



A social host in the machine? The case of group attention



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ABSTRACT

I argue that akin to mind-body dualism, social-mental dualism is open to critique. That is, mental processes can be inherently social, with sociality 'baked into' the architecture of the cognitive mechanism. As a case in point, I introduce the reader to the cognitive mechanism of group attention. In particular, I focus on the differences between group attention and ideomotor imitation in terms of their (a) compliance to the social-mental dichotomy, and (b) contributions to building common knowledge—a prerequisite for human communication and collective action. Finally, I suggest possible implications of group attention scholarship for other social memory phenomena such as social contagion, socially shared memory-induced forgetting, and the saying-is-believing effect.

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In Descartes' mind-body dualism, mental life that occurs in the mind is seen as wholly separate from biological processes that occur in the body. Gilbert Ryle argued that such a mind-body dichotomy was a serious mistake, calling it the 'dogma of the Ghost in the machine' (Ryle, 1984). Today, with scientists mapping neural connections in the brain with the goal of understanding how we think, learn, and remember, there is broad scientific consensus that a strict mind-body dichotomy is logically indefensible and operationally undesirable.

Yet other dichotomies remain. A deeply rooted, indeed foundational, dichotomy in modern cognitive science is that of external social influences and internal mental processes. Indeed, the notion of social influence is currently synonymous with external influence—perhaps important fuel for, but not a critical part of, human cognitive mechanisms. The social-mental dualism is so complete that as Hirst, Coman, and Coman (2013) note, social influence can only be seen as an input for the information-processing machine (e.g., Neisser, 1967).

Imagine, however, that akin to mind-body dualism, social-mental dualism is vulnerable to critique. Just like the mind is not only a ghost in the biological machine, so social influence is not only a ghost in the information-processing machine. That is, cognitive mechanisms can be inherently social, with sociality 'baked

into' their architecture. But, what would such a socially structured cognitive mechanism look like, and how would it function?

As a case in point, I will introduce the reader to the cognitive mechanism of group attention. I will describe the mechanism, and review its effects across several domains of psychological functioning, including that of memory. In doing so, I hope to provide a unique justification for the focus of this special issue on social memory. Namely, I will argue that cognition in general, and memory more specifically, is not only informed by external social inputs, but is also underpinned by cognitive mechanisms with inherently social architectures.

To make my case for the inherently social architecture of the group attention cognitive mechanism, I will contrast it to the ideomotor account of imitation. As I describe below, both group attention and ideomotor imitation promote communication and cooperation; however, they do so through distinct cognitive mechanisms. Whereas ideomotor imitation fits neatly into the social-mental dichotomy, group attention does not.

1. Ideomotor imitation

Human curiosity begins in infancy, when others' actions first influence our own. Imitation of facial and manual gestures occurs in the first three weeks of human life (Meltzoff & Moore, 1977), and continues to influence our memories, attitudes, and beliefs across the lifespan (Allport, 1924; Bandura, 1977). Indeed, the high fidelity of human imitation allows for knowledge accumulation that stretches hundreds of generations. It is also through imitation

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that individuals can get to common knowledge, where a broad overlap in interpretive schemas allows for communicative signals (i.e., actions and words) that have the same meaning for each individual (Clark, 1985). In all, the human capacity for imitation allows for efficiency in communication and collective action—a watershed achievement in human evolution (Wilson & Wilson, 2007).

One explanation of the human ability to imitate is the ideomotor account (Massen & Prinz, 2009). Ideomotor framework posits that neurons responsible for perception directly activate neurons responsible for action. As William James (1890) put it, “Every representation of a movement awakens in some degree the actual movement which is its object. . .” (p. 526). Hence, thinking about moving one’s arm, renders the action of moving one’s arm more probable. To understand imitation through the prism of the ideomotor approach, one must allow that thinking about another person’s arm movement will also render the action of moving one’s arm more probable. That is, whether representations of arm movement are generated internally or through social inputs, arm movement becomes more likely (Berkowitz, 1984). Beyond behavioral imitation, one could imagine that attitudinal or verbal imitation can proceed in much the same way—when another’s attitude or words are perceived, they stir attitudinal or word-related cognitive activity (Bargh & Chartrand, 1999), resulting in attitudinally-driven behavior, or production of speech acts.

Notably, the ideomotor account of imitation fits neatly into the dualism of external social influences and internal mental processes. Although others’ attitudes and behaviors are social inputs that can stir internal attitudinal and behavioral representations, rendering imitation more likely, such social inputs are wholly unnecessary for the occurrence of ideomotor mental processes.

2. Group attention

Despite the importance of ideomotor-based imitation, it is a less than optimal process for aligning mental representations and behavior among individuals. A mind that only imitates is always a step behind the mind being imitated. That is, by the time an observer is representing an actor’s behavior, the actor is already acting, and by the time the observer actually acts, the actor may have already finished the act. Put another way, imitating is always playing catch up—arriving at a destination after the other has been there for some time. And of course once you have arrived, the other may have moved on. I will argue that in addition to a superb ability to imitate, humans achieve cognitive and behavioral common ground through the cognitive mechanism of group attention, or the perception of co-attention with one’s group (Shteynberg & Apfelbaum, 2013; Shteynberg, Hirsh, Galinsky, & Knight, 2014).

In what follows I will discuss the consequences of group attention on information processing, and the theoretical reasons for such consequences. In all, I will argue that the presence of group attention in the human psychological repertoire heightens our capacity to communicate effectively, and act collectively.

2.1. The effects of group attention

People are often aware that they are attending to information that is being co-attended with others in their social group. Reading the morning news, sharing a meal, listening to music on the radio, consuming social media, and watching television may all involve awareness of co-attention—a sense of simultaneous shared experience with other agents. What influence does awareness of group attention on a stimulus have on the cognitive processing of that stimulus?

Starting with my dissertation (Shteynberg, 2009), I have been investigating the psychological impact of group attention on

subsequent processing. My colleagues and I have shown that information that is thought to be simultaneously experienced with one’s social group is more likely to be remembered and acted upon (Shteynberg, 2010; Shteynberg & Galinsky, 2011). Similar results were reported by He, Lever, and Humphreys (2011), and Eskenazi, Doerrfeld, Logan, Knoblich, and Sebanz (2013). Subsequent studies suggested that group attention drives behavioral learning (Shteynberg & Apfelbaum, 2013), where behavior that is observed under group attention is more likely to be internalized and reproduced by the individual. We have also found that when group attention focuses cognitive resources on emotionally evocative events, emotional reactions become more intense, with scary, sad, and happy events becoming scarier, sadder and happier, respectively (Shteynberg, Hirsh, Apfelbaum, et al., 2014). Finally, we have found that group attention increases elaborative processing of emotionally neutral events, leading to greater mood infusion into judgments of such events (Shteynberg, Hirsh, Galinsky, et al., 2014).

Across more than fifteen studies from our lab and elsewhere, findings suggest that the perception of co-attention focuses greater cognitive resources on a stimulus to the extent that people believe they are (a) simultaneously co-attending to that stimulus (b) with members of their social group. Theoretical reasons for the group attention effect, its consequences for achieving common ground, and hence effective communication and collective action are discussed next.

2.2. Group attention and communication

It is hard to underestimate the importance of common knowledge across communicators aiming to be understood (Clark, 1985). In a sense the communicative signal is an encoded clue that can only be properly understood with the right background knowledge in hand. One may ask what is “proper” understanding, and what is the “right” background knowledge. Put simply, when a receiver’s understanding of a signal matches that of the sender’s, we can say that the message is properly understood. As such, proper understanding requires that the sender and the receiver have and use the same background knowledge in a given communication—hence making common knowledge, or the actual overlap in knowledge, critically important to all communication.

The group attention effect, or the focusing of cognitive resources on targets that are simultaneously co-attended with one’s social group, is instrumental to the achievement of common knowledge. That is, if both of the co-attendants focus more cognitive resources on the targets that they are co-attending than other targets, greater common knowledge is the logical result. Interestingly, the perception of simultaneous co-attention does not only make it more likely that the other is co-attending with you, but that the other is aware of that fact. As such, group attention, or the perception that ‘we are attending to X’, makes it more likely that the co-attende is also in a state of group attention, and hence they are also funneling cognitive resources to the target of co-attention. This dual consequence of group attention yields broad overlap in knowledge among co-attendants.

In contrast to group attention, imitation lacks this dual implication. Imitating another in no way suggests that the other is aware of the imitation. As such, whereas a feeling of group attention is evoked across co-attendants, imitation is more likely to be a one-way street, where the imitated moves on to a new focus of attention. A special exception involves situations in which the imitated is on a public stage. In such instances, the person may be aware of being imitated and hence respond by focusing cognitive resources on the content being imitated. However, notice that these situations may indeed activate group attention, where one’s behavior is the object of group attention (i.e., ‘we’ are attending to my speech and/or behavior).

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