# THE MEANING OF THE SOCIAL BODY: BRINGING GEORGE HERBERT MEAD TO MARK JOHNSON'S THEORY OF EMBODIED MIND

KELVIN J. BOOTH



The body that creates meaning is not only, as Mark Johnson argues, an emotional, kinesthetic, and aesthetically experiencing body; the body that creates meaning is a social body. This paper uses George Herbert Mead's social theory of meaning, itself an embodiment theory, to develop the social aspect of Johnson's approach to embodied mind. The social body develops through what Mead calls the "conversation of gestures," wherein gestural meaning is a social form of embodied meaning. Symbolic meaning grows out of gestural communication through taking the role of the other, which is a result of the mimetic synchrony between child and adult. Especially important in this synchrony is the gesture of pointing, where the meaning of pointing is shared between child and adult. Understanding symbolic meaning as a form of embodied communication accomplishes what Johnson sets out to accomplish; it preserves the continuity between symbolically mediated cognitive processes and pre-symbolic cognition.



WILLIAM JAMES STUDIES • VOLUME 12 • NUMBER 1 • SPRING 2016 • PP. 1-18

n his book *The Meaning of the Body*, Mark Johnson brings together a number of important strands in cognitive science and the phenomenology of the body, and integrates them into a pragmatist philosophy of mind (Johnson, 2007). Meaning is grounded in embodied movement, emotion, and feeling, and it finds expression in what Johnson calls the aesthetics of human understanding. The word of in the title of Johnson's book should not be read as the meaning that a body has as an object in the world. Rather, meaning is *created by* the body. This approach breaks down any dualism between bodies and minds, as well as other persistent dualisms, such as concept and emotion and inner experience versus an external world. Johnson especially criticizes the mental representation theory of mind, which reinforces such dualisms. Using James and Dewey as a basis, as well as his own previous work with George Lakoff on metaphor and embodiment, Johnson offers a non-representational view of mind that expands the idea of meaning well beyond concepts and propositions.

Johnson's wide-ranging book provides an excellent basis for future developments in a pragmatist cognitive science, I want to focus on one element in particular needing further development—the social dimension of the theory of mind and meaning. Johnson does bring in social elements to some extent, for instance when he discusses infant imitation, and then again as one element of distributed cognition, but he does not offer an extended discussion of the social element of embodied condition. My intention here is to find a place within Johnson's pragmatist view of embodied mind for Mead's social theory of mind and meaning, which is clearly an embodiment theory since it is based on the gesture as bodily movement. The body that creates meaning is not only an emotional, kinesthetic, and aesthetically experiencing body; the body that creates meaning is a social body.

# **EMBODIED MEANING**

Johnson uses the word *meaning* very broadly. Meaning concerns the significance of our interactions with our environment, and the consequences of these interactions for actual and possible

experience. Linguistic meaning is only one dimension of these interactions with our environment, just one part of a "vast, continuous process of immanent meanings" (Johnson 2007, 10). Meaning "is not just a matter of concepts and propositions, but also reaches down into the images, sensorimotor schemas, feelings, qualities, and emotions that constitute our meaningful encounter with the world" (ibid., ix). This embodied view "sees meaning and all our higher functioning as growing out of and shaped by our abilities to perceive things, manipulate objects, move our bodies in space, and evaluate our situation" (ibid., 1). In short, meaning is a relation of the active body encountering and structuring the world. This embodied view of meaning is, he says, "the only way to preserve the continuity between so-called higher and lower cognitive processes.... The 'higher' develops from the 'lower'" (ibid., 25). In terms of human ontogeny, our abilities to engage in developed symbolic communication grow out of our embodied kinesthetic and emotional interaction with the people and objects around us beginning in early infancy. In evolutionary terms, our distinctly human linguistic and conceptual meanings evolved from a pre-linguistic level of embodied meaning that we likely share with many animals, particularly our closest primate relatives.

Meaning for Johnson, and for pragmatism in general, is a relation of organism-environment, where we have not two separate things—the organism and the environment—but a unified relationship within which the organism and the environment have interdependent existence and function. An environment is always an environment of an organism, and the living organism is of its environment, not just in it. Similarly, there is no separation between mind and world. Meaning, as a mode of human life activity, is a way that the body is of its world, and how it lives its world. Dewey talks of immediate meaning that is prior to conceptual understanding and prior to the distinction between subject and object, mind and world. Subject and object are abstractions arising out of our linguistically mediated experience and are not characteristic of immediate embodied experience. Though a naturalist theory of mind supported by most mainstream philosophy rejects the dualism of mind and

body, Johnson notes that dualism creeps back into philosophy in the form of widespread acceptance of a representational psychology. This psychology is based on the idea of mind and world as being in some way separate from each other, with an external world being experienced by way of internal mental representations. The transactional embodied view developed by Johnson and based on the classical pragmatists precludes a representational psychology.

Some of Johnson's criticisms of mental representation are similar to criticisms that Dewey made of the psychology current in his day in his well-known reflex arc article (Dewey, 1896). Dewey rejects a standard notion of stimulus and response in which a stimulus is an object outside the body, the response belongs only to the organism, and the stimulus and response need to be mediated by an intervening third thing such as a concept or an idea. The need to posit mental representations or an information-processing faculty that mediates between an external stimulus and bodily response are present day examples of what Dewey was worried about. In Dewey's view, stimulus and response are functional factors or "divisions of labor" within a developing coordination. The stimulus is the organism-environment relationship in the process of falling away from equilibrium, setting a problem for the organism; the response is simultaneously a movement of the same organism-environment relation toward re-establishing integration. Meaning lies in the integrative response; it is part of the reintegration of experience. The response determines, or gives meaning to, the stimulus as a stimulus. William James also explicitly rejects a representational psychology, saying that it violates our sense of life. Someone sitting in a room reading a book "knows of no intervening mental image but seems to see the room and the book immediately just as they physically exist" (James 1912, 10-11). A representational psychology posits a false diremption between consciousness and content, as if consciousness is a self-existent thing that needs something outside itself as content. In reality, consciousness and content are the same thing "taken twice." A theory of embodied mind rejects any such cleavage within human experience.

Developing a transactional view of meaning based on work by Dewey and James, Johnson builds on the work he and George Lakoff have done on *image schemas*. For instance, because we are the kind of bodies that we are, we tend to think in terms of Up-Down, Toward-Away from, Center-Periphery, and In-Out, to name just a few of the many schematic structures of meaning-making that he and Lakoff have uncovered (Lakoff and Johnson 1999, 1980). Johnson brings together this work with Shaun Gallagher's idea of the body schema, which Gallagher understands as a "system of sensory-motor capacities," a set of "tacit performances preconscious, sub-personal processes that play a dynamic role in governing posture and movement" (Gallagher 2005, 26). Gallagher distinguishes the body schema from the body image. The body image is one's own body as an object of awareness. In contrast, the body schema functions without becoming an object of awareness. Gallagher's idea of the body schema is similar to what Samuel Todes calls the "subject-body," which is the body I am, not the body I have (Todes 2001). The subject-body or body schema, as well as Johnson's image schemas, should be understood not as static structures, but as dynamic capacities for movement through which we engage our world. To be alive is to be moving. Maxine Sheets-Johnston refers to a "primal animation" that is the ground of experience and sense-making (Sheets-Johnson 1999). At its root, meaning develops out of a dynamic capacity for movement of the body schema.

Coordinated bodily movement is anticipatory. A coordinated response to a change in the environment requires anticipating how events are immediately about to unfold and integrating these anticipations into ongoing activity. To catch a ball, I must anticipate its trajectory. To catch a rabbit, a coyote must anticipate its movement and make continual adjustments. We approach a household appliance with an organized set of expectations of how we will use it so that we are ready to use it when we reach it. When an obstacle or unexpected interference interrupts activity, there is, in Mead's terms, an "impulsion" to complete the anticipated act. Habits probe the situation, looking for a way to complete

themselves, and anticipations are experienced as felt possibilities toward a reorganization of the situation. There are feelings of welcoming and rejecting as the central nervous system "tries out" different incipient responses and we anticipate their outcomes. Eventually a definite course of activity is recovered. It is important to note that this process constitutes a kind of "thinking" that occurs on a pre-reflective level. Anticipations are not "mental" in any disembodied sense; they are not mental representations. They are felt possibilities of movement in the body schema or subject-body. The living being thinks with its movements. (ibid.) More accurately, it thinks with its incipient movements and anticipations.

Johnson emphasizes that embodied meaning is emotional in character. James and Peirce talk of doubt as rooted in a feeling of hesitancy, and belief as a feeling of assurance. Johnson draws on the work of Antonio Damasio and other cognitive neuroscientists to show how emotions underlie thinking. Following Damasio's terminology, emotion is mostly below the level of consciousness. Feeling is the conscious awareness of emotion, and "by the time we actually *feel* an emotion much of the essential life-sustaining bodily adjustment has already occurred" (Johnson 2007, 66). We make sense of things through our mostly unconscious emotional involvements with the world. Though emotion may be largely unreflectively experienced, "it is nonetheless *meaningful* to us, insofar as it constitutes an important part of our maintaining a workable relation to our surroundings" (ibid., 68).

To sum up some key points of Johnson's embodied view of meaning, meanings are grounded in transactions of body-world that are pre-linguistic and emotional, they are based in bodily movement and anticipation, and they gain structure through the body schema or subject-body.

### **SOCIAL MEANING**

The human subject-body is a social body; it is born and develops by being embedded in an emotional network of social attention and communication. Human communication is an intercorporeal affair, a scene of bodies in relationships of movement and

anticipation. Embodied social relationships, for both human and nonhuman animals, are enacted through what Mead calls a "conversation of gestures." A gesture is any movement of one organism that is responded to by another. It is that part of a wholebody movement that calls out a response in another individual. A movement is not a gesture on its own. It is a gesture when and because it evokes some response in another organism. Gestures can be limb movements, whole-body attitudes, postures, facial expressions, direction of travel, or any movement of the body. The gesture is not the whole act or movement, it is the beginning of a movement of one organism that evokes a response in the other. Mead calls these beginnings of movements "attitudes." A gesture is a stimulus, understood in Dewey's transactional understanding of stimulus from his reflex arc paper. The beginning of a movement of the gesturing individual is that part of a developing coordination of the second individual that is falling away from an equilibrium and that demands a reinstatement of equilibrium through a response.

A conversation of gestures involves the mutual adjustment of at least two organisms to each other. As one organism begins a movement, the second organism adjusts itself as it anticipates the full movement of the first individual. The beginning of the second organism's response then evokes an adjustment on the part of the first organism, which then stimulates a further adjustment by the second organism, and so on. In Mead's example of a dog-fight, one dog is ready to spring at another's throat; it has the attitude of springing. The "reply" from the other is to adjust its position or attitude in expectation of the full movement. The first dog then alters its response accordingly in midstream. In humans, we can find a similar conversation of gestures in expert martial art contests where there is no time to think. Each participant responds immediately to subtle beginnings of movements of the other. Less dramatically, in everyday life this same process characterizes the unconscious adjustments we make in bodily posture, facial expressions, and tone of voice whenever we engage in social intercourse. As a result, a conversation of gestures is not strictly speaking a "conversation" in the sense of taking turns. It is a seamless flow of simultaneous

mutual adjustment of two organisms to each other in a single system of communication. It is more like a dance than a conversation. As with any life activity, each gesture is a transaction, an organism-environment relationship. In the dance of gestures, stimulus and response are functional distinctions from within the seamless flow of movement of the organism-environment relationship. A response of one organism is a stimulus for the other organism, so that stimulus and response interpenetrate each other. The conversation of gestures develops as a single dynamic system of communication and embodied meaning.

For Mead, the gesture of one individual means the anticipated outcome of the social act for the other individual. Recall that embodied meaning is the significance of an object or an event for actual or possible experience. It is an anticipated outcome of an organism's interaction with some aspect of its environment. In a conversation of gestures, the movements of one individual are part of another individual's environment. They have meaning for that other individual in relation to the anticipated outcome of the social act. The movements of the first individual are given meaning by the second individual through its immediate responses to the initial movements of the other, and according to the anticipated outcome of that movement. For example, a young chimpanzee's raised hand means the initiation of play to another young chimp, toward whom the first animal directs its movements, because play involving both chimps usually follows the raised hand. We can name this kind of social meaning *gestural meaning*. Gestural meaning is a social form of embodied meaning. It is embodied both in the sense that the first animal moves part of its body, and in the sense that the second animal's response is a bodily response. Gestural meaning is not something "mental." It is inter-corporeal. It is exists in the relationship of bodily gestures of at least two organisms to other elements of the social act.

At its most basic level, the meaning of a gesture does not require any sense of self-reference by the gesturing organisms. Nonhuman animals, according to Mead, respond only to the gesture of the other, but don't respond to their own gestures. In the dog-fight

example that Mead uses, each dog is totally absorbed in the movements of the other dog. It does not "think about" its own responses. Also, there is no imitation occuring. Each gesture calls out a different response in the other. Similarly, in the martial arts contest, or when guarding the hockey net against a rushing opponent, there is no time to think about one's responses. Responses are immediate and unself-conscious. And of course we know that much of our non-verbal communication with other people takes place without our conscious awareness. In most (perhaps all) nonhuman animal communication, gestures are meaningful to others while the gesturing individual does not indicate this meaning to itself (Mead 1934, 81; see also Mead 1964, 110-11). That is, in Mead's terms, there is meaning but no self-consciousness of meaning. If an animal cannot indicate to itself the meaning that its gestures have for others, then the animal cannot self-consciously communicate meaning. In other words, the gesture (in Mead's terms) is not symbolic. Nevertheless, this mutual absorption in immediate bodily experience forms the inter-corporeal ground of symbolic meaning.

# TAKING THE EMBODIED ROLE OF THE OTHER

Almost as soon as infants are born, they enter into communicative gestural relationships with adults and are capable of rudimentary imitation. Johnson draws on the work of Andrew Meltzoff and his associates, who discovered that infants even as young as twelve days are able to imitate tongue protrusions and open mouth gestures of an adult (Meltzoff & Moore, 1977). Their later studies found the same phenomenon occurred just hours after birth. Imitative abilities develop as infants gain more control over their movement, so that after a few months they are able to imitate tongue rolling, tongue protrusions to the side of the mouth, and simple hand movements (Meltzoff & Moore, 1989, 1994, 1997). This basic mimetic ability reveals an embodied relationship that Johnson calls a "primary togetherness" (Johnson 2007, 38). For Meltzoff and Moore, it is based on what they call a "supermodal framework" that can unify visual cues and motor responses. This, they claim, allows

infants to have a sense of "like me" very early in their development, giving them the ability to perceive an equivalence between adults and themselves. They note that infants sense this equivalence only with other humans, and not, say, with inanimate objects. But this ability to perceive such an equivalence itself requires explanation. Positing something like a supermodal framework does not do enough explanatory work. A sense of "like me" entails a sense of "me" as an object of awareness. In Gallagher's terms, this would require the infant to have a body image before it had developed a body schema. It also involves a rather sophisticated conceptual comparison—that something else is like this thing that I sense as "me." Furthermore, the child would have an apprehension of its own physical and conscious states. Very young infants do not seem to have these abilities, and it would be very surprising if they did. Moreover, as in Mead's examples of the conversation of gestures, each individual is focused completely on the movement of the other individual, and not on its own movements. According to Mead, socalled "like-me" abilities can only develop through social interaction rather than serving as the basis for social interaction.

To understand imitation in children, Marcel Kinsbourne proposes that there is an "interactional synchrony between child and adult" (Kinsbourne 2005). This is similar to Johnson's idea of primary togetherness, with the advantage that it is explicitly embodied. Kinsbourne suggests that "there is a core predisposition of the human brain to entrain with conspecifics" (ibid., 68). And by "entrain" he means the child's synchronization with the bodily movements and facial expressions of others. Why conspecifics? According to Kinsbourne, infants tend to synchronize their movements with a source of arousal. Babies are genetically predisposed to find the faces of caregivers arousing, so they entrain with adult facial expressions (Meltzoff 1995). In early infancy, synchrony is restricted to simple behaviors, such as the basic mouth and tongue movements observed by Meltzoff, because these are some of the few movements over which a newborn has a degree of control. As the child matures, interactional synchrony grows more complex and extends to all kinds of bodily movements and gestures.

Much of this synchrony goes on unconsciously as children adopt the mannerisms of their family and culture. Almost from birth, then, the body schema of the infant is synchronizing to the movements of its caregivers. The body schema becomes increasingly social—thus allowing the emergence of a body image—as the child matures.

Is there something about the human body, particularly the human brain, which forms the basis of this embodied synchrony in humans? One clue is our enjoyment of repetition. We appreciate our routines, we like to practice skills, and we are drawn to rhythms and rituals. Of course any animal will tend to repeat what it enjoys or is trained to repeat, but human repetition is often just for the sake of repetition itself, regardless of the intrinsic rewards of the particular activity. Why might this be? The structuring of an unstructured situation, including that gained through repetition, can be experienced as rewarding. Most animals come into the world with genetically established behavioral structures already in place. This kind of genetic inheritance, of course, is largely lacking in humans. The value of repetition is that it brings structure to experience and activity that would otherwise be lacking.

Kinsbourne calls repetition for repetition's sake "selfimitation" (Kinsbourne 2005, 171). We are imitating our own actions. At the same time, we can see imitation as a kind of repetition. Instead of repeating one's own behaviors, we repeat the behavior of others. When we see imitation as a instance of repetition, we can see how it provides needed structure to the developing child. Imitation, or inter-corporeal synchronization, fulfills the same role as repetition, providing structure to behavior and experience. Though imitative behaviors have been reported in other animals, particularly chimpanzees, this is usually within a broad definition of what counts as imitation. When imitation has been tested in controlled laboratory environments and under a more restricted definition closely resembling human imitation, it can be open to alternative interpretations. Even if it is imitation similar to humans, it occurs only after training. Animals do not do it easily. In contrast, human children imitate spontaneously, easily, and often.

Two characteristics of the human brain likely enable imitation. One is the great plasticity of the human cerebral cortex, which allows a vast behavioral space of unstructured possibilities for human behavior and cognition. This lack of structure provides the neural matrix for repetition to take hold and provide cognitive and behavioral structure. The second characteristic of the cerebral cortex is its extensive overlapping of sensory and motor modalities through its highly complex interconnections with different areas of the brain, so that sensory modalities interact easily with motor modalities. This interaction results in the production of Meltzoff's "supermodal framework," which allows the repetition of others to serve the same structuring function of repetition. Mirror neurons, which fire in similar ways when one is performing an action and when one is observing the action done by others may help here, too. The complexity and lack of structure of the infant brain, then, make imitation both possible (due to its openness,) and necessary for human behavioral development because of the lack of existing structure. Nevertheless, overlapping of modalities and openness to mimetic structure does not necessarily yield anything like a sense of "like-me." Something else is required.

A further human ability that may be more closely related to imitation that at first may seem to be the case is the act of declarative pointing — pointing to show something to someone else. This gesture is a request or invitation for another individual to synchronize with or imitate one's own attention. While imitation is a mutual doing in which the child synchronizes her behavior with the adult, pointing is a request for a mutual undergoing: for the adult it is a request to synchronize the experience of what is pointed at with the child's experience of that object. Since any act simultaneously involves doing and undergoing, it is no stretch to think that an organism that tends to synchronize its doings with others would also want to synchronize its undergoings. Declarative pointing is one way to achieve this. Examined in this light, repetition, imitation, and declarative pointing are all manifestations of a generalized human ability and desire for synchrony of the body schema with the bodies of others, an ability that is based in the peculiar nature of the human brain. This embodied synchrony provides the basis for the emergence of joint attention, and for taking the role of the other in human cognitive development. Taking the role of the other gives rise to symbolic meaning out of gestural meaning.

Michael Tomasello and his associates have carried out an extensive series of investigations of the development of joint attention in children. In the process, he has articulated a view of cognitive and social development that is highly compatible with Mead's theories. We can see the gradual development of the ability to take the role of the other growing out of interactional synchrony. Early social interaction between child and adult is dyadic: the child directs her attention either toward the adult or toward an object, but not to the relationship between adult and object. Between 9 and 12 months of age, attention becomes triadic. Here, children start checking and sharing adult attention, first to nearby objects, then to objects at a distance (Carpenter, Nagell & Tomasello, 1998). In Kinsbourne's terms, the child synchronizes her attention-paying behavior with that of adults. The child also begins showing objects to adults by holding them up to the adult's gaze. The child wants to have the adult's attention synchronized with her own attention toward objects presently at hand. The child and adult are engaged in a cooperative social act and the development of shared gestural meanings. A few months later, this synchronized attention becomes directed to objects at a distance. The direction of the adult's attention toward distant objects is a gesture that means a certain outcome of the social act involving those objects. Following an adult's gaze to a distant object requires the child to understand what the adult is attending to within a range of possibilities in the visual field. In some experiments, children also begin to expect certain outcomes from adult actions and will complete those actions if the adult fails to do so. Tomasello claims that the child begins to understand what the adult is intending as well as attending (Tomasello 1995). Nevertheless, this is still on the level of gestural meaning. The meaning of the gesture of the adult is the anticipated outcome of the social interaction, understood in the context of embodiment.

At 12 to 15 months of age, the child starts directing adults' attention by pointing to a distant object (Tomasello, 1995). The child now understands that adult attention and intentions can be directed to the same thing at a distance to which the child is already attending. This is a request or demand for shared intention. Joint attention becomes *joint intention*. There is a sense of *we*, and in Tomasello's phrase an activity is understood by the child as "what *we* are doing together." This shared intention forms the basis for symbolic communication, because it involves shared attitudes, anticipations, and the embodied meanings of shared gestures.

# THE EMBODIED SYMBOL

Declarative pointing is arguably the first symbolic act of a child, and perhaps was one of the first kinds of symbolic acts in human evolution. If this is true, then the original symbolic act is clearly an act of the body, not of some disembodied mind. In the act of pointing, both people respond to the gesture as a pointing so that they are both attending to the same thing. The pointing gesture of one individual stimulates in the other the same attitude of attending that it does in the person who is doing the pointing. The person doing the pointing expects the other to respond in this way. Pointing thus means the same to both—it means, "Look over there." And each person knows that it means the same to both. Tomasello calls this mutual understanding "role reversal." Each person involved in the pointing can put herself in the role of the other. Mead calls it taking the role or the attitude of the other. This role reversal is what makes a gesture, vocal or otherwise, fully symbolic in Mead's use of the term. The child is able to direct the adult's attention with symbols (pointing, using words or sounds, drawing pictures, etc.) just as the adult can use the same symbols to direct the child's attention. Gestural meaning, which is embodied social meaning, is now symbolic meaning, but it is still gestural nonetheless.

Though symbolic meaning is seemingly detached from embodiment because it can be abstractly represented in ways not tied to any particular bodies or objects, it is still rooted in embodied meaning. It is rooted in the felt bodily responses of the people using and undergoing symbolic communication. A physical symbol might not be connected to a gesture in an obvious way. However, every symbol is the result of an embodied act of creation. It is a trace or deposit in the physical and social world left by acts of symbolic communication that are, at root, gestural in Mead's sense of gesture. It is a physical element in a conversation of gestures where that element evokes the same response in the person creating the symbol as it does in the person receiving it.

Pointing *refers*, or directs, the attention of the other to an object. The *reference* of the pointing is not just to the object; it is to the object as it functions in a later stage of the cooperative act. All symbols are in this sense a form of pointing or referring. For Mead, to think about something using symbols is to point things out to oneself. The symbolic *meaning* of pointing is not a "representation" in the sense of a correspondence between a mental symbol and an "external" object. It is the relationship of the present social act to a mutually anticipated outcome. But because symbols are abstract and cannot be guaranteed to evoke any particular bodily response, it is legitimate to say the symbols *represent* objects as they function in social interaction: they stand for objects other than themselves. Symbols are indeed representations, but they are not *mental* representations. Symbols are public objects with shared meanings in a social world.

Obviously, one of the most important objects of adult attention is the child. As the child follows adult attention and intentions back to herself, she develops a growing sense of herself as an object of attention, and thus an object of her own attention. It is not just her physical body that is the object of social attention, for a child can easily pay attention to parts of her own body without following the attention of others. The adult is most interested in the subjective experiences and intentions of the child. The child learns to follow adult attention back to her own subjectivity and to herself as an intending being, and in the process develops self-awareness. As this sense of self-awareness grows, the child also begins to understand that others have selves and intentions as well. She learns to direct her attention toward their intentions and feelings. This is where a

true sense of "like me" emerges. The child's understanding that the adult is "like me" emerges at the same time as there appears a "me," the self-as-object that the adult is like. The child is now able to take the role of the other in social relationships toward other people and herself in a shared world, and in the process becomes a self. The self develops *out of* shared embodied meanings. As self-awareness grows, so does the awareness of one's own meanings. Where animals and infants have meanings but no consciousness of meanings, the self-aware human has consciousness of meanings and can intentionally communicate meanings through symbols.

To sum up, we can start with Johnson's basic framework of embodied meaning as transactional, emotional, and grounded in bodily movement, but we should also incorporate into this framework Mead's idea of the gesture, his theory of taking the role of the other, and the development of symbolic communication. Symbolic communication is grounded in pre-symbolic embodied meaning of a socialized body schema. Each stage of development toward symbolic communication is a development of the gesture, which is the meaningful movement of the body. This understanding of the development of symbolic communication accomplishes what Johnson sets out to accomplish through a theory of embodied meaning. It preserves the continuity between so-called higher and lower cognitive processes, where the higher develops from the lower, both in individual human cognitive development and in the evolution of the human species.

Thompson Rivers University Kbooth@tru.ca

### REFERENCES

Carpenter, M., K. Nagell and M. Tomasello. .1998. "Social Cognition, Joint Attention, and Communicative Competence from 9 to 15 Months of Age." *Monographs of the Society for Research in Child Development* 63: 1-143.

- Dewey, John. 1896. "The Reflex-Arc Concept in Psychology." *Psychological Review* 3: 357-70.
- Ferarri, Pier F., Elisabetta Visalberghi, Annika Paukner, Leonardo Fogassi, Angela Ruggiero and Stephen J. Suomi. 2006. "Neonatal Imitation in Rhesus Macaques" *PLOS Biology* 4 (9): e302. doi:10.1371/journal.pbio.0040302.
- Gallagher, Sean. 2005. *How the Body Shapes the Mind*. Oxford: Oxford University Press.
- James, William. 1912. "Does Consciousness Exist?" in *Essays in Radical Empiricism*, 1-38. New York: Longmans, Green & Co.
- Johnson, Mark. 2007. *The Meaning of the Body*. Chicago: University of Chicago Press.
- Kinsbourne, Marcel. 2005. "Imitation as entrainment: Brain mechanisms and social consequences." in *Perspectives on Imitation: From Neuroscience to Social Science*. Vol 2., edited by S. Hurley and N. Chater, 163-172. Cambridge, MA: MIT Press.
- Lakoff, George and Mark Johnson. 1980. *Metaphors We Live By*. Chicago: University of Chicago Press.
- Lakoff, George and Mark Johnson. 1999. *Philosophy in the Flesh*. New York: Basic Books.
- Mead, George Herbert. 1934. *Mind, Self and Society*. Edited by Charles Morris. Chicago: University of Chicago Press.
- ——. 1964. *Selected Writings* (Andrew Reck, Ed.). New York: Bobbs-Merill.
- Meltzfoff, Andrew N. 1994. "Imitation, Memory, the Representation of Persons." *Infant Behavior and Development* 17: 83-89.
- Meltzoff, Andrew N. 1995. "Understanding the Intentions of Others: Re-enactment of Intended Acts by 18-month old Children." *Developmental Psychology* 31: 838-50.
- Meltzoff, Andrew M. and M. Keith Moore. 1977. "Imitation of Facial and Manual Gestures in Human Neonates." *Science* 198: 75-78.
- ——. 1989. "Imitation of Newborn Infants: Exploring the Range of Gestures Imitated and the Underlying Mechanisms."

- Developmental Psychology Vol. 25, No. 6: 954-62.
- ——. 1994. "Imitation, Memory, the Representation of Persons." *Infant Behavior and Development* 17: 83-89.
- ——. 1997. "Explaining Facial Imitation: A Theoretical Model." *Early Development and Parenting*, 6: 179-192.
- Nyowa, Masako. 1996. "Imitation of Facial Gestures by an Infant Chimpanzee." *Primates* Vol. 37, No. 2: 207-13.
- Sheets-Johnson, Maxine. 1999. *The Primacy of Movement*. Amsterdam and Philadelphia: John Benjamins.
- Todes, Samuel. 2001. *Body and World*. Cambridge, MA: MIT Press. Tomasello, Michael. 1995. "Joint attention as social cognition." in *Joint Attention: Its Origins and Role in Development*, edited by C. Moore and P. Dunham, 103-130. Hillsdale, NJ: Lawrence Erlbaum.

# **NOTES**

1. This early imitation in infants has also been confirmed in some other primates (See Ferrari et al., 2006; Nyowa, 1996). However, this imitation disappears quickly as the infant develops and does not seem to play a role in further social learning.