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Bence Nanay

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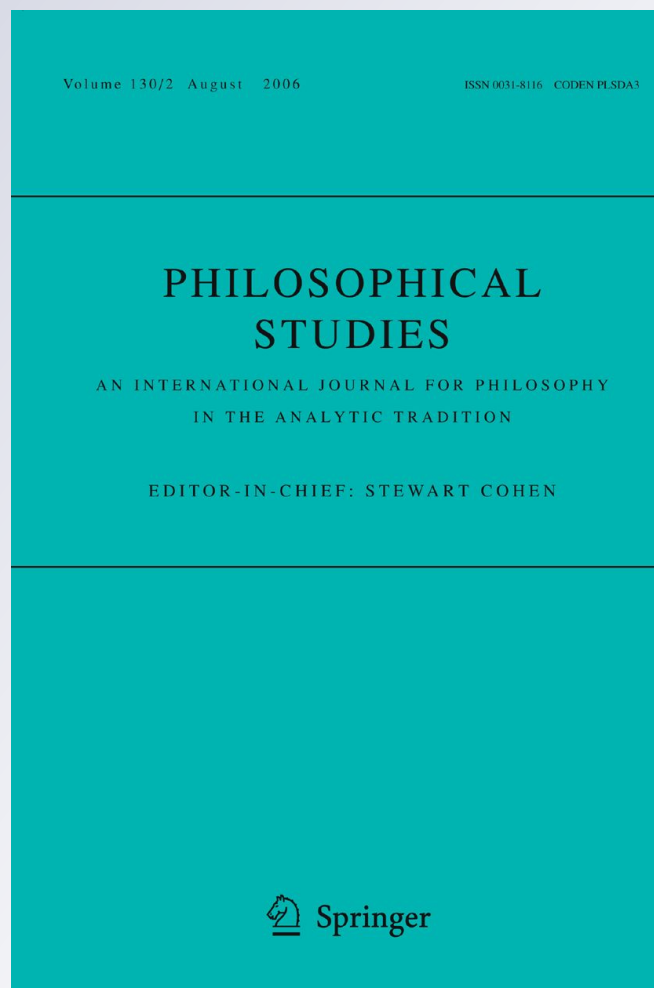EDITOR-IN-CHIEF: STEWART COHEN

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Abstract   The aim of this paper is to reinterpret success semantics, a theory of mental content, according to which the content of a belief is fixed by the success conditions of some actions based on this belief. After arguing that in its present form, success semantics is vulnerable to decisive objections, I examine the possibilities of salvaging the core of this proposal. More specifically, I propose that the content of some very simple, but very important, mental states, the immediate mental antecedents of action, can be explained in this manner.

Keywords   Mental content · Success semantics · Modest naturalism · Action-guiding representations

1 Success semantics

Many of our mental states are about something; they refer to something. In other words, they have content. My papaya-thought refers to, or is about, a papaya (or maybe about papayas in general). In order to understand what the content of my papaya-thought is, we need to explain this relation between my papaya-thought and what it is about: the papaya. In general, the explanation of the content of mental states is the explanation of the relation between these mental states and what they are about.

   'Naturalistic' theories of mental content intend to explain the relation between the mental state and what it refers to in purely naturalistic terms. One of the most

B. Nanay
Department of Philosophy, University of Antwerp, D 413, Grote Kauwenberg 18,
2000 Antwerp, Belgium

B. Nanay (✉)
Peterhouse, University of Cambridge, Cambridge CB2 1RD, UK
e-mail: bn206@cam.ac.uk
URL: http://webh01.ua.ac.be/bence.nanay

elegant naturalistic explanations of mental content is success semantics. According to success semantics, the content of a belief is fixed by the success conditions for the performance of an action triggered by this belief. I argue that although some powerful objections have been raised against success semantics, if we narrow down the scope of this theory, we may be able to salvage the gist of success semantics and give a coherent account for the content of at least some of our mental states.

The starting point of success semantics is an observation made by Frank Ramsey in his paper "Facts and Propositions", where he claimed that the content of some simple beliefs is fixed by the conditions for the successful performance of some actions (Ramsey 1927/1990):

> […] The relation between the chicken's behaviour and the objective factor was that the actions were such as to be useful if, and only if, the caterpillars were actually poisonous. Thus any set of actions for whose utility *p* is a necessary and sufficient condition might be called a belief that *p*, and so would be true if *p*, i.e. if they are useful. (Ramsey 1927/1990, p. 40.)

Ramsey's proposal is rather sketchy. J. T. Whyte, however, elaborated on this suggestion and argued that the content of any belief is fixed by the success conditions of the action this belief (together with a desire) gives rise to (Whyte 1990, 1992, Chap. 1 and 6, 1993, 1997; Papineau 1993; Mellor 2003, forthcoming; Dokic-Engel 2002). More precisely, he claims that:

> A belief's truth-condition is that which guarantees the fulfilment of any desire by the action which, combined with that desire, it would cause. (Whyte 1990, p. 150; Whyte 1993, p. 84)

In other words, the truth-condition of one's belief is fixed by the success conditions of some of one's actions. Several arguments can be raised against this proposal (Brandom 1994; Godfrey-Smith 1994, see also Dokic-Engel 2002; Dokic-Engel 2004; Whyte 1997; Blackburn 2005; Raftopoulos 2008; Hattiangadi 2007, pp. 120–126). I will focus on two of these, which I take to be the most influential ones.

The first objection is based on the observation that the outcome of my action depends on more than one of my beliefs. Therefore, we cannot single out one belief that is such that, paired up with a desire, its truth would guarantee the successful performance of an action this belief and this desire together bring about, because the success of this action will also depend on the truth of some other beliefs. Simon Blackburn writes:

> The idea that the truth-condition of a belief would be whatever *guarantees* success in action based on the belief meets trouble […] no fact guarantees success in action, because even when an agent apprehends a fact correctly, there may be an indefinite amount of rubbish in her head, waiting to misdirect action based upon it. This is the familiar holism of the mental. (Blackburn 2005, pp. 22–23)

The standard response to this objection is that if the success of my action is guaranteed by the truth of a number of beliefs of mine, then given that some of these beliefs play a role in guaranteeing some of my other actions, we get a systematic

relation between my beliefs and my actions that would still allow us to determine the content of my beliefs with the help of the success conditions of my actions. The content of my belief that the cookies are in the cupboard is not fixed by the fact that the truth of this belief (together with the truth of some other beliefs) guarantees the success of my action of taking the cookies out of the cupboard, but it is fixed by the fact that the truth of the same belief plays a role in guaranteeing the success of several other actions.

Thus, the truth of B_1 together with the truth of B_2 and B_3 guarantees the success of A_1—an action based on B_1, B_2 and B_3; the truth of B_1 together with the truth of B_4 and B_5 guarantees the success of A_2 and the truth of B_1 together with the truth of B_6 and B_7 guarantees the success of A_3. And so on. On the basis of these simultaneous equations, we can determine the content of B_1: The content of B_1 is that which guarantees the success of A_1 if B_2 and B_3 are true *and* what guarantees the success of A_2 if B_4 and B_5 are true, and so on. The same goes for B_2, B_3, etc. Thus, if we have several simultaneous equations involving one single belief but different actions, then we can account for the truth-conditions of this belief in terms of the success conditions of some actions (see Papineau 1993; Hattiangadi 2007, p. 120).

But even this claim has been questioned. After the quote I gave above, Simon Blackburn continues: "And there may also be an indefinite number of things not wrong with the agent […] but wrong with the environment: unknown and unthought-of obstacles waiting to trip her up" (Blackburn 2005, p. 23). Robert Brandom also argued that even if all of our beliefs that an action is based on are true, the success of this action would still not be guaranteed (Brandom 1994). After all, I may be ignorant of some of the conditions of the successful performance of my action, therefore, I may not have any belief about these conditions. I may have a belief that the cookies are in the cupboard and that the cupboard is in the kitchen and that the kitchen is on the first floor, but if, unbeknown to me, the cupboard door is locked, then I still cannot perform the action successfully, in spite of the fact that all the beliefs the performance of this action is based on are true. This is the second problem with Whyte's success semantics: not even the truth of all our relevant beliefs guarantees the successful performance of an action.

2 Success and no-impediment beliefs

Whyte has a solution to this problem of unforeseen circumstances. Our actions are based not only on the relevant beliefs but also on a belief that there are no physical impediments to the successful performance of this action. The claim is that the truth of the relevant beliefs together with the truth of the belief that there are no physical impediments to the successful performance of this action does guarantee the success of the action. Thus, Whyte thinks that in order to be motivated to act, we need to have—besides the beliefs I enumerated in the previous paragraph—an additional belief that there are no physical impediments to my getting into the cupboard (Whyte 1990, 1997). This belief, then, entails (besides many other things) that the cupboard door is not locked. Whyte calls beliefs of this kind *no-impediment beliefs* (Whyte 1997, p. 85).

Whyte argues that if this no-impediment belief is true and if all our other beliefs the action is based on are true, then the success of the action is guaranteed. If the cupboard is indeed in the kitchen and if the cookies are indeed in the cupboard and if it is true that if the cupboard is in the kitchen and the cookies are in the cupboard, then my action will succeed, then my action will indeed succeed. Success semantics is saved.

According to Whyte, no-impediment beliefs play two roles in the explanatory scheme of success semantics. First, having no-impediment beliefs (together with having some other beliefs) motivates us to perform an action. Second, the truth of a no-impediment belief (together with the truth of some other beliefs) guarantees the success of this action.

We can define no-impediment beliefs in two ways, corresponding to the two roles they play in success semantics: (1) the belief the truth of which (together with the truth of some other beliefs) guarantees the success of our actions, or, (2) the belief that (together with some other beliefs) plays a necessary role in motivating us to perform our actions. I will argue that the first way of defining no-impediment beliefs makes success semantics vacuous, whereas the second one does not allow success semantics to solve the problem of unforeseen circumstances. If my argument is correct, then we need to dispose of the idea of no-impediment beliefs. And this would imply disposing of Whyte's success semantics.

Let us first define no-impediment beliefs as the beliefs that play a necessary role in motivating us to perform our actions. Whyte's initial consideration was that without having a no-impediment belief we would not be motivated to act. If we thought that there are some impediments to our performance of an action, then we would not be motivated to perform it. If I had a belief that there are physical impediments to my getting into the cupboard, then I would not even bother to go to the cupboard.

The first thing we need to notice about this line of reasoning is that it does not establish the claim that we do have beliefs about the lack of physical impediments each time we are motivated to act. All that follows from this reasoning is that in order to be motivated to act, we cannot believe that there are physical impediments. This claim does not imply that we must believe that there are no physical impediments. Not believing that p does not imply believing that not *p*.

But even if there is a mental state that is necessary for being motivated to perform an action, it does not follow that the correctness of this mental state guarantees the success of the action that is based on it. In order to be motivated to perform an action, it is enough if we represent it as *having a chance* of succeeding. It happens all the time, after all, that we are motivated to perform (or even in fact perform) an action that we are not sure we will succeed in. But even if my mental state that represents an action as having a chance of succeeding is correct, this will not *guarantee* the success of my action—it only guarantees that the action has a chance of succeeding. Thus, this way of defining no-impediment beliefs cannot help success semantics to solve the problem of unforeseen circumstances.

The second alternative for success semantics is to define no-impediment beliefs as beliefs the truth of which (together with the truth of other beliefs) would

guarantee the success of the actions that are based on them. If we accept this definition, however, then the claim of success semantics will be vacuous.

Suppose that I have some beliefs, B_1, B_2, B_3, that are required for the successful performance of an action. These in themselves cannot guarantee the successful performance of the action, so let us add whatever belief would be needed to guarantee the success of my action. This would be the no-impediment belief.[1] If we defined no-impediment beliefs this way, then the truth of the no-impediment belief (together with the truth of B_1, B_2, B_3) would indeed guarantee the success of my action, unforeseen circumstances notwithstanding. But this claim is analytically true; it is true by definition. No-impediment beliefs are defined to be just those beliefs the truth of which (together with the truth of some other beliefs) would guarantee the success of the action. Thus, no-impediment beliefs of course guarantee the successful performance of the action. We defined them in such a way that they would do so. If we accept this way of defining no-impediment beliefs, then the claim of success semantics becomes vacuous.[2]

To sum up, if we define no-impediment beliefs as beliefs that are necessary for being motivated to perform an action, then success semantics cannot handle the unforeseen circumstances objection. If, on the other hand, we define them as beliefs the truth of which guarantees the success of our action, then success semantics becomes vacuous.

Hence, Whyte cannot help himself to no-impediment beliefs when answering the unforeseen circumstances objection. Thus, we need to dispose of the idea of no-impediment beliefs. Since the idea of no-impediment beliefs is a necessary feature of Whyte's success semantics, this would also imply disposing of Whyte's success semantics.

The discussion so far may indicate that success semantics is not exactly a very promising candidate for explaining mental content. Yet, I would like to suggest that if we go back to Ramsey's original suggestion, we may be able to salvage the core of his suggestion. In other words, I will argue that there may be a way of interpreting Ramsey's original suggestion in such a way that is not vulnerable to the objections that made Whyte's proposal lose its appeal.

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[1] One may worry whether these beliefs are psychologically real, but I bracket this worry in order to make this horn of the dilemma as plausible as possible.

[2] Robert Brandom could be interpreted as giving an argument along similar lines: "[Adding no-impediment beliefs to the original score of success semantics] saves the principle that the failure of any action can be traced to the falsity of some belief on which it was based—but only by trivializing it. […] The expanded conjunction [B_1 and … and B_n & B_i] logically entails that A (if performed) will be successful. But this has nothing to do with the truth conditions of B_1 and B_2 and … and B_n." (Brandom 1994, p. 177). Chris Daly also made a similar point (Daly 2003, pp. 60–62). See also Whyte's response to Brandom's argument that is based on a misinterpretation (Whyte 1997). It has to be pointed out that neither the idea of no-impediment beliefs, nor Brandom's objection (let alone Whyte's supposed refutation of it) has been taken very seriously (an important exception is Hattiangadi 2007, esp. pp. 122–123). Those who attack success semantics tend to ignore the idea of no-impediment beliefs altogether (Blackburn 2005 is a good example, see also Dokic and Engel 2002, 2004). And those who defend success semantics assume that Brandom's argument does not work (without giving much argument for this—an example would be Mellor 2003). As the idea of no-impediment beliefs is a necessary feature of success semantics, it would deserve more attention.

3 Back to Ramsey

Whyte's success semantics is supposed to apply to all of our beliefs. This is a radical change from Ramsey's original proposal.[3] Ramsey did not claim that the content of all beliefs could be explained with the help of the conditions of the successful performance of some action. All he suggested was that the content of some (presumably very simple) beliefs can. He explicitly claims that this approach should not be extended to cases where we are dealing "with those beliefs which are expressed in words […] or other symbols, consciously asserted" (Ramsey 1927/1990, p. 40).

Perhaps we can preserve the spirit of Ramsey's proposal and limit the scope of applying the idea that the success conditions of our actions fix the content of our mental states to relatively simple mental states. The suggestion would be that the content of some simple mental states could be explained in this manner: the content of *some of* an agent's mental states is fixed by the success conditions of her actions.

How the content of other mental states is explained is an entirely different question, which may not be answered with the help of a Ramseyan explanatory scheme. The question then is whether we can apply Ramsey's explanatory scheme in the case of simple mental states in such a way that is not vulnerable to the same objections Whyte's success semantics was vulnerable to.

My strategy is similar to what is sometimes referred to as 'modest naturalism' (Sterelny 1990; Godfrey-Smith 1996). As Peter Godfrey-Smith writes:

> Immodest theories attempt to give a fully general analysis of representation in naturalistic terms. Modest theories try to divide and conquer. Modest theories only try to give a naturalistic account of the most basic representational capacities. Then theories which are not themselves naturalistic, as they presuppose representation in some form, can be used to explain more complex types of representation. (Godfrey-Smith 1996, p. 176)

In short, while the original version of success semantics is an immodest theory, I would like to outline a modest Ramseyan theory. My claim is that the content of only some of our mental states can be explained with reference to the success of our actions. These mental states are the immediate mental antecedents of action, which I call 'pragmatic representations'. In the next section, I say more about what these mental states are, why they are important and how they differ from beliefs and then in Section 5, I argue that the content of pragmatic representations (but not of other mental states) can be explained by an explanatory scheme that is similar (but not identical) to that of success semantics.

4 Pragmatic representations

One of the most important questions of philosophy of action (or, maybe even the most 'fundamental question', see Brand 1979) is what makes actions actions: how actions differ from mere bodily movements. What is the difference between

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[3] See also Bermúdez (2003, pp. 65–67) for an analysis of how Whyte's success semantics differs from Ramsey's original insights.

performing the action of raising my hand and having the bodily movement of my hand going up (maybe as a result of a neuroscientist manipulating my motor cortex)? In short, what makes actions more than just bodily movements? Given that the bodily movement in these two cases is the same, whatever it is that makes the difference, it must be a mental state that triggers, or maybe accompanies, the bodily movements. If bodily movements are triggered (or accompanied) by mental states of a certain kind, they qualify as actions. If they are not, they are mere bodily movements.[4]

The big question is of course what mental states are the ones that trigger (or accompany) actions. And there is no consensus about what these mental antecedents of actions are supposed to be. But whatever they are, they seem to be representational states that represent the properties that are necessary for the performance of the action. They guide, and sometimes even monitor, our bodily movements. Myles Brand called mental states of this kind 'immediate intentions' (Brand 1984), Kent Bach 'executive representations' (Bach 1978), John Searle 'intentions-in-action' (Searle 1983), Ruth Millikan 'goal state representation' (Millikan 2004, Chap. 16), Marc Jeannerod 'representation of goals for actions' or 'visuomotor representations' (Jeannerod 1994, Sect. 5; Jeannerod 1997; Jacob-Jeannerod 2003, pp. 202–204). I myself called them 'action-oriented perceptual states' (Nanay 2012) or 'action-guiding perceptual representations' (Nanay 2011). Here (as in Nanay, forthcoming a, b), I call them 'pragmatic representations'.[5]

I use the term 'pragmatic representation' as a place-holder for the immediate mental antecedent of actions. Not just of intentional actions; all actions. And not just of autonomous actions (see Velleman 2000; Hornsby 2004), all actions. Thus, understanding the nature of pragmatic representations is a logically prior task for philosophers of action to all other questions in action theory. In order to even set out to answer questions like 'what makes actions intentional?' or 'what makes actions autonomous?', one needs to have an answer to the question 'what makes actions actions?' And the way to answer this question is to describe the immediate mental antecedents of action: pragmatic representations.

I said that I use the term 'pragmatic representation' as a place-holder for the immediate mental antecedent of *all* actions. However, I will not say anything about mental actions or the mental antecedents thereof. It is not clear that there is a mental antecedent of mental actions (one could argue that this would be duplicating mental processes) and even if there are, it is unclear in what sense they 'guide' these mental actions. For simplicity, everything I say about the mental antecedents of action in this paper is limited to non-mental actions.

Pragmatic representations are genuine mental representations: they represent objects as having a number of properties that are relevant for performing the action.

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[4] Theories of 'agent causation' deny this and claim that what distinguishes actions and bodily movements is that the former are caused by the agent herself (and not a specific mental state of her). I leave these accounts aside because of the various criticisms of the very idea of agent causation (see Pereboom 2004, for a summary).

[5] This list is supposed to be representative, not complete. Another important concept that may also be listed here in John Perry's concept of 'belief-how' (Israel et al. 1993; Perry 2001).

As a result, pragmatic representations can be correct or incorrect. If they are correct, they are more likely to guide our actions well; if they are incorrect, they are more likely to guide our actions badly.

Pragmatic representations are not beliefs.[6] Here is why. Consider the following short but impressive demonstration of perceptual learning.[7] We are asked to put on a pair of distorting goggles that shifts everything we see to the left. Then we are supposed to throw a basketball into a basket in front of us. The first couple of attempts fail miserably: we throw the ball not towards the direction of the basket, but to the left of it. After a number of attempts, however, we do throw the ball accurately into the basket.

But after having practiced this for a couple of times with the goggles on, we are supposed to take off the goggles and try to perform the task without them. And now we go through the same phenomenon again: when we first attempt to throw the ball towards the basket without the goggles, we miss it. After several attempts, we learn to throw it the way we did before putting on the goggles.

I would like to focus on this change in our perception and action after taking off the goggles. At the beginning of the learning process, my pragmatic representation is clearly different from my pragmatic representation at the end, when I can successfully throw the ball into the basket. My pragmatic representation changes during this process and it is this change that allows me to perform the action successfully at the end of the process.

Now suppose that pragmatic representations are beliefs. In this case, they must be sensitive to other beliefs. But none of our background beliefs change in the process. Nor do our perceptual beliefs change. I experience the basket in front of me all along and I have the same beliefs all along. Still, the pragmatic representation changes.

In this example, our pragmatic representation attributes a certain location property to the basket, which enables and guides us to execute the action of throwing the ball in the basket. But this is not the property we believe (or experience) the basket to have. Thus, if this pragmatic representation were to be a belief, this would mean that this belief would be insensitive to and even contradict one's other beliefs. And a belief cannot be insensitive to our other beliefs, at least not too often and not for too long.[8]

But the real problem is that even if a belief could at least sometimes be insensitive to some of our other beliefs, it certainly cannot be insensitive to those of our beliefs it is supposed to be based on and inferred from. As in this example all my perceptual and background beliefs about the whereabouts of the basket are unchanged, if my pragmatic representation were in fact a belief, it would also

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[6] I argue elsewhere (Nanay 2011, 2012, forthcoming a, b) that the immediate mental antecedents of action are perceptual states and Bach (1978 esp. p. 368) seems to assume the same. My argument here is consistent with this proposal but it does not rely on it.

[7] This interactive demonstration can be found in a number of science exhibitions. I first saw it at the San Francisco Exploratorium. See also Held (1965) for the same phenomenon in an experimental context.

[8] See Harman (1984) for a classical analysis of the topic of contradicting beliefs.

remain unchanged. But it does not.[9] Hence, it is not a belief (see also Nanay 2012, forthcoming a, b).

We have seen that the explanatory scheme of success semantics is problematic when we apply it to beliefs. But I want to argue that as long as we restrict the scope of this explanatory scheme to pragmatic representations (and modify it slightly), we get a plausible account. In short, the claim I will defend in the next section is that the content of pragmatic representations can be explained with reference to the success conditions of some actions.

5 Success semantics reconsidered

According to the new version of success semantics I defend here, the explanatory scheme of success semantics applies only to some of our mental states—pragmatic representations. Further, and this is the second point of departure from Whyte's version of success semantics, the correctness of these mental states does not guarantee the success of any action.

My claim, at first approximation, is that the correctness of a pragmatic representation raises the probability of the successful performance of the action this pragmatic representation is the immediate mental antecedent of. In order to (even attempt to) eat an apple, I need to represent it as having a certain spatial location (otherwise I would not know which direction to reach towards), a certain size (otherwise I would not know what grip size to approach it with), a certain weight (otherwise I would not know what force to exert when lifting it), and so on for all the properties of the object that are relevant for the performance of my action. If I get all of these properties of the object right, then the success of the performance of this action will be more likely. If I misrepresent, say, the spatial location of the apple, then I am much less likely to succeed in eating it.

Again, it is important that I do not claim that the correctness of this pragmatic representation *guarantees* the success of the action that it is the immediate mental antecedent of. The object may have properties that my pragmatic representation fails to represent. The apple may explode when I touch it, for example. But, other

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[9] Similar results are reported in the case of a number of optical illusions that mislead our perceptual experience but not our pragmatic representation. One such example is the three dimensional Ebbinghaus illusion. The two dimensional Ebbinghaus illusion is a simple optical illusion. A circle that is surrounded by smaller circles looks larger than a circle of the same size that is surrounded by larger circles. The three dimensional Ebbinghaus illusion reproduces this illusion in space: a poker-chip surrounded by smaller poker-chips appears to be larger than a poker-chip of the same diameter surrounded by larger ones. The surprising finding is that although our judgment of the comparative size of these two chips is wrong as we judge the first chip to be larger than the second one, if we are asked to pick up one of the chips, our grip-size is hardly influenced by the illusion (Aglioti et al. 1995, some worries about the experimental conditions is expressed by Pavani et al. 1999; Franz 2001, 2003; Franz et al. 2000, 2003, see also Gillam 1998, Vishton 2004 and Vishton and Fabre 2003—see Briscoe 2008 for a good philosophically sensitive overview on this question). Similar results can be reproduced in the case of other optical illusions, like the Müller-Lyer illusion (Goodale and Humphrey 1998; Gentilucci et al. 1996; Daprati and Gentilucci 1997; Bruno 2001), the 'Kanizsa compression illusion' (Bruno and Bernardis 2002), the dot-in-frame illusion (Bridgeman et al. 1997), the Ponzo illusion (Jackson and Shaw 2000; Gonzalez et al. 2008) and the 'hollow face illusion' (Króliczak et al. 2006).

things being equal, if my pragmatic representation is correct, the successful performance of the action of eating the apple will be more likely: the correctness of my pragmatic representation raises the probability of the success of the action it is the immediate mental antecedent of.

But what does it mean that the correctness of my pragmatic representation raises the probability of the success of the action it is the immediate mental antecedent of? As a first approximation, we can say that it means that the conditional probability of the success of this action given the correctness of the representation is higher than the conditional probability of the success of this action given the incorrectness of the representation. But this can mean many things, depending on what variables we hold fixed.

There is a weak sense of probability-raising in which any correct representation raises the probability of the success of the action that is based on it. This is true even of beliefs in the original conceptual framework of success semantics. The truth of my belief that the cookies are in the cupboard does raise the probability of the success of my action of eating them as long as the rest of my mental states cooperate, that is, as long as, to paraphrase Blackburn, there is no 'rubbish in our head', 'waiting to misdirect our actions'. But not otherwise. Thus, the correctness of beliefs does raise the probability of the success of the action based on them, but only in a weak sense of the term that would be of not much use for us.

The concept of probability-raising that would be useful for us is much stronger: the correctness of my mental state raises the probability of the success of an action based on it in the stronger sense if it raises this probability *regardless of whatever else is going on in my mind*. I will use the concept of probability-raising in this stronger sense in what follows. And the correctness of my pragmatic representation does raise the probability of the success of the action it is the immediate mental antecedent of in this stronger sense, that is, regardless of whatever else is in our mind.[10]

So the claim is that *the correctness of my pragmatic representation raises the probability of the success of the action it is the immediate mental antecedent of, in the strong sense*. If I am attempting to eat an apple and I represent all the properties I take to be relevant for eating it correctly, then this raises the probability of succeeding, regardless of what else I misrepresent about the world. Now we only need to transform this claim into an account of the content of pragmatic representations.

A preliminary attempt at connecting the correctness conditions of pragmatic representations and the success conditions of actions would be the following: the correctness conditions of a pragmatic representation, R, is C if and only if C raises

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[10] For purists: we may need to add one more qualification of what 'other things being equal' means in this context: we may need to add that the correctness of my pragmatic representation raises the probability of the success of the action it is the immediate mental antecedent of, in the strong sense *given that this action is performed*. If we did not add this, one could conclude that the correctness of no mental state would raise the probability of the success of an agent's actions as it may be possible that this agent is paralyzed or she has some kind of mental block that prevents her from performing actions. And if no action is performed then no successful action is performed either. For the sake of simplicity, I leave this subclause out in what follows.

the probability (in the strong sense) of the success of the action R is the immediate mental antecedent of. The problem with this preliminary definition is that there are usually a number of actions a pragmatic representation raises the probability of (in the strong sense).

We have seen that the correctness of my pragmatic representation raises the probability of the success of the action it is the immediate mental antecedent of. But it also raises the probability of some other actions. Take the pragmatic representation that is the immediate mental antecedent of my action of lifting the apple in front of me. The correctness of this representation raises the probability of the success of my lifting this apple. But it also raises the probability of the success of my grasping this apple. Or reaching for it. And so on for each proper part of the action the pragmatic representation is the immediate mental antecedent of.

In the light of this, the final account of the content of pragmatic representations is the following: *the correctness conditions of a pragmatic representation, R, is C if and only if C raises the probability (in the strong sense) of the success of the action R is the immediate mental antecedent of and this action is not the proper part of any other action the success of which R raises the probability of.*

A quick example: R is the immediate mental antecedent of the action of grasping the apple in front of me. What is the content of R? R's correctness raises the probability of the success of grasping the apple in the strong sense. It only raises the probability of the success of lifting the apple in the weak sense: if I have the wrong idea about how to lift apples, R's correctness will not raise the probability of the success of my lifting the apple. And R's correctness raises the probability of the success of a number of actions that are proper parts of grasping: reaching for the apple, approaching it with a certain grip, etc. But there is only one action that is such that R's correctness raises the probability of its successful performance and that is not the proper part of any action the successful performance of which R's correctness raises the probability of. And this action is grasping. R's correctness conditions are those conditions that raise the probability of the successful performance of grasping the apple (in the strong sense). We have reestablished the link between the correctness conditions of mental states and the success conditions of actions that success semantics posited.

6 Objections

Again, it is important to emphasize that my account is more modest than the original formulation of success semantics in two different ways. First, in my explanatory scheme, the correctness of a pragmatic representation does not guarantee the success of the action that it is the immediate mental antecedent of—it only makes the success more likely. Second, my claim is only about a subset of mental states: pragmatic representations. Thus, my account is more modest than Whyte's success semantics. And, as a result, it can answer the objections raised against Whyte's account in a satisfactory manner.

The first objection to success semantics was that the success of my action also depends on the truth of some other beliefs of mine. This objection does not apply in

the case of my account as pragmatic representations raise the probability of the success of the action they are the immediate mental antecedent of regardless of what other beliefs I have. The holism objection is avoided.[11]

Second, the success of an action depends on unforeseen circumstances. As we have observed, things can go wrong: some unforeseen circumstances can prevent the agent from succeeding. This forced Whyte to introduce the idea of no-impediment beliefs, which then turned out to lead to very implausible consequences. According to my version of success semantics, the correctness of a pragmatic representation does not guarantee the success of the action it is the immediate mental antecedent of—it only makes this success more probable. Thus, my account is not vulnerable to the unforeseen circumstances objection.

A new potential worry about my account would be the following: suppose that Judy wants to slap Archibald Leach. Wouldn't the pragmatic representation that raises the probability (in the strong sense) of the success of her doing so also raise the probability of the success of her slapping Cary Grant? The action of slapping Cary Grant is not a proper part of the action of slapping Archibald Leach—so my account would seem to imply that one pragmatic representation raises the probability of two different actions (in the strong sense)—we have lost the neat one on one correspondence between pragmatic representations and actions. My response is to bite the bullet with delight. As the bodily movement involved in the performance of the action of slapping Archibald Leach is exactly the same as the bodily movement involved in the performance of the action of slapping Cary Grant, the pragmatic representation that guides and monitors the action of slapping Cary Grant is exactly the same pragmatic representation that guides and monitors the action of slapping Archibald Leach. What these pragmatic representations represent is the spatial location of the man's face, its orientation, distance from one's hand, etc. They do not represent the identity of the man. That is done by other, much more complex and much less immediate mental antecedents of one's action—like prior intentions or beliefs. For many other purposes, of course, slapping Cary Grant and slapping Archibald Leach are very different actions. But for the purposes of specifying the content of pragmatic representations, they would count as the same action.

Another possible worry: if we limit the scope of success semantics to pragmatic representations, then we lose the explanatory relevance of this theory, as even if these mental states exist, they are few and far between. Thus, even if we manage to explain their content, this will hardly matter in the big project of explaining content in general. My answer is that we are performing actions all the time. Each time, we can only do so if we have a pragmatic representation. Thus, pragmatic representations are extremely important constituents of our mental life.

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[11] Does this mean that I need to commit to some kind of atomism? Do I need to pay the price for avoiding the objection that has been raised against Whyte's suggestion by having to deny the holism of the mental? Here we need to make a distinction between holism about pragmatic representations and about the rest of our mental states. Nothing I say here rules out that our mental states that are not pragmatic representations do indeed form a holistic network. Thus, I do not need to give up the holism of the mental in order to avoid this objection.

Further, non-human animals are capable of performing goal-directed actions, such as running away from predators or chasing prey. But if they are, they must be able to have pragmatic representations. Hence, even organisms that may be incapable of entertaining complex thoughts and beliefs must be able to have pragmatic representations. And this takes us back to Ramsey's original formulation of the gist of success semantics, where he talks about the chicken: "relation between the chicken's behaviour and the objective factor" (Ramsey 1927/1990, p. 40).[12]

7 Conclusion

Finally, it is important to emphasize again that if the explanatory scheme I put forward in this paper does work, then we still have a lot to do in order to explain the content of our mental states in general. If the argument I presented here is correct, then the content of pragmatic representations can be explained in terms of success semantics. Whether and in what way the content of all other mental states can be explained is a different question: nothing I said here helps us with that task. But if we do manage to explain the content of pragmatic representations with the help of the explanatory scheme of success semantics, then at least we have a good starting point.

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[12] Bermúdez (2003, pp. 65ff) also makes a distinction between success semantics as applied to human beliefs and as applied to the representations of animals and he is less negative about the second of these two projects. My approach differs from his in two ways: I argue that success semantics can be applied to some of our representations and I am not committed to the claim that it can be applied to all representations of animals.

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