Cognitive Efficacy as the Hallmark of Occurrent States

In a recent paper, Gary Bartlett argues for a theory of the distinction between occurrent and standing mental states. On his view, the former are best understood as processive, while the latter are non-processive. As such, occurrent states become a problem for functionalism, Bartlett argues in a separate paper. Traditionally, functionalism posits that mental states are abstract causal roles, and such a role cannot define a state that is, by its nature, internally active. While I agree that occurrent states are best construed as active states, I maintain that the relevant type of activity is *external*; specifically, for a state to be occurrent is for it to be causally active in cognition. I argue that construing occurrent states in this way facilitates (i) the differentiation of occurrent and standing mental states from a neural perspective, and (ii) a functional account of occurrent states, with one amendment to standard functionalism.

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I. Introduction

In a recent paper (2018a), Gary Bartlett argues for a theory of the distinction between occurrent and standing mental states. On his view, occurrent states are best understood as *active* states, activity being the property that distinguishes them from standing states. Furthermore, the activity is internal to the state, making occurrent states *processes*, according to Bartlett. As such, occurrent states become a problem for functionalism, he further argues (2018b). Traditionally, functionalism posits that mental states are abstract causal roles and places no constraints on the internal nature of the realizers of those roles. Thus, such roles cannot serve to define a state that is, by its nature, internally active.

I agree with Bartlett on two points: (1) occurrent states are best defined as active states, and (2) if the characteristic activity of occurrent states were processive, such states could not be abstract causal roles, as standard functionalism requires. But I deny the antecedent in (2): Contra Bartlett's proposal, I maintain that the activity characteristic of occurrent states is *external*; that is, for a state to be occurrent is for it to be causally active, specifically in cognition.

This paper provides theoretical motivations for accepting that definition of occurrent states. My aim is not merely to critique Bartlett's theory, but also to develop and defend an independent account. In Section II, I explain my notion of cognitive efficacy. In Section III, I argue that identifying *being occurrent* with *being cognitively efficacious* facilitates the differentiation of occurrent and standing mental states from a neural perspective; on Bartlett's view this becomes difficult. In Section IV, I argue that construing occurrent states as cognitively efficacious allows a functional account of them, if functionalism is supplemented with the idea of an *enacted functional role*.

II. The Cognitive Efficacy of Occurrent States

The conception of occurrent states as active has its roots in Alston (1967), Goldman (1970), and Audi (1994), but the *type* of activity involved isn't characterized in a consistent way. For example, Goldman defines an occurrent want as one that is a "mental process . . . a 'going on' or 'happening'" (p. 86). This is the type of activity Bartlett refers to as "internal" to the state (2018a, p. 12). In contrast to this kind of activity, note the way Alston distinguishes "aroused" wants from "latent" ones (terms which Goldman later replaced with "occurrent" and "standing"): Aroused wants are guiding the subject's actions, while latent ones are not (1967, p. 402). Here we have occurrent states (generalizing from Alston's focus on wants) defined as *causally* active. More specifically, such states are affecting cognition, in this case the deliberation that guides action. Audi implies that this sort of causal activity characterizes occurrent states when he claims that occurrent propositions are "attended" and similar to those a computer "calls in" when doing a calculation. Standing ones, in contrast, are in the memory bank but not being used in calculations (1994, p. 420). If the content of the occurrent state (i.e., an "occurrent

proposition") is deployed in a calculation, the state is affecting the ratiocination. So again, this is a kind of cognitive efficacy, an activity that is "external" to the state.

Turning to folk psychology, I would argue that a *lack* of cognitive efficacy is at least part of what people mean when they refer to standing states. Consider a chess player who learns a certain mating pattern, but then when an opportunity presents itself to apply that pattern, he doesn't. During the post-game analysis, he says, "I know that mating pattern, but it just didn't occur to me at the time." He might alternatively say the pattern didn't "come to mind." Now, by these locutions he could mean that the knowledge failed to become conscious, if he has some understanding of the distinction between conscious and non-conscious mental states. But what he more certainly, and pre-theoretically, means is that the knowledge of the mating pattern *failed to play a role in his thinking* at the time — it didn't "factor in" to his calculations.

Thus, I think there are both theoretical precedents (i.e., Alston and Audi) as well as folk psychological support for the claim that occurrent states are cognitively efficacious. That claim is entailed by my view, which is that a mental state's being occurrent *is* its being cognitively efficacious.

Before proceeding to argue for that view, I will say more about what I think qualifies a state as cognitively efficacious. Such a state exerts causal power on thinking, which either means (a) the state affects the outcome of the thinking process, or (b) the state exerts causal power but fails to affect the outcome, due to a competing mental cause (i.e., where the state would have caused outcome *x*, the competitor causes an outcome other than *x*). I construe "thinking" rather broadly to include everything from calculation and deliberation to less logically guided processes such as free association, mental wandering, and mental image making. Not just beliefs and desires, but also emotional and perceptual states, can be cognitively effective if they are exerting causal power on such processes, in an (a)- or (b)-type way.

To illustrate those two scenarios, I will refer to a desire that Bartlett discusses. Suppose you occurrently want a third slice of peach pie. On my view, the desire's being occurrent is its being cognitively efficacious, in an (a)- or (b)-type way. An example of the former would be if the desire, together with your belief that serving the slice requires a knife, causes your desire to reach for the knife, which ultimately yields that behavior. Thus, the desire has affected the outcome of your deliberation on whether to consume that third slice. An example of (b)-type cognitive efficacy would be if your desire to keep a healthy weight, combined with your belief that a third slice may compromise that goal, cause a desire to stay your hand that is *stronger* than the desire to reach for the knife. In that case, the desire for a third slice of peach pie did exert causal power on the deliberation, but it failed to affect the outcome of the process (i.e., it failed to cause your *volition* in that situation). If you hadn't had the desire to keep a healthy weight at that moment, then the desire for the slice of pie would have guided your action. This means the latter desire was exerting causal power, just not enough to overcome a competing cause.

The exertion of causal power typically (perhaps always) entails the state's having *intermediary effects*, i.e., those that under other circumstances would be part of the causal chain leading to the outcome. In the case of the desire for the third slice of pie that did not ultimately guide behavior, its intermediary effect was a desire to reach for the knife, which was then "canceled out" by the stronger desire to stay one's hand. Alternatively, the desire for the slice itself could be canceled directly by the desire to maintain a healthy weight (combined with the belief that a third slice may compromise that goal). In this case, the thought process about obtaining the slice does not get started, yet the desire for the slice may still have intermediary effects; namely, neural activity that would cause thoughts about how to obtain the slice,[1] but which is inhibited once the desire to keep a healthy weight becomes occurrent. Standing states, accordingly, can be defined by their lack of intermediary effects. They would, of course, exert causal power under certain conditions: A standing desire for peach pie would become externally active when one is in the presence of that dessert (for example), although it may not end up affecting volition or action.

On my view, then, a mental state need not affect action, mental or physical, in order to be occurrent; it need only exert causal power on cognition. The external activity of a state need not be its effect on action. In the following passage, Bartlett implies that external activity simply *is* a state's affecting action. And since occurrent states need not affect action, he rejects external activity in favor of internal activity as the marker of occurrent states.

> Crucially, when I say that occurrent states are active, I do not mean that they are causally active in producing action. There is a difference between a mental state's being active and its affecting action. … A want may be activated yet not issue in action. … So the activity of an occurrent state, as I am speaking of it — that is, as involving change in certain salient properties — is a feature of the occurrent state itself, not of its effect on the subject's actions. It is internal, not external. (2018a, p. 12)

But as I have argued, there is a type of external activity, namely (b)-type cognitive efficacy, that does not entail an effect on mental or physical action. And there are cases of (a)-type efficacy where the state only affects the outcome of a thinking process, which does not in turn affect bodily behavior.

III. Why Equate *Being Occurrent* With *Being Cognitively Efficacious*?

I argue that there are at least two theoretical advantages of equating *being occurrent* with *being cognitively efficacious* instead of equating the property with *being processive.* The first is that the occurrent/standing distinction becomes easier to maintain at the neural level on my understanding of the distinction. The second is

[1] Such activity would not constitute a mental state, as it would be comprised of subpersonal neural events.

that my view, unlike Bartlett's, renders occurrent states functionally analyzable. I discuss the first motivation in this section, and devote Section IV to defending the second claim.

The type of internal activity Bartlett says characterizes occurrent states is "certain kinds of fluctuations in neurophysiological properties" (2018a, p. 13). The question is, what type of neural property change makes a state occurrent? It seems that *any* neural state, and thus the ones that are standing states, includes processes. Even neurons at rest exhibit ion activity, sodium-potassium pump operations, small membrane potentials, etc. Bartlett notes that it is "largely an empirical matter" which are the *salient* property changes, the ones that make a neural state count as occurrent (2018a, p. 13). Even so, the problem is that the occurrent/standing distinction will not match the processive/non-processive distinction, as occurrent states become a *type* of neural process.

In turn, we have the problem of determining what type of process makes for an occurrent state. Bartlett claims that is to be resolved empirically, but what kind of empirical data would determine the kind of amygdala processes that constitute an occurrent fear versus a standing one, for example? It cannot simply be the activity that is the substrate for a token state, for that very activity would determine the state's identity in both occurrent and standing versions. Presumably, some lower grade of that internal activity characterizes the standing version, but we still lack a principled way to distinguish between salient and non-salient internal fluctuations.

In contrast, identifying a cognitively efficacious state at the neural level is more straightforward. Such states will either affect the outcome of a cognitive process (a-type efficacy) or exert causal power on a cognitive process without affecting the outcome (b-type efficacy). Determining whether these external activities are occurring is a matter of determining whether there is communication between the active neuronal population that constitutes the state and the one that constitutes the cognitive process (e.g., between the amygdala activity that constitutes a token fear and the prefrontal activity that constitutes a token deliberation). I am not suggesting this investigation is easy, only that it *can be fruitfully pursued* with regard to a given state, in order to determine whether it is standing or occurrent.

IV. Enacted Role Functionalism

The second motivation for defining occurrent states in terms of cognitive efficacy instead of internal activity is that the former approach makes it possible to give a functional account of occurrent states. On Bartlett's view, the inability to account for occurrent states becomes a strike against functionalism.

The reason for that inability is that abstract functional roles define mental states purely in terms of their causal relations to other mental states, as well as sensory stimuli and physical behaviors. As such, functionalism places no constraints on the intrinsic nature of mental states: The realizers of the roles may be physical or nonphysical, biological or non-biological, and, as Bartlett argues, processive or non-

processive. And based on his claim that occurrent states are, by their nature, processes, they cannot be functionally accounted for.

Bartlett goes on to consider various ways that functionalism may be amended to account for states that are necessarily processive. He argues that these attempts are deficient insofar as they stray from the basic thesis of functionalism, which he terms the Functional Sufficiency Thesis (FST): "*S*'s having a state that plays an abstract functional role of a certain type metaphysically suffices for *S* to have a mental state of a certain type" (2018b, p. 3). Thus, a theory will fall short of true functionalism if it makes this sort of claim: For a token mental state *m* to count as a certain type of mental state, *m* must play a certain abstract functional role *in addition to having a certain nonfunctional property* (e.g., being processive).

I claim that my view of occurrent states respects FST. In order to accommodate my version of such states, no constraints on their internal nature need be added to functionalism. Rather, the theory must be supplemented by a certain type of abstract functional role, which I call an *enacted functional role*. Playing an enacted functional role of a certain type metaphysically suffices for being in a cognitively efficacious (i.e., occurrent) mental state of a certain type.

Traditionally, the functional role identified with a given type of mental state is constituted by *what causes the state*, under certain conditions, and *what the state causes*, under certain conditions. The state is thus a node in a network of causal relations to both other mental states (themselves defined in the same way) and sensory stimuli and bodily behaviors. An *enacted* functional role is a role that is being played: Some of the conditions that constitute the role are in place, and the corresponding effect is happening or tending to happen. I use the phrase *tending to have* certain effects to refer to (b)-type cognitive efficacy, where the state does not cause behavior or the outcome of a mental process, but would do so were it not for a stronger competing cause.[2]

Let us first consider a traditional type of functional role with reference to the mental state *believing the Pythagorean theorem* (state *P*). Plausibly, *F* describes part of that role:

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[2] Enacted functional roles include actualized dispositions, and it may be objected that merely tending to cause *x* (but failing to) is not an *actualization* of the disposition to cause *x*. I would reply that the realizer of an enacted functional role need only be *tending to actualize* one of the relevant dispositions, where this phrase again refers to (b)-type efficacy. A role enacted with this kind of efficacy is like the actor that is unsuccessfully attempting to play Hamlet. Such an individual must be distinguished from the actor that is merely disposed to attempt to play Hamlet if he is on stage, has prepared for the role, etc.

> *F*: Understanding a proof of the theorem causes *P*, if one trusts the source of the proof and if one's memory is working.[3] *P* causes the correct calculation of the length of the hypotenuse for a given problem, if one wants to solve that problem, has adequate calculation abilities, and is focused on the problem.

On my view, *F* (partly) defines what it is for someone to be in the *standing version* of *P*: If one is in *P*, one is in the kind of state that would be caused by the state of understanding described in *F*, under the conditions given in *F*. One is also in the kind of state that would cause the act of solving given in *F*, under the conditions given in *F*. The first statement in *F* would also be true of *P* as an *occurrent* state (*P´*), but in addition, *P´* would be identified with an enacted functional role. An example would be the enacted version of the role described by the second statement in *F*: *P´ is causing* the correct calculation of the length of the hypotenuse for a problem.

In general, where *R* is the complete functional role constituting mental state *M*, the role constituting an occurrent *M* (role *R´*) would be like *R* except that *R´* constrains its realizer to actualize at least one of *M*'s *dispositions to cause mental state or behavior* x *under certain conditions*. That is to say, in lieu of at least one of those dispositions, the realizer would be *causing (or tending to cause)* x. This makes *R´* disjunctive: If *R* includes dispositions *a*, *b*, and *c*, a realizer of *R´* would actualize *a* or *b* or *c* (inclusive "or"). Any realizer of *R´* is an occurrent state, insofar as it is cognitively efficacious.[4]

V. Conclusion

I have argued that there are at least two theoretical advantages of construing occurrent states as externally active instead of internally active. First, distinguishing occurrent from standing neural states is more practicable when occurrent states are defined as cognitively efficacious. And second, cognitively efficacious states, as opposed to processive ones, are functionally definable, via enacted functional roles.

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[3] Regarding these conditions, I assume that if for some reason one did not trust the author of the proof, one could suspect that even though one follows the proof, it contains an error one fails to catch. I also assume that if one lost one's memory as soon as one understood proof, one would not form the belief in the theorem.

[4] *R´*, of course, is not a traditional type of functional role. As Rupert (2006) explains, "The realizer of a functional-role state should not … be understood as a state that, *ipso facto*, has certain effects; rather, the realizer has certain effects *under certain conditions*, the details of which are part of the individuation conditions of the functional-role property realized" (n. 3). Indeed, functionalists characterize a mental state as one that is "*apt* for being caused in certain ways by stimuli plus other mental states and *apt* for combining with certain other mental states to jointly cause certain behavior" (Lewis, 1991, p. 230; emphasis added). In contrast, the realizer of an enacted functional role does, *ipso facto*, have certain effects; it is not merely apt for producing those effects.

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