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Choice in a two systems world: picking & weighing or managing & metacognition

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Abstract Intuitively, choices seem to be intentional actions but it is difficult to see how they could be. If our choices are all about weighing up reasons then there seems no room for an additional intentional act of choice. Richard Holton has suggested a solution to this puzzle, which involves thinking of choices in a two systems of cognition framework. Holton's suggestion does solve the puzzle, but has some unsatisfactory consequences. This paper wants to take over the important insights from Holton on the phenomenology of choice and the possible explanation via a two systems framework, but wants to suggest an alternative more satisfactory account. This account is built around the idea that choices are what Pamela Hieronymi calls managerial acts. After developing the claim the paper then defends it against the objection that managerial control cannot be understood in a system1 context, by examining recent research on uncertainty monitoring and early forms of metacognition.

Keywords Choice · Picking · Metacognition · Two systems · Mental actions

Standard belief desire accounts of action have a problem. They seem to leave no room for choices made by agents. All that has to be done for a decision is to execute a weighing process of the relevant beliefs and desires. The process that leads to the choice does not look agentive at all, but as Velleman (1992) aptly puts it 'hydraulic'. It is as if one could hear the whirring of cogs and imagine the pumps operating to produce the intention. Such a process, whatever else it may be, seems to have very little to do with choices in the ordinary sense. Choices in every day language are actions made by agents and they feel genuinely open. It doesn't feel as if choices only require the execution of a calculation process that leads to a determined outcome.

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Richard Holton in his 2009 book *Willing Wanting Waiting* has provided a possible solution to how to bring the agent back into the process of choice. One strength of Holton's account is that it is empirically informed. Holton does not only use armchair intuitions, but integrates his observations about our experience with a cutting edge psychological perspective. His argument is built on a two systems approach to human cognition (Stanovich 2011; Frankish and Evans 2009; Carruthers 2009, 2011; Evans and Stanovich 2013)¹ and uses a number of experiments at various points of the argument to support his claims.

This paper will trace the steps of Holton's argument to work out its strong points, but then focus on a serious flaw. Holton attempts to do justice to the intuition that we can intentionally choose what to do by claiming that choice involves an element of picking. The paper argues that this is mistaken. It is true that the phenomenology of choice involves an intentional action, but picking is neither necessary nor even particularly useful to explain choice. Instead the paper suggests that we should think of choices as managerial acts. The paper will explain how such an account would work. But in doing so it will become clear that a satisfactory account of choice that relies on a two system background and thereby ventures into the field of the cognitive sciences can profit enormously from looking at choice related discussions in this field. The paper will focus here on the literature on uncertainty monitoring and metacognition, which, as we will see, is very closely connected to the phenomenon Holton is interested in. Doing this will allow us to address a pressing worry to the proposed account and at the same time put it on a plausible empirically supported footing.

1 Part 1 Picking v managerial control

Holton's argument begins with three intuitive desiderata for a phenomenologically satisfying account of choice. First, choice is not fully determined by our beliefs and desires. Secondly, choices are sufficient for actions. In contrast to other psychological states like beliefs and desires, choices are directly linked to actions. Finally, and most importantly in this context choices are intentional actions. He writes

“Choice is an act. It requires time, concentration and a certain amount of effort.”

Page 54.

Holton wants to achieve two things for choice. He wants it to be an intentional action, but crucially, at the same time Holton wants to show that choice is nevertheless not reducible to arbitrary picking. Choices should be more than simply randomly picking out, say, one of many identical tins of tomatoes on the supermarket shelf.²

As we will see, though initially promising, Holton's argument is ultimately unsatisfactory. However, in investigating why it does not work we will learn an important

¹ According to this framework human cognition employs two different forms of processing. System one is evolutionary old, unconscious, fast and automatic, while system 2 is evolutionarily young, conscious, slow, and controlled.

² For the distinction between picking and choosing see Ullmann-Margalit and Morgenbesser (1977). Picking and Choosing. *Social Research*, 44(4), 757–785.

lesson about indirect intentional control of the mind and the role of different forms of metacognition for this process.

1.1 Holton's argument

So how does Holton's argument work? As already mentioned above, it doesn't seem as if there is space for an action like choice in a standard belief desire framework of action. All that agents ever do is weigh options, but this weighing even though it sounds active has nothing to do with a real action. Instead it is the mechanical operation of adding up the values of reasons that the agent has for performing either action a or action b. There does not seem to be space for an agent in this process. Holton's answer to this conundrum involves two elements: uncertainty and hunches.

The first step of the argument points out that there are very many situations in an agent's life where it is not obvious what the right course of action is.³ Now obviously, not every action is like that. Often in life, when faced with two or more options, agents don't need to make a choice that is a distinct action. They simply know which action they prefer and the question of whether to do the other thing instead does not get deliberated over. The action is selected automatically and there is nothing like an act of choice.

But it is equally common that the agent will be faced with two options where it is not immediately obvious which one is the better one. Sometimes a bit of deliberation will resolve the issue, and as soon as an agent reaches a judgment that the one option is clearly the better one, again this option will get selected without anything that is recognisable as a separate act of choice.

But sometimes even a bit of deliberation will not resolve the issue completely. As we are finite human beings and not doing anything is often worse than doing either A or B, we often have to pick one of two options, even though we do not really know which of the options is the better one. Now in contrast to the mechanical weighing of reasons, simply picking one of two options is a very typical instance of an intentional mental action. It is intuitively possible for the agent to pick A or B just as easily as it is to lift one's arm or not.

However, there is also a problem with acts of choice like this. The way the story is told so far, these acts of choice seem very much reduced to random picking. There is no particular decisive reason why the agent chooses the one option over the other. So while these choices look like real intentional actions it is unclear whether they really deserve the name choice.

This is where Holton's second step comes in. He argues that choices feel like they are random to the conscious subject, but that they are in fact not random at all. The subject has the impression that she simply picked one of two equal options, because she does not have access to all the information that she has picked up. Unconsciously, the agent might well 'know' which option to prefer, but the conscious subject does not know why she is attracted to the option she chooses.

With these two elements Holton gets a choice that is very clearly an intentional action where the decision is fully arbitrary at the conscious level, but at the same time it

³ Importantly Holton does not want to restrict choice to the much discussed phenomena involving true incompatibility. Michael Bratman, "A Desire of One's Own," *The Journal of Philosophy* 100.5 (2003), Michael Smith, *The Moral Problem* (Oxford: Blackwell, 1994) Instead he focuses on the much more common phenomenon that we simply don't know in the time available for the decision what the better course of action would be.

is not just random picking, because the agent makes her choice on a hunch, i.e. on information that she has unconsciously but that she can't use for conscious deliberation.

This is a neat idea, but there is an obvious problem that Holton also sees. While on his account it is true that the conscious choice is not determined by a conscious judgment, the picture gets more complicated once we look at the whole mind. This is because it looks as if the agent is making her choice very much because of an unconscious judgment.

Holton has two replies to this: First of all, he wonders whether we really can call the unconscious processing a judgment at all. Is it not too encapsulated for that?

But Holton does admit that perhaps this strategy has a problem, because it is less and less clear whether it really is true that unconscious processing does not have the right complexity. His second argument therefore makes do without the assumption that there are no unconscious judgments.⁴

The second argument simply says that he is interested in showing that agents experience choice in the absence of conscious judgements and that the choices that are such experienced are nevertheless not random. The account seems to make good on that claim, even if choices turn out to follow unconscious judgments. The initial demand for a plausible account of choice was that choices should not be reducible to our beliefs and desires and this is exactly what the hunch story allows without having to rely on mere picking.

1.2 Holton's choice complications

Holton's account of choice seems like a neat way to have your rational cake and still intentionally eat it. But once we look closer there is a serious problem with this account and it is not even that difficult to uncover. Let's look at Holton's second and final argument that he doesn't mind if choices are caused by unconscious judgments, because his account is about conscious choice, a bit more closely. What seems so excellent about the account is that it does include a real intentional action on the conscious level. At the same time, the choice is not random, because it is influenced by the unconscious judgment. But while it is clearly true that Holton has achieved his formal desiderata for choice (i.e. not reducible to conscious beliefs and desires and has to be an action) there is still an odd lacuna in Holton's account. Holton does not tell us how it is that the unconscious judgment influences the conscious picking. Perhaps he thinks that there simply is no experiential echo at all. In this case, the influence on behaviour would be rather like blind sight (Weiskrantz 1986).⁵ This would fit well with Holton's emphasis on picking: All the agent feels is that the choice is completely random and could just as well be decided by the tossing of a coin. Holton can even allow that we can nevertheless learn a lot about our attitudes from choosing, even though the causes of our choices are hidden to us, by simply observing our choices. We observe what we do and infer something about our mind from these observations – perhaps even something about the world that the unconscious part

⁴ While it is obvious still up for debate whether there can be unconscious judgments in the context of this paper we will assume that they can exist and therefore concentrate on Holton's second strategy.

⁵ Thanks to Robert Deutschlaender for this apt comparison.

of the mind had picked up on.⁶ If we find ourselves picking one option rather than the other, then we can often infer from that that we did have a reason for that choice, even though we might not be consciously aware of it.

Thus, even if there is no experiential echo of the unconscious judgment at all, this does not mean that the information cannot reach consciousness after the choice has been made.

However, if it were the case that observation would be the only way to get access to the information that biases our choices, then this would also mean that the conscious agent would have no access at all at the time of the choice. If this is indeed the case, then we would have to think ourselves lucky that we do not often really use randomness generators to make these choices, because presumably that would render the useful and completely unconscious biasing null and void, and we would not be able to use all the information it provides.

So are choices really like blindsight with absolutely no experiential echo of the unconscious judgement, as Holton seems to suggest? I want to argue that this is unlikely and in fact, even the cases Holton uses as examples for his argument seem to suggest that, contrary to his account, there is some form of access to the unconscious judgment.

One of Holton's key examples e.g. involves a fireman who can consciously see no reason why he should leave a house where they are fighting a seemingly harmless one-storey fire, but who has the strong sense that he needs to get out and retreats. Here it turns out that the feeling saves his life, because minutes later the house collapses. In this case, there obviously is a very intense conscious experience that makes the fireman leave the house. The thing that is different to an ordinary conscious judgment is that the fireman does not understand the reasons for why he has the feeling. However, the fireman does have an experiential echo of the unconscious judgment and it is this hunch that he trusts, even though he does not know the reasons for having it.⁷

So why does Holton insist in his theoretical account that the conscious choice is an intentional arbitrary picking action, if even his own example suggests that the action is not arbitrary at all, even on the experiential level, but consists in following a hunch? One reason might be that once we accept that the conscious hunch is a sufficient reason for the choice, it does not seem as if the choice is an intentional, arbitrary picking. So it seems Holton either has to lose his intentional picking component, or he can't allow for such hunches to be conscious.

⁶ Obviously sometimes this can go wrong and in these cases, we end up confabulating a rationalisation of our behaviour. This is according to Holton what happens in the seminal Nisbett experiments (Nisbett and Wilson 1977) where subjects defend their picking the garment on the right of a row of identical items, which is actually caused by an unconscious bias to the right, by inventing quality differences between identical garments to rationalise their choice.

⁷ I discuss this also in Vierkant (2012). There I make a distinction between explicit and aware, i.e. the fireman is aware of his Feeling of Knowing (FOK), but cannot put into words why he feels it. But actually, this is even more complicated. In Holton's scenario the fireman does know in language that he has a FOK and trusts it perhaps because he has reasons to trust it, even though he does not know why he has the FOK, but it could also be a scenario where the fireman is aware of and acts on his FOK without recognizing it as such.

1.3 Choice as managerial control

In what follows, I want to look at a way of saving Holton's idea of choice as an intentional action while at the same time allowing for the intuitively plausible scenario where the choosing agent is aware of the hunch that leads to the choice.

However, my account differs from Holton's in that it does not put the same emphasis on random picking.

To achieve this, we first need to introduce a piece of terminology: the notion of managerial control (Hieronymi 2009). The solution I want to propose lies in thinking of Holton's choices as managerial acts. However, before we can begin to develop this account, a few clarifications are in order. First of all, we need to put some more meat on the bones of the notion of managerial control: Managerial control is an intentional mental action with the purpose of creating an environment that will facilitate cognitive activity and the management of attitudes. Importantly for Hieronymi, even though managerial mental actions are the only mental actions that function very much like ordinary bodily actions, they are not the most important form of mental agency. Indeed, on Hieronymi's account, the fundamental and normal way of mental agency is cognitive agency.⁸ However, while cognitive agency is the most important form of mental agency, on her picture, it is quite different from ordinary bodily agency. One crucial difference for our context is that cognitive acts are never intentional acts – instead, prototypical cognitive acts are judgments, but also e.g. the acquisition of an intention. In the tradition of doxastic non-voluntarism (e.g. Chrisman 2008; Strawson 2003; Williams 1973), Hieronymi holds that such acts cannot be voluntary acts, because one of the essential characteristics of voluntary acts is that it is up to the agent to decide whether or not to perform them, but it is not up to the agent to randomly decide what to judge or what to intend.

However, while Hieronymi argues that it is not possible to decide what to judge or what to intend directly, there is a way in which an agent can bring it about that they judge or form an intention indirectly. This intentional bringing about of the right cognitive environment to influence the non-voluntary judgment is what managerial control achieves. An agent can e.g. intentionally concentrate on a problem, rehearse an argument, go to a library, etc. All these actions are perfectly normal intentional actions and they all have the aim of influencing the environment in such a way that a cognitive act will bring the desired result.

Importantly, these managerial acts are not simply a second independent way of acquiring beliefs or intentions, but rather a specific complex form of mental action that is possible for agents who can perform a certain form of cognitive act. This is because all managerial acts on Hieronymi's picture contain two cognitive acts: The agent first has to form the intention to perform the managerial act and secondly, after the managerial action, the agent still has to perform a non-voluntary cognitive act to acquire the desired attitude.

What I want to argue here is that the phenomenon of choice that Holton describes (intentional action, but still not random) can be best understood as a managerial action. However, there seems to be a major problem in combining Holton and Hieronymi. Hieronymi thinks that forming an intention is a cognitive act. But isn't the formation of an intention and a choice the same thing? If we were to assume that forming an

⁸ Hieronymi speaks of evaluative acts. I use cognitive and evaluative as synonyms in this context.

intention is the same as making a choice, then it seems that choices on Hieronymi's picture cannot be managerial actions at all, because managerial actions are always intentional and cognitive acts are never intentional.⁹

Fortunately, the problem disappears once we look more closely at what forming an intention is for Hieronymi. According to her, intention formation is a practical judgment of what the best thing to do is, all things considered. So intention formations are cognitive acts because they are a form of judgment. In contrast, as already discussed, for Holton, choices are acts that agents perform especially when they are insecure about what the right cause of action is. In other words, choices are what agents use when they are uncertain about what to do and have no obvious means to dissolve this uncertainty and can therefore not form an all things considered judgment about the best cause of action. In other words, what Holton does is describe a phenomenon that Hieronymi does not explicitly discuss in her work. Hence, this paper wants to argue that there is nevertheless a very promising way to use her frame work to make good on the important and plausible conditions that Holton sets up to explain the phenomenology of choice.

Here is how this might work: Let's first think about this phenomenology of choice again. As Holton rightly points out, choices often demand considerable effort. It is hard to decide which option to pick, if one doesn't know which one is the better one. But in a way that is surprising, if his account is the right one. If it really feels to the agent that there is no difference between the options she can pick from, then that should not be difficult. Indeed, it should be as simple as throwing dice. What is hard are the attempts to figure out what is better and to inhibit a constant reopening of the question, once one feels that further deliberation would be counterproductive. These intentional acts of attending to the question and of inhibiting the reopening of deliberation obviously only happen if the agent feels that it is appropriate to attend to the problem and to inhibit further deliberation. In other words, they are dependent on a prior cognitive act. They are intentional acts to manage the cognitive process and are caused by a prior evaluation that such management is appropriate.¹⁰

Holton might not like this, because he insists that choices can happen before judgements and that is certainly not true on this picture, because choices are the direct consequence of unconscious judgments, but as discussed before, Holton is willing to concede that choices might be the product of unconscious judgments as long as they do not depend on conscious ones. In fact as we have seen he himself is quite open about choices being the consequence of an unconscious judgment.

With this solution we do get an explanation for why choices can be thought of as intentional actions. However, what we do not get from this solution is an important role for picking in choice. It is clear that choices in this sense don't need to be acts of picking to be intentional. Holton thought that choices could only be intentional actions if they are pickings, because the real business of choice, which is to evaluate which is the better option, is done by an evaluative process that cannot be intentional. But once we introduce managerial control there is another option. There are rational acts that

⁹ Thanks to the reviewer who pressed me on this point.

¹⁰ My account of choice here is in many ways similar to Shepherd's (2014) account of decisions as intentional actions. However, while I agree with Shepherd that deciding can be understood intentionally, I want to insist that this only works if we understand it also managerially in the sense discussed. Decision itself then has no rational dimension. For a detailed discussion see Vierkant (in preparation)

require intentional mind directed acts in order to get a choice right. If we understand choices as these managerial acts then it is easy to see why choices are intentional actions and why they have been traditionally understood as ‘decisions to’. They are not about evaluating what is best, but about cajoling the mind in to following through on its evaluations, to produce the best possible conditions for the evaluation and to actively inhibit responses if the evaluation is not safe enough yet.

As the evaluative acts that cause the managerial acts are unconscious the account also explains why these choices can feel like pickings.

Holton is right then that choices often feel like picking for the agent, but while this is true, it is a red herring to describe this experience as important for the reason why choices are actions. Choices are actions, because they work exactly like ordinary intentional bodily actions. The only difference is that while bodily actions have a world directed intention, the intentions that guide choices are attitude directed.

We now have an account of choice that does explain the phenomenology of picking and effort in choice, but one where the importance of picking is illusory. Instead what makes the choice in this sense intentional is simply that it is an act of managerial control.

Where does this leave us? Like Holton the account can explain that choices feel like intentional actions (because they are) and also feel like pickings (because the agent is not aware of the rational acts that cause the managerial ones). So like Holton’s account the one suggested here does solve the issue of the agentive phenomenology of choice, but in contrast to the Holton account it does not have to rely on picking for this. This seems like a good result. However, there is one important catch here. Obviously, for the account to work it has to be possible to understand properly how the intentional actions that make up our choices really can be thought of as managerial control.

2 Part 2: A problem: Can choice really be attitude-directed?

I argued that we should think of choice as managerial control. But this might seem surprising given the definitions suggested earlier. Managerial control is supposed to be attitude-directed, but choices seem not to be about attitudes at all, but rather, about what to do. (see also Vierkant 2013) where I first raise this issue). How is it possible that there are intentional actions that control attitudes when the agent is not at all interested in attitude control, but simply tries to achieve world directed goals. In other words how could it be possible to have a form of control that is dependent on thinking about thinking when all the thinking involved is aimed at achieving something else.

2.1 Metacognition and choice

To understand how the notion of managerial control could be sensibly employed in the context of a revamped Holton choice it makes sense to take a step back and to think more generally about the notion of metacognition which seems a very closely related notion to attitude-directed thought in the cognitive science literature. Like attitude directed thought metacognition is a form of thinking about thinking. But while attitude directed thought in Hieronymi is a form of thought by human adults who understand psychological concepts and can consciously think about them, in the cognitive sciences

metacognition is also used by some authors to describe a form of thought that does require a lot less stringent conditions to be fulfilled. If such early forms of metacognition could play a functional role that resembles the managerial account of choice outlined above then that might disable the worry that the managerial model can't be right, because it requires conscious attitude directed thought to get of the ground.

An example of such phylogenetically early forms of metacognition can be found in a series of much discussed experiments by David Smith and colleagues (2003), who tested uncertainty monitoring in macaques. The animals had to decide whether a screen presented to them was densely or sparsely pixelated. There was an arbitrary cut off point of 1500 pixels. More than that and the picture had to be rated as dense. Obviously, solving this task becomes harder and at some point impossible to solve, the closer you get to the arbitrary cut off point.

Before we have a look at what the researchers found, it is worth thinking about what the connections between this experiment and our discussion of choice are. They are fairly obvious anyway. The monkeys are asked to make a 'choice' between two options (dense or sparse). They are rewarded with food if they get it right and penalised with waiting time until the next trial¹¹ if they get it wrong. The macaques are very good at solving this task if the pixelation is relatively far away from the cut off point, but the closer it gets to the cut-off point, the more their choices become simply arbitrary picking, because they do not have the resources to make such a fine grained distinction. The two scenarios present both horns of the traditional dilemma of choice. If it is possible to know whether the screen is sparse or dense, then the choice seems mechanical and there seems no need for intentional action in the process of choice, and if it is not, then the choice seems to be no more than arbitrary picking.

The interesting thing about these experiments is that the researchers introduced a third option into the mix. The macaques could not only press dense or sparse, but they were also offered a third option which would simply give them a new trial, without waiting time, but also without reward. The researchers interpreted this button as the "I don't know button". The researchers found that the macaques can learn to use this button efficiently, but they also found that this is a very rare ability in the animal kingdom. Most animals will ignore the button and the researchers even found this for very close relatives of the monkeys like capuchin monkeys.¹² Smith and colleagues concluded from these experiments that in macaques we have the first tender shoots of metacognition. The monkeys do not only try to understand the world, but they also monitor the cognitive tools that they are using to do world-directed tasks. In other words, they monitor their own mentality or have attitude-directed states in some sense.

The researchers have a natural interpretation according to which the experiments very nicely show that at least some non-human animals do have a way of dealing with their own uncertainty. According to them what is neat about the experiments is that by introducing the "I don't know button", the researchers give the animal the possibility to not only be uncertain but to show that it is aware of its own uncertainty. The researchers feel that they can show that the ability to use the button transforms what used to be

¹¹ They love doing these tasks.

¹² The picture has become a little more complicated with regard to capuchin monkeys. It has been found that under certain conditions the capuchins will use the button however it might be possible that this is due to the specific conditions of these variations of the experiment. Perdue et al. (2015) argue that there is not yet good evidence that capuchins do show metacognition.

arbitrary picking into a choice informed by a monitoring of one's own cognitive performance. This is very much in line with our earlier discussion, where we defined choices as conscious managerial actions initiated by unconscious judgments. But the experiments add to this a specification about what the content of such judgment might be. If Smith and colleagues are right, then the crucial element is metacognitive performance monitoring.

The experiments are interesting for us for two reasons. On the one hand, they seem to demonstrate that there can be metacognitive performance monitoring in creatures that do not possess mental state concepts – and there is wide ranging agreement that the apes do not possess such concepts (e.g. Povinelli and Vonk 2003) and they are nevertheless able to pass the task. This is good news for our account, because if monkeys can control their attitudes metacognitively despite not having mental state concepts, then thinking about mental state concepts does not have to be a condition for metacognitive managerial control either.

At the same time and even better, the experiments also provide us with a scenario that looks actually like an animal equivalent to the choice situations we are interested in like e.g. Holton's fireman case and like Holton's fireman, the animals are faced with two competing options and are uncertain about which option to take. Obviously, this is where the parallel ends, because in order to show that the animals are not only uncertain but also aware of their uncertainty, the researchers introduce the third button. The fireman scenario is more complex. In addition, the fireman has the metacognitive awareness of uncertainty and also a second metacognitive hunch that there is a right solution. But while the scenario is in this respect obviously different, it is still true that in both cases an uncertain choice gets resolved with the help of metacognitive feelings.

2.2 But is this metacognition?

Peter Carruthers (2008) has argued that the experiments do not demonstrate that the animals do have metacognitive abilities. Importantly, though, what is at issue here is the question whether or not the experiments imply that the apes represent their own representational states as such. Many people assume that metacognition implies that there is one state that represents another mental state as a mental state. This ability has also been termed metarepresentation.

Carruthers is sceptical that the experiments show that the animals have metarepresentational abilities. However, whether or not Carruthers is correct in holding that the experiments do not show metarepresentational abilities is not important here as such,¹³ because the metacognition we are interested in here is not supposed to be dependent on metarepresentation.

Instead, the sense of metacognition I am interested in here is the one defended by Joelle Proust.

Proust argues that while the metarepresentational sense of metacognition does exist, metacognition, especially in the empirical sciences, is used in a different way. Here, metacognition is understood as a form of control or monitoring of ongoing cognitive activity. Metacognition in this control sense can involve metarepresentation, but it need not. Instead it might e.g. use non-conceptual doxastic feelings or feelings of knowing

¹³ As it happens, I actually think that he is right to be sceptical

(FOKs¹⁴) or even have no experiential component at all. Whether metacognition in the control sense really can be termed “meta” is contentious (see Carruthers 2008 for a critique of the Proust position). For us, this debate is not important. Whether or not metacognition is meta in the right sense, it is uncontroversial that such cognitive acts can cause intentional actions that have cognitive effects downstream.

If we try to translate that thought back into Hieronymi’s terminology, we get something like the idea that there might be acts of managerial control that are caused by judgments that are not explicitly attitude-directed. The judgments in question are e.g. fluency judgments that lead to FOKs, but the subject does not have to be aware of or even possess the concept of a mental state to have a FOK. The FOK’s trigger intentional actions, which in turn will have effects on attitudes.

Using this picture, we can also address a worry that Proust has about Hieronymi’s account of mental actions. Proust argues that self-probing is intentional and thus Hieronymi’s picture too passive, because Hieronymi does not seem to take into account more basic level intentional actions that influence cognition. Instead she seems to focus exclusively on full blown metarepresentational managerial control. That point is as we have seen in the last section well taken, but what Proust (2013, p. 7–8) does not see is that even those very basic intentional self probing actions will have evaluative causes.

So while it is true that there are more basic managerial actions than the ones Hieronymi has in mind it is also clear that even these basic managerial actions themselves do again depend on basic evaluative ones. This recreates a Hieronymi-like structure between evaluative and managerial on the non metarepresentational level.

We are now in a position to address the worry from the beginning of this section:

The worry was: How can choice be thought of as managerial control, which is supposed to be a form of control where the agent intentionally targets attitudes, if choice is caused by unconscious judgements which very likely do not contain any metarepresentations and therefore seem not capable of targeting attitudes at all, intentionally or not.

The answer to this question is that it is not necessary to possess mental state concepts to control mental states as long as you do not control them as such. This is an important addendum to the Hieronymi distinction. For her, the difference that matters is the question whether the attitudes that are controlled in a mental action are part of the agent or an object that the agent intentionally manipulates. What our discussion here has thrown up is that attitudes can also be controlled if the agent intentionally does something else (e.g. concentrating on a problem, or inhibiting inner speech) which has as a side-effect the control of the attitude. Obviously, the agent does not control the attitude intentionally in these scenarios, but she is acting intentionally and because the action is controlled by the FOK it is the control of attitudes using intentional action.

Given this it seems natural however to still call this managerial control and given this understanding, it is now clear how choice can be thought of as an act of managerial control.¹⁵

¹⁴ Feeling of Knowing. For a thorough treatment of FOK see e.g. (Koriat 1993)

¹⁵ Given that all managerial control involves an intentional action that is caused by a judgment procedural metacognition in the Proust sense is nevertheless wider than managerial control, because the monitoring here does not have to work via an intentional mental action like an attention shift or a inhibition.

3 Conclusion

Human decisions feel agentic and that seems to be more than a mechanical weighing of reasons. Holton's account looked initially impressive in doing this intuition justice. It seemed as if Holton had come up with an account of choice that was both intentional and not arbitrary.

Holton offers us an elaborate mix of picking and choosing for reasons. Holton argued that the conscious system 2 experiences choices as intentional mere pickings. For the agent, the experience is one of an arbitrary picking of one option over the other, much in the same way as one would choose between qualitatively identical tins on a supermarket shelf.

Nevertheless, choices are not mere pickings, because while the agent experiences them as such they are informed by an unconscious biasing. The system does evaluate one option as better than the other, but the information is not accessible to the conscious agent.

Unfortunately, Holton's account does not stand up to closer scrutiny. While it does do a good job of explaining the phenomenology of intentional agency in choice this paper showed us that Holton's account is misleading in its emphasis on picking. Picking does have a role in the phenomenology of choice (Deutschländer et al., in preparation)¹⁶ and the lack of access to the reasons for the choice might well play a big role in why we have this phenomenology, but it is not relevant in explaining why the intentional action really is an integral part of what choice is about.

As an alternative to Holton's emphasis of picking, it was suggested that we should think of choice as managerial control. That way, it is possible to keep the Holton architecture of an experience of picking caused by an unconscious judgement, but to give a more plausible explanation of why intentional actions matter for choice. They matter because they control our practical rationality in a managerial way.

The biggest seeming problem with the alternative proposal was that managerial control in the original Hieronymi sense is clearly metarepresentational, while choices do not even seem to be clearly attitude-directed at all. To address this worry, we discussed Proust's work on metacognition in the control sense. We concluded that we need a wider notion of managerial control. Managerial control happens when an intentional action has the function to control an attitude, whether or not the action is controlled by a goal state that is about attitude control.

Once this is understood we now have an account of choice as intentional action that both respects the phenomenology and at the same time plausibly explains the roles of intentional and evaluative components in the decision process in a two systems framework. The account does lose the element of picking, but explains its phenomenological seeming importance. This is a good result, because in the end picking really does not seem to be the kind of thing that should play a major role in our choices. We do not want our important choices to be similar to the simple picking of a tin of beans.

¹⁶ The notion of arbitrary intentional picking is also very prominent in experimental attempts to implement free will (see e.g. famously Libet et al. 1983)

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