelessly in love with Alex, but Alex wants to avoid Sam's advances. Then the conditional 'If Sam had gone to the party, Alex wouldn't have' can be true – Alex is avoiding Sam – even though its contraposition 'If Alex had gone to the party, Sam wouldn't have' is false, since Sam wants to go to any parties Alex is at too.



We can explain the differences between the two sentences 'If Sam had gone, Alex wouldn't have' and 'If Alex had gone, Sam wouldn't have' in terms of pragmatics. The first is aimed at making an audience assume that Sam had gone; the second at making an audience assume that Alex had. The first is making us think of the closest worlds at which Sam had gone; the second is making us think of the closest worlds at which Alex had, and these, given the truth of the first conditional, are going to be different worlds. But this doesn't stop the two sentences being logically equivalent, in the sense of being true in all the same possible worlds.

Universal belief

We've already heard what it is to believe a claim like 'If P then Q'. But what is it to believe in a universally generalised conditional, like 'For all x, if Fx then Gx', or less formally, 'All Fs are Gs' – 'all ravens are black'? And what is it to believe the corresponding existential, 'Some F is G' – 'some swans are black'? The first question has been answered by Frank Ramsey, whose theory in his 1927 paper *General Propositions and Causality* was worked out several decades later by the late David Armstrong in his *Belief, truth and knowledge*. The theory we defend is similar, though we won't offer any exegesis of Ramsey or Armstrong.

On our theory, to accept 'All Fs are Gs' is to be disposed to accept 'If a is F then a is G' for each a. Since, on the dispositional theory, this conditional belief is itself a disposition, we can take the belief that all Fs are Gs to be the disposition to believe that a is G, given that you believe that a is F, and to have this disposition for all a. For instance, someone who believes that all ravens are black is disposed to move from the belief that A is a raven, to the belief that A is black. Given our remarks about contraposition, such a person would also be disposed to believe that A is

not a raven, given that they believed that A was not black.

The crucial element of this theory is that it accounts for the element of generality in the belief that all Fs are Gs in terms of a disposition. Instead of leaving the element of generality, the 'for all' element, as it were inside the content of the belief, getting the belief *that all F are G* which contains an irreducible general component, the dispositional theory deals with the belief as a disposition to have singular beliefs, of the form 'if a is F then a is G'. The dispositional method will become important in a moment, when we look at existential beliefs.

Objections and replies

Next I will look at some objections and replies to this theory, the first two of which are discussed by Armstrong. First, one might argue that someone may believe 'all F are G' yet never be disposed to accept 'a is G' because the overall conditional judgement is just too complex for them to grasp. So the disposition to infer cannot be necessary for the belief: one can have the belief without the disposition. With Armstrong, we can reply to this by saying that in such cases, the subject does not believe that all F are G, but instead grasps the sentence 'all F are G' and believes that it states a true proposition, without being able to grasp that proposition itself. The subject still has the disposition, but the two initial conditions of the disposition – belief that all F are G, and belief that a is F – are not satisfied, and won't be because the subject never really believes that all F are G. A disposition can still be present even if its initial condition is never satisfied and so it is never activated. So the objection does not show that the disposition is not necessary.



The next objection is that most believers don't have the disposition in question, because there are plenty of cases where we believe that all Fs are Gs but coming to believe that a is F does not always result in us believing that a is G. For instance, we may be distracted, make errors in our reasoning, or fail to believe that a is G for other practical reasons – perhaps the consequences are too horrible. Armstrong also discusses such an objection; he deals with it by adding a normality clause: the disposition is that if you believe under normal circumstances that a is F, you will believe that a is G. An alternative reply to this objection is that in such cases, you lose your disposition to infer that a is G from a is F; the dispositional theory only requires you to believe that a is G if you believe that a is F, and you don't lose the disposition. So either way, the objection fails.



The final objection I consider is that the disposition is insufficient for the belief that all F are G. I might be disposed in each case to think that something is black given that I think it is a raven, but at the same time believe that somewhere out there, there is a white raven which I have yet to come across. This second belief seems to be compatible with the disposition, but not the general belief, and so the disposition is insufficient. We might also think this about a case where someone was undecided, thinking that there were more ravens somewhere which *might* be

white.

The answer to this objection is to say that the person who apparently has the disposition but not the belief, does not really have the disposition. For such a person would not be disposed to believe that something was not a raven, given that she was convinced that it was not black. It wouldn't, so to speak, come as a surprise, or cause a conflict in her beliefs – she could carry on as before, having finally identified the non-black raven. But the disposition to infer that something is not a raven, given that it is not black, is just part of the disposition we are saying constitutes the belief that all ravens are black. So such a person does not have the disposition, and so the case doesn't threaten the sufficiency of the disposition for the belief.



Existential Belief

Next we turn to existential beliefs, beliefs of the form 'some F is G'. For simplicity, I'm going to focus just on claims of the form 'something is F', since 'some F is G' can just be thought of as the claim 'something is (F and G)'. These beliefs are trickier than their universal counterparts. Believing 'something is F' cannot merely be a lack of the corresponding universal belief, that everything is not-F. Someone may lack that belief yet still not believe that something is F, due to being undecided, or not understanding what "F" means. Nor can believing that something is F necessarily involve any particular belief of something that it is F. One may believe that *something is a black swan* yet not actually believe of any particular swan that it is a black one. Yet it seems that particular beliefs have some kind of connection with existential ones – I will say more about this in a moment.

The answer I suggest, is that belief that something is F is another inferential disposition, which I have written here on the handout. It is a disposition to believe any claim 'P', when one also believes ' $\forall x(Fx \rightarrow P)$ '. In other words, the belief that something is F gets you to any conclusion P, which you believe to follow from any thing's being F. You can have this disposition without having to believe of anything that it is F. That is the existential belief's distinct contribution to your inferential behaviour; it leads you to further belief and action *even* in the absence of any particular beliefs. For example, suppose you believe that someone murdered Dr Black. You may not yet believe of any of the guests that they did it. But suppose you then come to believe that whoever did it, they must have done it for money – and therefore you believe that for all x, if x murdered Dr Black, the safe is empty. Now, my claim is that the belief that someone murdered Dr Black will dispose you to believe that the safe is empty on this basis, even in the absence of any definite belief of any particular guest that they murdered Dr Black.

It's important to be clear about what the belief that something is F *won't* dispose you to believe. It won't dispose you to believe P just on the basis that you think, of a particular thing A, that if A is F then P. For instance, believing that someone mur-

dered Dr Black won't dispose you to believe that Professor Plum is rich, just given that you believe that if Professor Plum murdered Dr Black, then Professor Plum is now rich. This is because you don't believe the relevant universal conditional, just a single instance. However, if you did believe that for all x , that if x murdered Dr Black, Professor Plum is now rich – perhaps because you believe that Professor Plum is the mastermind who arranged all this, even if he didn't do the dirty work himself – you *will* be disposed to believe that Professor Plum is rich.

This theory has several advantages. First, it shows why a particular belief of some A that A is F causes the belief that something is F . Suppose you believe that A is F , and you believe that for all x , if x is F , then P . Then *of course* you'll be disposed to believe that P , since you will believe the particular instance 'if A is F , then P ', and your belief that A is F will cause you to believe that P . So, if you believe that A is F , then you will have the disposition that constitutes the belief that something is F .

Another advantage of this theory is that it allows you to believe that something is F , even if you don't know how many things are in the domain, or what those things are. You can believe that someone murdered Dr Black even if you don't know how many guests there are at the house, and even if you don't know who is there. This is a significant advantage over the disjunction strategy, which takes the claim to be a disjunction of the form 'Professor Plum murdered Dr Black or Miss Scarlet murdered Dr Black or ...'. This strategy, as Ramsey pointed out, requires an extra clause saying that nobody else was a guest. But it is perfectly consistent to believe that someone murdered Dr Black without believing this extra clause, due to one's ignorance of the guest list. Indeed, you might have this belief even though you are so ignorant of the guest list that you aren't willing to assent to any disjunction of this form at all. Moreover, if the domain is potentially infinite – if you believe something (contingent) about the natural numbers, for example that there is some prime number that is Hugh Mellor's favourite – the relevant disjunction would have to be infinite, and it is unclear whether we can really believe an infinite disjunction.



Truth-conditions

General beliefs, then, are dispositions, and as such can be taken as having the same kind of truth-conditions as the dispositions we associate with conditional beliefs: a general belief is true iff it cannot take you from a true belief to a false one. It is straightforward to show that on our reading, the disposition we identify with the belief that all F are G is true iff all F are G , and that the disposition we identify with the belief that something is F is true iff something is F . On our view, then, general beliefs have the truth-conditions we would intuitively expect them to have. Let's call the relevant dispositions the disposition that all F are G and the disposition that something is F , just for brevity.

The disposition that is the belief that all F are G takes you from the belief that A is F





to the belief that a is G . It can therefore only be false if it can take you from a true belief that A is F to a false belief that A is G . In any such circumstance, not all F are G , since A is F but not G . So the disposition  be false on our terms of  if not all F are G . Conversely if all F are G , your disposition will never take you from a true belief that a is F to a false one that a is G . So the disposition that all F are G is true if and only if all F are G .

The disposition that something is F takes you from the belief that for all x , if Fx then P , to the belief that P . It is false only if it can take you from a true belief that for all x if Fx then P , to a false P . But given the truth of the conditional 'for all x , if Fx then P ', P can be false *only* if nothing is F . So the disposition can be false only if nothing is F . Conversely, if there is some F , then P will follow from 'for all x , if Fx then P ', and so if you have a true belief in the latter, you won't end up with a false belief in P . So the disposition that something is F is true iff something is F . There are brief sketches of these last two arguments on the handout.