

Gesture Philosophy: Phenomenology, Ontology, and Semiotics

57.1 A Short Recapitulation of Musical Ontology

Summary. This short section recapitulates the global architecture of the ontology of music.

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Ontology of music includes three dimensions: realities, semiotics, and communication. It also includes the extension of ontology to the fourth dimension of embodiment. We call this extension “oniontology” for reasons that will become evident soon.

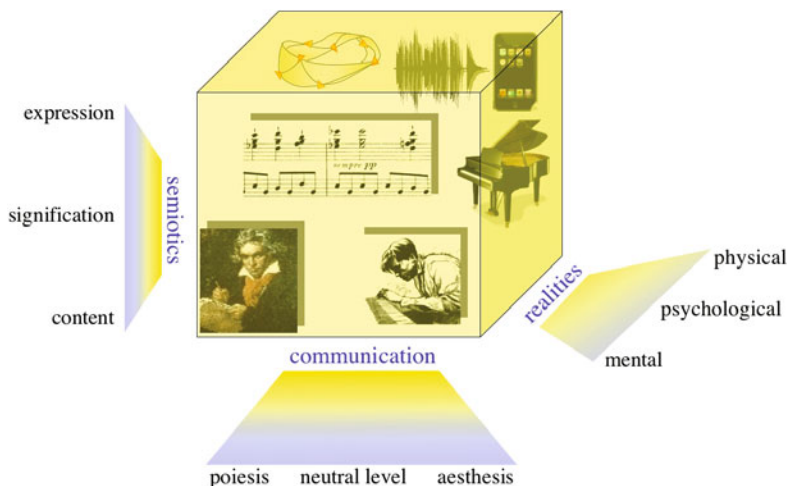


Fig. 57.1. The three-dimensional cube of musical ontology.

57.1.1 Ontology: Where, Why, and How

Ontology is the science of being. We are therefore discussing the ways of being which are shared by music. See Chapter 2 for a detailed discussion. As shown in [Figure 57.1](#), we view musical being as spanned by three ‘dimensions’, i.e., fundamental ways of being. The first one is the dimension of realities. Music has a threefold articulated reality: physics, psychology, and mentality. Mentality means that music has a symbolic reality that it shares with mathematics. This answers the question of “where” music exists.

The second dimension, semiotics, specifies that musical being is also one of meaningful expression. Music is also an expressive entity. This answers the question of “why” music is so important: it creates meaningful expressions, the signs which point to contents.

The third dimension, communication, stresses the fact that music exists also as a shared being between a sender (usually the composer or musician), the message (typically the composition), and the receiver (the audience). Musical communication answers the question of “how” music exists.

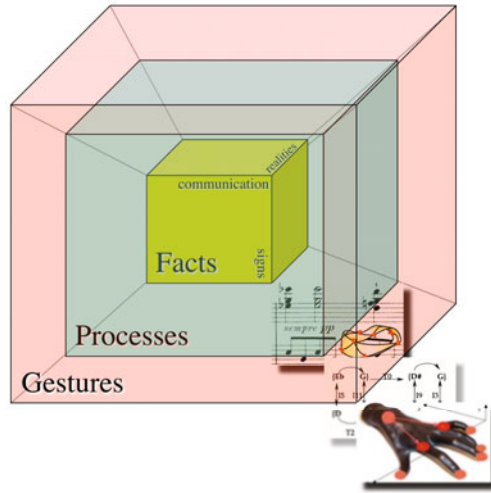


Fig. 57.2. The hypercube of musical ontology.

57.1.2 Ontology: Facts, Processes, and Gestures

Beyond the three dimensions of ontology, we have to be aware that music is not only a being that is built from facts, finished results; no, music is strongly also processual, creative, and living in the very making of sounds. Musical performance is a typical essence of music that lives, especially in the realm of improvisation, while being created. The fourth dimension, embodiment, deals with this aspect, it answers the question “how *come into being*?” It is articulated in three values: facts, processes, and gestures. This fourth dimension gives the cube of the three ontological dimensions a threefold aspect: ontology of facts, of processes, and of gestures. This four-dimensional display can be visualized as a threefold imbrication of the ontological cube, and this, as shown in [Figure 57.2](#), turns out to be a threefold layering, similar to an onion’s. This is the reason why we coined this structure “onionology”—sounds funny, but it is appropriate terminology.

57.2 Jean-Claude Schmitt’s Historiographic and Philosophical Treatise “La raison des gestes dans l’Occident médiéval”

“La raison des gestes dans l’Occident médiéval” was published in 1990 [946]. It is the most complete and important contribution to the history of the concept, philosophy, and social and religious roles of gestures during the early centuries of our modern Western culture. It starts with a summary of the ancient Greek and Roman traditions: Plato, Aristotle, Cicero, and Quintilian, and then draws a trajectory through the Middle Ages, starting with the early writings of Martianus Capella (between 410 and 470), culminating in the sophisticated and detailed writings of Paris-based theologian Hugues de Saint-Victor (1096-1141), and terminating with a detailed discussion of the transition of the Christian culture during the twelfth and thirteenth centuries to an “intellectual Renaissance” where new technologies, the new medical paradigm of

surgery, the first universities, and the rediscovery of ancient traditions generate new perspectives on the phenomenon of gestures.

Before we discuss the most evolved definition of a gesture by Hugues de Saint-Victor, let us summarize the relation of gestures to the Christian religion and church in the Middle Ages as it is described and analyzed by Schmitt. As gestures are always related to the human body, their role is strongly related to the position of the body in the early Christian tradition. This position has two contradictory faces. On the one hand, our body is the "prison of the soul" and also occupies the role of a cause of sin and mean animalistic behavior. In this face, the body's gestures must be limited and controlled by the high moral and holy principles of the Christian soul that seeks its salvation in God. This perspective explains the repression of mimes, histrions and jugglers, and also of feminine body movements or more generally of any erotically colored gestural utterances. On the other hand, the central essence of Christian religion is described by the Eucharist, the transformation of bread and wine into Christ's body and blood. Here, the body signifies incarnation of a divine existence, and therefore it receives a totally different role, not sinful and animalistic, but realizing the embodiment of a divine revelation. In this second face, gestures, above all the priests' precisely canonized gestures when delivering the holy communion, but also in the ecstasy of mystical Christians, such as stigmatist Francis of Assisi, are understood as connectors that transcend verbal expressivity. According to Schmitt, what is common to these two faces is that gestures are (1) *expressive* in the sense that they relate the internal human moods or emotions or thoughts to the external reality of visible bodies, (2) *communicative*, i.e., they transfer contents as signs (Hugues de Saint-Victor calls them *signa*), and (3) *technical* in the sense that they ask us to make something.

It is remarkable that many modern approaches to a theory of gestures germinated in the Middle Ages (if not in Greek Antiquity), for example the association of gesture with language (the basis of Adam Kendon's and David McNeil's theories; see Section 57.7), the idea of music being more than sound, including gestures in its dancing expressivity, or more generally the theories of non-verbal communication.

Apart from the fact that Schmitt recognizes the Middle Ages as a "civilization of gestures", a fact that positions the project of this book in a long cultural tradition, it is interesting to discuss the concept of a gesture that has been defined in Hugues de Saint-Victor's *De institutione novitiorum*, written in Paris around 1140. In Chapter XI, he starts with a definition of a gesture:

Gestus est motus et figuratio membrorum corporis, ad omnem agenda et habendi modum.

Gesture is the movement and figuration of the body's limbs with an aim, but also according to the measure and modality proper to the achievement of all action and attitude.¹ That gesture is the human body's movement (*motus*) is in harmony with traditional, ancient musically and rhetorically motivated conceptualizations. But the specification of the movement as also the body's *figuratio* is new and specific to Hugues de Saint-Victor's setup. Schmitt interprets figuration as the creation of a configuration of the body's members which express the soul's movements. We cannot follow this interpretation; it seems too strongly directed towards a semantic view (gestures are expressing internal contents of mood, etc.). We would prefer to simply see the configuration of the body's limbs in this characterization, meaning that a gesture is more than a general movement; it is the movement of an articulated whole, a combination of parts (the limbs) that relate to each other in a complex anatomic architecture. The second couple of properties: action and attitude, which are attributed to *modus*, translated as measure and modality by Katsman, are more difficult to understand. Katsman and also Schmitt use longer circumscriptions of *modus* in its relation to action and attitude. The Latin wording is very short and elegant, being reduced to the preposition *ad*, meaning that *modus* is *for*, *specified by* action and attitude. This means that the body's movement and (con)figuration are directed to a modality, which is specified by action and attitude.

57.2.1 Comments

We don't see the semantic valuation as explicitly as Schmitt does. It is a movement and figuration of the body with a specification, not a general movement, but carrying a modality. This modality is not a priori

¹ Following the translation by Roman Katsman [524]; see also <http://sites.utoronto.ca/tsq/12/katsman12.shtml>.

meaningful; it is an action and attitude, not more and not less. One could object that Hugues de Saint-Victor's comments about the nature of a gesture as a sign would suggest a semiotic specification in his definition. This seems plausible in the context of Hugues de Saint-Victor's Christian background: A gesture must be meaningful to comply with the general principle of meaningful life *sub specie aeternitatis divinae*; this is evidenced in Schmitt's concluding chapter, *L'Efficacité symbolique*: Everything is meaningful, if not magic, and incessantly observed by God. We would prefer not to load this definition too much with a semiotic scheme. This needn't mean that gestures in Hugues de Saint-Victor's understanding are a presemiotic concept, but it could mean that gestures not only are carriers of given contents but could be involved in the creation of contents, that they could be semantic generators. We shall come back to this question when discussing the modern French philosophy of gestures in Chapter 58.

57.3 Vilém Flusser's *Gesten: Versuch einer Phänomenologie*

57.3.1 A Short Introduction to Flusser's Essay

Flusser's German essay [328] was first published in 1991. The author focuses on a phenomenological approach, i.e., following his own words in the first chapter, a non-historical philosophical perspective, where freedom is not bound to linear time, but gets off ground without any preconception and describes or analyzes gestures in their singular specific shapes. These are the chapters: 1. Geste und Gestimmtheit (Gesture and Coherence) 2. Jenseits der Maschinen (Beyond Machines) 3. Die Geste des Schreibens (The Gesture of Writing) 4. Die Geste des Sprechens (The Gesture of Speaking) 5. Die Geste des Machens (The Gesture of Making) 6. Die Geste des Liebens (The Gesture of Loving) 7. Die Geste des Zerstörens (The Gesture of Destroying) 8. Die Geste des Malens (The Gesture of Painting) 9. Die Geste des Fotografierens (The Gesture of Photographing) 10. Die Geste des Filmens (The Gesture of Filming) 11. Die Geste des Maskenwendens (The Gesture of Mask Turn-over). The first chapter is an introduction to the general topic of gesture phenomenology. Here, Flusser gives a definition of the gesture concept, which is a thoroughly semiotic one: gestures have meaning. We will discuss this in the next section. He however stresses that there is no general theory of what he calls "interpretation of gestures", which means that there is no theory that would offer a scientific approach to what gestures mean. The keyword "Stimmigkeit" ("coherence") means a symbolic transformation of "Stimmung" ("mood"), an artistic transfiguration, using gestures, of the emotional atmosphere. The author is aware that this is a circular statement: Understanding gestures means using gestures to explain their transformational power of creating/giving meaning.

The second chapter is an attempt to position the gestural phenomenon within a triple characterization of how we work in this world: in the author's words, *ontology* describes the world how it is, *deontology* looks at how the world should be, and *methodology* deals with the ways we act to actually change the world. The remaining chapters discuss (but not exhaustively) a spectrum of gestural phenomena that the author considers important.

57.3.2 The Semiotic Neurosis

Flusser's phenomenology of gestures is one big conjuration of the concept of a gesture. His definition is essentially negative: Freedom, that part that cannot be satisfied in the causal determination of the human body's intentional movements and its associated tools. He searches desperately for the meaning of that movement. For, what is meaningless cannot be understood. This is the semiotic trap which has been avoided by Châtelet, Alunni and their French associates.

My mathematical music theory is also pre- or a-semiotic. The musical realization of symmetries, groups, gestures, etc. is not a preliminary form of meaning. Remember Hanslick [438]: "The content of music are sounding moved forms." What would be the meaning of a dodecahedron, a sphere, a fractal geometry? This is it: Nothing a priori, as much as a pirouette of a dancer.

The semiotic neurosis is virulent. I (Mazzola) had described that already in my novel fragment “Das Geschlecht des Klaviers” (“The Gender of the Piano”). And in that artistic Harakiri jazz performance where content and expression were provocatively exchanged.

Meaning is always a *aliquid pro aliquo*, a replacement action. This should not happen ad infinitum (Hegel's bad infinity where $1 \mapsto \dots n \mapsto n + 1 \mapsto n + 2 \dots$). To avoid this pathology (if one does not want to end up in meaningless dead ends), the only solution is to introduce circularity: The system of signs is autoreferential; it has, as a directed graphical structure, cycles. Using this strategy, a semiotic can work perfectly, eventually coming back to itself. The question of the function of circularity however remains; to state it in a provocative style: What is the meaning of circularity, apart from the fact that it eliminates bad infinity?

Let us first focus on circularity as a special case of a reference, and let us say “pointer” instead of “reference”, since this concept describes better the activity of pointing that generates the referential relation. In circularity, the pointer action remains valid. But the target of a pointer is the same as the starting instance: $x \mapsto x$. It is action or movement, without moving anything; nothing happens to x . It is a conceptual pirouette, turns around itself. The autoreference, the self-pointer unmasks exactly the concept of a pointer since it is, in the circularity, a pointing without any effect. Is a gesture this pointing without considering any visible effect on its object?

Let us have a look at Frege's interpretation of the relation of circular pointing. Here it is nothing but the ordered pair (x, x) . For Frege, the reference is reduced to the empty relation of a formal juxtaposition x to x . This is what already Châtelet had recognized. But in our case, the Fregean emptiness is also a conceptual one: One ends up in the not-understanding if the pointing movement is not embedded in the mathematical formalism. The pirouette of thought is a thought of the pirouette. The thought of a pirouette is a pirouette of the thought, same altogether.

Once the related components (*relata*) are removed, what remains is the plain pointing movement, the elementary finger pointing described by Tommaso Campanella! And this one is a “pure” gesture, the pointer qua pointing, without de Saussure's *signifiant* and *signifié*.

This is why a gesture is presemiotic: It is a condition for the very concept of a sign. The pointing action is that part of a sign which is preconceived as a gesture. Signs are compound concepts.

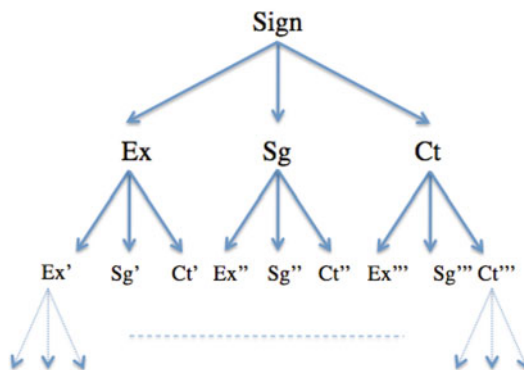


Fig. 57.3. The threefold ramified Hjelmselev sign gesture.

What is the role of Hjelmselev's construction here? His idea is the following: Instead of explaining the three parts of a sign, expression Ex , signification Sg , and content Ct , Hjelmselev conceives all three parts as pointers to the same concept; they are signs by themselves, i.e., $Ex \mapsto (Ex', Sg', Ct')$, and so on. It is a threefold ramified gesture; see [Figure 57.3](#).

Hjelmselev's idea is pure gesturality. He replaces de Saussure's inhomogeneous conceptuality by the homogeneous threefold pointing structure. This is utterly elegant, but it simultaneously positions gesturality at the first position. *His conceptual substance of a sign is a threefold ramified gesture.*

Conclusion: The semiotic concept of a sign needs the preconception of a gesture, in Hjelmslev's homogeneous approach even the simple gesture defined by a threefold ramification.

Remark 1. It is coherent with the French school (specifically with regard to Alunni) that gestures are generators of meaning since the gesture concept is fundamentally responsible for the sign concept (not only for examples of signs!). Gestures in first place enable the structure of signification, of the pointer to meaning.

This is a giant step: Conceptual mathematics above all needs the mathematical theory of gestures. I believe that Grothendieck took exactly this giant step: Moving away from 20th century mathematics of structures (after the 19th century mathematics of objects) to the 21st century mathematics of concepts. Motives, scheme, etc. are just excellent examples of this conceptual research.

57.4 Michel Guérin's *philosophie des gestes*

57.4.1 The Essay's Structure

This is a typical French non-semiotic approach; however it is similar in its phenomenological style to Flusser's essay. Guérin discusses four gesture types which he considers to be elementary, i.e., the simplest ones and a complete set of such elements. They are: Faire (make), don(ner) (donate, gift), écrire (write), danser (dance). In a second part of the essay, Guérin summarizes these four aspects and observes (p.79) that in occidental thinking, the thought of a gesture has never occurred; he also refers to Bergson for this.

57.4.2 Gestural Ontology and Four Elementary Gestures

The author does not give a definition of a gesture, but exhibits a number of characteristics of that concept, e.g., (p. 13) as a relation between body and mind, (p. 32) the gesture informs by its deformation; it desires a remote form and caresses a near one; (p. 35) when matter is reduced to formulas, the gesture has no countenance (*prise*) anymore; (p. 45) the gesture's essence is its contact; (p. 72) the gesture of dance is an expression that expresses nothing; (p. 76) dance touches the sacred; in its pure form it has no intention; (p. 80) gesture is ambiguous between history and project; (p. 82) the sense of gesture is found in the dialogical relation of mode and function; (p. 84) the work (l'oeuvre) is the perfect circle of an exploited gesture (I would also refer to Mallarmé's *le livre* here); (p. 95) at the beginning is the gesture (auto-motion); (p. 115) the first art is dancing the gesture; (p. 129) thinking is the action of the presence, the presence of the action.

In the concluding second part (added later to the first part) he reconsiders the "quadrature" (the four elementary gesture types) and adds the ontology of presence in the dancing thought (following Nietzsche), as well as its mirror nature (the same but turned around), not really well explicated; I know better mirror analyses in my own work. He then adds the "Figure" concept following Rilke, in that we think in figures, the forms of gestures. Gesture has finality without end (*finalité sans fin*), and gesture is finiteness of the circular loop foot-hand. It generates space from this circularity, it generates every thought, the announcement, the angel's appearance before any content is transferred. On page 108, a mathematical allusion is made: *le geste est son proper "mathème", il est coextensive à son apprendre; il s'enseigne lui-même.*

Although, as a substitute for a definition, these characteristics are important, it is not clear whether they are generic or only valid for their specific gestural types. The layer of reality of these gestures is not specified. Is writing a physical gesture? Or a mixed reality? Dancing seems physical, but it is evidently also highly symbolic, etc.

In particular, the last example: the gesture of thought, is that a symbolic gesture? Then, in what presence would it happen? Here the question of its reality/realities is particularly delicate: What is the relation of a mental gesture's reality to the reality of thoughts in general? This is very important since gestures of thought are considered as being basic.

Also the blurring of biological, anthropological, and symbolic levels of "realities"/perspectives is confusing, in particular when they are (ab)used to generate evidence.

The discourse about the gesture of writing is badly written. Also full of those very French word games of alliteration type, such as *La lettre tue parce qu'elle se taît*. Especially in view of the fact that all those negative statements about the separating role of writing are *written*.

It is further not clear why the author specifies the four types as gestures. While this is clear for dancing, it is not clear for donation. Not every action is a gesture. We are not informed why he qualifies them as gestures, even if one agrees intuitively. This is the typical philosophical style: abstract and imprecise.

Many of the above characteristics are mysterious, for example, the above *il s'enseigne lui-même*, what does that mean? How does such a self-instruction work? Is there a subject for that? Etc.

Finally, there is absolutely no structure theory. Everything is utterly fuzzy.

57.5 Flusser and Guérin: Some Consequences

From the two contributions we draw these conclusions:

- The ontology of gestures is a proper ontological topic of philosophy.
- Gestures are dialogical, live in presence, are circular, elastic, are presemiotic, and are as such already differentiated (being gestural can be ramified into different types).

The big question would be this one: If this differentiation is not a semiotic one, i.e., “writing” is not the meaning of such a gesture, what else can it be?

We are asked to develop an anatomy of gesturality, and to do so, we need a structure theory. Evidently, we can describe the structure of natural gestures, such as writing, using the mathematical theory of gestures. And this for the entire quadrature. But for the gesture of thinking, I am not so sure, except if the general mathematical theory of gestures (over topological categories) would be taken as a candidate of a general theory of gestural thinking. This would then be Guérin’s *mathème*.

Of course, the category-theoretical theory of gestures would not be a philosophical first movement since it is embedded in mathematical concept architectures. But we don’t ask for such a philosophically foundational theory. We have to be very careful here in the interpretation of the musical ontology. It is not claimed that one of its dimensions, or even dimensional values, can be reduced to others. Gestures can also be communicative, and specific in their realities. It is only the semiotic dimension that would not be specific in gestural perspectives. Which does not mean that this dimension is absent altogether, but it can and will be near to vanishing.

Philosophy confirms the necessity of an ontological dimension of embodiment. It also, in principle, confirms the necessity of a structural theory of gestures, and let us call this the anatomy. But this anatomy will not presuppose semiotics as an essential conceptual ingredient, only—if at all—as a technical tool. Mathematics would be such a tool.

We could call this a height structure, as opposed to a depth structure. We should liberate ourselves from the tyranny of the vertical: things might be fundamental on top, not down there. In circular conceptual architectures, every locus without which other loci fall apart would be called “essential”. Are gestures essential? Their *mathème* is, there is no valid *theory* of gestures (not only a philosophy) without a mathematical structure theory. The claim of a *mathème* is empty if it isn’t made explicit as a mathematical building. This necessity is what we have to explicate.

Evidently, many philosophers and, hélas, also music theorists and computer scientists, maintain that a definition of “gesture” and a corresponding structure theory are superfluous. However, physics teaches us that this is erroneous. The physical concept of time as a real (or complex) coordinate has a trivial ontology. But its behavior under transformations is characteristic for the comprehension of its ontology. Ontology is above all reified in the concept’s behavior, not in its static Kantian “Ding an sich”. This is Yoneda: What time is as such is irrelevant. It is how it behaves (as a functor). Being as a “so-sein” (suchness), not only “da-sein” (being here, existing). This is also essential for gestures. Abstract existence is irrelevant and may be replaced by suchness. Better: Existence is the locus in the topos and this is the isomorphism class of the functor, i.e., Yoneda is also a theorem about the replacement of existence by suchness. In fact, all characteristics are verbs, suchness (answering *How is the gesture behaving?*), never existence (except perhaps presence, that

prae-esse, being in front of you). The later contributions by Châtelet are not present here, but they will be in complete coherence with the present ones.

Ontology is no longer fundamental now as a first existence, but is as a first suchness. How gestures are manifested, their suchness, this is where they are (exist) and what they are. Existence survives as suchness.

Remark 2. The philosophical part should not try to use the fundamental role of gestures as an ontological first thing, but only (1) stress its independence from other ontological dimensions, (2) elaborate their specific attributes, and (3) explicate the program to work these attributes out, a thing that may fail in parts.

57.6 A Program

Here is our proposed program:

1. Gestures are presemiotic. This has been described above.
2. They are non-essential. Their essence is contact. They are dialogic (see there!).
3. Gestures are dialogic. They are neither subjective nor objective, but grounded in the second person (you); see Benveniste for this. They are also formally this irreducible movement $I \rightarrow X$.
4. They are auto-motion. This follows from the dialogical explanation above.
5. They are elastic. This is covered by the hypergesture concept which generalizes homotopy.
6. They are an interface between body and mind. This is covered by our discussion of cognitive aspects, in particular the action-body, mirror neurons, Yoneda-on-the-body, etc.
7. They include a *mathème*, a self-instructing mathematical structure. This is the mathematical theory of gestures.
8. They are *in presence*. They might be covered by the flow theory developed in the free jazz discourse.
9. Circularity of gestures. This is a delicate topic, to be discussed below.

57.6.1 Circularity

Here is a model of how gestures could involve circularity on the conceptual level. Circularity is not covered by *finalité sans fin* and similar attributes. They are merely word games.

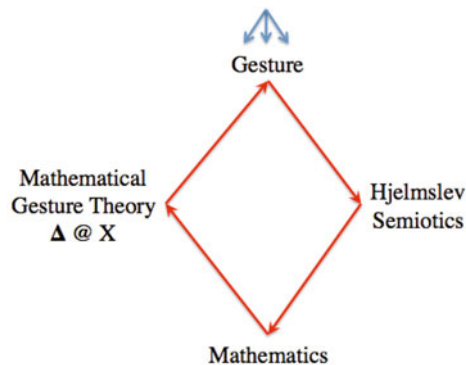


Fig. 57.4. The circularity of gestures and their mathematical theory.

We had seen that the presemiotic character of gestures is evidenced in Hjelmslev's idea of purely gestural description of the sign structure; see [Figure 57.3](#), where the threefold non-terminating gestural skeleton defines the structure of a sign. If we understand the mathematical theory of gestures as an outcome of the semiotic system of mathematics, semiotics is induced by the concept of a gesture, but induces the

mathematical structure theory of gestures (their *mathème*); see Figure 57.4. But the latter is the precise framework to yield a valid definition of a gesture. This is a type of essential circularity. None of its points can be omitted without a loss of other points.

When arguing about gestures, one may start in an adequate point of the circular cycle and then proceed to the next point without claiming that any of these points be more fundamental than others. It is an operational discourse, not an essentialistic one.

57.7 The Semiotic Gesture Concept of Adam Kendon and David McNeill

In this section we refer to an important Anglo-Saxon tradition of gesture theory. We discuss the two well-known theories of Adam Kendon and David McNeill; see Figure 57.5. We focus on the semiotic aspect of these theories; psychology as such is not our focus here.

We first refer to *Adam Kendon's* book “Gesture—Visible Action as Utterance” [530]. He first discusses possible definitions of a gesture, then recapitulates historical contributions from Classical Antiquity, then from the nineteenth century, and finally from the twentieth century. Next he discusses classification issues and gesture units and phrases. He then thematizes semantic issues. Discussions of pointing and other more specific gesture types follow. The book—which is a rich source of examples about speech-related gestures—terminates with a discussion of gestures without speech (when they replace words), gestures and sign language, and a summary of the state of the art. Similarly to David McNeill’s approach, Kendon’s is a theory of language (in the broader sense, including non-verbal systems; we come back to this in the following discussion of McNeill’s work). He stresses the “very intimate way in which gesture is integrated with speech.” And he concludes: “For a truly inclusive view of human language, gesture must be taken into account.”

We want to focus on Kendon’s attempts to define gesture, rather than summarize the book, since his approach to this concept is, together with McNeill’s theory, a very special understanding of the phenomenon of gestures.

The second chapter, “Visible action as gesture,” is devoted to the problem of defining gestures. The author gets off the ground with suggesting that “‘Gesture’ is a term for visible action when it is used as an utterance or as a part of an utterance.” He then asks what ‘utterance’ is and “how actions in this domain are recognized as playing a part in it.” His first clarification refers to Ervin Goffman’s definition [375], namely that utterance is “any ensemble of action that counts for others as an attempt by the actor to ‘give’ information of some sort.” This generality is however not what Kendon will use; it is also too general since anything can be interpreted as information. Such a definition would be abstract nonsense. Kendon then cites the *Oxford English Dictionary* (2nd edition 1989) where ‘gesture’ is defined as “a movement of the body, or any part of it, that is expressive of thought or feeling.” After an analysis of the intentionality in utterances, he concludes: “‘Gesture’ we suggest, then, is a label for actions that have the features of manifest deliberate expressiveness.” The critical concept is ‘expressiveness’, but Kendon makes this clear in his comment following that definition: “The more a movement shares these features (manifest deliberate expressiveness, G.M.), the more likely it is to be given privileged status in the attention of another and to be seen as part of the individual’s effort to convey meaning.” So expressiveness is about conveying meaning. This is an unequivocally semiotic statement: Gestures are expressing meaning, they are signs (although complex ones) that communicate meaning. The information in Goffman’s definition is made precise as semantic information. In other words: gestures are signs in the sense of semiotics. And they are always related to the body’s actions, no more abstract concept of a gesture is addressed. This will be confirmed by the second gesture theorist of this school.

Our reference to *David McNeill* is due to his book “Gesture & Thought” [741]. In the introduction, he defines the general scope of his theory: “Now [the emphasis] is how gestures fuel thought and speech.(...)”



Fig. 57.5. Adam Kendon (left) and David McNeill.

Gesture, language, and thought are seen as different cognitive, and ultimately biological levels. (...) Gestures are active participants in speaking and thinking.” This makes clear that McNeill is restricting his gesture theory to gestures that are in different ways coexisting with language; this is also the reason he uses the concept of “language” in two ways: first as the linguistic phenomenon, and then in a larger sense—we might say: in a semiotic sense—as a system where the linguistic part of language is joined by the gestural part of language. Let us denote the language concept that includes gestures by “Language”. Referring to neuroscientist Antonio Damasio, McNeill states that “language is inseparable from imagery”, and that the imagery is covered by gestures. The connection between these two components is existential, and also, language evolution could not have happened without gestures: “To treat gestures in isolation from speech makes no more sense than to read a book by only looking at the ‘g’s.” In this sense, McNeill takes over from Kendon what he calls the “Kendon continuum”, namely a sequence of roles that gestures can play in relation to the linguistic language part; see Figure 57.6. To the extreme left, we have gesticulation, where gestures are completely secondary with respect to language, and to the extreme right, we have the case of sign language, where gestures are given the structure of a full-fledged linguistic semiotics.

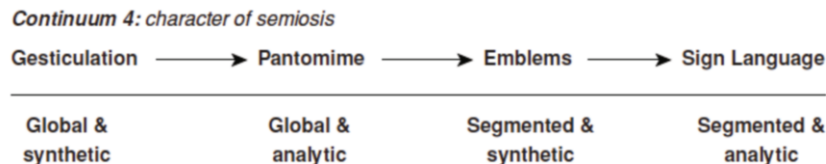


Fig. 57.6. The semiotic aspect of Kendon’s continuum.

What is essential in this approach is that gestures in McNeill’s theory always “carry meaning”, they are in a general semiotic sense signs. Accordingly, this language enables synonymous signs: a gesture might have a word that points to the same meaning, McNeill calls such words “lexical affiliates”. Another semiotic property of gestures is what Karl-Erik McCulloch calls “semiotic components”. These are meaning-bearing parts of gestures, of the hand’s orientation for example. More generally, gestures here are also given an anatomy: They unfold in time, and define groups of gestural movements that McNeill calls “phrases”, namely gestural units that have a complete inner structure: the sequence of phases: from *preparation* to *prestroke* to *stroke* to *stroke hold* to *poststroke* and to *retraction*. Gestures are also given two viewpoints: the third-person *observer* viewpoint, where a gesture presents an entity in a narration, and the first-person *character* viewpoint, which represents the speaker who is “inside the gesture space”.

McNeill stresses a different structure of the semiosis in his theory. He claims that the Saussurean semiotics is a static one, which needs a complementary view of a “dynamic” semiosis, i.e., one where meaning is not a fact, but a process, following the ideas of Russian psychologist Lev Semyonovich Vygotsky [1100]. For Vygotsky, language and thought are two overlapping instances, and neither of them contains the other. This contribution is enriched by the insights of Maurice Merleau-Ponty that language is not the thought’s dress, but its body. The semiosis for McNeill is given an ontology of an existential action, with a reference to Martin Heidegger’s understanding of language as a “house of being”, not a detached formal representation of an object.

The concrete implication of these ideas culminates in what McNeill calls the “Growth Point” (GP). From McNeill’s home page we read: “A growth point (GP) is a dynamic unit of online verbal thinking. It is *sui generis*—not the same as units of synchronic linguistic description (words, morphemes, etc.). The GP combines unlike modes of cognition imagery and linguistic categorial content.(...) It does not exist at all times, and comes into being at some specific moment; the formation of a growth point is this moment, theoretically, and it is made visible in the onset of the gesture.” The GP formalizes the interaction of image (gesture) and linguistic code.

57.7.1 Comments

The theories of Kendon and McNeill are above all theories of gestures that are intimately related to language. Moreover, gestures are conceived as bodily utterances; gestures in another context, such as melodic gestures in music or dance gestures of ice skaters, are not addressed. Moreover, the expressivity of gestures as they are defined in this school is a semiotic one: gestures express meaning, they are signs in a semiotic system of a generalized language (including gestures as well as linguistic signs).

57.8 Juhani Pallasmaa and André Chastel: The Thinking Hand in Architecture and the Arts

Juhani Pallasmaa's beautiful book "The Thinking Hand" [814] deals with "the essence of the hand and its seminal role in the evolution of human skills, intelligence and conceptual capacities." And the rationale for this program is that "the hand has its own intentionality, knowledge and skills." Pallasmaa, a famous Finnish architect and writer, evidently focuses on topics that pertain to the culture of architecture, specifically (and these are the chapter titles): the mysterious hand, the working hand, eye-hand-mind fusion, the drawing hand, embodied thinking, body self and mind, emotion and imagination, and, finally, theory and life.

Our interest in this book, and also the following "Le geste dans l'art" by the famous French art historian André Chastel, lies in their focus on the hand as a central gestural instance. This does not mean that symbolic intellectual human skill must stem from the hand, as some anthropologists (such as neurologist Frank R. Wilson [1135]) argue, or as Anaxagoras claimed that humans are intelligent because they have hands. But it is evident that the hand and the brain are deeply interconnected, in the sense that the hand is neurologically and physiologically distributed all over the nervous and muscular systems. Pallasmaa makes an attempt to define the hand and concludes from these facts that "the hand is fundamentally beyond definability." The problem of such a definition seems to be less the anatomy or physiology than the understanding of the hand's functionality, and the latter is obviously related to the gestures hands are performing. We shall see in the next Section 57.9 that hand gestures with their complex ambiguity of sense production are prominent in literary contexts. The potentiality of such gestures is also the key to the idea of the hand gestures being "the tongue and general language of Human Nature, which, without teaching, man in all regions of the habitable world do at the sight most easily understand," as the English physician John Bulwer writes in 1644 [158]. We may anticipate here that it will be shown that gestures in the mathematical sense of the word (to be defined in Section 61.5) in fact can give rise to symbolic objects, such as abstract mathematical groups, the key word being the *fundamental group* of a topological space; see Section 78.2.10.2.

The non-definability of the hand's dynamic potential is not only a given fact, it is also the consequence of the common lack of language power in the discourse about gestures. The very concept of a gesture is extremely demanding, and this may also be one reason why there is no gesture theory in music: it is simply beyond the language power of scientists educated in the humanities to be able to even describe a gesture, and in particular a hand's gesture with its multiple finger configuration, and its complex spatio-temporal unfolding. That the hand's gestures are so central in Pallasmaa's approach is also important in view of the theory of embodiment which he sets forth. It is evident from his arguments that the hand's gestures (and not only its anatomy and physiology) must play the role of a link between the body and the mind. This is a crucial statement for the ontology of gestures. They could offer the missing link in the cartesian divide, a link that is also still missing in the embodied AI approaches, which believe in emergent properties of (even cheap) embodied design.

Chastel's book [188] is a collection of three published papers: "L'art du geste à la Renaissance", "Sémantique de l'index", and "Signum harpocraticum". They all deal with hand gestures in painting. The general program behind his exposé is what he calls "Prolégomènes à une critique de la *gesturalité* dans l'art." His analyses focus around Renaissance paintings, but also deal with Greek vases and reach to 20th

century art. The most basic gesture he exhibits is the pointing gesture (index), that gesture which Tommaso Campanella [945] had called the only unconditionally understandable and basic human gesture.²

Chastel, fully in congruence with Schmitt's treatise [946] which we have discussed in Section 57.2, refers to Cicero and Quintilian and then recognizes the character of those classical gestures as tamed phenomena: "Les gestes que retient le peintre, ce sont naturellement les gestes stéréotypés, répétitifs, tous construits et codifiés dans le vécu." More precisely: "Il n'est pas absurde de considérer ces formes comme les éléments d'une sorte d'*ars memoriae* religieux."

From this situation of tamed gesture, Chastel discovers a strong digression into a totally different gestural ontology which was initiated in Leon Battista Alberti's theoretical writing, *De pictura* (1435), where he writes: "Coi movement dell membra mostran movement dell'animo." Chastel comments on it saying that it is a program of painting where the painted figures no longer represent a condition or a quality, but a *being*. And Leonardo da Vinci adds: "Lo bono pittore ha da dipingere due cose principali, cioè l'homo e il concetto della mente sua. Il primo è facile, il secondo difficile perché s'ha a figurare con gesti e movimenti delle membra." And Chastel summarizes that: "La naïveté sémantique du geste, sur laquelle nous avons édifié notre exposé, était en somme compromise par la théorie des *moti*." It is the theory of movements, these characteristics of *untamed* gestures, which gives Chastel the argument for a radical change of gestures with Alberti and da Vinci. He concludes that: "Le geste de l'index était si remarquable, si chargé de sense pour Léonard qu'il est devenu avec lui une sorte de geste pur." The reference to the extremely complex and powerful configuration of 130 pointing gestures in Leonardo's *Last Supper* illustrates this theory. Summarizing, the hand's gestures—above all the pointing gesture—are for Chastel and Pallasmaa germinal phenomena that initiate an autonomous ontology of gestures beyond their plain semiotic role as nonverbal signs.

57.9 Émile Benveniste and Marie-Dominique Popelard/Anthony Wall: Gestures as a Dialogical Category

Émile Benveniste in [100] sets up a refined analysis of the Saussurean sign structure that connects the signifier (*signifiant*) to its signified (*signifié*) by means of the signification process (*signification*). Benveniste's analysis of signification stresses the role of the subjects involved in the process when pronouns are involved. The classical *trias* of first, second, and third person, *je/tu/il* (I/you/he), reveals a fundamentally different situation when the deictic nature of these pronouns is at stake. He separates the first two personal pronouns *je/tu* from the third one considering the mechanisms that enable their full meaning. Whereas the first two persons involve a substantial subjective involvement, the third person, which he qualifies as a "non-person," are independent of subjective dimensions. It is in fact well known that the pronouns *je/tu* are strong shifters; their full meaning is only achieved by the integration of the underlying subjects which perform enunciations including those pronouns.

This shift from a formal signification process to one that essentially involves the subject(s) of enunciation is not only a formal enrichment of Saussure's abstract scheme, it also creates an ontological dimension in that the existence and presence of subjects underlying the pronouns *je/tu* becomes a *conditio sine qua non* for the possibility of meaningful fulfillment of these pronouns' *signifiés*. In the spirit of dialogical linguistics, as forwarded by Michail Bakhtin, [70] the first two persons pertain to a relational understanding of linguistic utterances. It is stated that *je/tu* implicitly or explicitly always presuppose the presence of a co-enunciators, meaning that the ontology realized by these pronouns always includes the presence of the Other that is addressed when using *je/tu*. The Saussurean abstract scheme thereby morphs to a speech act where the deictic completion enforces a co-existence of the Other. This is not a direct necessity of gesturality, but in the action that such a co-existence includes (addressing your words to another person), it opens up a dimension that transcends the objective facticity of the third person.

² It is remarkable that recent research by Michael Tomasello and collaborators in neuropsychology [1062, 1063] has demonstrated that pointing is a basic and exclusive human ability that children learn at the age of one year, and that this gesture is a root of human language development.

Benveniste's approach is exemplified and discussed in Popelard's and Wall's short, and easy-to-read, book "Des faits et gestes" [857]. Their discourse traces a dialogue about gesture and fact between a philosopher (Popelard) and a literary scientist (Wall). Their understanding of gestures does not include a precise definition,³ but a phenomenological analysis, mainly focusing on gestures as complements of language, and this in the spirit of Kendon (whom they cite) and McNeill. They attribute to gestures a fundamental role: "Ce sont les gestes qui se servent de nous." It is here a typically French approach to gestures: They are not just a variant of language (in its more general concept), but genuine communicative phenomena.

They discuss gestures working out two main examples: Michelangelo's *Creation of Adam* and Stendhal's *Le rouge et le noir*. In both instances, they focus on the hand's gesture, in Michelangelo's case between God and Adam, and in Stendhal's case between Madame de Rhênal and her lover Julien. Their interaction is a dialogical one that is based on a mutual communication with its inherent ambiguity in the sense that these gestures don't communicate given contents, but create a joined sense uniquely by their bidirectional exchange. Their gestures don't share the classical Saussurean *signifié*, but create a sense that is built upon the second person's co-presence: "Aucun geste se fait tout seul." And: "Les faiseurs de gestes sont des co-gestionnaires." They create a "nous", a we-community⁴ that gives their gestures their sense. This is a remarkable shift from Saussure's *signifié* to a sense that transcends the semiotic setup.

³ On page 10, they however state that "un geste engage un corps qu'il met en mouvement: en temps et en espace, un corps se trouve animé. Comment? En signifiant quoi? Faire un geste dirait quelque chose. La question est de savoir quoi."

⁴ It might be a bit unprecise to identify the second person singular pronoun with the first person plural pronoun here. Benveniste would not have accepted this identification. Rather he would prefer understanding that the second person, "you", is a shared identity of intimacy without the ontology of a "public" community of the plural.