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42. Elements of meaning in gesture: The analogical links

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Abstract

My interest essentially lies in the specificity of co-speech gesture and in its mode of symbolic functioning. I argue for viewing gesture as a symbolic system in its own right that interfaces with thought and speech production.

1. Co-speech gestures as analogical signs

Our body is simultaneously the source and the displayer of sensations, the producer of movements, postures, behaviours, actions, and signs that, from the simple physical point of view, are all interactions of the body with its environment. The body, the seat of symptoms and reflex actions, is a producer of actions and signs. To what extent could the latter, via a relation of contiguity or resemblance, be derived from the former? Reactive behaviours that serve as indicators of a person's affective or psychic state can be deliberately reproduced in order to signify the state that they naturally indicate. By way of gesture, the human being re-expresses all the vibrant interactions that issue from his culturally influenced or determined perceptual-motor experience (Mauss [1934] 1950), whether they be deeply felt, proprioceptively sensed, or externally observed and cognitively integrated. This is the conclusion I have come to after many years of empirical research into questions about the semantic contribution of nonverbal elements during language use.

1.1. Experience of the physical world

Gestural representation draws upon our common experience of the physical world. Thus, by imitating how an instrument is handled, we can refer to each one of the components involved in the action, to each element in the operational chain: the actor, his action of using the instrument, the instrument itself, the action of the instrument on an object to achieve a goal, and the object. Hence the sequence "subject-action-instrument-action-object" forms what I call an *action schema*. For example, one can mime holding a fishing rod to refer to: the angler, him handling the rod, the rod itself, the act of fishing, or the fish attracted to the bait at the end of the line. Furthermore, this action schema can be applied to another object and metaphorically represent the way in which a person is baited in order to trick him. By analogy, the gesture presents the relevant element (handling the fishing rod) referred to in the action schema, and the context enables the interlocutor to identify the segment of the action schema to which the speaker is referring. This simple example shows us that both the encoding and the decoding of a representational gesture imply metaphoric and/or metonymic cognitive processes that are inspired by links of resemblance or contiguity between what we experience in the physical world and the gestures we perform.

The interpretation of a gesture requires us to reason on the physical level because that is where the semiotic process is initiated. Saliency given to a different selection of a gesture's physical features induces different representations.

For example, the palm facing forwards presenting a flat vertical surface in front of the body, a configuration which I call Palm Forwards, can move forwards to push forwards or to counter an approaching aggressive force. Thanks to our physical experience, we recognize the flat palm in this orientation and position as being an active or a reactive force. The gesture simply means what it does in reality: obstruct something, give resistance to an aggressive force coming towards oneself, protect oneself from it, or even push it away. It draws its meaning from a physical function (self-protection). It is or it represents an opposing force, and this primary sign of opposition is subject to semantic derivation (see 4.2.1 Semantic derivation). The representational gesture, in this case, is based on an analogy of function (the palm moves forwards to protect

oneself) originating from a link of contiguity between the gesture (the palm moves forwards) and its functional meaning (to protect oneself). The analogical link of function is a link of contiguity.

However, as a vertical surface with a rectangular shape turned away from the body, Palm Forwards at face level can represent a notice, the relevant element in the action of putting an announcement on a notice board. The virtual object thus represented can evoke, via metonymy, the whole action schema and its motive: putting a notice on a board to make its written content known to everyone. And by further semantic derivation, outside the domain of the written word, the action of making something known to everyone as if one were displaying it on a notice board. This example shows us that the semiotic process that produces representational gesture occurs in stages, in this case using several links: resemblance of shape (rectangular flat palm and notice), temporal contiguity (displaying information), and resemblance of motive (public announcement). The analogical link of shape is a link of physical resemblance, and the contextual meaning (public announcement) is derived from this physical resemblance.

In sum, the analogical link is the initial link of contiguity or of resemblance established through analogy between a physical feature of the gesture and our physical experience of the world. On the basis of the analogical link, further links of contiguity or resemblance may come into play to create the contextual meaning of a gesture. We shall come back to the importance of identifying the analogical link of a gesture in order to discover the meaning of a gesture in a given context.

1.2. Representation of the physical world

One can gesturally represent an action, a state, an object, an animal, or a person characterized by a distinctive dynamic or static feature. Even when giving an account of a concrete reality, gestural representation implies a mental process of abstraction that will influence what is to be characterized (what is the visibly distinctive feature?) and how this is to be done (the choice of body part(s), the most appropriate movements, symbolic norms to be respected).

Moreover, a mimetic gesture does not necessarily refer to the act that is being imitated, but it can also, as we have already seen, refer to the idea derived from the result of the imitated act (fishing > tricked person; putting up a notice > public announcement). From the semiotic point of view, one observes that the link established between a gesture and its meaning is not direct: it supposes a link of resemblance followed by a link of contiguity. The gesture does not evoke the act that is imitated but its consequence.

Once we recognize the analogical link, and therefore a gesture's deep physical meaning, it modifies how we interpret a gesture in a given context. For example, Palm Forwards* – the asterisk indicates where the gesture begins – in the context of a narration could accompany the verbal utterance **elle n'a pas dit un mot* 'she didn't say a word'. The reflex action (of raising the hand, palm facing forwards, to protect the face) represented by the physical elements of the co-speech gesture (palm facing forwards and outwards) communicates a deep meaning (self-protection) that underlies and clarifies the gesture's contextual meaning (self-protective prudence). The transcript of the multimodal message could be: "fearing detrimental consequences, wisely, *she didn't say a word." The gesture shows the reason for the silence. From the semiotic point of view,

a physical similarity between the gesture's physical elements and the reflex action (Palm Forwards) creates a physical metaphor (physical self-protection). This serves to express an abstract metaphor via a transfer from the physical world (reflex of physical self-protection) to an abstract notion (non-physical self-protective action).

A deep analysis of the kinesic sign highlights its motivated character. Researching this motivation leads us to home in on the perceptual-motor experience of the body in physical interaction with its environment. This return to the origins highlights the non-conscious, physico-symbolic information conveyed by the gestural sign that thus operates on several levels of consciousness; quite often, it is its deep motivation, its non-conscious "symbolic action," that is revealed to be of highest relevance on the semantic level during speech production. Knowledge of this root meaning enables us to explain the spontaneous choice of a particular kinesic expression at the expense of another and, in this way, to gain a deeper understanding of the utterance.

2. Corpora

My research began by studying attitudes that French people express through co-occurrent intonational and facial expressions, truly audio-visual nonverbal entities (Calbris and Montredon 1980). It continued by concentrating solely on the visual modality, first of all on conventional gestural expressions that can be understood without a context (emblems), and then on spontaneous gestural expressions that occur during speech production (co-speech gestures).

Initially, 50 French (Calbris 1980: 245–347) and foreign (Calbris 1981: 125–156) subjects were tested using an experimental film designed to study how 34 conventional French co-occurrent manual and facial expressions are structured to convey meaning. The results give indications of the relative pertinence of meaningful physical elements and the cultural character of these expressions. Moreover, the foreign subjects interpreted them as signs that necessarily have a "motivated" origin, that is to say, there seems to be a natural driving force that has led to their appearance as opposed to an arbitrary pairing of forms and meanings established by convention.

An outcome of this initial research was the need to verify the motivation of the physical components of the gestures produced during spontaneous uses of language. This gave rise to Corpus 1, a very varied collection of about a thousand samples of co-speech French gestures ethnographically noted in 1981 in the field, for example, in trains and cafes, as well as selected from media such as films, comedy sketch shows, and television debates. The semiotic analysis of these gestures, classified according to their physical aspects by evaluating the hierarchical relevance of their physical components in view of their corresponding contextual meanings, was the subject of a doctoral thesis (Calbris 1983), later condensed into a book (1990). A comparative analysis of the data showed that one gesture can evoke several notions (semantic diversity) and that one notion can be represented by several gestures (physical diversity). This being the case, how is the presumably motivated character of gesture maintained? I sought to answer this question by conducting a further comparative analysis of the data. This revealed the phenomenon of semantic derivation on the basis of one physico-semantic link (single motivation). This revealed the phenomenon of semantic derivation from either one single physico-semantic link (single motivation), or one selected from several possible physico-semantic links (plural motivation) (Calbris 1987: 57–96).

To confirm the results obtained from observations noted in the field, in 1990 I established Corpus 2, a database of audio-visual samples of French gestures: fragments of sequences, varying in length from a few seconds to one minute, selected from filmed interviews with about 60 people, mostly intellectuals.

Corpus 3 is a series of six interviews with Lionel Jospin, the former French Prime Minister, that were broadcast on French television between July 1997 and April 1998. It was established to study how the two types of sign – gestural and verbal – interact synergetically during utterance production.

A major contribution of my work resides in demonstrating the plural motivation of gesture. This modifies our perception of the referential function of co-speech gesture because one gesture can be bi-referential or even multi-referential. Thus, in a given instance, by establishing several analogical (physico-semantic) links between its physical aspect and its contextual meaning, one gesture can contain several gestural signs.

3. Methodology

In order to progress towards a deep understanding of surface phenomena, my method of analysis operates on several descending levels: from the examination of a co-speech gesture in its contexts of use, to its motivation, and then to the physical origin of its motivation. The stages of analysis are summarized as follows:

- (i) Establish a large database of representational gestures;
- (ii) Classify the representational gestures according to their priority physical component;
- (iii) Compare the relations between gestures and the notions they represent.

By researching physical diversity, on the one hand, and semantic diversity, on the other, one may discover the range of physico-semantic links contained in the database.

3.1. Identifying representational gestures

To pin down the meaning of a co-speech gesture, we have to take into account the information conveyed by the situation in which it occurs, by what is said, by other bodily information, and by the voice. It is necessary to distinguish body movement with a referential function from body movement with a demarcative or expressive function in liaison with the voice. The distinction is relatively easy to make once the vocal scansion and accentuation have been coded. Furthermore, a manual gesture should be interpreted in relation to “co-occurring” movements, i.e. those simultaneously produced by other body parts: gaze shifts or facial expressions will determine the particular meaning of a head movement, for example, as either an indication of place, benevolent attitude, or a sign of restriction. The meaning is then verified by what is said in the given situation. What seems to happen is that the context comes to “activate” one of the meanings that are possible.

In order to arrive at an understanding of the symbolic system of gestures that replace or accompany speech, it is necessary to have access to a diversified and representative sample of the whole system.

3.2. Classification of representational gestures according to their priority physical component

We begin by developing a classification of gestures according to physical criteria. This allows for an objective and relatively exhaustive approach. Insofar as a physical characteristic of a gesture can be shown to be a vehicle of meaning, this classification becomes physico-semantic as recurrent correlations between physical characteristics of gestures and contextual meanings become apparent in the data.

Firstly, I make a broad distinction between *body-focused gestures* that touch or focus on a part of the speaker's body, from those that do not (Tab. 42.1). For body-focused gestures, the body part on which the gesture focuses, and not the position of the body part making the gesture, is of primary relevance.

For *gestures in space*, that do not touch or focus on a body part of either the interlocutor or the speaker, the type of movement is of primary relevance. In these cases, it is necessary to distinguish those which describe straight lines or flat surfaces from those which describe curved lines or surfaces because the physical elements which are relevant for the former are not relevant for the latter.

Finally, I have systematically examined a very large and important category of *head gestures*, namely movements performed with the head, excluding facial expressions.

My research shows that particular gestural components have priority in that they determine the next level of classification into different types of gestures: the body part to which the gesture directs attention, that I call *localization*, in the case of body-focused gestures; the *movement* in the case of gestures in space; and the moving *body part* in the case of head gestures.

Although the semantic contribution of one of the physical elements may have priority in a given instance, the contribution of the other components must also be taken into consideration. The meaning of the gesture is derived from the combinatorial interplay between primarily and secondarily relevant components which convey meaning.

Tab. 42.1: Classification of gestures by priority physical component

PRIORITY COMPONENT	CLASSES OF GESTURES	
Localization	<i>Body-focused gestures</i>	
Movement	<i>Gestures in space</i>	
Form of movement:	Straight pathways	Curved pathways
Direction of movement:	Directional axis of movement	Clockwise vs. anticlockwise
Secondary components:	Body part (hand or digit/s)	
	Configuration of body part	
	Orientation of configuration	
	...	
Body part	<i>Head Gestures</i>	

The major class of gestures in space is subdivided according to the form of the movement pathway: straight-line gestures are opposed to curved gestures, whose components of secondary relevance differ completely from one another. In the case of straight-line

gestures, what matters is the directional axis of the movement performed by a body part in a particular configuration, and in a specific orientation if the configuration has a flat shape. Repetition and symmetry are also secondary components. In the case of curved gestures, what matters is the form created by the movement as well as its direction: progressive (clockwise) movement is opposed to regressive (counterclockwise) movement.

Whereas there are essentially only three priority physical components (localization, movement, and body part), the secondary components are numerous: repetition of movement, type of repetition, and movement quality all have their importance, as does laterality or the use of both hands, as well as the plane, whether it be the plane in which the flat hand performing a straight-line movement is oriented or the plane in which a curved movement is performed. Furthermore, certain physical elements of the flat hand, such as the tip, the edge, or the surface of the flat palm, appear to be relevant. The sub-components of a configuration, just like the sub-components of a movement, can unite to constitute the relevant physical feature of the gesture in question.

3.3. Stages of analysis

The systematic analysis of gestural signs requires several steps:

- (i) Code the representational gestures' components: the coded description indicates, always in the same order, the hand used (or both hands), its localization (only for gestures at face level or higher), its configuration, its orientation, and then its movement. For example, the right hand [R], closed in a Fist [R ♀] turned inwards towards the speaker [R ♀b], moves forwards [R ♀b.f];
- (ii) Create repertoires according to gestural components;
- (iii) In each repertoire, determine the common semantic element corresponding to the common physical element;
- (iv) Deduce the potential analogical link(s) between physical and semantic elements;
- (v) Validate the analogical link.

This method enables us to discover the diverse analogical links established between the physical and the semantic levels and subsequently the combination of these links manifested internally in the gestures. It brings to light the complex interplay of the symbolic relations between gestures and the notions they express.

4. Identifying gestural signs by analyzing relations between gestures and notions

In the database of representational gestures, we investigate the relations between gestures and notions (Fig. 42.1) and study the diversity of these physico-semantic relations by adopting the semantic viewpoint (one gesture represents different notions), then the physical viewpoint (different gestures represent one notion). In view of the diversity of gestural signs observed to refer to one notion or obtained by investigating one gesture, the objective is always the same: to identify the analogical link explaining each of these signs.

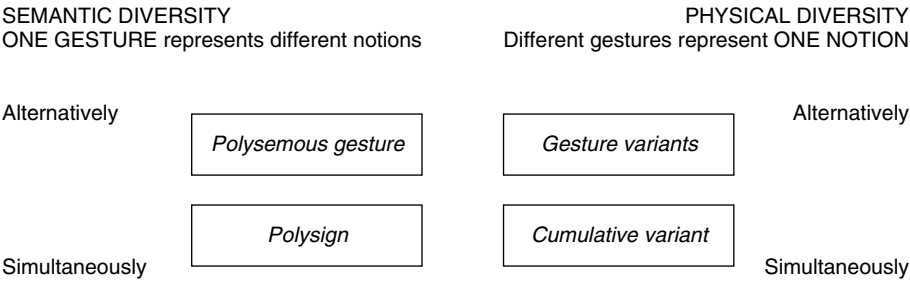


Fig. 42.1: Relations between gestures and notions

4.1. Physical diversity to express a notion. Gesture variants

A given notion or concept may be expressed gesturally in several different ways. We may say, then, that a given notion may have *gesture variants* (Fig. 42.1). Essentially, they consist in a change of movement or a change of body part. For instance, the head, hand, index finger, and thumb may be used indifferently to localize spatially or temporally, to designate concretely or abstractly (localization and designation), or to mime movements in various directions. The addition of a body part performing the same movement, for example, lateral shaking of the hand and the head to express “negation”, allows one to obtain *stylistic variants*; in fact, the addition only reinforces the expression since it produces a *cumulative variant*. In contrast, the substitution of one component for another, for example, substituting body parts that cannot cumulate their movements, such as the hand, thumb, and index finger, or substituting the shape of the movement pathway, for example, from a straight to a curved line, allows one to obtain *semantic variants*. One can then determine the semantic contribution of the substitute, whose role as a secondary component allows nuance to be added to the meaning of the priority component. This possible precision allows one to select the semantic variant adapted to a situation.

4.2. Semantic diversity of a gesture: Polysemy, polysign, polysemy of a polysign

The collected corpus is sorted into repertoires of gestures that have physical components in common; the gestures within each repertoire are then compared from the physical and the semantic points of view. One studies how a given gesture may represent several different notions (Fig. 42.1). In cases where one gesture may represent more than one notion, it may be *polysemous*, in which case these different notions are represented on different occasions of the gesture’s use. On the other hand, a gesture can function as a *polysign*, in which case it may refer to several different notions at once on a given occasion of its use.

4.2.1. Polysemy of a gesture explained by semantic derivation or plural motivation

For example, Palm Forwards and the transverse movement of the flat hand parallel to the ground, a configuration which I call Level Hand, are both polysemous gestures, but their polysemy is explained differently: a semantic derivation from one analogical link

in the case of Palm Forwards, whereas the gesture performed with the Level Hand contains several analogical links.

4.2.1.1. Semantic derivation

Palm Forwards may express the notions of “opposition,” “prudence,” “refusal of responsibility,” “stopping,” “requesting someone to wait,” “agreement,” “refusal-negation,” “objection,” “restriction,” or “perfection.” Derived from the reflex of self-protection, the gesture expresses a (self-protective) opposition if one takes into account the notions of “prudence,” “refusal of responsibility,” and “agreement by capitulation” thus expressed. As a variant used to signify “perfection,” it “opposes” all possible objections regarding the quality being spoken about.

One way of verifying the value of the analogical link that one imagines is to verify whether the modulation of the sign on the physical level entails or gives rise to the modification echoed on the semantic level, thus justifying the link itself. In reality, the surface area that is physically opposed appears to be proportional to the strength of the opposition or self-protection symbolized (Fig. 42.2).

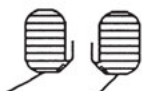




	Hands	Hand(s)		Forefinger	Thumb
P S Y S I C A L					
S E M A N T I C	Refusal of responsibility	Self-protection Stop Request to stop Objection Refusal Negation	Negative insinuation	Restriction	Restriction 'Time out!'

Fig. 42.2: Parallel attenuation, physical and semantic: Opposition to the outside (Calbris 1990: 119)

As a semantic variant, restriction or partial opposition is offered by a partially raised palm oriented in an oblique plane and facing forwards. Instead of adjusting the angle, another possible way to attenuate is to reduce the opposing surface area further by raising just one finger, the index finger, or the thumb. The index finger, the indicator finger, is used to oppose in order to add precision, while the thumb, the strong finger, is raised outwards to stop something for a moment. One can say that the phenomenon of parallel attenuation on the physical and semantic levels confirms the value of the link established between them.

4.2.1.2. Plural motivation

The gesture contains alternative gestural signs based on different analogical links (Fig. 42.3). The examples in my corpora show that the transverse movement of the

Level Hand can express the following alternative notions depending on its context of use: “quantity” and as a value judgement “superlative”; “totality” and as a value judgement “perfection”; “directness” on the temporal level (“immediately afterwards”), on the logical level (“determinism,” “obligation,” “certainty”), or on the value-judgement level (“frankness”); “stop-refusal” as in cases of “negation” (“nothing,” “never,” “no more”), “refusal,” or “end”; “cutting”; and it can literally and figuratively express the idea of a “flat surface,” a “second surface” that covers the first, the action of “laying something out flat,” a “level,” or “making something level,” i.e. “equality.” It is a question of “levelling – flattening – standardizing – equalizing.”


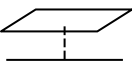

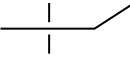
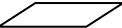
GESTURE	Transverse movement of the Level Hand				
RELEVANT TRAIT	Movement makes relevant: the visual field from left to right	the fingertips that draw	the palm that resists	the edge that cuts	the flat palm that covers
ANALOGICAL LINKS	<i>Everywhere</i> 	<i>Straight line</i> 	<i>Obstacle</i> 	<i>Cut</i> 	<i>Horizontal plane</i> 
MEANINGS	Quantity Totality	Directness	Stop-refusal	Cutting	Flat surface
SEMANTIC DERIVATIONS	Superlative Perfection	Determinism Certainty Obligation Frankness	Negation Refusal End		2° Surface (same) Level Equality Stability

Fig. 42.3: Plural motivation of the transverse movement of the Level Hand (Calbris 1990: 140)

The diverse contextual meanings of the same gesture make one or another of the components relevant (movement or configuration), or even one of the physical traits of the configuration (the palm, the fingertips, the edge of the hand, or the orientation of the palm); most frequently, the analogical link resides in the movement of one of these elements (the movement of the palm, of the fingertip(s), or of the edge of the hand).

Let us now consider the relevant physical features upon which the different analogical links in Fig. 42.3 are based:

- (i) We know that other gesture variants expressing “totality” have a component in common: the “transverse movement” of the hand or of the gaze, sweeping the horizon, representing the whole visual field, “everything,” and “everywhere.”
- (ii) The idea of “directness” that is common to the notions of “determinism,” “obligation,” “certainty” and “frankness” supposes the representation of a straight line (linear trace made by a moving point); hence it is the movement of the fingertips which becomes relevant.
- (iii) The idea of “stop-refusal,” previously expressed by Palm Forwards opposing something approaching from the outside, is signified by a horizontal movement of the palm facing downwards. Could the palm stop an opposing force? The notion

- of “the end” implies stopping a process that has come to an end. Would this be represented by the palm stopping a progression originating from the ground?
- (iv) To express the notion of “cutting,” it is the edge of the hand, or more exactly the movement of the edge of the hand, which becomes relevant.
 - (v) Lastly, the analogy between the flat shape of the hand and a flat surface that it is representing is obvious.

The analogical link applies to every domain and may be at the origin of semantic derivation. For example, a direct link expresses “immediacy” on the temporal level, and on the logical level, “immediate consequence” (“determinism,” “obligation,” “certainty”), whereas on the level of moral judgement, directness expresses “frankness.”

4.2.2. Polysign

A gesture that simultaneously represents several notions is called a *polysign*. For example, a raised fist that as co-speech gesture signifies how well a secret has been guarded simultaneously represents “enclosure” by virtue of the fist configuration and “increasing exclamation” by the upward movement. Each component (configuration, movement) supporting an analogical link is a gestural sign. Hence the gesture (movement of the configuration) is a polysign.

The *complex gesture* is a particular type of polysign. Here is an example from my data: in order to simultaneously depict “mixing” and “approximation,” usually signified by the two hands turning around each other in the first case, and by a rotational oscillation of the concave palm facing downwards in the second, a screen writer expresses a “kind of confusion” and a philosopher expresses an “approximate mixture” by performing the same synthesis, i.e. an alternating oscillation of the two concave palms, one behind the other, as if they were interlocked (Fig. 42.4).




GESTURE	1. Two hands turning around each other	2. Rotational oscillation of the concave palm	Synthesis of 1. & 2. Alternating oscillation of the two concave palms, one behind the other
			
MEANINGS	Mixing	Approximation	Kind of confusion Approximate mixture

Fig. 42.4: A complex polysign gesture (Calbris 1990: 149)

The multifaceted depiction requires one of the components to be modified so that the analogical links necessary for synthetic representation can be cumulated. In other words, an addition on the symbolic level requires a slight transformation on the physical level.

We know that a gesture is a composite unit. Each of these components can itself be decomposed. We have seen that a hand configuration, a flat hand, for example, is able to contain several relevant physical elements: the fingertips, the palm, and the edge of

the hand. Similarly, a movement, for example, a curved line, is characterized by both shape and direction. There are thus many elements which may convey meaning. Since it is the analogical link, established by a gestural component or even a gestural sub-component, that determines a meaning, several types of polysign may occur (Tab. 42.2). Two analogical links established by two gestural components give rise to a bi-referential gesture. Likewise, two analogical links within one component, for example, a movement composed of two relevant sub-components, give rise to a bi-referential movement. A polysign gesture may be multi-referential by having several analogical links on the component and/or sub-component level. Tab. 42.2 shows just some of the possible combinations of analogical links that, in sum, generate the referential potential of polysign gestures.

Tab. 42.2: Types of polysign

GESTURAL COMPONENTS				
Orientation	Configuration	Movement	Analogical links	Types of polysign
	—	—	2	<i>Bi-referential gesture</i>
		— —	2	<i>Bi-referential movement</i>
—	—	—	3	<i>Multi-referential gesture</i>

Key: — relevant physical elements with an analogical link

4.2.3. Polysemy of a polysign

A polysign can be polysemous (Fig. 42.5). It is sufficient that more than one gestural component supports several analogical links, for example, a polysemous fist configuration and a polysemous movement forwards, for their polysign product to become polysemous:

GESTURAL COMPONENTS	Configuration Fist	Movement Forwards	Configuration & Movement Fist moves forwards
ANALOGICAL LINKS	Physical or psychological strength	Towards or against, Spatial or temporal progression	
MEANINGS	Will Effort Strength Strength	Forwards Advancing towards Temporal progression Advancing against	Will to go forwards Effort towards a goal Strength & Modernism Strength to attack

Fig. 42.5: A polysemous polysign

By comparing repertoires of contextual meanings of co-speech gestures according to their priority component or relevant physical feature, we know for instance that the fist can represent “strength,” physical or psychological. As for movement forwards, it is eminently ambiguous: one advances towards something or against an opposing force. The progression represented along this axis is both temporal and spatial.

Consequently, the different combinations of notions that these gestural components can evoke are themselves multiple. If we consider Fig. 42.5,

- (i) the “will,” on one hand, and the “progression,” on the other, represent together the “will to advance”.
- (ii) The “effort” and the “progression towards a goal” become allied to represent the “effort towards a goal”.
- (iii) The combination of the notion of “strength” and that of “temporal progression” results in “strength and modernism”.
- (iv) Finally, the representation of “strength” allied to a “progression” amounts to the “strength to attack”.

Many combined and diverse meanings for one and the same gesture are possible. In fact numerous contextual meanings can depend on a few physical elements that support more than one analogical link, each of which may be subject to semantic derivation.

When the analogical link is not obvious, one finds it by exploiting the interaction between the phenomena of polysemy (one gesture represents different notions), on the one hand, and variation (different gestures represent a notion), on the other. For example, in France, the head shake expresses “negation”; but furthermore, as a co-speech gesture, it can also express “totality” and/or “approximation.” How can we discover the analogical link inherent to each of the three contextual meanings of the head shake? The answer lies in comparing the gesture variants of each notion. All those that express “totality” are characterized by a transverse movement of the head, or of the hand. What is the analogical relation between this common characteristic (transverse movement in each gesture referring to “totality”) and the notion of “totality” if it is not reference to the horizon, “everywhere,” concretely represented by the gaze sweeping across the horizon (in a single or a repeated head movement), or by the palm covering it from one side to the other (using one hand or both hands in a symmetrical movement).

4.2.4. Nuance contributed by the polysemous gesture to each notion it expresses

The polysemous gesture of the transverse movement of the Level Hand (Fig. 42.6), for instance, can express alternatively: 1. totality, 2. negation, 3. cut, or 4. stop. But it sometimes occurs that each of the gesture variants (a, b, c, d) used to express a notion (1 or 2 or 3 or 4) conveys a semantic nuance. This means that the nuance conveyed is a second sign underpinned by an analogical link. The variant thus contains two links: the principal analogical link representing the common notion (4.) and a secondary link (a) representing a second notion that comes to add a nuance (4.a). One thus observes combinations of analogical links, and the variant functions like a polysign. This possibility of expressive modulation enables one, for example, to select the gesture variant appropriate to the situation (4a or 4b or 4c or 4d).

















	N	O	T	I	O	N	S
	1.	2.	3.	4.			
	Totality	Negation	Cut	Stop			
VARIANTS							
a	finished	absolute	total	definitive			
<hr/>							
b							
	finished	defensive	at ground level	defensive			
c							
	finished	of refusal	obstacle	time limit			
d							
	unified	corrective	in two	time limit			

Fig. 42.6: Polysemy and gesture variants: Different notions nuanced by the polysemy of the gesture

Once the various elements of the symbolic Meccano system constituted by analogical links have been identified, one can leisurely observe the constructions obtained by the association of various elements. A polysemous gesture (meanings: 1, 2, 3, 4) can in a given situation become a polysign: the totality is finished (1.a) and not unified; the negation is absolute (2.a); the cut is total (3.a); and the stop is definitive (4.a). For each notion, the polysemous gesture cumulates two analogical links, namely, the link specific to the notion, and the link that, depicting “totality” by the transverse movement, comes to nuance it.

Playing with the symbolic Meccano system produces curious results because a kinesic ensemble (facial expression and hand gesture) just as well as a kinesic unit (hand gesture) or a kinesic sub-unit (gestural component) can, each one of them, contain one or more analogical links!

5. Gestural sign, speech, and thought

When gesture and speech alternate, whether the order is (Speech > Gesture) or (Gesture > Speech), the gesture functions much as if it were a word or another unit of linguistic expression, taking its place in the construction of the utterance as a component of its syntax. On the other hand, when gesture and speech occur together, the gestural expression and the spoken expression may be related semantically in two different ways:

5.1. A coverbal sign

Sometimes a gesture that co-occurs with speech functions like a “commentary,” simultaneously added on to what is being expressed in words. Either it expresses the speaker’s attitude in relation to the object of the utterance, or in relation to the interlocutor, or it expresses a commentary on the object of the utterance. The complementary information it provides enables one to avoid the verbal repetition of synonymous information. Insofar as it concretely clarifies what is said and sometimes disambiguates the verbal content, gesture plays an involuntary pedagogical role.

5.2. A preverbal sign

Let us imagine the audio-visual chain segmented in rhythmic-semantic groups as a number of verbal-gestural pairs that succeed one another. It may happen that the information conveyed by the gesture in one pair announces the information conveyed by the speech in the subsequent pair. The synchrony of the dual units may be perfect but without there being any synchrony in the respective pieces of information supplied: the gestural information often precedes the verbal formulation of what (idea, notion) is to be uttered. The co-verbal gestural sign is often pre-verbal (Fig. 42.7):

[face-to-face, the two concave palms sculpt a globe] **Et c’est dans ce sens, me semble-t-il*, [sculpt a second, smaller globe], **que quand même derrière tout cela*, [the speaker leans back again, hands in the rest position] *il y a malgré tout une unité*

[face-to-face, the two concave palms sculpt a globe] **“And it’s in this sense, it seems to me,”* [sculpt a second, smaller globe] **“that even so behind all that,”* [the speaker leans back again, hands in the rest position] *“there is nevertheless a unity”*

Idea of “globality”



beginning



end of the gesture

Et c’est dans ce sens, me semble-t-il
 ‘And it’s in this sense, it seems to me’

Fig. 42.7: Gestural formulation anticipating verbal formulation

The multichannel nature of the communication is highly evident in this example since both the acoustic and the visual channels are used in a complementary way during three-fifths of the utterance: one is assigned the task of diplomacy, and the other is entrusted with the essential content. In other words, the idea of “unity,” present right from the start, is gesturalized in the form of a globe. The gesture is repeated in order to segment the rhythmic-semantic groups corresponding to the oratorical precautions (three-fifths of the utterance). The multifunctionality of the gesture is equally evident

since the significance of the globe, sculpted by the referential gesture that segments and complements the simultaneous utterance, is only confirmed at the end.

One sees the gesture giving the metaphorical image of the abstract notion often well in advance of this being put into words. More than the imagination, it expresses the metaphorical imagery that underlies the putting of thoughts into words. Gestural referentiality is an indicator of ideation, of the spontaneity of the thought to be put into words (see Calbris 2011: 295–312).

Now let us consider the relation between the gestural sign and thought. The study of gestures of cutting, for example, extracted from fragments of conversation selected from different corpora, demonstrates how gesture expresses the percept underlying the concept (Calbris 2003: 19–46). Gesture appears as the product of a perceptual abstraction from reality. It represents a *preconceptual schema*, an intermediary between the concrete and the abstract, which allows it to evoke the one or the other equally well. For example, the schema of cutting implicitly appears in numerous and varied notions: “separation,” “cutting into elements,” “division into two halves,” “blockage,” “refusal,” “elimination,” “negation,” “end,” “stoppage,” “decision,” “determination,” “measurement,” “categorization,” “categorical character,” and “interruption.” An ideal, abstract, and adaptable prototype is constructed on the basis of concrete acts. The gesture of cutting represents the visual and proprioceptive operational schema and, through it, the two extremes of the semantic continuum going from the concrete to the abstract: from cutting a real object into pieces and the cognitive dissecting task of analysis. Despite its motivated character and the physical concreteness of its form of expression, the gestural sign operates at a certain level of abstraction.

6. To conclude

The methodological approach adopted here, that consists in studying the analogical link by comparing the gesture variants of a notion, has enabled us to throw light upon the aforementioned cases: it explains a gesture’s potential to change analogical links in order to evoke different notions according to the context (polysemous gesture) or to cumulate two analogical links in order to evoke two notions at the same time (polysign gesture). The context comes to activate this and/or that analogical link which the gesture can propose; it does not just develop a semantic derivation on the basis of an analogical link. In short, gesture appears to be like a composite unit composed of physical elements that are not only relevant but also potential conveyors of meaning that the context comes to activate in a selective manner.

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43. Praxeology of gesture

1. Introduction
2. Praxeology
3. Praxeology of gesture
4. Gesture as praxis
5. Ecologies of gesture
6. Methodology
7. Praxeologies of gesture: Some examples
8. Conclusion
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Abstract

This chapter presents the outline of a praxeological approach to the study of gesture. It argues that gestures should be analyzed for the cultural practices or methods by which they are shaped and performed, rather than as a semiotic code or a mode of expression of mental content. The praxeological approach can be traced to Mauss' concept "techniques du corps", which emphasizes the cultural nature of bodily comportment. The chapter discusses the "practice turn" in social research, shows the importance assigned to the body in practice theory, and defines gesture practices as methods to achieve practical understanding in complex, multi-modal activity contexts. It is argued that gesture practices can be investigated in terms of their impact on the ecology of the communicative situation and their relations to different components of these ecologies. It is suggested that an adequate methodology for the rigorous study of communicative practices must be micro-ethnographic, being attentive to both generic practices and organizations, as well as to the ethnographic particulars of the community and the situation. The chapter concludes with a brief summary of some recent practice-oriented studies of gesture.

1. Introduction

To investigate gesture in praxeological fashion means to conceive of it, in the first place, as skilled physical praxis, as embodied activity performed according to methods that are shared within some community. Gestures are physical actions by which we "do things"