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MODES OF KNOWING: AUTISM, FICTION, AND SECOND-PERSON PERSPECTIVES

Eleonore Stump

The rapid, perplexing increase in the incidence of autism has led to a correlative increase in research on it and on normally developing children as well. In this paper I consider some of this research, not only for what it shows us about human cognitive capacities but also for its suggestive implications regarding the ability of science to teach us about the world.

1. Autism and the Knowledge of Persons

One pair of researchers sums up autism by saying that “the chief diagnostic signs of autism are social isolation, lack of eye contact, poor language capacity and absence of empathy.”¹ Whatever ties together the different clinical signs of all the degrees of autism, the most salient feature of the disorder is its severe impairment in what psychologists call ‘social cognition,’ or what philosophers call ‘mindreading.’ This is the knowledge of persons and their mental states.

Autism’s deficits as regards social cognition or mind-reading have made researchers increasingly aware of what normally developing children can do effortlessly. So, for example, numerous studies² show that a pre-linguistic infant can know her primary care-giver as a person and can even, as it were, read the mind of her care-giver to some limited extent.³ In fact, it has become clear that a pre-linguistic infant’s capacity for social cognition is foundational to the infant’s ability to learn a language or to develop normal cognitive abilities in many other areas. The difficulty in learning language evinced by autistic children seems to be a function of the fact that they are severely impaired in their ability to know persons and to engage in “mindreading” of them.

The knowledge missing for an autistic child, however, cannot be taken as knowledge *that* something or other is the case. A pre-linguistic infant

¹Vilayanur S. Ramachandran and Lindsay M. Oberman, “Broken Mirrors: A Theory of Autism,” *Scientific American*, November 2006, p. 64.

²See, for example, the collection of papers in Naomi Eilan, Christoph Hoerl, Teresa McCormack, and Johannes Roessler, *Joint Attention: Communication and Other Minds* (Oxford: Clarendon Press, 2005).

³For a philosophical attempt to explain the nature of mindreading, see Shaun Nichols and Stephen Stich, *Mindreading: An Integrated Account of Pretence, Self-Awareness, and Understanding Other Minds* (Oxford: Clarendon Press, 2003).



is not capable of knowledge *that* a particular person is her mother; but she can know her mother, and to one extent or another she can also know some of her mother's mental states. Conversely, an autistic child can know *that* a particular macroscopic object is a human person or *that* the person in question has a certain mental state. But the autistic child can know such things without the knowledge that comes with mindreading. For example, an autistic child might know that the person whose face he is seeing is sad, but in virtue of the impairment of autism he is unlikely to have this knowledge *that* because he knows the sadness of the other person. An autistic child can know that someone he is looking at is sad because, for example, someone who is a reliable authority for the child has told him so. This is clearly not the same as the child's knowing the sadness in the face of the person he is looking at.⁴ What is impaired in the cognition of an autistic child is a direct knowledge of persons and their mental states.

What sort of impairment is this? One researcher on autism, Peter Hobson, quotes Wittgenstein to help him explain the kind of knowledge which normally developing infants do have and with regard to which autistic children are impaired. He says,

"We see emotion"—As opposed to what?—We do not see facial contortions and *make the inference* that he is feeling joy, grief, boredom.⁵

For Hobson, we know the mental states of others not as knowledge *that* but more nearly by direct awareness, in the manner of perception, as it were.

So normally functioning human beings have the capacity for a knowledge of persons and their mental states which is fundamentally different from knowledge *that*. Insofar as autistic children are deficient in their knowledge *that* something is the case as regards the mental states of other people, it is because they are impaired in their capacity for a kind of knowledge which is not reducible, or not entirely reducible, to knowledge *that*.

But what is this cognitive capacity? How are we to understand it and the kind of knowledge it makes possible?

2. Mirror Neurons

There is as yet no uncontested explanation of autism; but at present two lines of research seem particularly promising in their ability to illuminate it. The first, pursued by developmental psychologists and discussed also by philosophers, highlights a deficiency among autistic children in their capacity for engaging in what researchers call 'dyadic attention sharing.' In the interest of brevity, I am going to leave this work to one side. Here I want to call attention only to the second line of research, that having to do with mirror neurons.

⁴See Derek Moore, Peter Hobson, and Anthony Lee, "Components of Person Perception: An Investigation With Autistic, Non-autistic Retarded and Typically Developing Children and Adolescents," *British Journal of Developmental Psychology* 15 (1997), pp. 401–423.

⁵Peter Hobson, *The Cradle of Thought* (Oxford: Oxford University Press, 2004), p. 243.

In the 1990s, a team of Italian neuroscientists discovered that certain neurons—which they called ‘mirror neurons’—fire both when one does some action oneself *and also* when one sees that same action being performed by someone else. It now seems as if the mirror neuron system is foundational for the capacity of all normal human beings at any age to know the mind of another person.⁶ When John sees Mary smile at him and pick a flower in a certain way, he knows that she is going to give the flower to him. How does he know what she is doing? How does he know what she is feeling and intending to do? The Italian team of researchers responsible for the discovery of mirror neurons says,

A decade ago most neuroscientists and psychologists [and, they might have added, philosophers] would have attributed an individual’s understanding of someone else’s actions and, especially, intentions to a rapid reasoning process not unlike that used to solve a logical problem: some sophisticated apparatus in John’s brain elaborated on the information his senses took in and compared it with similar previously stored experiences, allowing John to arrive at a conclusion about what Mary was up to and why.⁷

The discovery of the mirror neuron system has made this sort of attempt at understanding the human ability to mindread look Ptolemaic. Trying to summarize their research, the Italian researchers go on to say,

John grasps Mary’s action because even as it is happening before his eyes, it is also happening, in effect, inside his head . . . mirror neurons permit an observed act to be directly understood by experiencing it.⁸

This summary of theirs is not entirely perspicuous, from a philosophical point of view since it is not clear what it is to experience an observed act. Nonetheless, the research of these neurobiologists, as well as that of many others, has shown convincingly that mirror neurons underlie the human capacity to know not only someone else’s actions, but also her intentions and emotions. Describing their research on the role of mirror neurons in mediating the knowledge of intentions, another team of researchers says,

the ability to understand the intentions associated with the actions of others is a fundamental component of social behavior, and its deficit is typically associated with socially isolating mental diseases such as autism . . . Experiments in monkeys [have] demonstrated that frontal and parietal mirror neurons code the “what” of the observed action. . . . The findings [of this study] . . . strongly suggest that this mirror neuron area actively participates in understanding the intentions behind the observed actions. . . . The present

⁶The mirror neuron system is predicated on recognition of a person as a person, but by itself it does not seem to facilitate that recognition, as we currently understand the workings of the mirror neuron system. So the knowledge of persons cannot be explained by the mirror neuron system alone, as far as we now know.

⁷Giacomo Rizzolatti, Leonardo Fogassi, and Vittorio Gallese, “Mirrors in the Mind,” *Scientific American*, November 2006, p. 54.

⁸*Ibid.*, pp. 56 and 58.

data show that the intentions behind the actions of others can be recognized by the motor system using a mirror mechanism.⁹

Other researchers who are working on mirror neurons and emotions put the point this way:

Observing another person experiencing emotion can trigger a cognitive elaboration of that sensory information, which ultimately results in a logical conclusion about what the other is feeling. It may also, however, result in the direct mapping of that sensory information onto the motor structures that would produce the experience of that emotion in the observer. These two means of recognizing emotions are profoundly different: with the first, the observer deduces the emotion but does not feel it; via the second, recognition is firsthand because the mirror mechanism elicits the same emotional state in the observer.¹⁰

It is not entirely clear what these researchers mean by saying that the mirror mechanism elicits the same emotional state in the observer. It is certainly not the case that every time a person observes the emotion of another, he comes to have that same emotion himself. But perhaps these researchers mean only that one can feel something of the emotion of another *as that other's emotion*.

What all these researchers are struggling to describe is the knowledge of another person and of that other's mental states when that knowledge shares features with the phenomenology of certain kinds of perception. Like the perception of color, for example, the knowledge of persons at issue here is direct, intuitive, and hard to translate without remainder into knowledge *that*, but very useful as a basis for knowledge *that* of one sort or another. John knows *that* Mary is going to give him a flower because he first knows Mary, her action, her emotion, and her intention—but these are things which he knows by, as it were, seeing them, and not by cognizing them in the knowledge *that* way.¹¹

⁹Marco Kacoboni, Istvan Molnar-Szakacs, Vittorio Gallese, Giovanni Bucciono, John C. Mazziotta, and Giacomo Rizzolatti, "Grasping the Intentions of Others with One's Own Mirror Neuron System," *PloS Biology* 3 (2005), pp. 1, 4, 5.

¹⁰Rizzolatti et al., "Mirrors in the Mind," p. 60.

¹¹These results from psychology and neuroscience should prompt us to reflect more broadly about knowledge which is not *knowledge that*. Like the things proposed as objects of knowledge by acquaintance, the objects of Franciscan knowledge can be even inanimate things. So, for example, an infant knows a ball as a ball before the infant is in a position to know that *this* is a ball. As far as that goes, even for normally functioning adult human beings, there is a difference between knowing something as a thing of a kind and knowing *that* this is a thing of that kind. A person who has a visual agnosia might not be able to know a glove as a glove, but he might still be able to know *that* this is a glove, say, because his physician has told him so. (See Oliver Sacks, *The Man Who Mistook His Wife for a Hat* [New York: Summit Books, 1985]. For a helpful recent neurobiological study of agnosia, see Martha J. Farah, *Visual Agnosia* [Cambridge, Mass.: MIT Press, 1990].) In fact, it seems as if knowledge which is not knowledge *that* must be primary. Without *any* knowledge of a thing as a thing, it is hard to see how anyone could have knowledge *that* this something-or-other has certain properties or stands in certain relations to something else. Aquinas makes this point by saying that the primary act of the intellect is the knowledge of the quiddity of a thing, that is, the knowledge of a thing as a thing; on his view, this sort of cognition is prior to the intellect's

And so these discoveries about the mirror neuron system help to explain the Wittgensteinian point Hobson made in the quotation I cited earlier. We *see* emotion, as we *see* intention, because the mirror neuron system gives us a sort of direct apprehension of someone else's mental state.

3. *Second-person Experience*

One group of neurobiologists try to explain the knowledge mediated by the mirror neuron system by relying on a common philosophical distinction. They say,

Humans are an exquisitely social species. Our survival and success depends crucially on our ability to thrive in complex social situations.¹²

The novelty of our approach consists in providing for the first time a neurophysiological account of the experiential dimension of both action and emotion understanding. What makes social interactions so different from our perception of the inanimate world is that we witness the actions and emotions of others, but we also carry out similar actions and we experience similar emotions. There is something shared between our first- and third-person experience of these phenomena: the observer and the observed are both individuals endowed with a similar brain-body system. A crucial element of social cognition is the brain's capacity to directly link the first- and third-person experiences of these phenomena.¹³

These neurobiologists are here availing themselves of the distinction by now familiar in contemporary philosophy between a first-person and a third-person experience or point of view. But, contrary to their view, it does not seem right to take the knowledge of persons which the mirror neuron system subserves as a first-person knowledge of oneself, or a third-person knowledge of another, or some combination of both together. Rather, it seems to be something entirely different. Under one or another description, some philosophers are now drawing our attention to the importance of what can be called 'a second-person point of view' or 'a second-person experience.'¹⁴ In my view, this is more nearly the notion which the neurobiologists need to express what is of interest to them.¹⁵

having knowledge expressible in propositional form. (See the chapter on the mechanisms of cognition in my *Aquinas* [London: Routledge, 2003].) This broader claim about Franciscan knowledge is, of course, even more contentious than the claims about the knowledge of persons, and it cannot be adequately expounded or supported in passing here.

¹²Gallese et al. 2004, p. 396.

¹³Ibid.

¹⁴See, for example, Stephen Darwall, "Fichte and the Second-Person Standpoint," *Internationales Jahrbuch des deutschen Idealismus* 3 (2005), pp. 91–113; and *The Second-person Standpoint: Morality, Respect, and Accountability* (Cambridge, Mass.: Harvard University Press, 2006).

¹⁵In this chapter, I distinguish not only among first-person, second-person, and third-person experiences, but also among the corresponding points of view and accounts. I have no neat and precise definitions for any of these, but, put roughly, what I have in mind is this. A first-person experience is an experience I have with some degree or other of conscious awareness and which I could have by myself. A first-person point of view is my reflection on or observation of my (real or imagined) first-person experience considered as a first-person experience (as distinct, for example, from considering that experience as a neurologist or some

For my purposes, I will understand a second-person experience in this way. One person Monica has a second-person experience of another person Nathan only if

- (1) Monica is aware of Nathan as a person (call the relation Monica has to Nathan in this condition 'personal interaction'),
 - (2) Monica's personal interaction with Nathan is of a direct and immediate sort,
- and
- (3) Nathan is conscious.¹⁶

These conditions are necessary for second-person experience and sufficient for a minimal degree of it.

Condition (1) implies that Monica does not have a second-person experience of Nathan if Monica is dumped unconscious on top of Nathan; even if Nathan is conscious, it is necessary that Monica be conscious as well if Monica is to have a second-person experience of Nathan. Furthermore, if Monica is conscious but not aware of Nathan—say, because Nathan is hiding and Monica does not know he is present—then Monica does not have a second-person experience of Nathan. Condition (1) can be met, however, even if Monica does not have perception of Nathan. It is possible for one person to be aware of another as a person without seeing, hearing, smelling, touching, or tasting that other person. For example, if Monica and Nathan are engaged in an animated conversation with one another which they conduct by means of email, Monica is aware of Nathan as a person, even if she does not perceive Nathan.¹⁷

other third person might consider it). And a first-person account is my account to someone else of my reflection on or observation of my (real or imagined) first-person experience qua first-person experience. So, my wanting a cup of coffee when I am in a normal cognitive and conative condition is a first-person experience; I want the coffee, and the desire is a conscious desire in me. My conscious, introspective reflection on or observation of that conscious desire is a first-person point of view. I can have a conscious state without a conscious reflection on it or observation of it, as I do when I drive to work, conscious of the state of the road but focused intently on the news on the radio, so that I don't attend to the conscious visual states which guide my driving. And my explaining my desire considered as a first-person experience to someone else is a first-person account. Something roughly similar distinguishes experience, point of view, and account for the second- and third-person analogues.

¹⁶Insofar as consciousness comes in degrees, there is some vagueness in this condition. I mean to rule out only cases in which a person lacks sufficient consciousness to function as a person. Drowsiness is not ruled out; certain drugged states, such as the so-called twilight sleep, are. There are also grey areas here. I am inclined to say that a mother has second-person experience of her newborn infant, but that a condition such as advanced Alzheimer's precludes second-person experience. But my intuitions are not strong as regards those cases. (I am grateful to Kathleen Brennan for calling my attention to the need to address this issue.)

¹⁷The scientific descriptions of the mirror neuron system quoted above make it plain that the primary perceptual modality used in conjunction with the mirror neuron system is vision. Nonetheless, it must also be the case that the mirror neuron system can be engaged in conjunction with other perceptual modalities as well. If that were not the case, then congenitally blind children would be autistic. Although there is in fact a significant incidence of autism-like disorder among the congenitally blind, there are also many congenitally blind children

As for condition (2), I take Monica's personal interaction with Nathan to be mediated and indirect just in case Monica has personal interaction with Nathan only in virtue of having personal interaction with a third person Aaron. So condition (2) rules out cases of personal interaction which are mediated by one or more other people, but it does not rule out intermediaries which are machines or mechanical devices, such as glasses, telephones, and computers. If Monica's only contact with Nathan is by computer, but if the computer contact between them meets the other conditions for second-person experience, then Monica's computer contact with Nathan counts as a second-person experience.¹⁸ On the other hand, Monica does not count as having a second-person experience of Nathan if her contact consists just in Aaron's reporting to Monica something Nathan has said or done. In such a case, Nathan is conscious, and Monica is aware of Nathan as a person, in some sense; but this sort of awareness of Nathan is insufficient to count as a second-person experience of Nathan because it is mediated by a third person.

Finally, condition (3) requires that Nathan be conscious for Monica to have a second-person experience of him. It is not necessary, however, that Nathan be conscious of Monica. Polonius has a second-person experience of Hamlet when Polonius is hidden from Hamlet behind a screen, watching Hamlet interact with his mother.¹⁹

So this is how I will understand a second-person experience. This characterization of a second-person experience makes clear that a second-person

who are not autistic. (See, for example, Rachel Brown, Peter Hobson, and Anthony Lee, "Are there 'Autistic-like' Features in Congenitally Blind Children?," *Journal of Child Psychology and Psychiatry* 38 [1997].) Insofar as defects in the mirror neuron system are now thought to implicated in autism, it must be the case that the mirror neuron system can be employed even in the absence of vision. Insofar as written language can stand in for spoken language processing by hearing for those who can read, it is possible that a second-person experience based on written communication also be facilitated by the mirror neuron system.

¹⁸Although Monica does not have sensory perception of Nathan in the process of emailing him (she does not see, hear, touch, taste, or smell Nathan in email communication), that fact does not rule out email contact from counting as second-person experience, provided only that it really is Nathan with whom Monica is in email contact. If someone other than Nathan is emailing Monica in the persona of Nathan, then the email communication doesn't count as Monica's having a second-person experience of Nathan. There are grey areas here, too. If it really is Nathan who is emailing Monica but Nathan is systematically deceiving Monica on all points about himself, it is considerably less clear whether the email communication counts as a second-person experience of Nathan for Monica. I am grateful to John Kavanaugh for pointing out these complexities to me.

¹⁹I am indebted to John Kavanaugh and Adam Peterson for helping me to see that there are complexities here, too. If Nathan sends Monica email communication but then dies in the period between when he sent it and when Monica reads it, so that he is no longer conscious at the time Monica reads his message, does that communication count as Monica's having second-person experience of Nathan? And if it does, is the third of my conditions on second-person experience violated in such a case? I am inclined to say that Monica *does* have second-person experience in such a case but that the third condition is not violated. It is possible for the presentation of a conscious person Nathan to reach another person Monica after some delay, as the email example makes clear. Nonetheless, the Nathan with whom Monica is in contact by this means is a conscious Nathan, not the Nathan who is unconscious at the time of Monica's receipt of Nathan's message. And in this way the third condition is not violated by this example.

experience is different from a first-person experience. In a first-person experience, I am directly and immediately aware of a person as a person, but that person is only myself. It is also clear that a second-person experience is different from a third-person experience. For a third-person experience, one has knowledge of the states of another person but not in virtue of being conscious of that other person as a person. So a second-person experience is different in character from a first-person or a third-person experience because it is necessary for a second-person experience, as it is not for a first- or third-person experience, that you interact consciously and directly with another person who is conscious and present to you as a person, in one way or another.²⁰

We are hardly in a position to give a clear and complete account of knowledge which is not knowledge *that* or even just of the knowledge of persons directly subserved by the mirror neuron system. But however we are to describe the knowledge of persons enabled by the mirror neuron system, in my view, it cannot be captured appropriately as knowledge of either a first-person or a third-person kind. It is more nearly accurate to describe it in terms of a second-person experience. Although the mirror neuron system no doubt also facilitates knowledge in ways which are variants of a second-person experience,²¹ the paradigmatic sort of experience in which one gains the kind of knowledge of persons subserved by the mirror neuron system is a second-person experience. The mirror neuron system seems to be a neural system designed to enable second-person experience and the knowledge of persons it generates.

4. *Second-person Accounts*

With so much clarification of the notion of a second-person experience, I want to consider the means by which the knowledge of persons gained in a second-person experience can be communicated to someone who was not part of the second-person experience in question. It will be helpful to have some short designation for a shareable account of a second-person experience. So call such an account 'a second person account,' by analogy with the more customary notions of first-person or third-person accounts

²⁰In a subsequent chapter, I will explain that a second-person experience is a matter of one person's being in a position to share attention with another person; it is a necessary but not sufficient condition for joint attention.

²¹Annette Baier has suggested to me that one can mindread the mind of a person who is sleeping, to some limited extent, but the experience one has of a sleeping person is not a second-person experience, as I have described second-person experience. It may also be the case that the mirror neuron system enables us to have a quasi-personal experience of things which are not persons, as when one has a sense of the personality of a robot, for example, or even when one has a sense of the personality of a building. But such experiences would not count as second-person experiences on my account. So there may be a broad genus of experiences of persons and quasi-personal things which is facilitated by the mirror neuron system and which enables a person in such experience to mindread, and second-person experience may be only one species within this genus. If so, second-person experience nonetheless seems to be the exemplar on the basis of which the other species within the genus can be understood. I am indebted to Alan Musgrave for calling my attention to the need to make this point.

or reports.²² A second-person account is not itself a second-person experience, but it is a report of a second-person experience communicated to someone else.

But why think that there is such a thing as a second-person account? What would differentiate it from either a first-person or third-person account? In a first-person account, I give a report about some first-person experience of mine. In a third-person account, someone gives a report about some feature or condition of someone else. What is there left for a second-person account to do? Why wouldn't a report of a second-person experience simply be one more first-person account—if I report the conscious states which I had in the second-person experience²³—or one more third-person account—if I report something about some other person which I observed during my second-person experience of her? Why couldn't a second-person experience be represented adequately in ordinary expository prose²⁴ of either the first-person or the third-person variety?

If everything knowable in a second-person experience could be expressed in terms of knowing *that*, either with regard to oneself or the others with whom one interacts, then no doubt a second-person experience could be captured by first-person and third-person accounts, and there would be no room for anything that could be considered a second-person account. But the cumulative weight of the evidence I have given about the knowledge of persons is sufficient to show its distinctive character. Second-person experiences cannot be reduced to first-person or third-person experiences without remainder, and so they cannot be captured by first-person or third-person accounts either.

²²It is no part of my distinctions among first-person, second-person, and third-person experiences, points of view, and accounts to suggest that there is opposition among these so that an agent who adopts one of these about something is thereby precluded from adopting any of the others. So, for example, someone who has first-person experiences of beliefs and desires might also consider even his own beliefs and desires from a third-person point of view, as a neurologist would. It is also possible to combine first-person, second-person, and third-person perspectives in an iterative fashion. For example, I might tell you about my introspective experiences of listening to music; then you would have a second-person experience of me which included my first-person account. Or I might introspect reflectively on my second-person experience of you, considering how I really felt about what you said. Then I would have a first-person point of view about a second-person experience. Religious believers can consider religion from a first-person point of view, where that point of view includes reflection on what they take to be their own second-person experiences connecting them in some fashion with the person of God. I am indebted to Al Plantinga for prompting me to consider this issue.

²³I am not here violating the explanation of first-person accounts given above, because, insofar as what is at issue is my conscious states, these are states I could have had during a hallucination of another person, when no other person was present. So the experience being reported in this first-person account is one I could have had by myself.

²⁴For purposes of this chapter, I take 'expository prose' to mean prose which does not constitute a story and which does not fall into some other genre of literature (such as poetry) that is story-like in its artistry. I will describe accounts that are formulated in terms of knowing that something or other is the case as presented in expository prose. I am therefore using 'expository prose' as a term of art, *faute de mieux*.

To some people, this conclusion might seem equivalent to the claim that a second-person account is impossible. If the knowledge of persons is difficult or impossible to express in terms of knowing *that*, how can any account of it be given at all? If the knowledge of persons is subserved by the mirror neuron system, then it seems as if this knowledge could not be shared by anyone who was not involved in the second-person experience in question.

In one sense, this conclusion is right. There is no way to give an adequate account in expository prose of a second-person experience. But it does not follow that no account of it is possible at all. While we cannot express the distinctive knowledge of such an experience as a matter of knowing *that*, we can do something to re-present the experience itself in such a way that we can share it with others who were not part of it, so that the knowledge of persons garnered from the experience is also available to them.²⁵

This is generally what we do when we tell a story.²⁶ A story takes a real or imagined set of second-person experiences and makes it available to a wider audience to share.²⁷ It does so by making it possible, to one degree or another,²⁸ for a person to experience what it would have been like for her if she had been an on-looker in the second-person experiences represented in the story.²⁹ That is, a story gives a person some of what she would have

²⁵In this respect, a second-person experience differs from a first-person experience of the sort we have in perception. There is no way for me to convey to someone who has never seen colors what I know when I know what it is like to see red.

²⁶I am not here implying that the only function, or even the main function, of narratives (in one medium or another) is to convey real or imagined second-person experiences. My claim is just that much less is lost of a second-person experience in a narrative account than in a third-person account, *ceteris paribus*.

²⁷Someone might object here that any information which could be captured and conveyed by a story could also be conveyed by an expository account. I have no good argument against this claim, for the very reasons I have been urging, namely, that we can't give an expository description of what *else* is contained in a story; but I think the claim is false. Consider, for example, some excellent and current biography of Samuel Johnson, such as Robert DeMaria's *The Life of Samuel Johnson: A Critical Biography* (Oxford: Blackwell, 1993), and compare it to the pastiche of stories in Boswell's *Life of Johnson*, and you see the point. There is a great deal to be learned about Johnson from DeMaria's *The Life of Samuel Johnson*, but Boswell's stories give you the man as the biography can't.

²⁸The degree will be a function not only of the narrative excellence of the story but also of the sensitivity and intelligence of the story-hearer or reader as well.

²⁹For an initial presentation of this idea, see my "Second Person Accounts and the Problem of Evil" in *Perspectives in Contemporary Philosophy of Religion*, Schriften der Luther-Agricola-Gesellschaft 46, ed. Timo Koistinen and Tommi Lehtonen (Helsinki: Luther-Agricola-Society, 2000), pp. 88–113; reprinted (among other places) in *Faith and Narrative*, ed. Keith Yandell (Oxford: Oxford University Press, 2001), pp. 86–103. (The idea was originally presented in my Stob lectures, which appeared together with subsequent Stob lectures in *Seeking Understanding: The Stob Lectures 1986–1998* [Grand Rapids, MI: Eerdmans, 2001], pp. 497–529.) Cf. also, Kenneth Walton, "Spelunking, Simulation, and Slime: On Being Moved by Fiction," in *Emotion and the Arts*, ed. Mette Jhorte and Sue Laver (New York: Oxford University Press, 1997). For a helpful discussion of the positions of Walton and others in connection with simulation, see Alvin Goldman, "Imagination and Simulation in Audience Responses to Fiction," in *The Architecture of the Imagination: New Essays on Pretence, Possibility, and Fiction*, ed. Shaun Nichols (Oxford: Clarendon Press, 2006), pp. 41–56.

had if she had had unmediated personal interaction with the characters in the story while they were conscious and interacting with each other, without actually making her part of the story itself. The re-presenting of a second-person experience in a story thus constitutes a second-person account. It is a report of a second-person experience which doesn't lose (at least doesn't lose entirely) the distinctively second-person character of the experience.

We can put the point I am trying to make the other way around by noticing what we lose if we try to reduce a narrative to expository (that is, non-narrative) prose. If we boil a story down to non-narrative propositions, so that all the knowledge it conveys is knowledge *that*,³⁰ then we lose the knowledge that the story distinctively provides just because we cannot convey by means of expository prose alone even a simulacrum of a second-person experience.³¹ A real story cannot be captured in a set of non-narrative propositions designed to summarize it; a prose summary is no substitute for the literary work itself.

Why should this be so? Why should it be the case that knowledge which is subserved by the mirror neuron system in second-person experience should also be available to one extent or another through stories?

Here it is helpful to think about the neural systems for perception. For example, recent studies of vision have investigated what happens when a person sees a complex object and then watches that object rotating in space. Studies on visual imagery have made it clear that those parts of the visual system which are involved in the sight of the rotation of objects are also the parts of the system which are used when a person imagines the rotation of the imagined objects.³² It is now clear that the visual system can be used for the actual visual cognition and inspection of objects in physical reality, or the same neural system can be used to form images of objects and to rotate those imagined objects in the mind.

Nothing keeps us from supposing that the mirror neuron system which subserves the knowledge of persons can also be used in this dual purpose way, for the appropriation of second-person experience either in actuality or in thought only. If this is right, then it might be that when we engage with fiction, we also employ the mirror neuron system, but in an alternate mode, just as the visual system is employed in an alternate

³⁰Someone might suppose that we could turn any story into expository propositional form just by prefixing to the story the words 'It is true in this story that' and then filling out the remainder of the sentence with a conjunction formed from all the sentences in the story. But this swollen sentence would not constitute an example of expository prose since it would contain a story within it. And, in any case, it would not be true that all the knowledge in the story was conveyed by means of propositions *that*. The story would be embedded in a proposition *that*, but the distinctively Franciscan knowledge of the story would be conveyed by the story itself.

³¹I can't, of course, specify what that knowledge is, since to do so would be to translate it into terms of knowledge *that*.

³²See, for example, Stephen Kosslyn, *Image and Brain: The Resolution of the Imagery Debate* (Cambridge, Mass.: MIT Press, 1994).

mode when we imagine the rotation of an imagined object. If the mirror neuron system is like the perceptual system in this regard, then the same system which explains our knowledge of persons in second-person experience could also explain our appropriation of the knowledge of persons through fiction.

I am not claiming here that the mirror neuron system is used in the appropriation of fiction to give us actual second-person experience. The appropriation of fiction doesn't give us real second-person experience, any more than the imagined rotation of imagined objects gives us real visual inspection of such objects. I mean only that when fiction functions as a second-person account and we gain some knowledge of persons from fiction, one possible explanation for why we do so is that the mirror neuron system can also be used in an alternate mode, for the engagement with fiction.

5. Conclusion

So there is a broad array of knowledge commonly had by human beings which cannot be formulated adequately or at all as knowledge *that*. One important species of such knowledge is the knowledge of persons. In normally functioning human beings, such knowledge has a source in the mirror neuron system, which enables a person to know the actions, intentions, and emotions of another person in a direct, intuitive way analogous in some respects to perception. Such knowledge of persons is first gained through second-person experiences. And although the knowledge gained through second-person experiences is not reducible to knowledge *that*, it can be made available to others who lack the second-person experiences in question by means of a story of one sort or another that re-presents the experience. A story is, then, a second-person account.

Second-person experience and stories thus play a role with regard to the knowledge of persons analogous to the role played by postulates and arguments with regard to knowledge *that*. Experience and stories, on the one hand, and postulates and arguments, on the other, are devices for the acquisition and transfer of knowledge, although the kind of knowledge acquired or transferred and the sort of acquisition or transfer involved differ.

These two types of knowledge, knowledge *that* and knowledge of persons, are clearly not in opposition to each other; rather, as the studies on autism show, both are needed for adequate understanding of the reality in which we live.

And so it is important for us to realize and take seriously the possibility that however valuable and important the kind of knowledge given us by those academic disciplines which focus on knowledge *that*, including the sciences, that sort of knowledge does not exhaust all there is to know which is important to us. In fact, if the major monotheisms are right in supposing that the ultimate foundation of all reality is a God, something with a mind and a will, then the sciences, whose focus is only on knowledge *that*, will not be able to teach us all there is to know even about the

foundations of the universe. If the major monotheisms are right, then even to understand what is ultimately real, we will need to have not just physics and cosmology but also the non-propositional knowledge of persons, which cannot be mediated to us by the sciences.³³

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³³This paper is also scheduled to appear in *Science, Reason, and Truth*, ed. Marco Bersanelli and Peter van Inwagen (forthcoming).