

The Gestalt Hypothesis - On the form and meaning of gestures

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Notes

1. See for example the Critical Inquiry controversy, edited by W.J.T. Mitchell in 1985, *Against Theory. Literary Studies and the New Pragmatism*, The University of Chicago Press: Chicago and London. I have discussed the controversy in my paper "The New Pragmatism and the Problem of Theory and Meaning" at a Semiotic Conference in Imatra, Finland, July 1990, forthcoming in an anthology published by the International Semiotics Institute at Imatra.
2. Here Felman operates with an understanding of reading which is very close to the Model Reader of open texts in Umberto Eco's book *The Role of the Reader: the pragmatic process of interpretation is not an empirical accident independent of the text qua text, but is a structural element of its generative process*". (Eco 1979: 9)
3. See Paul de Man *Allegories of Reading*: "Peirce calls this process by means of which "one sign gives birth to another" pure rhetoric, as distinguished from pure grammar, which postulates the possibility of unproblematic, dyadic meaning, and pure logic, which postulates the possibility of the universal truth of meanings". (1979: 9)
4. On the broadness of Peirce's understanding of rhetoric see for example Kevelson 1987: 26. Kevelson points to an unpublished manuscript by Peirce "Ideas, stray or stolen, about scientific writing", MS 774: 3.

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The Gestalt Hypothesis - On the form and meaning of gestures

Richard Hirsch

Abstract

A hypothesis is proposed that relates the form and meaning of gestures. The form of a gesture is characterized as belonging to a class of gestural gestalts. The class of gestural gestalts exhibits certain emotiv-conceptual qualities which serve as a bridge between the form and a class of meanings referred to as a semantic field. The hypothesis is explained and illustrated by means of a number of examples from a large Cross-cultural Gesture Corpus. The implications and consequences that the hypothesis has for international and intercultural communication are also discussed.

Introduction

If one examines the arguments in the so-called Nature-Culture controversy with the universalists – naturalists, mostly biologists and psychologists on one side and the relativists – culturalists, most anthropologists on the other, one finds that both sides are partly right and partly wrong. For a good discussion of the controversy see Polhemus (1978:30-112). The relationship between the form and meaning of a gesture is neither wholly attributable to nature nor culture, but a combination of both.

If we examine the gestures that are offered as expressions for the same basic meaning such as 'Excellent', 'Terrible' or 'Don't know' by a number of persons from different cultures or different persons from the same culture, or even the same person in different situations within the same culture, we find that there is no simple relationship between the form and meaning of a gesture.

Different gestures can signal similar meanings. In the first case we have, for instance, the thumb-index ring which can signal a variety of meanings – Excellent, Money, Good Luck, or Sexual Insult. In the second case we have, for instance, shaking the head and wagging the index finger as two different ways of signalling negation.

In this article I describe a hypothesis which relates the form and meaning of gestures to account both for the diversity of gestures which have similar meanings and the diversity of meanings that one and the same gesture can have in different situational and cultural contexts.

This hypothesis has been developed in connection with a cross-cultural study of gestures conducted at the Department of Linguistics at the University of Göteborg in connection with the research project Anthropological Linguistics (Allwood 1979).

The large scale study of gestures conducted by Desmond Morris et al. (1979) investigated the distribution of twenty key gestures and their meanings in Western Europe and the Mediterranean. The present study covered nearly all the major cultural areas of the world. Whereas Morris took the form of the gestures as a starting point – looking for their occurrence and meaning variation, our study started with a list of content categories and sought the different forms of expression both across cultures and across situations in the same culture. For a catalogue of the content categories used in the survey, see Table 1. Table 2 contains list of the countries covered in the survey.

Table 1
List of Content Categories

1. Me (?)	17. Threat
2. Yes	18. Serves you right
3. No	19. I like you
4. Don't know	20. Flirt
5. Confused	21. Disgust
6. I'm stupid	22. Hitchhike
7. You're stupid	23. Money
8. Great	24. Good luck

- | | |
|------------------|-------------------------|
| 9. Terrible | 25. Something like this |
| 10. Take it easy | 26. Agreed |
| 11. Come here | 27. Impatient |
| 12. Go away | 28. What a shame |
| 13. Quiet | 29. Appreciation |
| 14. Come again | 30. Secret |
| 15. Shame on you | 31. Very good (tasty) |
| 16. Insults | |

Table 2
List of Informants

Country	Number	Sex	Language
1. Sweden	1	male	Swedish
	1	female	
2. Finland	2	male	Finnish
3. Germany	2	male	German
4. Scotland	1	male	English
	1	female	
5. England	1	female	English
6. France	1	male	Lemosin
7. Poland	1	female	Polish
8. USSR	3	female	Russian
9. Hungary	1	female	Hungarian
10. Greece	1	male	Greek
11. Turkey	1	male	Turkish
12. Israel	1	male	Hebrew
13. Iran	6	male	Persian
14. Western India	1	male	Gujarati
15. Bengal	1	male	Bengal
16. USA	2	male	English
17. Panama	1	female	Spanish
18. Bolivia	1	male	Quechua
19. Chile	1	male	Spanish
20. Japan	1	male	Japanese
21. China (People's Republic)	1	male	Mandarin

22. Morocco	1	male	Arabic
23. Somali Republic	1	male	Somali
24. Kenya	1	female	Kikuyu
25. Ivory Coast	1	male	Dida
26. Gambia	1	male	Wolof
27. Ghana	1	male	Twi

The gestures contained in this corpus can be most abstractly described as a type of conventional communicative behavioral expression. Such conventional gestures are usually referred to as emblems (Ekman and Friesen 1969). They are basically non-verbal but may contain certain auditory elements such as blowing, whistling, smacking, hissing, sighing, etc. They may also be accompanied by speech expressions of the type - imperatives, exclamations, curses, etc. The gestures that we will be examining here are therefore, primarily communicative expressive movements which are communicated through the visual sensory channel.

The conventionality of the gesture as I wish it to be interpreted here entails nothing more than that the person making the gesture is aware of the intersubjective meaning that is assigned to this behavioral display. He knows how the gesture should look when executed and can detect mistakes in its execution or failures at successful execution. He may also be able to instruct others on the proper execution of the display.

This extended cross-cultural study of gestures revealed that the relationship between the form and meaning of gestures is complex but systematic.

At first viewing there are a wealth of different gestures that signal a type of message such as "Don't know" or "You are stupid". This is the complexity side. On the system side, the number of variants can be greatly reduced by classing the variants according to semantic principles that are involved in all types of symbolism.

I will first present and explain the hypothesis. We will then look at a few test cases for the hypothesis which give a more concrete picture of how the hypothesis works in practice. This presentation of the hypothesis and its functioning is followed by a discussion of what the hypothesis has to say about the possibilities of understanding ge-

stures across cultures and the strategies that can be most fruitfully pursued in seeking mutual understanding.

The Gestalt Hypothesis

Form. The formal relationships of a class of expressions can be characterized according to a set of gestalt features. The gestalt features consist of a set of polar scales. Each expressive movement can therefore be characterized by plotting tendencies that it exhibits along a set of these polar scales. Table 3 contains a list of gestalt feature scales that are used in characterizing the formal aspects of the gestures.

Table 3
Gestalt Feature Scales

Gravity	-	Antigravity
Strong	-	Weak
Checking	-	Flowing
Fast	-	Slow
Toward	-	Away
Long	-	Short
Rising	-	Falling
Together	-	Apart
Symmetrical	-	Asymmetrical
Balanced	-	Unbalanced
Opening	-	Closing
Steady	-	Unsteady
Dynamic	-	Static
Supporting	-	Non-supporting
Accelerating	-	Decelerating
Internal	-	External resistance
Continuous	-	Interrupted
Whole	-	Sectioned
Crossing	-	Spreading
Advancing	-	Retreating

Covering - Exposing
 Strenuous - Effortless
 Relaxed - Tensed
 Expanding - Contracting

These gestalt features are meant to capture the semantically interesting holistic impression that the expressive movement displays. The gestalt features could be further reduced to classes according to the various physical dimensions of the behavioral display such as shape, duration, spatial orientation, etc. but this is not as semantically informative as the holistic gestalt features found in Table 3.

A set of values on these feature scales will give what I would like to refer to as a gestural gestalt. Each gesture will therefore have a corresponding gestural gestalt consisting of a number of tendencies along the gestalt feature scales. A gestural gestalt gives rise to a complex synaesthetic experience which is a blend of emotional and conceptual qualities. This complex synaesthetic experience is referred to as an emotiv-conceptual quality category.

This can be depicted more schematically as follows.

$$\text{GESTURAL GESTALT}_x \Rightarrow \text{EMOTIV-CONCEPTUAL QUALITY CATEGORY}_x$$

This emotiv-conceptual quality category serves as a bridge between the formal aspects of the gesture and its meaning. The category is semantically extremely vague awaiting cultural and contextual factors for further specification and preciseness.

Meaning. The emotiv-conceptual quality category correlated with the gestural gestalt can be explicated by reference to a semantic field. A semantic field is a network of conceptual associations ranging from the very general to the specific. A good source of systematic presentations of a large number of such semantic fields is found in Roget's Thesaurus. There we find a number of very general headings related to more specific headings, sometimes in hierarchical order but just as often as a type of cross-classification with concepts having associations to a variety of general headings.

What I would like to refer to here as a semantic field will only be partly contained in a work such as Roget's which is primarily based

on the study of the vocabulary of verbal symbols. A semantic field, in the sense I want it to be understood here, contains any emotive or conceptual associations whatever that can be ascribed to a gestural gestalt. This definition encompasses all types of symbolic transfer such as metonymy, synecdoche, and metaphor, plus all types of connotations that are associated with the gesture - religious, social, or psychological.

By relating a gestural gestalt to a semantic field we account for the diversity of the relationship between form and meaning and the principled nature of the relationship. To illustrate this hypothesis we will now look at a number of examples taken from the gesture corpus.

Case Studies

We will consider two cases, first, one where the same gesture is used to signal different meanings and secondly, a case where 'different gestures' are used to signal the 'same meaning'.

Case 1: Here we consider the variety of meanings that can be ascribed to the gesture: 'Thumb and index ring' (Figure 1).

Figure 1



The meanings that were assigned to this gesture are presented in Table 4.

Table 4

Content Categories	Sample Culture
1. Fantastic	Sweden
2. Excellent	Sweden, Greece
3. Sexual insult	Turkey
4. Appreciation	Sweden
5. Money	Japan
6. Good luck	France
7. Agreed	USA, Panama
8. Round like this	Sweden

Let us see how the assumption that the form a gesture constitutes a gestural gestalt and the meaning of a gesture constitutes a semantic field will bring some order into the apparently arbitrary, and at certain points contradictory, list of meanings

The gestural gestalt for this gesture is given by the following set of gestalt features (< > = tendency toward).

Together	<	Apart
Symmetrical	<	Asymmetrical
Balanced	<	Unbalanced
Opening	>	Closing
Steady	<	Unsteady
Continuous	<	Interrupted
Whole	<	Sectioned
Dynamic	>	Static

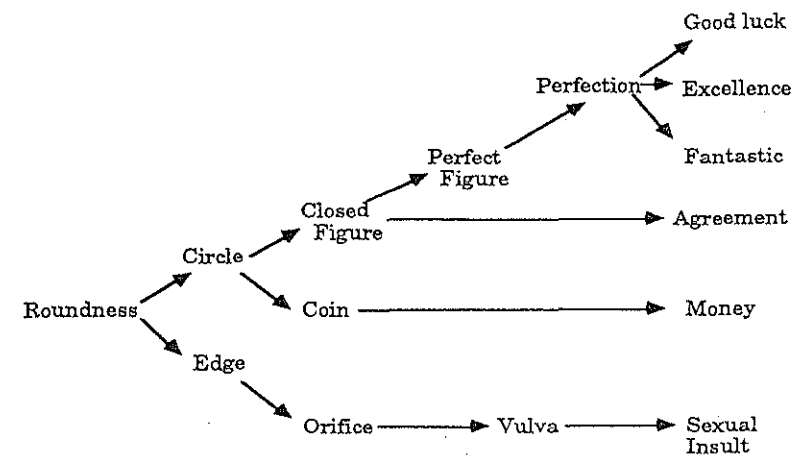
The essence of the emotive-conceptual category connected with this gestural gestalt is most apparent in the iconic use of the gesture to signal 'round like this'.

This iconic use of the gesture constitutes the core of a network of conceptual associations related to this form of expression. From this iconic core which can be labeled as 'roundness' we can move to other concepts such as excellence, agreement, money, sexual insult, and good luck via certain mediating conceptual links according to basic semantic principles for symbolism.

Moving from 'roundness' to 'excellence', for instance, can be accomplished via an association of roundness with the geometrical figure of the circle which is known in most parts of the world as a perfect figure. The ring is an iconic representation of the concept of the geometrical figure the circle. The circle, a perfect figure, can in turn be taken as a symbol for the concept of 'perfection' by a process of abstraction. 'Perfection', in the abstract, is in turn related to 'excellence' and 'goodness' belonging to the same class of near-synonyms which we referred to as a semantic field. 'Good luck' can be easily derived from 'goodness' by a process contrary to that of abstraction or extension of meaning which we employed above, namely, restriction of meaning – going from the general to the specific. The association with the concept of 'agreement' can be derived from the property of closedness or completeness exhibited in the figure of the circle. As for the sexual insult meaning, this is accomplished by association of the ring with the edge of an orifice and thereby with the vulva. The vulva belongs to a class of sexual taboo objects which when represented either in verbal or non-verbal form can be used to give offense

The other conceptual associations follow the same types of principles. The reasoning above is illustrated in Diagram 1.

Diagram 1



The types of associations illustrated in the diagram above are potential meanings of the thumb-ring gesture. These depend on basically two semantic principles – (1) extension of meaning, (2) restriction of meaning.

Extension of meaning can be effected by a number of operations, for example (a) generalization, (b) abstraction, (c) analogy.

Restriction of meaning can be effected for example by, (a) specification, (2) example, (3) illustration.

From this complex of potential meanings of the thumb-ring gesture certain of these will be actualized by the conditions of the context in which the gesture is exhibited. In other words, which parts in this network are, so to speak, activated depends very much on the situation in which we find the gesture. There the gesture will be seen in the light of the values and belief-systems which obtain in the culture in question. This is especially true of the insulting use of gestures. Also of great importance here is what might be called the gestural context, i.e. which other bodily expressions that accompany the gesture, especially facial expressions and body postures.

To sum up, a very vague meaning potential related to the gestural gestalt becomes more precise and specific in combination with various situational conditions and the given gestural context.

What our example with the thumb-index ring has shown is that a number of, at first glance, unrelated meanings can, on further reflection, be seen to be systematically related according to the semantic principles of extension and restriction of meaning.

Case 2: Here we will examine two apparently unrelated gestures that can be used to signal 'negation', that of 'shaking the head' and 'wagging the index finger'. We are looking for gestalt features that will relate both of the expressions to the meaning of 'negation'.

The set of relevant gestalt features shared by these two expressions can be given as follows:

Steady	>	Unsteady
Dynamic	<	Static
Continuous	>	Interrupted

Although there are various ways of signalling negation with the head, I will follow Darwin in claiming that all of these variants can be seen

as variations on the theme of rejecting food. We will take 'shaking the head' as the more basic of the two gestures and try to show that 'wagging the index finger' is structurally similar to 'shaking the head' and therefore also a natural expression of negation.¹

There happen in this case to be a number of structural analogies based on physiological similarities between the two gestures that reinforce the gestalt features that they share.

For instance, the following analogies can be made:

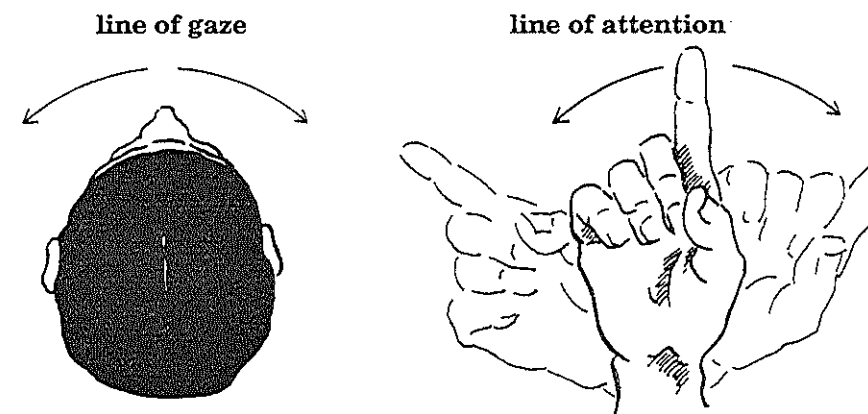
head	~	fist
neck	~	fore-arm
nose	~	index finger

We find therefore that 'shaking the head' and 'wagging the index finger' are anatomically very similar. A further similarity based on more psychological factors is a natural correlation of the pointed index finger and the direction of attention with the irection of the nose and the line of gaze to give us the following analogy:

line of gaze	~	direction of attention
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The structural analogies are illustrated in Figure 2.

Figure 2



The examples we have looked at here exhibited rather close structural resemblances. There are however much more complicated relationships between the form and the meaning of a gesture.

If we take, for instance, the variety of expression offered for the content category of the corpus 'Don't know' we find the following:

1. shoulder shrug
2. head shake
3. head rocked from side to side
4. both hands brought up open palms
5. arms waved out to side of body
6. hands turned to expose palms

Table 5 presents the relevant gestalt feature characteristics of the various expressions related to the content category of 'Don't know'.

Table 5

Gestalt features x-y	Expressive movements				
	Shoulder shrug	Head shake	Palm flash	Arms waved	Head rocked
Gravity - Antigravity	x > y	-	-	x > y	-
Checking - Flowing	x < y	x < y	x < y	x > y	x < y
Toward - Away	x < y	x > y	x > y	x > y	-
Together - Apart	x < y	-	x > y	x > y	-
Symmetrical - Asymmetrical	x < y	x < y	x > y	x < y	x < y
Covering - Exposing	x < y	-	x > y	x < y	-
Expanding - Contracting	x > y	-	x < y	x < y	-
Supporting - Non-supporting	x < y	-	-	-	x > y
Dynamic - Static	x < y	x < y	x > y	x < y	x < y
Opening - Closing	x > y	-	x < y	x < y	-
Continuous - Interrupted	x < y	x > y	x < y	x < y	x > y

Key - x > y = tendency toward y
 x < y = tendency toward x
 - = no clear tendency or not relevant feature

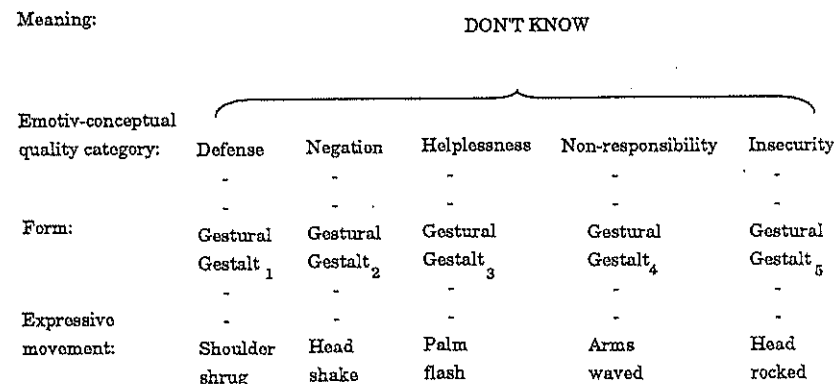
If we examine the gestural gestalts for these expressive movements we find that they differ in a number of respects. The shoulder shrug,

for instance, has a character of defense whereas others such as the arms waved out have a slightly aggressive nature.

If we however examine the conceptual implications and dimensions of the content category 'Don't know' we find that there is room for both types of gestural gestalts within this semantic field. 'Don't know' is essentially a response to a request for information or knowledge. Having and giving knowledge or information can imply a number of things, for instance, affirmativeness, power, responsibility, security, helpfulness, or pride. Not having or not being able to give knowledge or information implies negation, powerlessness, denial of responsibility, insecurity, apology, or shame.

Given these conceptual and emotive implications of the content category 'Don't know' we can correlate the gestural gestalts to the semantic field in the following manner:

Diagram 2



By way of summary the gestalt hypothesis says, in essence, that the form of a gesture is characterized as belonging to a class of gestural gestalts which is related via an emotiv-conceptual quality category to a class of meanings referred to here as a semantic field.

The Gestalt Hypothesis and Cross-cultural Communication

If we accept the gestalt hypothesis we find ourselves with an analytical tool that related forms and meanings on a quite high level of abstraction. Because of this high level of abstraction we cannot assume that the truth of the hypothesis will have any immediate positive consequences on the understanding of gestures across cultures. In other words, there is still a lot of room for misunderstanding of gestures across cultures in spite of the validity of the gestalt hypothesis.

This is mainly due to what we might call the problem of perspective. We as scientists with the support and aid of the gestalt hypothesis can more readily see relations on a higher level of abstraction than would be apparent to a member of a specific culture unaware of the hypothesis.

Viewing a gesture from a more observer-oriented objective perspective can be a completely different experience than viewing the gesture from a more participant-oriented perspective. From a participant-oriented subjective perspective where we employ our folk theories about communication and our folk methods of interpretation both to produce and process gestures, we have a tendency to stress the differences between cultures rather than the similarities.

In other words, *the belief* that our culture is something special and unique or the belief that the relation between form and meaning should be direct and simple can blind us to many similarities which exist across cultures. Also an unawareness of the enormous intra-cultural variation in the relationship between form and meaning in gestures which exist across situations can lead us to overlook obvious similarities between foreign cultures and our own.

To illustrate how the culture of a subject can influence the interpretation of a gesture I would like to consider the case of 'looking' as a gesture.

Looking is, I believe, naturally related to attention or interest. Sometimes this attention or interest is motivated by goodwill, at other times by ill-will, in other words, the looking can be both aggressive and non-aggressive. Intensive 'looking' is a characteristic of both greetings and attacks.

In certain cultures, especially those of Western Africa, 'looking' in the case of a younger person listening to an older person is considered disrespectful (Elechi Amadi 82:54). Deference to a senior is shown by avoiding 'looking' at the senior. This sign of deference is related with shyness where there is a natural tendency to avoid the other's gaze.

However, in the dominantly white North American culture, respect to the senior is payed by prolonged 'looking' while the senior is talking. Deference in this case is given by a show of attention and interest rather than shyness.

In the African cultures we find therefore a focusing on the aggressive potential of 'looking' in the context of listening to a senior, whereas in North America there is a focus on the non-aggressive associations of 'looking' in this context.

Therefore based on the cultural context the same gesture 'looking while listening' can have two radically different interpretations. This does not however mean that the gestalt hypothesis can therefore be rejected.

What the hypothesis tells us is that the 'looking' is potentially ambiguous between aggressive and non-aggressive attention and interest, and that the specific interpretation of the 'looking' will depend on the values and beliefs of the culture in question whether, for instance, non-aggression is more highly valued than interest and attention or the reverse.

The gestalt hypothesis claims that there is a natural relation between the form and meaning of gestures on an abstract and general level. This is however not suffucient to give us the specific relationship between form and meaning for a given displayed gesture. To arrive at this relationship we must consider the norms and conventions which obtain for the actual situational and cultural context, in addition to the accompanying facial expressions and body postures.

As concerns programs aimed at improving intercultural understanding, the discussion above leads to the following strategy. As participants in communication with persons from foreign cultures we should strive to view their gestures (which we conceive of as strange) from an observer perspective where the gestalt hypothesis guides our fantasy to seek similarities on higher levels of abstraction and allows us to see the system behind an otherwise confusing complexity.

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Note

1. I believe that the gestalt characteristics of gestures are phylogenetically motivated, i.e. they make good biological as well as psychological sense.

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