

Perceiving Others and Their Minds: Response to McGeer

Folk psychology is a naturally occurring psychological theory that we learn implicitly, and then apply to each other in order to understand, explain and predict our behavior. If folk psychology is a theory, its theoretical entities are beliefs, desires, thoughts, emotions, and perceptions. In her paper for this volume, Victoria McGeer recommends a Gestalt switch in the way we understand folk psychology, away from a focus on perceiving and figuring out others toward a more holistic notion in which both ways of perceiving as well as ways of acting, especially in social contexts, are taken into account. Folk psychology has normative force, because people who do not act in ways that it can describe might not be socially accepted. McGeer then applies her new conception to autism, arguing that it fosters a rethinking of the nature of the autistic person's problem. Autistic people do not merely fail to perceive us correctly. They have a larger problem, describable by McGeer's larger theory. They are set on a developmental trajectory early on that both prevents them from attending to us normal people correctly, but also prevents them from behaving in ways that we can successfully understand with folk psychology.

I will begin with several criticisms and comments directed toward the improvement of McGeer's hypothesis, and end with a suggestion for future directions in research.

1. CRITICISMS OF THE APPROACH

Part of this recommended reconceptualization of autism is McGeer's claim that autistic people have an initial obstacle to entering the world of folk psychology because their behavior is often not easily or naturally describable in folk psychological terms. This seems right and important. What do we say someone is doing, for instance, who is sitting on a couch flapping both his hands, for long periods of time? We don't have a verb for this, so people who work with autistic children have named it "stimming", short for "self-stimulation." We are quite good at telling what other normal people are looking at, and reporting this by saying "He sees the robin," and so on, but normal people have sometimes have great difficulty saying what autistic people are looking at, because they don't see anything of interest in that direction. The attention of autistic people is captured by

different things; not by what is on the video screen, but by a glimmer of light reflected off of it; not by what the experimenter is saying, but by the sound of the air conditioning vent in the ceiling.

Many Folk-Psychological Capacities

Autistic people are bad at understanding the minds of others, and seem to take little interest in them (Baron-Cohen, 1995). They also tend to make little use of folk psychology. McGeer refers to folk psychology as a single skill or capacity, but I suspect we will ultimately think of ourselves as possessing a set of mind reading capacities, as different as a set of tools. Our knowledge of mathematics, for instance, turns out to be made up of several different abilities and knowledge domains, each of which can be lost independently of the others subsequent to brain damage. Closer to our case of folk psychology, we have also found the same thing with our knowledge of language. People can develop aphasia for the names of organic things, but not the names of inorganic things, for example. Speakers of several languages can selectively lose the ability to speak and understand only one of them following brain damage.

Here are some possible sub-categories of mind-reading abilities:

1. *Understanding the perceptions of others.* This can involve understanding a person in an environment as he relates to objects of interest, and predicting his actions in that environment, as well as simulation of the perceptual point of view of a person in an environment. This would include the interesting phenomenon known as *joint attention*: You and I attend to an object, and each of us is aware that the other is also attending to it.
2. *Understanding the actions of others.* One way to do this is by simulation—by pretending at some level that we ourselves are simultaneously performing the same action. We can also use a process of backwards inference to infer mental states from behavior. Recent studies show that we use slightly different sets of brain areas when we perceive others preparing to interact with objects or preparing to interact with other people.
3. *Understanding the mental states of others.* This can involve simulation of the beliefs of others, especially of false beliefs.
4. *Understanding the emotions of others.* We often simulate the emotions of others, a process which occurs automatically in us. When I simulate someone, I expect a certain *pattern* of emotions in her. I know which emotions generally follow which, e.g., frustration is typically followed by anger.

5. *Understanding the personalities of others.* How do we represent differences in personality? Aside from representing the overall spectrum of characteristic emotions a person evinces, another way we may have of representing personality is by accumulating representations of their individual mental states into a larger concept of their minds. More on this in a bit.

Theory-Theory vs. Simulation Theory

One problem with the current debate between the theory-theory and the simulation theory is that the distinction between the two is slippery. Many of the standard ways that the two approaches are distinguished do not seem to work. McGeer says that in the theory theory “the way we attribute mental states to ourselves is essentially no different from the way we attribute mental states to others (both are theory-driven)”.¹ But the same can be said of the simulation theory, at least in some versions. McGeer mentions that some simulation theorists use a different account of how we attribute mental states to ourselves—we use introspection which is “experientially direct” and “not process driven.” But I do not see why simulation theorists need accept this account of introspection, especially the second part. Very often when we report our own mental states, we engage in processing and backtracking. Another difference between the two types of theory is supposed to be that on the theory-theory, folk psychology contains theoretical entities, such as beliefs and desires. But simulations can also contain theoretical entities. If I use a simulation of a ship, a small model, to determine how seaworthy it is, the rudder on the model is a theoretical entity that represents the rudder on the real ship. Simulations can certainly be parts or adjuncts of theories, and I do not see any particular problem with a simulation being the entirety of a theory.

Perhaps the crucial difference between the two approaches is in one’s attitude toward folk psychological platitudes, such as “People who suffer bodily damage tend to feel pain.” Theory theorists see this knowledge as contained in our minds in a propositional, or conceptual form. Simulation theorists might build this knowledge into their simulation, but in analog form, or at least nonconceptual form. Ultimately, the difference in the approaches might be that theory theorists see folk psychology as accomplished with conceptual representations, whereas simulation theorists see it accomplished primarily with analog representations, for instance, our use of our own somatotopic maps to understand the actions of others. We might better pursue this issue by focusing less on the theory types and more on the questions: Do we use representations to understand others? What kinds of

representations do we use to understand others? How conscious is our use of these representations? Which of these processes are used both for our own cognition and for understanding others? Two ways to test for this are: 1) Is there symmetry? If a patient's damage causes him to see himself as having a certain property, will he also tend to see others as having that property (and vice versa)? 2) Are there interference effects? Does using a brain system to understand others prevent us from using it for our own purposes at the same time? The mere presence of an interference effect does not guarantee that the interference is happening at the right cognitive level, of course, and determining the locus of interference may be difficult in some cases.

In her attempt to resolve the dispute between the two camps, McGeer says that "simply combining the two theories is insufficient for capitalizing on the strengths of each," but it is not clear why.² This question of the motivation for a complete rethinking of our approaches to autism is important, because it bears on its chances for success. I am not optimistic about the possibility of getting the scientists who study psychology or autism to significantly alter their conception of what the problem is without showing them that they are getting something wrong. As the example of J.J. Gibson's ecological theory of perception (Gibson, 1979) shows, introducing more holistic approaches into a science that is thoroughly atomistic can be tough going, or simply not possible. The way to get the attention of scientists is to show them that they are getting something wrong. The success of the enactive vision paradigm has come because they have been able to show concretely that the simple bottom-up view gives the wrong results in several different types of experimental paradigms.

What Should We Focus On?

According to McGeer, "We should shift the focus of research away from trying to understand the neuro-cognitive underpinnings of a higher-order recognitional capacity (e.g., a [theory of mind] mechanism) and instead focus on what prevents the autistic child from becoming a normatively well-regulated psychological agent." This is an important observation to make when we are trying to understand and provide therapy for children. But what about an autistic adult? We need to understand the neuroscience of his or her current situation. This can help us answer many important questions, and help with the task of discerning how exactly folk psychology is implemented by determining what processes autistic brains lack.

The final theory of autism will exist at several levels: Genetic, neurochemical, psychological, and philosophical. Even if the crucial breakthrough happens at the molecular level, we still need an understanding of autistic people at a philosophical level. How ultimately should we think of autistic people? How responsible are they for what they do, for instance? And what does autism tell us about

who we are? If autism does have genetic components, this indicates that the task of discerning what is wrong in their brains by working from the top-down, i.e., from philosophy and/or psychology down toward neurobiology, is going to be extremely difficult, rather like trying to discern the ingredients of a soup that has been boiling for years. I can imagine someone interested in these genetic components criticizing McGeer's approach in exactly the same way she criticizes those who focus on the neural underpinnings of theory of mind: She has failed, they might say, to take into account the holistic effects of alterations in the DNA. Many autistic people have seizures (Lewine et al., 1999), for instance, or severe digestive problems, perhaps caused by the same genes that produce the mental problems. Why study the mental problems in isolation from these, this genetic holist might justifiably ask.

Folk Psychology as Regulative

McGeer argues that folk psychology is not primarily for the explanation and prediction of behavior, but rather it is primarily a "regulative practice, molding how individuals think and act so as to become 'well-behaved folk psychological agents'."³ One consideration she offers for this is that we often make mistakes using folk psychology. These mistakes do limit the usefulness of folk psychology for explanation and prediction (or just as importantly, understanding), but by themselves they do not show that we are not using it mainly for those purposes. These well behaved agents are "agents who can be (fairly) well predicted/explained using concepts and sense-making norms of 'folk psychology' in large part because they are agents who work to make themselves (and others) conform to such norms," says McGeer. (Sect. 3). One can agree that this is a factor, while still holding to the view that folk psychology works on others because it fits their actual psychology. Folk psychology works on beings whose behavior is goal-directed and planned, and perhaps who also have mental states constructed out of concepts. Given the infamous flexibility of folk psychology and now this force in the other direction molding people to fit folk psychology, it is surprising folk psychology ever fails at all. Indeed, must not folk psychology be successful overall if it is to continue to perform what McGeer argues is its real function, molding people?

2. REPRESENTATIONS OF INDIVIDUAL MINDS

McGeer's example of the kiss is synchronous; it describes a single event without providing a past context of information about the characters involved. Who are these people and how did they come to be in that situation? Usually when

Perceiving Others and Their Minds: Response to McGeer
William Hirstein

these cases occur, they do so in a context of detailed knowledge on our parts about the characters and personalities of the people in the book or on the screen. The great novelists are masterful at creating an ensemble of different characters, by giving us crucial information revealing of their psychologies, then letting them interact. One sees this in a primal form in a writer like Dickens, for example. Even though the case McGeer describes has a great deal of complexity, the case itself is completely generic, in that it could apply to any random amorous couple. Perhaps *after* we understand what is happening, we begin to form individualized representations of the minds of the woman and man, but this can occur only after we have (one hopes correctly) understood what is happening.

Much of the work of folk psychology is done by spontaneously operating simulations. But because this work is done so naturally, it can produce strange results when these simulation systems are damaged. Often the person in whom theory of mind processes have been damaged has no idea what has happened, and confabulates explanations for his changed perception of other people. I suspect one of those strange results is manifested in Capgras' syndrome. Neurological patients with Capgras' syndrome claim that people close to them, typically their spouses, parents, or children, have been replaced by similar-looking impostors. But the patient does not merely see someone familiar as unfamiliar, he perceives that person as having a *different identity* from the person he knows. The patient does not merely treat the "impostors" as less related than before, but as no longer having the same mind, the same motives, moods, and emotions (e.g., paranoid Capgras' patients attribute evil intentions to the impostors). The Capgras' patient perceives his father as having a foreign mind, and this makes him claim that he is an impostor (Hirstein, 2005).

Knowing someone means knowing what makes her happy and what makes her angry, as well as how she behaves when she's angry or happy. We are not normally aware of our mind representations as representations because we simply see ourselves as perceiving people with emotions and personalities and characters. We do not realize that we are not actually seeing their emotions, intentions, or motives; we are reproducing them within ourselves. So perhaps what happens in Capgras' syndrome is that while the patient's representation of his father's appearance, including his face, is intact, the brain damage has destroyed his specific representation of his father's mind and personality. This approach takes what the patients say seriously, unlike the other approaches, which dismiss it as a convenient creation, but cannot explain why all the patients come up with the same story. The experience of an unfamiliar mind situated within a familiar body, with a familiar face, is exactly what would lead to the assertions about impostors (Hirstein, 2009).

If it is true that patients with misidentification disorders have mind reading problems, they are much better subjects of study than people with autism. Many misidentification patients have focal brain lesions, along with fundamentally

intact mental functioning in other realms (Signer, 1994). This is exactly the sort of patient that both classical neurologists and today's cognitive neuroscientist look for, since such patients promise to provide valuable clues about the functions of the damaged areas. The brains of autistic people are different from normal brains in many ways, and autistic people are better than normal people at certain skills (O'Riordan et al., 2001). All of these differences confound the investigation of the specific mind reading difficulties in autism.

How do we represent the personalities of the people we know? As we watch the angry person, livid that his car won't start, we don't just understand his angry actions, the slamming of doors and hoods. We understand how the anger was generated. We know how our own anger generates angry actions because we experience this causation directly. We can also understand why someone does not act. When we understand someone's pain, we understand how the pain restricts her actions and depresses her moods. Representations of personalities also include representations of that person's characteristic emotions and moods. Some types of simulations of minds can be thought of as functions from perceptions to actions. Two different people will respond differently to the same perceptions. One person may do what another person merely considers then inhibits, in the same situation. There are also cases where a perception causes a certain emotion which in turn causes an action. In order to represent these personalities, these functions, we would also need to simulate these emotions.

We possess representations of specific individual minds, if the ideas here are right, but there is also evidence that we possess generic mind representations that we use to understand strangers. We create generic representations of other significant things. All of my episodic memories of visits to grocery stores, for instance, organize themselves into generic memories of certain grocery store types—suburban convenience stores, urban corner markets, huge supermarkets—which I access when I decide where to go to purchase certain foods, or where to look for what I want once I'm in a grocery store. If the Capgras' patient has lost his representation of his father's individual mind, but uses a generic representation when he now looks at him, this is precisely what would produce the impression of an impostor—his father's body and face, but alloyed with the mind of some other person. One Capgras' patient we saw believed his father was an impostor, and referred to him as, "that nice Jewish gentleman." He also tended to categorize other people by religion (Hirstein and Ramachandran 1997). Perhaps this patient's generic egocentric representations were organized according to religion. Some people also associate personality types with certain races, a raw but regrettable fact that is perhaps more revealing of the mechanics of racism than talk about

Perceiving Others and Their Minds: Response to McGeer
William Hirstein

external differences. The ability to treat someone as an individual is closely related to the ability to treat someone as a person. If we merely treated each other with nothing but generic representations, we would be like societies of ants. Treating someone generically involves a failure to respect her individuality.

¹ Quoted from the paper presented at the Henle conference.

² *Ibid.*

³ *Ibid.*

References:

- Baron-Cohen, S. *Mindblindness: An Essay on Autism and Theory of Mind*. Cambridge: The MIT Press 1995.
- Gibson, J. J. *The Ecological Approach to Visual Perception*. Hillsdale, NJ: Lawrence Erlbaum 1979.
- Hirstein, W. *Brain Fiction: Self-Deception and the Riddle of Confabulation*. Cambridge, MA: The M. I. T. Press 2005.
- Hirstein, W., and Ramachandran, V.S. "Capgras Syndrome: A Novel Probe for Understanding the Neural Representation of the Identity and Familiarity of Persons. *Proceedings of the Royal Society of London, Series B* 264 (1997): 437-444.
- Hirstein, W. "Confabulations about People and Their Limbs, Present or Absent," In *The Oxford Handbook of Philosophy and Neuroscience*, ed. John Bickle. Oxford: Oxford University Press 2009.
- Lewine, J. D., Andrews, R., Chez, M., Patil, A., Devinsky, O. et al.. "Magnetoencephalographic Patterns of Epileptiform Activity in Children with Regressive Autism Spectrum Disorders." *Pediatrics* 104 (1999): 405-418.
- O'Riordan MA, Plaisted KC, Driver J, Baron-Cohen S. "Superior Visual Search Suggests Higher Degree of Attention in the Periphery. *Journal of Experimental Psychology: Human Perception and Performance* 27 (2001): 719-730.
- Signer, S.F. "Localization and Lateralization in the Delusion of Substitution," *Psychopathology* 27 (1994): 168-176.