

The experience of acting and the structure of consciousness

There was a long tug. Nick struck and the rod came alive and dangerous, bent double, the line tightening, coming out of water, tightening, all in a heavy, dangerous, steady pull. Nick felt the moment when the leader would break if the strain increased and let the line go.

The reel ratcheted into a mechanical shriek as the line went out in a rush. Too fast. Nick could not check it, the line rushing out, the reel note rising as the line ran out. With the core of the reel showing, his heart feeling stopped with the excitement, leaning back against the current that mounted icily his thighs, Nick thumbed the reel hard with his left hand. It was awkward getting his thumb inside the fly reel frame.

As he put on pressure the line tightened into sudden hardness and beyond the logs a huge trout went high out of water. As he jumped, Nick lowered the tip of the rod. But he felt, as he dropped the tip to ease the strain, the moment when the strain was too great; the hardness too tight. Of course, the leader had broken. There was no mistaking the feeling when all spring left the line and it became dry and hard. Then it went slack.

--Ernest Hemingway, "Big Two-Hearted River"¹

In this paper I develop an account of the experience of acting that has ramifications for how we think about the structure of phenomenal consciousness, among other things. I begin with the above passage to illustrate aspects of the phenomenology at issue. In it, there are *agentive* experience-types. Nick consciously tries to do a number of things, succeeding in some of them. He strikes with the rod, stops the reel by awkwardly jamming his thumb into

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¹ In *The First Forty-Nine Stories*, (London: Arrow Books, 2004): pp. 197-222.

the fly reel frame, and lowers the rod. Beyond agential experience-types, Nick is *perceptually* immersed in aspects of what he is doing. He perceives the sound of the reel, the weight and motion of the rod, the temperature of the water and the pressure of the current, the sight of the trout, the emotional shock of losing control of the action. Further, Nick is *cognitively* immersed in the activity. He notices the reel is running out too fast. He anticipates the moment when the leader is about to break.

While it is possible to roughly carve elements of Nick's experience into perceptual, cognitive, and actional parts, there is also a sense in which Hemingway gives us these elements as a coherent unit. They flow into each other, and they are organized as a piece of action – as a series of moments closely associated with (perhaps partially constituting) what Nick is doing. One task for a satisfying phenomenology of agency is to explain how these elements fit together in experience. In this paper I take steps in this direction. I offer an account of the experience of acting that demonstrates how agential aspects of experience associated with the execution of intentions are richly integrated with perceptual aspects associated with parts of action taking place in the publicly observable world.

In the next section, I discuss extant accounts of the experience of acting, noting deficiencies. In sections two and three, I develop my own account, drawing on Casey O'Callaghan's work on multi-modal perception. In the conclusion, I discuss ramifications for psychology and philosophy.

I. THE EXPERIENCE OF ACTING: EXTANT ACCOUNTS

Many commonsense descriptions of the experience of acting contrast an apparent active element with the passive or receptive nature of non-agential (typically perceptual) phenomenology. The active element is something like a phenomenology of the active direction of what is happening with respect to the action (or at least, with parts of the

action). David Hume notes an “internal impression we feel and are conscious of, when we knowingly give rise to any new motion of our body or new perception of our mind.”²

Reflecting on bodily action, Paul Ricoeur claims that “the personal body presents itself as body-moved-by-a-willing, that is, as the terminus of a movement which *comes down* from the ‘I’ to its mass.”³ Brian O’Shaughnessy claims much the same thing.

Consider now the event of trying to move an arm whose psychologicality was revealed nakedly to view because of the complete absence of kinaesthetic experience . . . where was that psychological event, of which one was immediately aware, experienced as taking place? One is perhaps inclined to say one experienced it as being at the felt location of the arm. However, it seems to me that to do so would be to confuse the site of the target-object for the will, with the event of willing that is directed to that place.⁴

Beyond initial description, what more can we say about this phenomenology of active direction? One way of further illuminating the phenomenology is to ask whether it is in some sense proprietarily agential, or whether it can be reduced to other experiential elements – e.g., perceptual, cognitive, emotional, or whatever. This is a question about how to understand the structure of conscious experience.

Uriah Kriegel’s work on this question is illuminating. In his book *The Varieties of Consciousness*⁵, Kriegel is concerned to map the phenomenal realm in terms of determinable-determinate relationships between more and less primitive kinds of

² *A Treatise of Human Nature*, David F. Norton and Mary J. Norton, eds., (Oxford: Oxford University Press, 2000), p. 257.

³ *Freedom and Nature: The Voluntary and the Involuntary*, Vol. 1, (Chicago: Northwestern University Press, 1966), p. 220.

⁴ *Consciousness and the World*, (Oxford: Clarendon Press, 2003), p. 351.

⁵ Oxford: Oxford University Press, 2015.

phenomenology. Regarding claims about primitive kinds of phenomenology, Kriegel isolates what he calls the second layer of determinability. This is the right layer for discussing primitive *kinds* because, as Kriegel notes, the first layer is that which applies to all phenomenology.

The highest phenomenal determinable is phenomenality per se (what-it-is-like-ness as such, if you will). It is the phenomenal property that is not a determinate of any other phenomenal property.⁶

Beyond this, phenomenal properties are more determinate, and can be grouped into familiar categories associated with, e.g., color experience, emotional experience, bodily experience, or whatever. (Kriegel himself finds at least six types of phenomenology at the second layer: I refer readers to his book for argumentation.) Our current question about agentive experience, then, is a question that targets the second layer of determinables. Is there a place for an agentive experience-type alongside whatever other kinds of experience – perceptual, hedonic, cognitive, or whatever – fill out the second layer?

Philosophers have given different answers to our current question, but in my view the arguments weigh heavily in favor of the view that the relevant aspect of phenomenology is proprietarily agentive.⁷ These arguments come in two types. The first presses the phenomenological inadequacy of extant attempts to explain agentive experience in terms of non-agentive conscious experience.⁸ Upon close reflection, there are simply no good non-agentive candidates that could capture the agentive element present in experiences of

⁶ *Ibid.*, p. 10.

⁷ For a recent discussion of the arguments, see Myrto Mylopoulos and Joshua Shepherd, “Agentive Phenomenology,” in Uriah Kriegel, ed., *Oxford Handbook of the Philosophy of Consciousness* (Oxford: Oxford University Press, forthcoming).

⁸ See Kriegel, *op. cit.*; Terence Horgan, “Agentive Phenomenal Intentionality and the Limits of Introspection,” *Psyche* XXIII, 1 (2007): 1-29.

acting. The second presses the lack of empirical motivation for a view of agential experience that would reduce it to other second-layer experiential categories,⁹ and notes the existence of empirical motivation for a view on which at least some agential experience is proprietarily agential.¹⁰ Given the strength of the relevant arguments, I will here accept that some agential experience, including the experience of acting, is proprietarily agential in the relevant sense.

A second question regarding agential phenomenology concerns its relation to action execution. In other work I – focusing on the experience of trying – consider two kinds of view, what I call constitutive and non-constitutive views. On a non-constitutive view, “the neural activities (i.e., the neural mechanisms, states or processes) that realize experiences of trying are distinct from the neural activities that realize actual tryings.”¹¹ On a constitutive view, “the neural activities that realize experiences of trying are not distinct from the neural activities that realize tryings . . . experiences of trying, when they occur, are (at least partially) constitutive of tryings.”¹²

I have argued in favor of a constitutive view. To see why we might adopt it, consider two brain stimulation studies. In the first, experimenters stimulated the mesial precentral area (MPA) – an area fairly close to the motor cortex, containing supplementary and pre-supplementary motor areas.¹³ These stimulations produced agential experiences at a relatively fine grain, but they did not produce experiences of trying or of active agency. Instead, participants reported feeling as though their bodies were *about to move*. Higher levels of stimulation produced actual movements of the body but not experiences of actively

⁹ Myrto Mylopoulos, “Agential Awareness is Not Sensory Awareness,” *Philosophical Studies* CLXXII, 3 (2015): 761-780.

¹⁰ Joshua Shepherd, “Conscious Action/Zombie Action,” *Noûs* L, 2 (2016): 419-444.

¹¹ *Ibid.*, p. 421.

¹² *Ibid.*

¹³ Itzhak Fried, Amiram Katz, Gregory McCarthy, Kimberlee J. Sass, Peter Williamson, Susan S. Spencer, and Dennis D. Spencer, “Functional Organization of Human Supplementary Motor Cortex Studied by Electrical Stimulation,” *The Journal of Neuroscience*, XI, 11, pp.3656-3666.

moving the body. A second experiment applied stimulation to the inferior parietal lobule (IPL), an area upstream of the MPA that is thought to be more closely associated with higher-level, rougher-grained, abstract elements of action planning and control.¹⁴ Accordingly, these stimulations produced rougher-grained experiences that did include active agency: participants reported a *will to move*. Higher levels of stimulation produced experiences of actively moving the body, but not of actual movement. In earlier work these results prompted me to comment: “the neural activity that realizes an experience of trying is just a part of the neural activity that directs real-time action control.”¹⁵

This focus on the experience of trying raises an additional question. For it is rarely the case that one consciously tries to do something without succeeding to some extent. In the case of bodily action, success involves action taking place in the body and beyond – that is, at places we typically access via perception. How is the agentive element in agentive phenomenology related to the perceptual experiences one has while acting?

One view, which we might call trying-based, gives very little (if any) role to perceptual experience.¹⁶ According to John Searle, for example, the character of an experience of acting can be accounted for by appeal to an intention-in-action, a present directed (and self-representational) mental state responsible for causing and guiding an action’s execution. The content of an intention-in-action might be something like <My arm goes up as a result of this intention in action>, with the additional note that “in any real-life situation the intention in action will be much more determinate . . . [and] will include not

¹⁴ Michel Desmurget, Karen T. Reilly, Nathalie Richard, Alexandru Szathmari, Carmine Mottolise, and Angela Sirigu, “Movement intention after parietal cortex stimulation in humans,” *Science*, CCCXXIV, 5928 (2009): 811-813.

¹⁵ Shepherd, “Conscious Action/Zombie Action,” p. 226.

¹⁶ I am bracketing for now Mylopoulos’s interesting account, on which the experience of acting is constituted by higher-order thoughts based upon an agent’s intentions to act (See Myrto Mylopoulos, “A Cognitive Account of Agentive Awareness,” *Mind & Language* (forthcoming)). Mylopoulos’s account has an affinity with trying-based accounts in giving little role to perceptual experience, but is distinct in important ways. Her account is better discussed later in this paper.

only that my arm goes up but that it goes up in a certain way and at a certain speed, etc.”¹⁷

For Searle, then, the presence of an intention in action is sufficient for a fully-fledged experience of acting, as the following passage makes clear.

If I raise my arm, what is left over if I subtract the fact that my arm went up? The question seems to me exactly analogous to the question: If I see the table what is left over if I subtract the table? And in each case the answer is that a certain form of presentational Intentionality is left over; what is left over in the case of visual perception is a visual experience; what is left over in the case of action is an experience of acting.¹⁸

As with many in this literature, Searle appears to be moved by an argument that leans on paralysis cases. He writes, for example, that

The simplest way to *argue* for the presence of the experience of acting as one of the components of such simple actions as raising one's arm is to show how each component may be carved off from the other. Consider first the famous case described by William James in which a patient with an anesthetized arm is ordered to raise it. The patient's eyes are closed and unknown to him his arm is held to prevent it from moving. When he opens his eyes he is surprised to find that he has not raised his arm; that is, he is surprised to discover that there was no arm movement. In such a case he has the experience of acting and that experience plainly has Intentionality; we can say of the patient that his experience is one of

¹⁷ John R. Searle, *Intentionality: An Essay in the Philosophy of Mind*, (Cambridge: Cambridge University Press, 1983): p. 93.

¹⁸ *Ibid.*, p. 87.

trying but failing to raise his arm . . . Such a case is analogous to the hallucination case in perception because the Intentional component occurs in the absence of the conditions of satisfaction.¹⁹

A very similar position is endorsed by both Christopher Peacocke and Uriah Kriegel.²⁰ Peacocke argues that when an agent's trying to A normally causes successful A-ing, an agent's trying to A will also cause an awareness (or experience) of A-ing. And Kriegel, drawing an analogy with successful and illusory visual experience, argues that experiences of trying, when successful, are experienced as actions. "When it is successful, our experience of ourselves as acting is veridical, and when it is unsuccessful, nonveridical. It remains that nothing in the conative experience itself guarantees its success, just as nothing in a visual experience guarantees its veridicality."²¹ For Kriegel, then, "every trying presents itself as an acting (in the way that every experience presents itself as a successful instance of its kind)."²²

A major problem with trying-based accounts of the experience of acting is phenomenological. When we perform bodily action, associated bodily experiences seem – at the very least – perception-involving. We can accept the actional character of the overall experience without denying that the bodily movement aspect of bodily action is quite similar in certain respects to the passive experience of the bodily movement. That is, when we move our bodies we not only experience the direction of bodily movement, we experience the body moving. Even if illusions of movement are sometimes associated with events of trying, It is difficult to see how an intention or a trying alone could be totally responsible for such phenomenal character.

¹⁹ *Ibid.*, p. 89.

²⁰ Christopher Peacocke, *The Realm of Reason*, (Oxford: Oxford University Press, 2003); Uriah Kriegel, *The Varieties of Consciousness*.

²¹ Kriegel, *The Varieties of Consciousness*, pp. 90-91.

²² *Ibid.*, p. 91.

A further problem for trying-based accounts is based in empirical research. As support for his view, Peacocke appeals to some studies of Anthony Marcel and colleagues regarding vibro-tactile illusions.²³ But these studies do not provide clear support for Peacocke's position. Marcel's basic result is this. Using vibro-tactile stimulation to the elbow, it is possible to put agents in a position in which they falsely experience their arm in one location and so intend to move their arm in one direction in order to accomplish a goal. But due to the illusion induced by stimulation, these agents must actually move their arm in the other direction to accomplish the goal. It turns out that agents are accurate in moving their arms in the correct direction. But 60-70 percent of agents in Marcel's study show no awareness of having moved in a direction opposite to their consciously reported intention. From this Peacocke concludes "The content of their trying (or some event causally related to it) seems to cause the content of their impression of action, even though the actual motor instruction issued requires, and produces, movement in the opposite direction."²⁴ But it is not clear how strong this evidence is. For, as Marcel notes, it is possible that these agents had no awareness of the specific character of their arm movements: their strong belief that they were moving their arm in one direction might have overridden whatever arm-related experience was present, leading to their false reports of arm movement. Second, as Marcel also notes, 30-40 of participants did have conscious access to the conflict between intention and arm movement. Marcel reports that "All of the latter subjects commented in one or another way that there was something peculiar, or that while they had intended to move in one direction they had the impression that they had moved in the other."²⁵ That the relationship between trying to A and having an experience of A-ing Peacocke asserts is not universal – even if it is present in most of the 60-70 percent of subjects in Marcel's study, a

²³ For a summary, see Anthony Marcel, "The Sense of Agency: Awareness and Ownership of Action," in Johannes Roessler and Naomi Eilan, eds., *Agency and Self-awareness: Issues in Philosophy and Psychology* (Oxford: Oxford University Press, 2003): pp. 48-93.

²⁴ Peacocke, *The Realm of Reason*, p. 122.

²⁵ Marcel, "The Sense of Agency," p. 66.

claim I have questioned – casts doubt on this as a general account of the experience of acting.

More generally, agents undergoing temporary paralysis experience themselves trying to perform various actions, but typically do not – contrary to the claims of trying-based proponents – experience themselves acting.²⁶ And agents who have recently lost proprioception do not continue to experience themselves moving their bodies. It takes much training, and a massively increased reliance on vision, for these agents to link their intentions to their bodily movements.²⁷

More plausible accounts of the experience of acting allow that the experience could involve perceptual aspects, but say little about how these aspects are involved. For Carl Ginet, experiences of action seem to be a simple conjunction of an agentive and a perceptual element. The agentive element is what Ginet calls an “actish phenomenal quality,” an “I-directly-make-it-happen phenomenal quality.”²⁸ This is, for Ginet, a mental event that causes what follows. As such, for Ginet perceptual experience makes a contribution to the experience of acting in the following way.

When I say a word out loud, there is a mental event, my willing the appropriate exertions of parts of my body, that indirectly causes a second mental event: my having the auditory sense experience involved in hearing the sound I’ve produced.²⁹

²⁶ See, for example, the studies discussed in Shepherd, “Conscious Action/Zombie Action.”

²⁷ For illuminating discussion of such cases, see Jonathan Cole, “The Phenomenology of Agency and Intention in the Face of Paralysis and Insentience,” *Phenomenology and the Cognitive Sciences*, VI, 3, (2007): 309-325.

²⁸ Carl Ginet, *On Action*, (Cambridge: Cambridge University Press, 1990): p. 14.

²⁹ *Ibid.*, p. 12.

Insofar as perceptual experience is contingently associated with what is essential in an experience of acting, we might call Ginet's a mere co-consciousness account of the experience of acting. In the case of bodily action, experiences of acting involve an agentic element, and associated perceptual experiences that follow, or are co-conscious with, the agentic element. I have defended this kind of view as well, presenting a range of data in favor of the following view.

The experience of acting typically consists of temporally extended experiences from more than one modality. These experiences are easily associated with the action being performed in virtue of the fact that their contents fit coherently into the agent's broader plan for action. And their contents fit coherently in virtue of the fact that they are functionally integrated and structured by what the agent is trying to do.³⁰

We can say this for a mere co-consciousness view. It looks like some experiences of acting will involve an agentic element – the experience of active direction – and merely co-conscious perceptual experiences. Consider actions with parts at large spatial and temporal distances from each other. One consciously tries to hit a target far in the distance with a rock. One might closely attend to the flight of the rock through the air, and experience its connection with the target as something one has in some sense *done*. But the hitting of the target is not as closely connected as were the bodily experiences had in conjunction with one's initial throw of the rock.

Are all experiences of acting ultimately explicable as merely co-conscious conjunctions of agentic and related (e.g., perceptual) elements? Philosophers have rarely if

³⁰ Shepherd, "Conscious Action/Zombie Action," p. 236.

ever explicitly considered this question, although some might answer in the negative. In one of the most influential recent papers on the phenomenology of agency, Elisabeth Pacherie discusses at length the ways that agential and perceptual elements are intertwined in experiences of acting.³¹ For Pacherie, phenomenal aspects attached to what the agent is doing are more closely tied to agential elements such as distal and proximal intentions, and phenomenal elements tied to how the agent is doing it are more closely tied to predictions based upon intentions, and to comparison of these with “consciously available exteroceptive feedback.”³² Pacherie does not explicitly consider the difference between a co-consciousness and a unified view of the experience of acting, but some of her remarks (could be taken to) suggest sympathy with the unified view. For example, she asserts that “one might be aware of the movement of one’s arm as an act of reaching for the doorknob,”³³ suggesting a unity between agential and perceptual elements.

Consider, further, some remarks due to Terence Horgan – long a forceful advocate for the existence of proprietary agential phenomenology. Regarding the experience of acting, Horgan is careful to distinguish the experience of acting from an experience of intending plus experiencing fortuitously matching bodily movements, and from a passive experience of one’s intention causing appropriate bodily motion. Instead, Horgan claims the relevant phenomenology is “the what-it’s-like of *self as source* of the motion . . . You experience the bodily motion as caused by *yourself*.”³⁴ This claim about self-as-source phenomenology is strictly consistent with a co-consciousness view. But some of Horgan’s remarks suggest he sees the experience of acting as going beyond this. In a paper co-authored by Horgan, John Tienson and George Graham, the authors claim that in the experience of acting there is something “phenomenologically distinctive that incorporates

³¹ Elisabeth Pacherie, “The Phenomenology of Action: A Conceptual Framework,” *Cognition* CVII (2008): 179-217.

³² *Ibid.*, p. 201.

³³ *Ibid.*, p. 196.

³⁴ Horgan, “Agential Phenomenal Intentionality,” p. 8.

but goes beyond the phenomenology of one's own bodily motion."³⁵ But how might the experience of acting incorporate these perceptual elements? On this question, Horgan says very little.

Finally, consider Benjamin Mossel's view, on which experiences of acting contain both active and passive elements. Regarding the active aspect, Mossel comments.

To raise an arm is to control its rising and to feel that one raises an arm is to feel that one controls its rising. Feelings of control we have only in acting. Visual or auditory sensations do not include such feelings. We do not feel that the content of such sensations depends on us. We feel that it is a present from the outside world. However, when we act, we feel that we create and control what we feel.³⁶

Although he distinguishes between active and passive elements, it is clear that Mossel sees these elements closely conjoined. He claims, for example,

[W]hile I move an arm, my sensation of acting informs me of the position, movement and acceleration or deceleration of the arm. This makes it plausible that it is at least partly caused by the part of my body whose position and movement it is informing me about.³⁷

³⁵ Terence Horgan, John Tienson, and George Graham, "The Phenomenology of First-person Agency," in Sven Walter and Hanz Heinz-Dieter, eds., *Physicalism and Mental Causation*, (Imprint Academic, 2003): pp. 323-340.

³⁶ Benjamin Mossel, "Action, Control, and Sensations of Acting," *Philosophical Studies*, CXXIV, 2 (2005): 129-180.

³⁷ *Ibid.*, p. 135. Note Mossel's language of sensation. He claims experiences of acting are sensory in the way experiences of bodily pleasure and pain are sensory. In my view, this aspect of his account is not well-defended, and is dispensable. I note that Tim Bayne ("The Sense of Agency," in Fiona Macpherson, ed., *The Senses* (Oxford: Oxford University Press, 2011): pp. 490-524) explicitly considers

For Mossel, then, experiences of acting are in some way a close conjunction of agentive and perceptual elements. Beyond this, however, it is not clear how to interpret Mossel's view. Many of his claims appear phenomenological in origin, but his use of mechanistic language in places – he claims experiences of acting play a critical role as a part of the feedback loops via which action control is implemented – suggests he thinks there is an informative empirical account to be given of the phenomenon as well. However, the empirical literature surrounding agentive phenomenology is large and growing, and requires care. If we want to know whether experiences of acting could conjoin agentive and perceptual elements in a way that goes beyond mere co-consciousness, we will have to be more specific.

For the sake of motivation, notice that if we can be more specific, we might be able to develop an account on which proprietarily agentive experience is somehow fused with perceptual experience in action, such that the agent's experience of acting cannot be described as the co-conscious conjunction of an experience of trying and easily associated perceptual experience of things happening. If that is right, the experience of acting would be a very interesting experience-type – an experience of action itself, involving the interpenetration of agentive and perceptual experience. Making the case for this possibility, which I do presently, is non-trivial.

II. O'CALLAGHAN ON MULTI-MODAL PERCEPTUAL EXPERIENCE

I turn initially to work by Casey O'Callaghan that indicates much of our conscious perceptual experience is the result of rich integration between sensory modalities.

a view of agentive phenomenology on which it results from a dedicated sensory system. For a convincing rebuttal, see Mylopoulos, "Agentive Awareness is not Sensory Awareness."

O’Callaghan develops his view in a number of recent papers, but I focus on “The Multisensory Character of Perception” as the most complete argument for his view on multimodal perception.³⁸

O’Callaghan argues that perceptual experience is richly multimodal in an important sense. In order to explicate that sense, O’Callaghan considers a range of ways an experience might be associated with a particular sense modality. One of the most interesting ways he calls a *mere experience of a modality*. A mere experience of a modality is one that could take place as one’s overall perceptual experience at a time – as though one’s other sense organs were “blocked or anesthetized.”³⁹ So O’Callaghan posits that perceptual experiences can be associated with a modality if they are experiences that could take place only in that modality – “For instance, a merely visual experience is visual but not auditory, tactual, olfactory, or gustatory.”⁴⁰

With the notion of a mere experience of a modality in place, O’Callaghan formulates the Thesis of Minimal Multimodality.

MM. The phenomenal character of each perceptual episode is exhausted by that which could be instantiated by a corresponding merely visual, merely auditory, merely tactual, merely gustatory, or merely olfactory experience, plus whatever accrues thanks to simple co-consciousness.⁴¹

³⁸ See “Intermodal Binding Awareness,” in David Bennett and Christopher Hill, eds., *Sensory Integration and the Unity of Consciousness* (Cambridge, Mass: MIT Press, 2014): pp. 73-104; “Not All Perceptual Experience is Modality Specific,” in Dustin Stokes, Mohan Matthen, and Stephen Biggs, *Perception and Its Modalities* (Oxford: Oxford University Press, 2014): pp. 133-165; “The Multisensory Character of Perception,” *THIS JOURNAL*, CXII, 10, (2015): 551-569; “Objects for Multisensory Perception,” *Philosophical Studies* CLXXIII, 5, (2016): 1269-1289.

³⁹ O’Callaghan, “The Multisensory Character of Perception,” p. 561.

⁴⁰ *Ibid.*

⁴¹ *Ibid.*, p. 562.

O'Callaghan argues that MM is false. His is, in my view, a very interesting argument, and I encourage readers to examine O'Callaghan's presentation of it. Since I wish to extend O'Callaghan's argument beyond perceptual experience, in what follows I offer my own reconstruction of the argument in a way that allows me to probe and expand upon some of O'Callaghan's assumptions, as well as the roles of empirical results and of phenomenology in his argument.

O'Callaghan's initial move is phenomenological. He describes cases involving object perception, such as "visuo-tactually experiencing something's being both red and rough,"⁴² as well as event perception, such as "perceiving a visible event as occurring just a moment before a sound, which differs from perceptually experiencing their being separated by several seconds."⁴³

In my view, the kind of phenomenology O'Callaghan has in mind is clearest in cases involving common sensibles. For example, one might have an experience as of a friend's voice being located to the right of whatever one is visually experiencing. And one might experience a sound (thunder) as occurring after a sight (lightning). In these cases one experiences spatial and temporal relations.

From such experiences, O'Callaghan draws the following premise.

(1) In the phenomenology of object or event perception, there is a phenomenal character as of some object or event's being jointly F and G, where F is associated with one modality and G another.

⁴² *Ibid.*

⁴³ *Ibid.*, p. 563.

O'Callaghan claims that the phenomenal character of such experiences cannot be explained by aspects present in mere experiences of a modality.⁴⁴ But he recognizes his opponent will complain. For example, the proponent of MM may complain that the phenomenology of common sensibles is somewhat elusive.⁴⁵ What reason do we have to deny that the phenomenology in question is inconsistent with MM? At this point O'Callaghan turns from claims about phenomenology to relevant empirical literature. His aim is to demonstrate that the best explanation of the kind of phenomenology highlighted in premise (1) is that MM is false. To this end, consider a second premise.

(2) The phenomenal character as of some object or event's being jointly F and G, where F is associated with one modality and G another, can be given an information-processing explanation.

The second premise is an assumption implicit in O'Callaghan's turn to empirical literature at this stage in the argument, and in much argumentation that moves between empirical work and claims about the content and structure of phenomenal consciousness.⁴⁶ It is worth noting that O'Callaghan does not need the existence of a total explanation of

⁴⁴ For relevant discussion, see Tim Bayne, "The Multisensory Nature of Perceptual Consciousness," in David Bennett and Christopher Hill, eds., *Sensory Integration and the Unity of Consciousness*, (Cambridge, Mass.: MIT Press, 2014): pp. 15-36.

⁴⁵ Perhaps a skeptic could deny that there is a phenomenology here. Perhaps our understanding of spatial or temporal relations is best characterized not as phenomenal, but as cognitive – an after-effect of learning. Perhaps, for example, our lack of surprise that a siren presented in auditory space as to the left is in fact to the left of a dog presented in visual space as in the center is a result, not of phenomenology, but of our familiarity with the similarities of space as presented in either modality. Later in his presentation of the argument, O'Callaghan notes that the best reason to deny we perceive relations between information present to particular modalities also supports skepticism about perceptually experiencing "any such relational features even through a single modality" ("The Multisensory Character," p 566). I agree with O'Callaghan that this is an implausibly sparse picture of what we experience, and thus rejectable.

⁴⁶ For an interesting discussion that is helpfully explicit on this point, see Terence Horgan and Shaun Nichols, "The Zero Point and I," in Sofia Miguens, Gerhard Preyer, and Clara Brava Morando, eds., *Pre-Reflective Consciousness: Sartre and Contemporary Philosophy of Mind*, (New York: Routledge, 2015): pp. 143-75.

phenomenal character (i.e., one that could close the explanatory gap between consciousness and considerations of structure and function). But he does need there to be some explanatory relationship between the mechanisms that undergird conscious experience and the phenomenal character of the experiences in question. Like O'Callaghan and many others, I accept that such a relationship exists. It is very plausible that exploration of the relevant information-processing mechanisms can illuminate contrastive features of phenomenal character (why it is one way at a time rather than another) as well as, perhaps, structural features (why some aspect of phenomenal character fits into one's total experience at a time as it does) and functional features (what causal role the neural realizers of the phenomenal character plays).

Given the second premise, a third is quite plausible.

(3) The best candidates for an information-processing explanation of the relevant phenomenal character are two. First, that it depends upon co-conscious modality-specific information-processing mechanisms (e.g., involving spatial or temporal properties co-presented through different modalities). Second, that it depends upon mechanisms enabling the supramodal or intermodal experience of the relevant relations in virtue of which an object or event is experienced as jointly F and G.

This premise frames O'Callaghan's use of empirical results in terms of a question: what kind of mechanisms best explain the relevant data? In this case, we frame the question as a choice between two types of mechanisms. One type is consistent with modality-specific presentation of spatial or temporal information; the second is consistent with mechanisms consistent with spatial or temporal information not recoverable from one modality alone.

At this stage, one confronts a mountain of data – multi-modal perception has been a topic of intense interest in psychology and neuroscience for some time. Since the relevant data typically involves inferences from behavior and correlated areas of brain activity to mechanisms, and since we do not know enough about the relationship between behavior and correlated brain areas to mechanisms to allow the latter to determine the former, much of the data is strictly consistent with both possibilities.⁴⁷ What we want is an argument that evidence favors one possibility or another.

(4) If the data is best explained by mechanisms that integrate spatial and temporal aspects into representations not producible by modality-specific mechanisms, then we should reject MM.

O’Callaghan claims that the best data in this connection involves intermodal rhythm and meter perception. He cites a study by Huang et al. that involved the presentation of a meter to participants via both audition and tactition.⁴⁸ Importantly, in two of Huang et al.’s conditions, the nature of the meter was not recoverable via audition alone or tactition alone. That is to say, if a participant received only auditory input, or only tactile input, they would not be able to perceive the meter. And yet participants were able to perceive and recognize the meter for what it was by combining information from audition and tactition. Huang et al. reason as follows:

⁴⁷ For relevant discussion, see Tim Bayne and Charles Spence, “Is Consciousness Multisensory?” in Dustin Stokes, Mohan Matthen, and Stephen Biggs, *Perception and Its Modalities* (Oxford: Oxford University Press, 2014): pp. 95-132.

⁴⁸ Juan Huang, Darik Gamble, Kristine Sarnlertsophon, Xiaoqin Wang, and Steven Hsiao, “Feeling Music: Integration of Auditory and Tactile Inputs in Musical Meter Perception,” *PloS one*, VII, 10, (2012): e48496.

If . . . the sensory systems process information independently, then presenting the inputs bimodally should not affect meter perception. We find that performance rose from chance when there are no meter cues to 70-90% with bimodal input. It should be stressed that subjects performed all of the experiments without training, feedback or instructions about where to focus their attention, demonstrating that auditory-tactile integration for meter perception is an automatic process. The results demonstrate, we believe, for the first time that auditory and tactile input are grouped during meter perception.⁴⁹

This result shows that it is possible to perceive – that is, “perceptually detect and respond differentially to”⁵⁰ – a relationship that only exists between modalities. This strongly suggests that the perception of (in this case) the temporal character of a series of multi-modally presented stimuli combines information from modalities into something novel.

(5) The data is best explained by mechanisms that integrate spatial and temporal aspects into representations not producible by modality-specific mechanisms – that is, by mechanisms that enable supramodal or intermodal experience of the relevant relations in virtue of which an object or event is experienced as jointly F and G.

(6) We should reject MM.

I turned to O’Callaghan’s argument for multi-modal perceptual experience for at least two reasons. First, elucidation of my own argument is now made much easier, for my argument uses similar assumptions and takes a similar structure. Second, acceptance of my

⁴⁹ *Ibid.*

⁵⁰ O’Callaghan, “The Multisensory Character,” p. 566.

argument is made easier insofar as the kind of phenomenology that concerns me is analogous to the kind that concerns O'Callaghan. If one can accept O'Callaghan-style multi-modal perceptual experience, and if one can accept proprietary agentive experience, one should not run afoul of any important background beliefs in accepting my view of the experience of acting. It remains to see the argument.

III. THE MULTI-CATEGORIAL EXPERIENCE OF ACTING

In section I, I considered various views on the relation between agentive and perceptual elements in the experience of acting. One possibility was that these elements can only ever be merely co-conscious at a time. Relying on O'Callaghan here, we can now get a clearer picture of this notion of mere co-consciousness. Where O'Callaghan appealed to experiences associated with a modality, I will speak of experiences associated with a category – where category is short for the second-layer determinables within phenomenally conscious experience. Say that a *mere experience of a category* is one that could take place as one's total experience at a time – as though the other categories at the second layer of determinability had been temporarily shut down. So we are positing that experiences associated with a category are those that could take place only within that category. This gives us an idea of merely agentive experience, merely perceptual experience, merely cognitive experience, or whatever, for those categories we think fill out the second layer.

Following O'Callaghan, we can put this possibility as follows.

MC. The phenomenal character of each conscious episode is exhausted by that which could be instantiated by mere experiences of a category, plus whatever accrues thanks to simple co-consciousness.

Call this the thesis of minimal multi-categoriality. According to it, there is no interpenetration of second-layer experiential categories (though there may be interpenetration at lower layers within a category, as O'Callaghan argues regarding perception).

Let us begin by considering an experience of acting. Almost any example of bodily action would work, but one clear example of the kind of phenomena I have in mind is this. Perform an action that involves multiple bodily effectors. For example, perform a bodily motion that simultaneously involves a kick in one direction, an arm motion in another, and (for good measure) a head movement. Performing such a movement, it seems to me as though I am not trying and also experiencing concordant bodily effects. The whole event seems unified in space and time in a certain way. What it is like to perform that action is different than what it is like to consciously try to perform it and to consciously experience the proprioceptive, kinaesthetic, and tactile experiences associated with my legs, arms, neck, and so on.

(1) In the phenomenology of action, there is (sometimes) a phenomenal character as of an event's being jointly F and G, where F is associated with agential experience and G with perceptual experience. For example, there is a phenomenal character as of an event's being jointly a direction of bodily movement by the agent and a concordant bodily movement.

As before, we want an information-processing explanation of the relevant phenomenal character. For explicitness, then:

(2) The phenomenal character as of an event's being jointly F and G, where F is associated with one category and G another, can be given an information-processing explanation.

One possibility is that the seeming unity in the phenomenal character is merely apparent – an effect, perhaps, of the closeness of what one is trying to do and what is actually happening. Another is that, just as the processing underlying perceptual experience often integrates information from various modalities to enable supramodal or intermodal experience of spatial and temporal relations, the processing underlying experiences of acting often integrates information from agitive and perceptual categories to enable intercategory experience of spatial and temporal relations.

(3) The best candidates for an information-processing explanation of the relevant phenomenal character are two. First, that it depends upon information-processing mechanisms that enable minimally multi-categorical experience of the relations present in the phenomenal character. Second, that it depends upon mechanisms enabling the intercategory experience of the relations present in the phenomenal character.

One consideration against mere co-consciousness stems from the experience of error in action. When experiencing the error, one continues experiencing oneself as producing the movement, and one also begins to take steps to correct it. Even so, imperfect action is experienced as action. Here there is a mismatch between what one is trying to do

and what one is doing, and yet the seeming unity of the action remains. Only when the failure is extreme does one begin to experience one's movements as outside the sphere of what one is doing.

That is a phenomenological claim. What is really needed at this stage of the argument is evidence that the information undergirding experiences of acting is integrated in the way the information undergirding multi-modal perceptual experience is integrated. Towards this end, consider recent work on the Rubber Hand Illusion.

This illusion is induced by (a) occluding a subject's hand from view while stroking it with a tool, and (b) having the subject watch as a rubber hand, placed some distance away from the subject, is simultaneously stroked. The result is typically that the subject feels that the hand she sees is her hand, located *over there*. This illusion appears to be an example of bodily experience with spatial contents built from integrated visual and proprioceptive contributions spatial experience that combines visual and proprioceptive content. In this case, the system attributes haptic properties regarding touches to the hand and visual properties regarding the hand's location to the same perceived object, namely the hand. And the system does so in a way that reflects the integration of haptic and visual spatial content.

It is possible to generate the rubber hand illusion via action as well. Consider a study by Riemer et al.⁵¹ In this study the Rubber Hand Illusion was induced in the traditional (i.e., passive) manner as well as in an active manner. In the active condition participants placed their hands out of view in a wooden framework. An artificial right hand was visible, and participants could move the index finger of this hand by moving their own right index finger. Participants were told to voluntarily move this finger every 3-5 seconds; beyond this they were allowed to voluntarily determine when they moved.

⁵¹ Martin Riemer, Dieter Kleinböhl, Rupert Hölzl, and Jörg Trojan, "Action and Perception in the Rubber Hand Illusion," *Experimental Brain Research*, CCXXVIV, 3 (2013): 383-393.

According to three different measures, this set-up afforded an active generation of the Rubber Hand Illusion. The first measure is self-report. Participants responded to statements designed to test their hand-related experience on a 1-7 scale. For example, participants reported agreement or disagreement to statements like “It felt as if the artificial hand was my own hand,” “The artificial hand began to resemble my own right hand (in terms of shape, skin structure, etc.),” “It seemed as if the artificial hand was part of my body.” Participant responses to these questions reflected the success of the measure – responses were significantly higher when the artificial hand’s movements were synchronous with their own movements.

The second and third measures were designed to test for the existence of proprioceptive drift. This is a well-known component of the Rubber Hand Illusion according to which participants mislocalize their hand in the direction of the artificial hand. According to both perceptual judgments and a pointing task, participants in this experiment demonstrated proprioceptive drift.

How might we explain this result? In active generation of the rubber hand illusion, an agent’s experience integrates visual feedback of the artificial hand moving and proprioceptive feedback of the actual hand moving, such that the spatial content of one’s experience of moving the hand changes. What we want to know is whether spatial content drawn from the execution of an intention to move the hand is also influential in the construction of the spatial aspects of the experience.

(4) If the data is best explained by mechanisms that integrate spatial and temporal aspects into representations not producible by category-specific mechanisms, then we should reject MC.

There is some reason to think that information related to the hand moving is not the only information used in the active construction of the Rubber Hand Illusion. Three data points are relevant.

The first comes from a study by Tsakiris et al. in which the Rubber Hand Illusion was actively as well as passively generated.⁵² Tsakiris and colleagues found that proprioceptive drift differed in the active as opposed to the passive condition. In the active condition, proprioceptive drift 'spread' to the entire hand, whereas in the passive condition proprioceptive drift was localized to the finger that had been stroked. Why would this be? Tsakiris and colleagues speculate that the reason has to do with different pathways to the illusion.⁵³ Perhaps some of the information responsible for the illusion in the active condition emanates from motor cortex, while the information responsible for the illusion in the passive condition is confined to primary somatosensory cortex. If so, we might predict a difference in proprioceptive drift given that the somatotopy of motor and primary somatosensory cortex differ. Tsakiris and colleagues explain:

[R]epresentations in primary somatosensory cortex (SI) and primary motor cortex (MI) have quite different organizing principles . . . the receptive field of neurons in SI corresponds to a small well-defined skin area, while somatotopy in MI is integrated and overlapping between fingers/hand.⁵⁴

That this is the best explanation of the difference Tsakiris et al. found supports a view according to which the spatial element of the experience results from integration of

⁵² Manos Tsakiris, Gita Prabhu, and Patrick Haggard, "Having a Body Versus Moving Your Body: How Agency Structures Body-Ownership," *Consciousness and Cognition*, XV, 2 (2006): 423-432.

⁵³ The speculations I have in mind stem from a later paper, namely, Manos Tsakiris, Simone Schütz-Bosbach, and Shaun Gallagher, "On Agency and Body-Ownership: Phenomenological and Neurocognitive Reflections," *Consciousness and Cognition*, XVI, 3, (2007): 645-660.

⁵⁴ *Ibid.*, p. 650.

more than just movement information. Contents related to intentions and/or motor commands appear to be involved as well.

A second data point stems from the study by Riemer et al. mentioned above. They induced the Rubber Hand Illusion both actively and passively, and measured proprioceptive drift. The drift was significantly stronger under the active condition. Riemer et al. suggest that this result may be due to different paths to the illusion. In the passive condition, a representational structure they call the body image may be implicated; in the active condition, a representational structure they call the body schema – a structure hypothesized to be directly implicated in action control, and constructed in part via reliance on motor commands – may be implicated.⁵⁵ If the active Rubber Hand Illusion relies on the body schema, then the construction of this experience relies at least in part on the contents of intentions and/or motor commands.⁵⁶

A third data point stems from a study by Kalckert and Ehrsson (2014b).⁵⁷ They attempted to induce the Rubber Hand Illusion while placing the artificial hand at distances of 12, 27.5, and 43 cm away from participants. While the illusion was generated in both conditions at 12 cm, only the passive condition was successful at 27.5 cm. Interpreting this finding, Kalckert and Ehrsson suggest that the active generation of the illusion “may obey a narrower spatial rule.”⁵⁸ Why would this be? Kalckert and Ehrsson suggest two possibilities. First, perhaps the narrower rule reflects the difference in somatosensory information between the active and passive conditions. In the active condition, hand movement affords

⁵⁵ For discussion of the body schema, see John Schwoebel and H. Branch Coslett, "Evidence for Multiple, Distinct Representations of the Human Body," *Journal of Cognitive Neuroscience*, XVII, 4, (2005): 543-553.

⁵⁶ This result was not replicated by Andreas Kalckert and H. Henrik Ehrsson, "The Moving Rubber Hand Illusion Revisited: Comparing Movements and Visuotactile Stimulation to Induce Illusory Ownership," *Consciousness and Cognition*, XXVI, (2014): 117-132. However, as they note, this could be due to the fact that the way proprioceptive drift was measured differed between studies. It could also reflect “an inherent difficulty in measuring the illusion” (128).

⁵⁷ Andreas Kalckert and H. Henrik Ehrsson, "The Spatial Distance Rule in the Moving and Classical Rubber Hand Illusions," *Consciousness and Cognition*, XXX, (2014): 118-132.

⁵⁸ *Ibid.*, p. 130.

participants access to “a multitude of proprioceptive and kinesthetic information from skin stretch, muscle spindles, joint receptors and others.”⁵⁹ Second, perhaps the narrower rule reflects the influence of “efferent information associated with the voluntary motor command.”⁶⁰ The second possibility would support our current case for content sharing between agentive signals and feedback signals in the construction of the spatial content of the experience of acting. Kalckert and Ehrsson do not consider the possibility that in fact both of these possibilities are true. But this is not implausible.

Multiple data points indicate, then, that the spatial content of the experience of acting is constructed via mechanisms enabling the intercategory experience of spatial relations. What about temporal relations?⁶¹

Before discussing specific empirical work, it is worth noting that it is well-known that action execution is critical for temporal experience along several dimensions.⁶² In a recent review, Merchant and Yarrow write “it is now clear that brain regions traditionally viewed as motoric form part of a core timing network which interacts dynamically with sensory regions to support a range of timing needs.”⁶³ One way action execution is critical involves temporal contents embedded in motor function. As Merchant and Yarrow discuss in depth, the motor system strongly influences temporal acuity in action and perception via “strong dynamic signals’ that ‘internally represent time, predict sensory events, and drive behavior.”⁶⁴ So it is

⁵⁹ *Ibid.*

⁶⁰ *Ibid.*

⁶¹ Although I argue that both spatial and temporal contents within the experience of acting result from integration between agentive and perceptual elements, it is worth noting that rejection of MC only requires one part of this argument to go through. This is worth noting here because, in my view, the case for temporal integration is stronger than that for spatial integration.

⁶² In this connection, one important area of work not discussed here (for reasons of space, and of degree of relevance to my argument) concerns intentional binding: an effect whereby the subjectively reported time between the initiation of a voluntary action and the perceptual experience of an action’s effects are compressed. For a recent review, see James W. Moore and Sukhvinder S. Obhi, “Intentional Binding and the Sense of Agency: A Review,” *Consciousness and Cognition*, XXI, 1, (2012): 546-561.

⁶³ Hugo Merchant and Kielan Yarrow, “How the Motor System both Encodes and Influences our Sense of Time,” *Current Opinion in Behavioral Sciences*, VIII, (2016): 22-27.

⁶⁴ *Ibid.*, pp. 23-24.

reasonable to predict rich integration of agentic and perceptual elements in the construction of temporal experience.

Consider experiences of temporal synchrony. Copious evidence indicates that experiences of or incorporating temporal synchrony result from integrated processing of inputs from a range of modalities.⁶⁵ As with spatial contents, however, we want to know whether contents related to intentions and/or motor commands are shared with temporal contents drawn from perceptual experience, such that an integration of these contents contributes to an overall experience of acting.

Two studies by Stetson et al. indicate that the answer is yes.⁶⁶ In the first Stetson et al. had participants press a button and see a flash on a computer screen. The flash was related to the button press in different ways. In a baseline condition, the flash appeared at a 35 ms delay 60 percent of the time. In an injected delay condition, the flash appeared at a 135 ms delay 60 percent of the time. In the remaining 40 percent of trials, in both conditions, the flash would appear at an unexpected time – sometimes before and sometimes after the button press. Stetson et al. predicted that in the injected delay condition participants would adapt to the delay between button press and flash, eventually experiencing the two closer together in time. Furthermore, Stetson et al. predicted that given this temporal recalibration effect, when the flash appeared closer in time to the button press, participants would experience the flash as occurring before the press.

⁶⁵ Michael J. Pesavento and John Schlag, "Transfer of Learned Perception of Sensorimotor Simultaneity," *Experimental Brain Research* CLXXIV, 3, (2006): 435-442.; Mirjam Keetels and Jean Vroomen, "Exposure to Delayed Visual Feedback of the Hand Changes Motor-Sensory Synchrony Perception," *Experimental Brain Research*, CCXIV, 4, (2010): 431-440.; Jean Vroomen, Mirjam Keetels, Béatrice De Gelder, and Paul Bertelson, "Recalibration of Temporal Order Perception by Exposure to Audio-Visual Asynchrony," *Cognitive Brain Research*, XXII, 1, (2004): 32-35.

⁶⁶ Chess Stetson, Xu Cui, P. Read Montague, and David M. Eagleman, "Motor-sensory Recalibration Leads to an Illusory Reversal of Action and Sensation," *Neuron*, CI, 5, (2006): 651-659.

This occurred. In the injected delay condition, flashes occurring within an average of 44 ms (plus or minus 7 ms) of the button press tended to elicit reports that the flash preceded the button press.⁶⁷

In the second study Stetson et al. sought to differentiate between the source of the effect – whether it was a result of cross-sensory or motor-sensory integration. So they replicated the first study with one change: instead of a button press “the key automatically moved up to tap the participant’s finger.”⁶⁸ This passive manipulation led to a small (not quite significant) cross-sensory recalibration effect. In the injected delay condition, flashes occurring within an average of 16 ms (plus or minus 8 ms) of the button press tended to elicit reports that the flash preceded the button press. As Stetson et al. note, “the magnitude of these shifts is less than half of the motor-sensory shift of 44 ms, suggesting that active interaction with the world is a powerful mechanism for calibrating timing judgments.”⁶⁹ This is strong evidence that the information utilized in experiences of temporal synchrony includes agentic (i.e., intention and/or motor command-related) as well as perceptual contents.

(5) The data is best explained by mechanisms that integrate spatial and temporal aspects into representations not producible by category-specific mechanisms.

(6) We should reject MC.

⁶⁷ *Ibid.*, p. 652. This basic result has been replicated many times using both visual and auditory stimuli: see Jana Timm, Iria SanMiguel, Julian Keil, Erich Schröger, and Marc Schönwiesner, "Motor Intention Determines Sensory Attenuation of Brain Responses to Self-initiated Sounds," *Journal of Cognitive Neuroscience*, XXVI, 7, (2014): 1481-1489.

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*, p. 653.

Having rejected MC, we have warrant to claim that agents often experience themselves consciously acting, and that the phenomenal character of such events is more than minimally multi-categorical in the sense that it involves more than the co-consciousness of merely agentic and merely perceptual elements. The experience of acting's distinct unity stems at least in part from a sub-personal process of construction that integrates spatial and temporal contents drawn from agentic and perceptual processing and attributes the result to the same unfolding event: the action.

I say at least in part because it remains possible that there are additional sources for explaining the character and cross-categorical unity of the experience of acting. I have not discussed a potential role for metacognition, but recently a number of theorists have given metacognition a role in explaining the nature of agentic phenomenology.⁷⁰ Let us consider, then, one way we might incorporate a role for metacognition into the current account.⁷¹

Myrto Mylopoulos has recently developed an account of 'agentic awareness' that emphasizes a role for higher-order thoughts about action.⁷² On Mylopoulos's account, the character of experiences of acting is at least partially explicable by appeal to these higher-order thoughts, which in the normal case are generated by default and based upon one's intention. "Agentic thoughts are first personal thoughts to the effect that 'I am Φ -ing', where ' Φ ' is filled in by an appropriate action description borrowed from the content of one's executive intention."⁷³

⁷⁰ Dorit Wenke, Stephen M. Fleming, and Patrick Haggard, "Subliminal Priming of Actions Influences Sense of Control over Effects of Action," *Cognition*, CXV, 1, (2010): 26-38; Janet Metcalfe, Teal S. Eich, and David B. Miele, "Metacognition of Agency: Proximal Action and Distal Outcome," *Experimental Brain Research*, CCXXIV, 3, (2013): 485-496; Valerian Chambon, Elisa Filevich, and Patrick Haggard, "What is the Human Sense of Agency, and is it Metacognitive?" *The Cognitive Neuroscience of Metacognition*, (Berlin: Springer Berlin Heidelberg, 2014): pp. 321-342.

⁷¹ I mention this possibility not to endorse it (though the possibility has its attractions), but to make clear that a full account of the experience of acting could incorporate a role for metacognition.

⁷² "A Cognitive Account of Agentic Awareness," *Mind & Language*, (forthcoming).

⁷³ *Ibid.*

Mylopoulos emphasizes that the content of the agentive thought is borrowed from the intention on which it is based. But in my view it is possible that such thoughts could be based on more than an intention – they could be based on the execution of the action that they target. The close integration of agentive and perceptual elements emphasized by my argument above helps clarify how this could be so. Thus, if one is attracted to a view that explains phenomenology by reference to higher-order thoughts generally,⁷⁴ one might find the posit of agentive thoughts that target actions a way to further illuminate the character of the experience of acting. On this line of thought, the unique unity and content of experiences of acting would stem from the kind of state an agentive thought targets – an evolving state that integrates agentive and perceptual elements – as well as the fact that the phenomenology is explained by reference to the content of the targeting state, the agentive thought.

IV. CONCLUSION

In conclusion, I wish to highlight potential upshots of this view of the experience of acting. The first two go beyond the scope of this paper, but deserve brief discussion nonetheless. After discussing these, I conclude on surer ground.

One potential upshot of the view I defend concerns the explanation of various disorders of agentive phenomenology – phenomena that motivate much research in psychology on the so-called ‘sense of agency.’ Given the number of ways agentive phenomenology can be disordered we should not expect one simple explanation. But given controversy in this domain a contribution to understanding of the mechanisms undergirding the experience of acting would be welcome. The account developed here predicts that one important way agentive phenomenology could break down is at the joint of integration

⁷⁴ See, for example, David Rosenthal, *Consciousness and Mind*, (New York: Oxford University Press, 2005).

between an agent's intentions and motor commands and the processing of sensory effects. In particular, we might expect failures of integration to manifest in the way temporal or spatial contents are shaped for action control.

In this connection, it is worth noting that the account developed here is consistent with current knowledge regarding delusions of control in schizophrenia. It is known, for example, that schizophrenic agents over-attribute external causes to their own agency. Some have suggested that this results from hyper-salient processing of sensory feedback to the exclusion of the normal role of intentions and motor commands.⁷⁵ Martin Voss and colleagues demonstrated that, compared with healthy agents, schizophrenic agents' perception of the time of their own action is shifted strongly in the direction of perceived external effects, suggesting that the normal role of intention and motor command in structuring temporal experience is disturbed. It may be that further investigation into the ways agentic and perceptual elements fail to integrate in schizophrenic experiences of acting will prove fruitful for our understanding of schizophrenia.

A second potential explanatory upshot concerns an agent's knowledge of her own action. According to Elizabeth Anscombe and many influenced by her, this knowledge is special in at least two ways.⁷⁶ First, Anscombe stressed this knowledge's status as practical or active knowledge in opposition to all other knowledge's status as speculative or passive. Second, Anscombe held this knowledge was had independent from observation. Why think an account of the experience of acting could play an explanatory role here? One reason is simply that others have emphasized such a role for experiences of *action*. Christopher

⁷⁵ Martin Voss, James Moore, Marta Hauser, Juergen Gallinat, Andreas Heinz, and Patrick Haggard, "Altered Awareness of Action in Schizophrenia: A Specific Deficit in Predicting Action Consequences," *Brain*, CXXXIII, 10, (2010): 3104-3112; Anaïs Louzolo, Andreas Kalckert, and Predrag Petrovic, "When Passive Feels Active-Delusion-Prone Alters Self-Recognition in the Moving Rubber Hand Illusion" *PloS one*, X, 6, (2015): p.e0128549.

⁷⁶ Elisabeth Anscombe, *Intention*, (Cambridge, Mass.: Harvard University Press, 2000).

Peacocke argues that knowledge of action can be based upon an awareness of acting.⁷⁷ And in response to the perceived inadequacy of intention-based explanations of knowledge of action, some philosophers have emphasized an explanatory role for *perceptual* experiences that present the agent's action.⁷⁸ It may be that the more complete account of the experience of acting provides a better epistemic resource. This may be especially attractive to those who emphasize the epistemic importance of an experience's phenomenal character.⁷⁹

Consider, for example, dogmatism about perceptual justification. This is the view that, as James Pryor has it, "when it perceptually seems to you as if p is the case, you have a kind of justification for believing p that does not presuppose or rest on your justification for anything else, which could be cited in an argument (even an ampliative argument) for p."⁸⁰ The dogmatist stresses the epistemic connection between the phenomenal character of one's perceptual experiences and the beliefs one has justification to form. According to the dogmatist, "you have justification for believing p simply in virtue of *having* an experience as of p."⁸¹

Suppose one accepts dogmatism for reasons given by Pryor or by others who defend a similar view.⁸² Is there any reason this view cannot transfer to a connection between experiences of acting and beliefs about acting? Consider the experience of A-ing and a belief that one is A-ing. For Pryor, what is epistemically crucial is that the experience have a

⁷⁷ Peacocke, *The Realm of Reason*.

⁷⁸ Hanna Pickard, "Knowledge of Action Without Observation," *Proceedings of the Aristotelian Society*, CIV, 1, (2004): 205-230; John Schwenkler, "Understanding 'Practical Knowledge'," *Philosopher's Imprint*, XV, 15, (2015): :1-32

⁷⁹ James Pryor, "The Skeptic and the Dogmatist," *Noûs*, XXXIV, 4, (2000): 517-549; Susanna Siegel, "Epistemic Charge," *Proceedings of the Aristotelian Society*, CXV, (2015): 277-306; Nico Silins, "Explaining Perceptual Entitlement," *Erkenntnis*, LXXVI, 2, (2012): 243-261. As it happens, my own account of knowledge of action appeals to conscious experience, but not in the way that I consider here. I develop that account in "Knowledge Of and In Action," (n.d.).

⁸⁰ Pryor, "The Skeptic and the Dogmatist," p. 519.

⁸¹ *Ibid.*, p. 519.

⁸² See, for example, Michael Huemer, *Skepticism and the Veil of Perception*, (Lanham: Rowan & Littlefield, 2001).

phenomenal character and a content similar enough to the relevant belief to provide the relevant justification. To get at this relationship, he identifies a kind of experiential content he calls basic.

Much of our use of locutions like 'It looks as if . . . ' and 'I (seem to) see that . . . ' is influenced not just by what representational contents our experiences have, but also by what further conclusions we take those experiences to make obvious. For instance, when you look at someone's face as he comes out of an examination and, as you'd put it, *see that he passed the test*, the proposition that he passed the test is not itself represented by any of your perceptual experiences. Rather, you only see that he passed the test in virtue of seeing that he has a certain kind of expression on his face. I will call those propositions we seem to perceive to be so, but *not* in virtue of seeming to perceive that other propositions are so, perceptually basic propositions, or propositions that our experiences basically represent.⁸³

On the account of the experience of acting I have developed, these experiences basically represent the agent as acting in various ways. So they have the right kind of content to deliver dogmatist justification. What about their phenomenal character? Pryor has little to say about this – in a footnote he claims that the reason why our perceptual experiences provide justification has to do with "the peculiar 'phenomenal force' or way our experiences have of presenting propositions to us."⁸⁴ Susanna Siegel offers a further elaboration of this general idea, identifying the *presentational* nature of such experiences as the relevant aspect. This is a character that "purports to characterize how things in the external world

⁸³ Pryor, "The Skeptic and the Dogmatist," p. 539.

⁸⁴ *Ibid.*, p. 547, footnote 37.

are.”⁸⁵ One way of understanding presentational phenomenal character is to contrast perceptual experience with imagination. In being presentational, perceptual experience commits to the existence of what is presented. Imagination does not.

If a contrast with imagination is the way to understand presentational phenomenal character, the experience of acting passes the test. Experiences of acting purport to characterize how things in the world are – both inside and outside of one’s mind and body. Experiences of acting commit to the existence of action. If dogmatism about perceptual justification is attractive, then dogmatism applied to experiences of acting is attractive as well.

If the arguments offered above are on track, a final upshot is on relatively firm ground. It is common to appeal to sense perception as our most immediate form of contact and acquaintance with the world. Indeed, Casey O’Callaghan begins his paper on multi-modal perception with the claim that “Sense perception matters because it is our most intimate form of acquaintance with concrete things and happenings independent from ourselves.”⁸⁶ The unintentional implication is that action is a less intimate form of engagement and acquaintance. But on the view I have elucidated, the experience of acting is often both an engagement with the world and a type of intimate acquaintance with it. In conscious action the agent consciously intervenes in the world and consciously experiences the world she is changing.

The upshot concerns the structure of phenomenal consciousness. It remains true that distinctions between categories of conscious experience are possible, just as it remains true that distinctions between experiences in various sensory modalities are possible. But on the view I have elucidated, it is often the case that one’s total experience at a time includes experiences that blur these distinctions in virtue of the fact that these experiences fuse

⁸⁵ Siegel, “Epistemic Charge,” p. 295.

⁸⁶ O’Callaghan, “The Multisensory Character of Perception,” p. 551.

familiar experiential categories. Much remains to be explored regarding the flexibility and dynamics of conscious experience, both at a time and over time. But just as O'Callaghan's work on multi-modal perception represents progress in our understanding of the structure of perceptual experience, the view I articulate here represents progress in our understanding of the structure of conscious experience more broadly.

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