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Chapter 13
Gesturing Language

Abstract: Among the different approaches that focus on language as enactive, i.e., as the extension of action, Di Paolo, Cuffari, and De Jaegher elaborate a thought-provoking proposal in *Linguistic Bodies. The Continuity between Life and Language* (2018). They rework Maturana's concept of *languaging* in a new way by connecting it to their theory of Sensorimotor Enactivism (Di Paolo, Buhrmann, and Barandiaran 2017 and Di Paolo 2005) and the participatory sense-making process (Di Paolo, Buhrmann, and Barandiaran 2017). The term "languaging," in fact, was coined by Maturana (1978, 1988, and 2002) to highlight a way of living together in a stream of recursive coordinations of consensual behaviors that arise in collaborative "doing things together." However, even if sensorimotor enactivists adopt the active role of our sociality to overcome the epistemological and methodological individualism inherited from Varela and Maturana's autopoietic theory of cognition, they still never really abandon their individualistic assumption. To face this individualistic methodological approach to language, I propose to look at George Herbert Mead's pragmatist theory of gesture. In this chapter, I will show that his gesture theory can offer helpful elements to confront some issues that arise with the enactivist languaging proposal.

Keywords: languaging, sensorimotor enactivism, pragmatism, George H. Mead's theory of gesture

1 Introduction

Among the different approaches that focus on language as enactive, i.e., as the extension of action,[1] Di Paolo, Cuffari, and De Jaegher elaborate a thought-provoking proposal in *Linguistic Bodies. The Continuity between Life and Language* (2018).

1 Some authors reinterpret Wittgenstein's reflections on language, remodeling it analytically (Hutto and Myin 2017) or offering a pragmatist reading of his investigations on practicing, rule-following, and language (Moyal-Sharrock 2021, 2003, and 2000). Another research direction takes steps from archeological cognition and Radical Enactivism to connect the semiotic dimension of a material sign with a non-representational approach to linguistic sign (Malafouris 2013). Other

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They rework Maturana's concept of *languaging* in a new way by connecting it to their theory of Sensorimotor Enactivism (Di Paolo, Buhrmann, and Barandiaran 2017; Di Paolo 2005) and the participatory sense-making process (Di Paolo, Buhrmann, and Barandiaran 2017). The term "languaging," in fact, was coined by Maturana (1978, 1988, and 2002) to highlight a way of living together in a stream of recursive coordinations of consensual behaviors that arise in collaborative "doing things together." Accordingly, from a phylogenetic perspective, language is "a system of generative consensual interactions," result of the evolutionary process of autopoietic organisms, with closed, structurally plastic nervous systems of "a selection realized through the behavior generated on the interacting organisms through their structural coupling in a domain of expanding ambient diversity" (Maturana 1978, 53–54).

As we will see, however, even if sensorimotor enactivists adopt the active role of our sociality to overcome the epistemological and methodological individualism inherited from Varela and Maturana's autopoietic theory of cognition, they still never really abandon their individualistic assumption. In particular, in their theory of languaging, individuals are logically prior to the social process in which they are involved so that language would emerge only through the intentional acts of autonomous agents interacting.

To face this individualistic methodological approach to language, I propose to look at George Herbert Mead's pragmatist theory of gesture. As I argued in a previous work (Baggio 2021), Mead is an influential interlocutor for Di Paolo and colleagues. In what follows, I will show that his gesture theory can offer helpful elements to confront some issues that arise with the enactivist languaging proposal. In particular, I will refer to Mead to support the hypothesis of the phylogenesis of languaging from gestural conversations based on bio-social processes. Mead's theory seems particularly useful to mediate between recognizing an essential biological process that could generate languaging and the more recent enactivist conception of the linguistic sense-making process. Furthermore, by referring to gestures as the practical involvement with the environment as interwoven with the rise of behavioral-based (i.e., non-propositional) semiotics, Mead provides the basis for developing propositional-based intentionality. As communicative devices, gestures give rise to cooperative acts rooted in primitive social instincts.

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authors link enactivism to biosemiotics (De Jesus 2016, Heras-Escribano and De Jesus 2018, and Fonseca Fanaya 2021).

2 Sensorimotor Theory of Languaging

According to De Jaegher, Di Paolo, and Cuffari's enactivist perspective (De Jaegher and Di Paolo 2007; Cuffari, Di Paolo, and De Jaegher 2015; and Di Paolo, De Jaegher, and Cuffari 2018), the organisms, be they basic-minded or contentful-minded, are autonomous living systems that cast a "web of *significance* on their world" aiming at self-generating their identities. The living systems actively participate in the generation of sense-making processes. Sense-making processes are relational and affect-laden processes grounded in a biological organization and expressing the capacity of autonomous systems to adaptively regulate their relation to the environment depending on the virtual consequences for their viability as forms of life. Meaning, sense, and signifier are thus attributable to basic minds (see Di Paolo, De Jaegher, and Cuffari 2018, 34).

The sense-making processes are therefore characterized by intention and teleology as "naturalized properties of active systems in interaction" (Di Paolo, De Jaegher, and Cuffari 2018, 35). Furthermore, an organism's perspective can be directly affected by the intentional coordination of movements in interaction with others, so that new domains of *participatory sense-making* can be generated that were not available to each individual on her own, "whereby individual sense-making processes are affected" (De Jaegher and Di Paolo 2007, 497). The active participation of organisms in sense-making processes relies on their intentional and expressive perspectives on the world.

Two features are needed for social interaction to take place allowing participatory sense-making to emerge: 1) a coupling among at least two agents—the orienter and the orientee—which is regulated to generate and maintain an identity in the relational domain; 2) and the autonomy of the agents involved. As De Jaegher and Di Paolo put it:

> it is through a process of coordination and modulation of sense-making activities that the orientee is directly affected by the orienter's intentions and sense-making, and therefore he does not need to figure out what these intentions are in order to respond accordingly. A coordinated response already embodies a practical understanding [. . .] the orientee cannot be totally passive. He is a sense-maker himself. In her turn, the orienter must not only grasp the other's sense-making but must skilfully act so that the right modulation comes about. (De Jaegher and Di Paolo 2007, 499–500)

Participatory sense-making also includes languaging, i.e., linguistic sense-making processes. More specifically, referring to Maturana's autopoietic theory of natural language, sensorimotor enactivists argue that languaging is a socially enacted form of whole-body sense-making, focusing on the dynamics of the construction of real-time behavioral events by co-acting agents. Languaging is the activity of a

signifying agent who "copes, acts, lives and has its being in a domain constituted by wordings, histories, rules, authorities, articulations, interactions, other people, and the work of other people." A socially enacted form of whole-body behavior, focusing on "the dynamics of real-time behavioral events that are coconstructed by coacting agents" (Thibault 2011, 211; see also Di Paolo, De Jaegher, and Cuffari 2018, 250–253).

However attractive the theory of languaging as participatory sense-making is, it presents two critical points—one epistemological and methodological, the other conceptual—that obscure its value. Even if sensorimotor enactivists adopt the active role of our sociality to overcome the epistemological and methodological individualism inherited from Varela and Maturana's autopoietic theory of cognition, they still never really abandon their individualistic assumption. They explicitly define participatory sense-making as a coordination of the intentional activity of individual subjects in interaction to generate new domains of social sense-making (De Jaegher and Di Paolo 2007, 497).[2] The individual sense-making activities are presupposed to their adjustment through interaction, which relies on appropriate coordination with other individuals. This means that individuals are logically prior to the social process in which they are involved, so participatory sense-making processes emerge only through the intentional acts of the interaction of autonomous agents. This also implies that languaging as "*a special kind of social agency*" (Cuffari, Di Paolo, and De Jaegher 2015, 1096) only emerges through the intentional acts of agents.

2 Together with sense-making, there are three core ideas behind sensorimotor enactivism: 1) The autonomy of systems involved in interactions. An autonomous system is a closed system composed of several processes that actively generate and sustain an identity under precarious conditions. Behind this idea is Maturana's autopoietic system as "a closed dynamic system in which all phenomena are subordinated to its autopoiesis, and all its states are states in autopoiesis" (Maturana 1978, 37). In line with this view, De Jaegher and Di Paolo argue that the view of autonomous cognitive systems allows rejecting, on the one hand, the view of passive cognizers just responding to environmental stimuli; on the other hand, the view of autonomous systems satisfying internal demands. Both views fail "to give the autonomous agent its proper ontological status and subordinate it to a passive role of obedience" (De Jaegher and Di Paolo 2007, 487). 2) "The relation of emergence between novel forms of identity (e.g., integrated sensorimotor engagements as emerging from neural, bodily and environmental dynamics)" as one "whereby the coupling between the emergent process and its context leads to constraints and modulation of the operation of the underlying levels" (De Jaegher and Di Paolo 2007, 487). 3) Experience is intertwined with being alive and enacting a meaningful world: "As part of the enactive method, experience goes beyond being data to be explained. It becomes a guiding force in a dialogue between phenomenology and science, resulting in an ongoing pragmatic circulation and mutual illumination between the two" (De Jaegher and Di Paolo 2007, 488).

The conceptual issue concerns precisely the notion of intention. As Di Paolo and colleagues argue, intentionality is, together with teleology, a naturalized property of the material systems, i.e., a kind of sensorimotor involvement in the process of "shaping the dynamics that lead to the engagement and control of particular sensorimotor schemes" (Di Paolo, Buhrmann, and Barandiaran 2017, 183). Their definition suggests a natural, primitive kind of intentionality that appeals to biological and evolutionary norms for determining the objects of intentional attitudes. In this sense, intentionality can be regarded as basic contentless intentional directedness rooted on the intertwining of natural instincts and habits. However, Di Paolo and his colleagues assume that conscious experience is a fundamental part of sense-making (Di Paolo, De Jaegher, and Cuffari 2018, 35). By doing so, they bring the cognitive gap down to a basic level of cognition. As a result, intentionality becomes so intrinsic, widespread, and natural that the term "intentionality" becomes almost redundant and misleading.[3] In other words, basic intentional directedness seems to be extremely vague and does not easily allow bridging the gap between the individual contentless "sensorimotor engagement" and linguistic contentful and participatory sense-making processes. This is also due to the epistemological issue, according to which organisms' autonomous organization and adaptivity are the primary explanatory resources of intentionality.

I argue that Mead's behavioral theory of meaning rooted in gestural interaction as the basis for the emergence of human language can present an interesting remedy to these issues. In particular, Mead's theory of gesture and cognition allows the transition from gestural interaction to participatory sense-making and symbolic language.

3 Mead's Theory of Gesture

Language has, according to Mead, a bio-social origin (Mead 2015, 236). The close intertwining of the biological and social dimensions is grafted onto an evolutionary perspective that points to unreflective social conduct as the expression of biological mechanisms underlying the development of reflexive conduct, thus rooting the capacity for communication in the process of biological-relational evolution (Mead 1895 and 2001). More specifically, the elements of coordination of social behavior and communication are already present in the evolution of the initial phases of instinctive acts and their physiological correlates, characterized by emotional content and expression:

3 Jean-Michel Roy (2015) moves a similar critique to Hutto and Myin's ur-intentionality.

> Before conscious communication by symbols arises in gestures, signs, and articulate sounds there exists in these earliest stages of acts and their physiological fringes, the means of coordinating social conduct, the means of unconscious communication. And conscious communication has made use of these very expressions of the emotion to build up its signs. They were already signs. They had been already naturally selected and preserved as signs in unreflective social conduct before they were specialized as symbols. (Mead 2001, 3)

What Mead calls "unconscious communication" is obviously not to be understood in psychoanalytic terms. It must instead be considered in terms of a "preconscious" (and thus pre-linguistic) communication that uses emotional attitudes and their physiological fringes to construct its signs. Unconscious communication refers to a pre-reflective process as a prerequisite for the emotional transposition that characterizes the possibility of interpreting others' behavioral attitudes. It precedes conscious, intentional communication, being present in the early stages of the acts and their physical correlates in the coordinating elements of social conduct and communication.[4]

In this framework, gestures are seen as the earlier stages of social acts, which mediate the appropriate responses of other individuals in the same groups. In other words, gestures are preparations for the act, i.e., the inhibited behaviors that became expressive.

> There exists thus a field of conduct even among animals below man, which in its nature may be classed as gesture. It consists of the beginnings of those actions which call out instinctive responses from other forms. And these beginnings of acts call out responses which lead to readjustments of acts which have been commenced, and these readjustments lead to still other beginnings of response which again call out still other readjustments. Thus there is a conversation of gesture, a field of palaver within the social conduct of animals. Again the movements which constitute this field of conduct are themselves not the complete acts which they start out to become. They are the glance of the eye that is the beginning of the spring or the flight, the attitude of body with which the spring or flight commences, the growl, or cry, or snarl with which the respiration adjusts itself to oncoming struggle, and

4 This means that emotion turns out to be immediately communicative. The "physiological fringes" involved in "unconscious communication," can be seen as the neuronal systems engaged in the genesis of acting emotional sequences in the performance of specific acts. More recently, Panksepp (1998) listed seven neuronal systems in which the interpersonal emotional systems of attachment, caretaking, competitive interaction, and peer cooperation, among others, are expressed. These systems reflect the innate social dimension of organisms and prove to be the basis for the more evolved forms of human social interaction. Baldwin (1992) pointed out that many of Mead's works anticipated modern social behaviorist analyses of emotions. In particular, many aspects of Mead's writings were empirically confirmed during the second half of the 20th century. For a discussion of the communicative dimension of emotions in Dewey and Mead, see Franks (1991), Ward and Robert Throop (1989), and Dreon (2019).

> they all change with the answering attitudes, glances of the eye, growls and snarls which are the beginnings of the actions which they themselves arouse. (Mead 1964, 124)

These early stages of animal reactions are stimuli for forms whose life is conditioned by others' behavioral attitudes. So, the early stages of the social acts "must become in the evolutionary process particularly effective as stimuli or, on the contrary, social forms must become particularly sensitive to these early manifest stages of social acts" (Mead 1964, 123–124). This also explains how certain gestures that originally constituted the beginning of an act persisted in the evolutionary process by modifying their original function. In other words, they experienced a process of what we could refer to, on the suggestion of Gould and Vrba (1982), as an "exaptation" that led them to become stimuli for a given response in another form of life.

This interplay of preliminary and preparatory processes, even in the conduct of animal forms lower than human beings, places the animals *en rapport* with each other and leads, in wooing, quarreling, and animal-play, to relatively independent activities that answer to human intercourse.

Although gesture first reveals an emotion, its primary function is to promote "the mutual adjustment of changing social response to changing social stimulation, when stimulation and response are to be found in the first overt phases of the social acts" (Mead 1964, 125). The emotional attitudes expressed in inhibited acts are the first phases of the rise of meaning from the gestural interaction between organism and environment and the mutual adaptation between social stimulus, individual response, and activities at which these processes eventually arrive. The mere reference to the original social interaction situation would not otherwise have allowed bodily and vocal gestures to become meaningful. It was firstly the reference to the change in the expression of other individuals involved in the act from a mere outcome of the nervous excitement in meaning, which allowed the development of communication, shared understanding, and mutual recognition within the field of social interaction.

Therefore, the emergence of social consciousness and the development of human communication is rooted in interactive coordination. In other words, only within a theory of social stimulus and response and of the social situations that create these stimuli and responses could meaning and language arise. As Mead writes:

> The likeness of the actions is of minimal importance compared with the fact that the actions of one form have the implicit meaning of a certain response to another form. The probable beginning of human communication was in cooperation, not in imitation, where conduct differed and yet where the act of the one answered to and called out the act of the other. The conception of imitation as it has functioned in social psychology needs to be developed

> into a theory of social stimulation and response and of the social situations which these stimulations and responses create. Here we have the matter and the form of the social object, and here we have also the medium of communication and reflection. (Mead 1964, 101)

Mead uses the term "cooperation" to refer to the reciprocal responses to others' gestures, whether collaborative or hostile (indeed, he often gives examples of both forms of interaction in his writings). However, it might be better to call such reciprocal responses "coordinations." Gestural coordination, behind which there is the emotional attitude as a relational property that co-constitutes the interactions, makes organisms evolve towards competitive or cooperative interactions. Without such coordination, situations cannot determine the type of interaction they constitute.

4 Maturana's Theory of Languaging

In this regard, Mead's theory shows some similarities with Maturana and Varela's theory of natural language (Maturana and Varela 1980 and Maturana 1978, 1988, and 2002), at the basis of Di Paolo and colleagues' theory of languaging as linguistic sense-making.

Maturana and Varela developed a theory of natural language as a new domain of interaction that becomes embodied in states of activity of organisms' nervous systems, subjecting their evolution to their interactions in the domains of observation and self-consciousness. Natural language is the outcome of the recursive application of the same neurophysiological process, whereby "new sequences of orienting interactions (new sentences) within the consensual domain are necessarily understandable by the interlocutor (orient him), because each one of their components has definite orienting functions" (Maturana and Varela 1980, 35). Language is, therefore, a manner of living together in a flow of coordinations of consensual behaviors or doings that arises in a history of living in the collaboration of doing things together.[5] Accordingly, symbolic language is secondary to the existence of languaging behavior as the expression of "the flow in living together in recursive coordinations of behaviors or doings" (Maturana 2002, 27). As he puts it:

5 See also Maturana and Varela (1987, 234–235). On recent revivals and re-developments of Maturana's "languaging" see, among others, Linell (2009), Cowley (2011), and Demuro and Gurney (2020).

> [. . .] what takes place in the interactions within a consensual domain is strictly structure-determined, interlocked concatenations of behavior. In fact, each element of the behavior of one organism operating in a consensual domain acts as a triggering perturbation for another. Thus, the behavior of organism A perturbs organism B triggering in it an internal change of state that establishes in it a new structural background for its further interactions and generates a behavior that, in turn, perturbs organism A, which . . . perturbs organism B, which . . ., and so on in a recursive manner until the process stops—either because, as a result of the structural changes of A and B some behavior is triggered that does not belong to the consensual domain, or because some independent intercurrent interaction occurs that leads them out of the consensual domain. What happens in a linguistic interaction, therefore, depends strictly on the structural state of the organism undergoing the interaction. [. . .] Therefore, the context on which the outcome of a linguistic interaction depends is completely determined in the structure of the interacting organisms. (Maturana 1978, 52–53)

Maturana explicitly affirms that to "understand the evolutionary origin of natural language requires the recognition of a basic biological process that could generate it" (Maturana 1978, 53). In this regard, Maturana and Varela are in line with Mead's claim (Mead 2015, 237, note) that all that is inherited about the human mind is the physiological mechanism of the human central nervous system, thanks to which the genesis of minds from the human matrix of relationships and social interactions is made biologically possible in human individuals. On the other hand, similarly to Matuarana and Varela's theory of autopoiesis, Mead maintains that natural selection and the development into reflective thought gave us "the tools we need [. . .] to keep up our process of living in the largest sense" (Mead 1936, 351).

Unlike Maturana, however, according to Mead, it is not possible to view organisms as isolated autopoietic systems. Social interaction is complementary to the biological complex of organisms, which is the precondition for physical consciousness (Mead 1964, 103). Nevertheless, the central nervous system develops not only in the co-ordinations of neural cells but also in the stimulation of co-ordinations between basic co-ordinations, which, as the basis for the possibility of higher cognitive capacities, must, in turn, be stimulated. The development of human higher cognitive capabilities is thus possible through the social stimulation of potentials that are only present in embryo in the organism (cf. Mead 2001, 78 ff.).

Maturana's and Mead's theories on the emergence of meaning and symbolic language also present complementarities. On the one hand, Maturana argues that language is "the necessary evolutionary outcome, in the recursive interactions of organisms having closed, structurally plastic nervous systems, of a selection realized through the behavior generated on the interacting organisms through their structural coupling in a domain of expanding ambient diversity." This means that

language is "a system of generative consensual interactions," so that denotation, i.e., the act of indicating something to someone, is merely a recursive consensual operation "which operates only in a domain of consensus and not in the processes through which linguistic interactions take place" (Maturana 1978, 53). On the other hand, Mead considers language as part of social behavior, so that the "early stages of social acts precede the symbol proper, and deliberate communication" (Mead 2015, 14–15), and language "simply lifts out of the social process a situation which is logically or implicitly there already" (Mead 2015, 79–80). This means that the connotation of a word, i.e., what a word suggests, is involved in the attitudes employed in the social act, and the interpretation of gestures is "an external, overt, physical, or physiological process going on in the actual field of social experience" (Mead 2015, 80).

Maturana's idea of "generative consensual interactions" is, in this sense, remarkably akin to what Mead refers to as the *cooperation*—i.e., what we call *coordination*—underlying the possibility of developing the consciousness of meaning that precedes the symbolic language. Mead does not regard meaning in semantic terms as a mere representation of an object. He instead argues that meaning is the functional, i.e., organic response to some social and natural stimuli. In other words, meaning has a *bio-social* nature expressed in gestures that show a *functional identity* of the responses of individuals to the same stimulus. This identity is rooted in the *cooperative* behavioral attitude of individuals as the manifestation of the social character of natural instincts:

> The important character of social organization of conduct or behavior through instincts is not that one form in a social group does what the others do, but that the conduct of one form is a stimulus to another to a certain act, and that this act again becomes a stimulus to first to a certain reaction, and so on in ceaseless interaction. The likeness of the actions is of minimal importance compared with the fact that the actions of one form have the implicit meaning of a certain response to another form. The probable beginning of human communication was in cooperation, not in imitation, where conduct differed and yet where the act of the one answered to and called out the act of the other. (Mead 1964, 101)

Therefore, the interpretation of gestures involved in the social act is a process that is fully implemented in the field of social experience. The articulated sounds —the vocal gestures—that the body emits are heard by the individual in the same way they are heard by the recipients of them, revealing themselves to her in the same way they reveal to others.

5 Sense of Meaning, the Consciousness of Meaning, and Language

Gestures are, first of all, a communication system. From the gestural coordination, the meaning emerges: "a statement of the relation between the characteristics in the sensuous stimulation and the responses which they call out" (Mead 1964, 129).

Mead then distinguishes between a "sense of meaning" and a "consciousness of meaning." This latter is the ability to associate a stimulus to mental content based on the ability to clearly distinguish the different elements in the contents of consciousness. The *sense of meaning* is a more basic "feeling of attitude" which "represents the coordination between the process of stimulation and that of response when this is properly mediated" (Mead 1964, 125). The *sense of meaning* is, in other words, the readiness to respond to different natural and social stimulations. As Mead maintains, when reacting to stimulations involved in an ongoing act it is difficult to detect the contents of the response, "either in terms of the attitude of body, the position of the limbs, feel of contracting muscles, or in terms of the memory of past responses" (Mead 1964, 126). This difficulty is related to the fact that as immediate conduct is "controlled by recognized differences in the field of stimulation," the analyzed elements of content are of negligible importance (Mead 1964, 126–127).

This means that organisms mostly do not interact with the world through abstracting and analyzing elements of the environment. They instead enact it, i.e., they organically interact with the natural and social environment that stimulates their responses. In this regard, Mead's "sense of meaning" can be equated with the sensorimotor enactivists' *sense-making* processes "at the core of every form of action, perception, emotion, and cognition" (Di Paolo, De Jaegher, and Cuffari 2018, 33). However, differently from Di Paolo, De Jaegher, and Cuffari, who refer to intentionality to describe the attribution of meaning, Mead does not refer to intention to explain the organism's directness to something. According to Mead, there is a basic instinctual cognitive ability to select and discriminate among stimuli which has to be regarded as:

> a development of the selective attitude of an organism toward its environment and the readjustment that follows upon such a selection. This selection we ordinarily connect with what we call "discrimination," the pointing-out of things and the analysis in this pointing. This is a process of labeling the elements so that you can refer to each under its proper tag, whether that tag is a pointing of the finger, a vocal gesture, or a written word. [. . .] Knowledge is a process of getting the tools, the instruments. (Mead 1936, 350–351)

Discrimination is an attitude rooted in a biological preconscious function arising from the interaction between neural signals and social and natural environmental stimuli, and it is the counterpart to the inhibition related to "motor imagery," which is a property of a particular field of interacting events, and of the physiological mechanisms of the agent which also make biologically possible the purposeful, skillful and unreflective bodily activities, as opposed to conscious intentionality which involves a propositional content (see Baggio 2021). This capacity is enactively identical to gestures and behavioral attitudes in interactions with others. Gestures are the embodied tools for cooperative interaction in a social act, giving rise to a triadic relationship between organisms themselves and between organisms and the environment.

It follows that interaction is primarily socially instinctual, contrary to the view that participatory sense-making derives from individuals' intentional sense-making. The social character of instincts precedes individual interactions by contributing to the formation of the individuals' selective capacity and hence to the direction of attention.

Differently from sensorimotor enactivists, according to which linguistic meaning derives from intentionality, Mead helps us to consider intentionality as the evolutionary result of a transition from a behavioral-based semiotics to a linguistic semantics embedded in the inner space of individuals.

Gestures are, therefore, natural signs that respond to natural signs in the natural and social environment through selection. Mead's notion of gesture is an element of continuity between sense-making, or the sense of meaning, and the emergence of the "consciousness of meaning" at the basis of human language.

As from the sense of meaning, the consciousness of meaning arises at the moment when an act is interrupted, that is, when a conflictual space arises that requires attention to the stimuli around us. However, there are situations where attention calls for discrimination of the different elements as contents of consciousness belonging to the field of stimulation and imagery. This applies to gesture, where initially, the sense of meaning—i.e., the contentless character of sensorimotor cognition involved in interaction—is predominant (Mead 1964, 130).

Yet, as Mead notes, there is an underlying difference in that, as human beings,

> we are conscious of interpreting the gestures of others by our own responses or tendencies to respond. We awaken to the hostility of our neighbors' attitudes by the arising tendency to attack or assume the attitude of defense. We become aware of the direction of another's line of march by our tendencies to step one side or the other. During the whole process of interaction with others, we are analyzing their oncoming acts by our instinctive responses to their changes of posture and other indications of developing social acts. [. . .] Thus our adjustments to their changing reactions take place, by a process of analysis of our own re-

> sponses to their stimulations. In these social situations appear not only conflicting acts with the increased definition of elements in the stimulation, but also a *consciousness of one's own attitude as an interpretation of the meaning of the social stimulus*. We are conscious of our attitudes because they are responsible for the changes in the conduct of other individuals. A man's reaction toward weather conditions has no influence upon the weather itself. It is of importance for the success of his conduct that he should be conscious not of his own attitudes, of his own habits of response, but of the signs of rain or fair weather. Successful social conduct brings one into a field within which a consciousness of one's own attitudes helps toward the control of the conduct of others. (Mead 1964, 130–131, emphasis added)

In social interaction, the construction of the coordinated act is closely intertwined with the consciousness of meaning, i.e., the ability to anticipate others' responses to our gestures. To anticipate the reactions of others to our behavioral attitudes is the discriminating element that stimulates the capacity for abstraction. However, abstraction is still rooted in the acting dimension, involving an enactive non-representational element. In this case, the capacity to be aware of one's action is combined with the ability to affect others' behavior and thus to seek to respond to social stimuli intentionally.

Indeed, Mead implicitly combines the consciousness of meaning with the presence of intentionality. Accordingly, "consciousness" is regarded as an intentional capacity that arises in social interaction. This means that the consciousness of meaning can be described, explained, or defined in terms of symbolic language only in its highest and most complex phase of development, the phase it reaches in the human experience. That is, the phenomena of language are those that appear within a set of social interactions (Mead 2015, 184).

Symbolic language is merely a significant or conscious gesture, "a highly specialized form" of gesture (Mead 1964, 132). Through the awareness of meanings and responses to stimuli made possible by the emergence of symbolic language, the individual acquires self-control to defer her responses, thus opening the way for the exercise of greater freedom of choice and design of her conduct—that is, of *embedded intentionality*. Symbolic language allows for the emergence of a kind of collective intentionality at the basis of consensual behaviors arising from "innate" social stimuli. However, it is crucial to remember that the idea of collective intentionality found in Mead is different from that which Di Paolo, Cuffari and De Jaegher (2018) have in mind. According to Mead, participatory sense-making arises from social practices based on inherited and acquired practical habits, namely, behavioral habits.

On the contrary, individual sense-making processes are a further step in this emerging process, connatural with the social process of the emergence of language. More specifically, intentionality is primarily practical in so far as it is part of interactions in a social context. Its more developed form in human beings is proposi-

tional and self-conscious. Mead often blurs the line between phylogenesis and ontogenesis. This allows him to work at an abstract level and simplify ontogenetic development. Accordingly, language "is not an affair of the individual soul, and its laws are frequently generalizations which would not have the slightest meaning if read into terms of the experience of the individual soul." The individual may be responsible for "the changes and the growth and development of language, but the product lies outside of the experience of the souls whose mechanisms are responsible for it" (Mead 2015, 377–378).

6 Conclusion

Mead's theory of gestures mediates between recognizing a basic biological process that could generate languaging and the enactivist conception of basic individual intentional directedness as prior to participatory sense-making processes. We can therefore consider the functional identity of gestures as the basis of the genesis of propositional language through the conditioning of bio-social canons and structures that have their roots in pre-linguistic behavioral attitudes, i.e., gestures. Mead's gestures, particularly vocal gestures (Mead 1964, 243), are individuals' practical involvement with the environment as interwoven with the evolution of the propositional-based individual intentionality from a behavioral-based sense of meaning rooted in the organisms' capacity to discriminate and respond to social stimuli. Gestures are, in this frame, the embodied tool for coordinative interactions in a social act, which in turn gives rise to a triadic relation between organisms themselves and between organisms and the environment. They are communicative devices, the sum of which gives rise to social acts which have roots in a set of primitive social instincts.

Mead's sense of meaning paves the way for a comparison with the sensorimotor sense-making theory. It also allows for the emergence of sensorimotor intentionality to be included within a naturalized framework of evolutionary continuity.

Mead further elaborates his behavioral theory of meaning behind his idea of the evolution of symbolic language from gestural communication (see also Baggio 2019 and 2020), taking as his starting point the difference between the sense of meaning and consciousness of meaning. Furthermore, Mead's "unexplored social organization" at the basis of interpretation and differentiation through reciprocal conditioning can be regarded as what De Jaegher and Di Paolo indicate as the biological counterpart of the sense-making process as a "relational and affect-laden process" (De Jaegher and Di Paolo 2007, 488). However, unlike De Jaegher and Di Paolo's notion of "participatory sense-making," for Mead, this process does not ex-

press the capacity of autonomous systems to "actively participate in the generation of meaning in what matters to them" (De Jaegher and Di Paolo 2007, 488). On the contrary, the relational and affect-laden process is a bio-social process through which the genesis of selves, i.e., "autonomous" individuals, is made possible. Autonomous individuals can actively value what matters to them only as a result of this process.

References

Baggio, Guido. 2019. "Language, Behaviour, and Empathy. G. H. Mead's and W. V. O. Quine's Naturalized Theories of Meaning." *International Journal of Philosophical Studies* 27 (2): 180–200.

Baggio, Guido. 2020. "Pragmatism and Verbal Behaviourism. Mead's and Sellars' Theories of Meaning and Introspection." *Contemporary Pragmatism* 17 (4): 243–267.

Baggio, Guido. 2021. "Imagery in action. G. H. Mead's contribution to sensorimotor enactivism." *Phenomenology and the Cognitive Sciences* 20: 935–955.

Baldwin, John D. 1992. "Social Behaviorism on Emotions: Mead and Modern Behaviorism Compared." In Hamilton, Peter (Ed.): *George Herbert Mead. Critical Assessments*. Volume III, 237–263. New York: Routledge.

Cowley, Stephen J. (Ed.). 2011. *Distributed Language*. Amsterdam and Philadelphia: John Benjamins Publishing Company.

Cuffari, Elena C., Ezequiel A. Di Paolo, and Hanne De Jaegher. 2015. "From participatory sense-making to language: There and back again." *Phenomenology and the Cognitive Sciences* 14: 1089–1125.

De Jaegher, Hanne and Ezequiel A. Di Paolo. 2007. "Participatory sense-making: An enactive approach to social cognition." *Phenomenology and the Cognitive Sciences* 6 (4): 485–507.

De Jesus, Paulo. 2016. "From enactive phenomenology to biosemiotic enactivism." *Adaptive Behavior* 24 (2): 130–146.

Demuro, Eugenia and Laura Gurney. 2020. "Languages/languaging as world-making: The ontological bases of language." *Language Sciences* 83: 101307.

Di Paolo, Ezequiel A. 2005. "Autopoiesis, adaptivity, teleology, agency." *Phenomenology and the Cognitive Sciences* 4 (4): 429–452.

Di Paolo, Ezequiel A., Thomas Buhrmann, and Xabier E. Barandiaran. 2017. *Sensorimotor life. An Enactive Proposal*. Oxford: Oxford University Press.

Di Paolo, Ezequiel A., Hanne De Jaegher, and Elena C. Cuffari. 2018. *Linguistic Bodies. The Continuity between Life and Language*. Cambridge: MIT Press.

Dreon, Roberta. 2019. "Gesti emotivi e gesti verbali. L'eredità di G.H. Mead sulla genesi del linguaggio umano." *Sistemi intelligenti* 1: 19–138.

Fonseca Fanaya P. 2021. "Autopoietic enactivism: Action and representation re-examined under Peirce's light." *Synthese* 198 (Supplement 1): S461–S483.

Franks, David D. 1991. "Mead's and Dewey's Theory of Emotion and Contemporary Constructionism." *Journal of Mental Imagery* 15: 119–137.

Gould, Stephen J. and Elisabeth S. Vrba. 1982. "Exaptation-A Missing Term in the Science of Form." *Paleobiology* 8 (1): 4–15.

Heras Escribano, Manuel and Paulo De Jesus. 2018. “Biosemiotics, the Extended Synthesis, and Ecological Information: Making Sense of the Organism-Environment Relation at the Cognitive Level.” *Biosemiotics* 11: 245–262.

Hutto, Daniel D. and Erik Myin. 2017. *Evolving enactivism: Basic minds meet content.* Cambridge: MIT Press.

Linell, Per. 2009. *Rethinking Language, Mind, and World Dialogically. Interactional and Contextual Theories of Human Sense-Making*. Charlotte: Information Age Publishing, Inc.

Malafouris, Lambros. 2013. *How Things Shape the Mind: A Theory of Material Engagement*. Cambridge: MIT Press.

Maturana, Humberto R. 1978. “Biology of Language: The Epistemology of Reality.” In Miller, George A. and Elizabeth Lenneberg (Eds.). *Psychology and Biology of Language and Thought*, 27–63. New York: Academic Press.

Maturana, Humberto R. 1988. “Reality: The Search for Objectivity or the Quest for a Compelling Argument.” *The Irish Journal of Psychology* 9 (1): 25–82.

Maturana, Humberto R. 2002. “Autopoiesis, Structural Coupling and Cognition: A history of these and other notions in the biology of cognition.” *Cybernetics & Human Knowing* 9 (3–4): 5–34.

Maturana, Humberto R. and Francisco Varela. 1980. *Autopoiesis and Cognition. The Realization of the Living*. Dordrecht: Reidel Publishing Company.

Maturana, Humberto R. and Francisco Varela. 1987. *The Three of Knowledge. The Biological Roots of Human Understanding*. Boston and London: New Science Library.

Mead, George H. 1895. “A Theory of Emotions from the Physiological Standpoint (Abstract of a paper read to the third annual meeting of the American Psychological Association, 1894).” *Psychological Review* 2: 162–164.

Mead, George H. 1936. *Movements of Thought in the Nineteenth Century*, edited by Merritt H. Moore. Chicago: University of Chicago Press.

Mead, George H. 1938. *The Philosophy of the Act*, edited by Charles W. Morris, John M. Brewster, Albert M. Dunham, and David Miller. Chicago: University of Chicago Press.

Mead, George H. 1964. *Selected Writings*, edited by Andrew J. Reck. Chicago: University of Chicago Press.

Mead, George H. 2001. *Essays in Social Psychology*, edited by Mary Jo Deegan. New Brunswick and London: Transaction Publishers.

Mead, George H. 2015. *Mind, Self and Society. The Definitive Edition*, edited by Charles W. Morris. Annotated edition by Daniel R. Hubner and Hans Joas. Chicago: University of Chicago Press.

Moyal-Sharrock, Danièle. 2000. “‘Words as Deeds:’ Wittgenstein’s ‘Spontaneous Utterances’ and the Dissolution of the Explanatory Gap.” *Philosophical Psychology* 13 (3): 355–372.

Moyal-Sharrock, Danièle. 2003. “Logic in Action: Wittgenstein’s Logical Pragmatism and the Impotence of Scepticism.” *Philosophical Investigations* 26 (2): 125–148.

Moyal-Sharrock, Danièle. 2021. “From deed to word: Gapless and kink-free enactivism. In memoriam John V. Canfield (1934–2017).” *Synthese* 198 (Supplement 1): S405–S425.

Panksepp, Jaak. 1998. *Affective Neuroscience: The Foundation of Human and Animal Emotions*. Oxford: Oxford University Press.

Roy, Jean-Michel. 2015. “Anti-Cartesianism and anti-Brentanism: the problem of anti-representationalist intentionalism.” *Southern Journal of Philosophy* 53 (Spindel Supplement): 90–125.

Thibault, Paul J. 2011. “First-order languaging dynamics and second-order language: The distributed language view.” *Ecological Psychology* 23 (3): 210–245.

Ward, Lloyd and Robert Throop. 1989. “The Dewey-Mead analysis of emotions.” *Social Science Journal* 26: 465–479.