Decoding The Emotive Meaning In The Visual Representation Of The Egyptian – Russian Relations.

Dr. Dalia M. Hamed

Abstract

A picture is worth a thousand words. To be able to communicate efficiently, the use of body language, facial expressions and hand gestures must be investigated. This paper examines the representation of emotive meaning in visual images. The researcher uses the semiotic resources of facial expressions as proposed by Ekman and Friesen (1975) and Izard (1977), touch as Proposed by Burgoon et al.’s (1996) and body orientation as Proposed by Martinec (2001). This paper adopts a semiotic approach to explain how meanings are represented in the image collections published by Russia Today (RT) online site. It summarizes the historical relations between Russia and Egypt across different times. This study demonstrates that the social semiotic approach is effective in explaining nonverbal behavior. The framework applied is a descriptive tool which provides an account of the visual representation of emotion in the selected images and describes the choices made in representing emotions.

Key words. Emotive meaning, images, facial expressions, touch and body orientation.

1. Introduction

Good and successful pictures are meant to reveal knowledge at first sight; according to popular opinion they should be clear, undistorted and concise. These expectations for images are summarized by the adage “a picture is worth a thousand words”. In general images are thought to be “a more easily accessible medium of communication than (conceptual) language” (Huppauf & Weingart, 2009, p. 14).

Communication refers to both verbal language and body language. Communication skills are vital if we want to gain an advantage on things, events and other people. To be able to communicate efficiently the use of body language, facial expression and hand jesters must also be investigated.

Human beings are emotional organisms. They have got the ability to express emotions and to share their internal feelings with others. Humans have a rich and flexible device serving many different expressions. Facial expression is one of them. It is the movement seen in the human face. Facial expression can also play a vital role when it comes to building and
maintaining human relationships. It acts as a vital tool in nonverbal communication transmission.

Faces are not simply blank canvases upon which facial expressions write their emotional messages. In fact, faces are windows to the soul. The face is the best indicator of a person’s emotions. Facial appearance and facial movement are both important social signaling systems in their own right.

Facial expressions of emotion have long been of interest to philosophers and psychologists. Darwin's (1872/1965) work On the Expression of the Emotions in Man and Animals was a first attempt to systematically understand emotion expression and its meaning. Darwin is of the view that emotion expressions are the visible part of an underlying emotional state. He considers emotion expressions to be universal across human cultures. They are biologically determined as a product of man’s evolution. Charles Darwin's hypothesis maintains that facial expressions of emotions—anger, disgust, contempt, fear, surprise, sadness, happiness—are innate and universal in earthly humans, and not culturally determined, that all people regardless of race, ethnicity, culture, religion, and age express using the same specific muscle combinations on the face. Fiske (2004) considers facial expressions to be an honest signal of an underlying emotion.

There are two principal strategies for the decoding of emotion displays (Kirouac & Hess, 1999). First, pattern matching can be used to draw inferences regarding an expresser's presumed emotional state depending on the features of the expression associated with specific emotions (Buck, 1984). The second decoding strategy depends upon the knowledge that the perceiver possesses regarding the sender and/or the social situation in which the interaction is taking place.

There are two ways to go about facial emotion measurement: a human way to analyze facial "microexpressions" and emotions; and a technological, automated method.

This paper is about faces and feelings. It examines the human face as a transmitter of expression signals and how emotive meaning is represented in visual images using the semiotic resources of facial expression, touch and body orientation. The ability to accurately interpret facial expressions is of primary importance for humans to socially interact with one another (Nachson, 1995). Facial expressions communicate information from which one can quickly infer the state of mind of one’s peers. Facial expressions are typically arranged into six universally recognized basic categories (fear, happiness, sadness, disgust, anger, and surprise; (Ekman & Friesen, 1975; Izard, 1971) that are similar across different backgrounds and cultures (Ekman & Friesen, 1975; Izard, 1971, 1994).

2. Aim of The Study

To read and to interpret a person's expression is an essential part of understanding the nonverbal cues that are crucially important in communication. Non-verbal visual cues supplement the meaning of spoken words and signify emotional state. This visual information includes head movements, facial expressions and body gestures.

Learning the basic emotions and their corresponding facial expressions can help us read others and understand what they are feeling so we can effectively respond. In this
paper, the researcher describes how emotive meaning is represented in visual images using the semiotic resources of facial expression as proposed by Ekman and Friesen (1975) and Izard (1977), touch as proposed by Burgoon et al.’s (1996) and body orientation as proposed by Martinec (2001). This paper adopts a social semiotic approach to explain how meanings are represented in the image collection published by Russia Today’s online site which summarizes the historical relations between Russia and Egypt across different times. This study demonstrates that the social semiotic approach is effective in explaining nonverbal behavior. The framework applied is a descriptive tool which provides an account of the visual representation of emotion in the selected images. It describes what choices are made in representing particular emotions.

3. Literature Review

Photographs are information rich. They contain non-linguistic information. This is rich in information might include facial expressions to convey emotional state, head nods to indicate emphatic stress, and posture and eye-gaze. In this paper, the researcher analyzes the visual representation of emotion, focusing on the embodied resources of facial expressions, touch and body orientation.

3.1. Background and Related Work

Facial expression of emotion is of great interest to many researchers. Investigators from psychology have been interested in the facial expressions of emotions. Interest in facial expression has a rich history dating back to the mid 19th century (Piderit, 1858, 1888; Gratiolet, 1865). Perhaps the most influential of these early theorists was Charles Darwin. In his book, The Expression of the Emotions in Man and Animals, Darwin (1872, 1965) argued that facial expressions were universal and innate characteristics.

Several events occurred in the ’60s and ’70s that brought facial expression into the fold of research. Silvan Tomkins (1962, 1963) presented a theory of affect that posited a central role for the face as a site of emotion, what has become known as the facial feedback hypothesis. Facial feedback theory holds that facial expression provides feedback which in turn produces the emotion. Tomkins and Mc- Carter (1964) published an impressive and systematic study of facial expression judgments.

Ekman and Friesen (1975, 1976, and 1978) focus on micro-behaviours which are visually discernible and were pioneers in the development of measurement systems for facial expression. Their system, known as the Facial Action Coding System or FACS, was developed based on a discrete emotions theoretical perspective and intends to measure specific facial muscle movements. It became clear, in the researcher’s opinion, that measurement of facial expression may indeed be a fruitful research enterprise.

Forceville (2005, 2011), interprets nonverbal behavior as visual manifestations of the Idealized Cognitive Model (ICM) of emotion. The social semiotic approach, specifically Michael Halliday’s systemic functional theory (e.g. Halliday, 1978; Halliday and Matthiessen, 2004), emphasizes the significance of interpersonal meaning (i.e. enactment of social relations) as the gateway to the experiential basis of meaning making. In studying visual images, social semioticians have tended to concentrate on interpersonal resources such as camera angle, modality, and gaze, which negotiate image-viewer relations (e.g. Kress and van Leeuwen, 2006), rather than visual
realizations of emotive meaning in communicative acts.

This paper tries to shed some light on the close relation between Cairo and Moscow via describing the nonverbal behavior in visual representations.

3.2. Facial Action Coding System

The Facial Action Coding System (Ekman & Friesen, 1978; Ekman, Friesen & Hager, 2002) is a comprehensive, anatomically based system for measuring all visually discernible facial movement. FACS describes all visually distinguishable facial activity.

As a mode of communication, the amount of information that the human face relays through facial expressions is endless. Ekman and Friesen’s Facial Action Coding System (FACS) (1976, 1978) measures all visible facial movements. FACS measures facial behaviours with action units (AUs), which indicate which muscles have contracted to produce the expression.

The Facial Action Coding System (FACS) is an internationally recognized, sophisticated research tool that precisely measures the entire spectrum of human facial expressions. Created in the 1970s by psychologists Ekman and Friesen FACS provides a comprehensive taxonomy of human facial expressions. The Facial Action Coding System (FACS) has provided the scientific community with a systematic way of coding muscle movements in the face and then impartially classifying specific muscle combinations into emotion categories. The coding system developed by Ekman is the most widely used tool for classifying facial behavior and in turn interpreting people’s emotional states at any given moment in any situation.

3.3. Emotion Resources in Facial Expression as Proposed by Ekman and Friesen (1975) and Izard (1977)

The face is a multimeessage system. The face broadcasts messages about emotion, mood, attitudes and character. This paper is about one type of message: emotion messages:

When we speak of emotions, we are referring to transitory feelings, such as fear, anger, surprise, etc. When these feelings occur, the facial muscles contract and there are visible changes in the appearance of the face. Wrinkles appear and disappear; the location and/or shape of the eyebrows, eyes, eyelids, nostrils, lips, cheeks, and chin temporarily change. (Ekman & Friesen, 2005, P. 11).

The proposed system of facial expressions includes facial dimensions in Ekman and Friesen (1975) which divide the face into three areas: the brow/forehead, the eyes/lids, and the lower face which mainly includes the cheeks, the mouth and the nose (See Appendix 1a). We need to know that not all facial areas are chosen in the representation of emotion. The forehead may be wrinkled, horizontally or vertically, or neutral. The eyebrows may be raised or lowered. Their inner corners may be raised, lowered, drawn together or neutral. The eyes may be wide open or narrow closed. The nose may be wrinkled or normal. The cheeks may be raised or normal. The mouth has diversity of shapes: it may be tensed, whether open or closed, or relaxed, whether open or closed. It may also corner up or down (See Appendix 1a).

According to Ekman and Friesen (1975:88), most basic emotions can be shown unambiguously in one facial area.
For example, happiness can be recognized by “lip corners up” and anger by “inner corners of eyebrow lowered”.

3.4. Emotion Resources in Touch as Proposed by Burgoon et al.’s (1996)

Based on Burgoon et al.’s (1996:86) five dimensions of touch, which include intensity, duration, the touched body part, the touching body part, and the frequency of contact, the system of touch is proposed (See Appendix 1b).

Body distance indicates emotional or social distance. Reciprocity refers to whether the same body parts of the agent (the person doing the touching) and the patient (the person being touched) are used. Positive emotions usually tend to be reciprocal, such as handshake. For the vector of movement, movements towards the agent which draw each other closer typically encode positive emotions such as friendliness (e.g. handshaking) while movements towards the patient which push each other away usually encode negative emotions such as anger and hatred (e.g. punching). Velocity, strength and duration encode the intensity of emotive meaning.

For a specific touch, for example handshaking, the more strength which is used and the longer it lasts, the more intense the emotion is.

3.5. Emotion Resources in Body Orientation as Proposed by Martinec (2001)

Body orientation refers to the aspects of posture that concern the horizontal and vertical orientations of the body. In the present study, the meaning of body orientation is analyzed in terms of horizontal and vertical variables (See Appendix 1c).

Based on Martinec’s Coding system of facial expressions (2001) with its dimensions of up and down, backward and forward, basic emotion are depicted. The vertical orientation encodes value-based emotion of un/happiness and the horizontal orientation encodes activity-based emotion of anger and fear. Upright body orientation often indicates happiness, confidence and other positive emotions, while downward body orientation indicates sadness, guilt and other negative emotions. Backward body orientation indicates dislike or disagreement, while forward body orientation may indicate either positive or negative emotions.


In what follows, theoretical frameworks are developed to provide a systematic description of facial action, touch and body orientation for the analysis and interpretation of the visual representation of emotion. In this paper, a collection of images depicting the historical relation between Cairo and Moscow are selected to show the emotive meaning related. For the selected images, see appendix (2).

Image No. 1

In this image the main participants are President Gamal Abed El- Naser and the Secretary of the Soviet Party Nikita Khrushche during his visit to Cairo on May 14th, 1964. As it seems, participants look happy. As far as President Naser is concerned, his facial expressions represent happiness via horizontal wrinkles in the
forehead. The inner corners of his eyebrows are slightly drawn together. His mouth is relaxed but closed and a smile is easy to recognize. Cheeks are raised as we can detect wrinkles in the cheek area. Though the eyes are hidden behind the glasses, we can guess that the eyes are narrowed due to the raised cheeks.

Nasser’s body orientation is vertical and up, as we see his raised head and upright torso. This orientation marks happiness and self-confidence.

As for Khroshof, his facial expressions represent happiness via obvious horizontal wrinkles in the forehead. The inner corners of his eyebrows are clearly drawn together. His eyes are narrowed. His mouth is relaxed and open with a smile. Cheeks are raised and the wrinkles in the cheek area are obvious. Like Nasser, Khroshof’s body orientation is up denoting the same sense of happiness.

We do not see direct touch between participants, but their sitting together reflects that they are close friends.

**Image No. 2**

In this image the main participants are Andree Gretchko, the Soviet Union marshal, and the general commander of marine forces of the United Arab Republic, admiral Soliman Ezzat on May 18th, 1966. They look so happy and share the same facial expressions denoting happiness. Both have horizontal wrinkles in the forehead with the inner corners eyebrows drawn together. The mouths are relaxed and clearly open with a nice laugh. Cheeks are raised and, accordingly, eyes are narrowed or closed. Their body orientation displays the same representation: a vertical, up, body orientation which encodes positive emotions. Like the previous image, we do not see direct touch between participants, but their sitting together in obvious happiness reflects that they are close friends or on good terms.

**Image No. 3**

In this image we see the Prime Minister of the Soviet Union, Alexee Kosegen, saluting and welcoming the Egyptian President, Mohamed Anwar El –Sadat, in Moscow on April 27th, 1971. Like the previous image, one can detect the same facial expressions denoting happiness. Both have horizontal wrinkles in the forehead with the inner corners eyebrows drawn together. The mouths are relaxed and clearly open with a nice laugh. Cheeks are raised and, as a result, eyes are narrowed or closed. We can see wrinkle in the nose. Their body orientation is the same: up. Unlike previous images, there is a reciprocal touch between El Sadat and Kosegen. This indicates the positive feelings of pleasure. They stand so close to indicate their friendship. There is no vector of movement from participant towards the other, but the image delivers the sense that both were moving towards one another in a friendly manner.

**Image No. 4**

In this image the main participants are the Soviet Minister of Foreign Affairs, Andree Gromeko, and the deputy of the Prime Minister Mahmoud Reyad. They were signing a protocol on July 1st, 1971. The photo was taken when they were busy signing the protocol and that is why we can
not detect the facial expressions. Their body orientation is up, a thing denoting positive feelings.

**Image No 5.**

In this image we see the general secretary of the Soviet Communist Party, Lioneed Bregenef, and the Egyptian President Anwar El- Sadat during negotiations on April 27th, 1971.

Bregenef’s mouth is relaxed but closed. His cheeks are raised and his eyes are narrowed or closed. El- Sadat’s facial expressions are a clear indication of happiness. His forehead has horizontal wrinkles. His mouth is relaxed, open with an obvious smile. Accordingly, his cheeks are raised and his eyes are narrowed. Their body orientation is the same: up. These choices involve positive feelings of happiness. Other persons in the photo share the same facial expressions and the vertical body orientation.

**Image No 6.**

In this image we have the Soviet Minister of Foreign Affairs, Andree Gromeko, welcoming the Egyptian Minister of Foreign Affairs, Ismael Fahmy, in Moscow on April 19th, 1975. Gromeko’s mouth is relaxed and closed. His cheeks are raised and his eyes are closed. Fahmy’s mouth is relaxed, open with a smile. His cheeks are raised, his nose is wrinkled and his eyes are narrowed. Both have wrinkles in the cheek area but it is clearer in Fahmy’s. There is a reciprocal touch between both persons indicating positive feelings. Both are moving towards each other and stand in a close distance. Their body orientation is up denoting the same meaning delivered by facial expressions and touch: happiness.

**Image No 7**

In this image we have the Secretary General of the central committee of the Soviet Party, Mekhael Gorbatchof; the Soviet Minister of Foreign Affairs, Edward Chevardnadzah; and the Egyptian Minister of Foreign Affairs, Esmat Abed El-Megeed on May 20th, 1988. The three participants in this image share the same facial expressions and body orientation. The mouth is relaxed and lips are spread with a smile. Cheeks are raised as we can see wrinkles in the cheek area. Eyes are wide open. Though there is no vector of movement, the close distance at which they stand show their friendliness. Their body orientation is vertical reflecting positive feelings.

**Image No 8**

In this image we have the Egyptian Minister of Foreign Affairs, Esmat Abed El-Megeed and the Soviet Minister of Foreign Affairs, Edward Chevardnadzah on August 27th, 1990. They share the same expressions of happiness. We can see vertical wrinkles in the forehead. The inner corners of their eyebrows are slightly drawn together. Mouths are relaxed, open with a smile. Cheeks are raised with clear wrinkles in the cheek area. Eyes are open. Body orientation is up and the close distance-sitting on the same sofa- denotes closeness.

**Image No 9.**

In this image we have the Egyptian president, Hosny Mubarak, and the Soviet President, Mekhael Gorbatchof, in the Soviet Union on May 15th, 1990. Though the two presidents are shown to be busy
signing, their faces draw an image of happiness via relaxed mouths and raised cheeks and some wrinkles in the cheek area. Up body orientation denotes positive feelings.

**Image No. 10**

In this image, we see the Egyptian president, Hosny Mubarak, and the Soviet President, Boris Yeltsen, at Keremlen on September 23rd, 1997. The two presidents share the same expressions of happiness. Their Eye brows are slightly drawn together, their mouths are relaxed and spread with a smile, their cheeks are raised, their eyes are closed or narrowed, their body orientation is up. As for touch, there is a reciprocal touch via exchanging the covenants.

**Image No. 1**

In this image, we have the Soviet Prime Minister, Vladimir Poten, and the Egyptian Prime Minister, Ahmed Nazef, in Moscow on November 11th, 2008. They nearly share the same expressions of happiness. As for Nazef, his forehead demonstrates horizontal wrinkles and the inner corners of his eye brows are drawn together. His mouth is relaxed and open, his cheeks are raised and his eyes are closed. Poten’s forehead differs as it shows vertical wrinkles and his eyes are open. Poten and Nazef are shaking hands, this reciprocal act reflects positive feelings. They stand close to each other. Their vertical body orientation indicates happiness.

**Image No. 12**

In this image, we have the Egyptian President Hosny Mubarak and the Soviet President Dmerty Medvedev at Al Etehadya Palace on June 23rd, 2009. Both demonstrate the same facial expressions of happiness via relaxed open mouth, raised cheeks and open eyes. There is no direct touch but the fact that they sit so close indicates close relation. Their vertical body orientation shows positive emotions.

**Image No. 13**

In this image we have the Soviet Minister of Foreign Affairs, Sergy Lavrof, and the head of the Egyptian Military Council, Marshal Hussein Tantawy, on March 10th, 2002. Both share the facial expressions of happiness via relaxed, spread mouth, raised cheeks and narrow eyes, though Medvedev’s eyes appear closed and his mouth more open. There is direct touch but they sit close to indicate friendliness. Their body orientation is vertical to indicate positive feelings.

**Image No. 14**

In this image we have the Soviet President, Vladimir Poten, and the Egyptian Defense Minister, El Sisi. In between, we see the Egyptian ambassador, Mohammed El Badry. The three express happiness via relaxed and spread mouths, raised cheeks, open eyes and vertical body orientation. El Sisi and Poten demonstrate reciprocal touch via handshaking. The three stand in a close distance showing friendly relations.

**Image No. 15**

In this image we have President Poten and President El Sisi in his first official visit to Russia on August 12th, 2014. They share the same expressions of happiness via relaxed mouth with spread lips, raised cheeks with wrinkles in the cheek area, open eyes and vertical body orientation. El Sisi’s forehead has some horizontal wrinkles while
Poten’s has vertical ones. They do not touch but stand closely enough to express friendly relations.

**Image No. 16**

In this image we have President Poten and President El Sisi in the main street at Rosa Khutor on August 12th, 2014. They express happiness via the same facial action of relaxed mouth which open with a smile, raised cheeks, wrinkled nose, narrowed eyes and up body orientation. El Sisi’s forehead has horizontal wrinkles, while Poten’s has vertical ones. There is no direct touch but the close distance shows their friendly relations.

**Image No. 17**

In this image we have President Poten and President El- Sisi during their meeting at Botchrof Rotchy on August 12th, 2014. Again, they share the same facial expression of happiness via relaxed mouths with spread lips, raised cheeks and wide open eyes. Once more, El- Sisi’s forehead has horizontal wrinkles, while Poten’s has vertical ones. Their handshake expresses a reciprocal touch and their close distance means friendly relations. Their up body orientation is another manifestation of happiness.

**Image No. 18**

This image is taken during the Egyptian high-level delegation’s visit to Moscow on February 12th, 2014. In this image we see Sergy Lavrof, Sergy Schwego, Marshal Abed El- Fattah El- Sisi and Nabil Fahmy. They all share the same facial expressions of happiness via horizontal wrinkles in the forehead. Their mouths are relaxed and spread with a nice smile. The two Russian figures have open mouths while the two Egyptian ones have closed ones. Cheeks are raised and we can detect clear wrinkles in the cheek area. The Two Russian figures have some wrinkles in the nose, while the two Egyptians one do not. Eyes are wide open. Their body orientation is vertical to show positive feelings. Their shoulders nearly touch, this results in reciprocal touch showing positive relations. The manner in which they stand close to each other reflects their friendliness.

**Image No. 19**

This is an image of President Vladimir Poten hung in the streets of Cairo to celebrate his visit to Egypt on February 9th, 2015. His image shows the very facial expressions of happiness discussed above: his forehead has horizontal wrinkles, his mouth is relaxed and spread with a smile, his cheeks are raised, his nose has wrinkles, his eyes are wide open and his body orientation is up.

**Image No 20**

This is an image of President Vladimir Poten and President Abdel Fattah El- Sisi while having dinner at Cairo Tower on February 9th, 2015. Both have horizontal wrinkles in the forehead. The inner corners of their eyebrows are drawn together. Their mouths are relaxed and spread with a smile, though El-Sisi’s mouth is more open. Their cheeks are raised and their noses have wrinkles. Their eyes are narrowed. Their body orientation is vertical to express positive feelings that are in harmony with their happy facial expressions. There is no direct touch but the way they sit together demonstrates friendly relations.
**Image No.21**

This image is published by Russia Today online site on November 11th, 2015 under the title: “Russia and Egypt discuss constructing an industrial area at Port Said.” In this image we see the two flags: the Russian and the Egyptian. These flags stand so close in an imposing view that seems to be a logical result of the friendly relations between Moscow and Cairo, a relation which is evident across history as the analysis proves. There is a direct contact between the two flags and this reciprocal touch encodes closeness. The flags have a vertical orientation to express their magnificence.

**Image No. 22**

This image is published by Russia Today online site on December 5th, 2015 under the title: “Egypt aims at increasing its industrial exports to 15% to Russia in 2016.” Again, this image is one of the best images encoding the positive relations between Russia and Egypt via the resources of facial expressions touch and orientation. It shows the Egyptian flag and the Russian flag as being two parts of one flag. This image expresses the historic unity between Moscow and Cairo better than any other image because this image tells us that Russia and Egypt are one entity symbolized by one flag with a Russian part unified with its another Egyptian part. The two parts of the flag, the Russian and the Egyptian, are stick together emphasizing their unity, something greater than closeness or friendliness. The two parts of the flag form one flag having a vertical position to show majesty and honor. I feel that this image of the Egyptian flag unified with the Russian flag can stands for a smiling face with the happiest facial expressions that may appear. This image is an evident result of positive relations between Russia and Cairo across history.

**5. Conclusion**

This study examines the way semiotic resources represent emotive meaning in visual images. The meaning making resources of facial expressions, touch and body orientation are the basis for this semiotic approach to analyze emotion in visual representations. The choices of facial expressions, touch and body orientation can encode basic emotions and describe how emotive meaning is created in visual communication especially the ones pertaining to political figures.

The analysis shows that the relation between Moscow and Cairo is characterized by positive features across history. Such features are reflected by the semiotic resources expressing happiness. All figures in the images share the vertical body orientation and stand at a close distance from each other. Though not all images show reciprocal touch between figures, they show that figures are close and have friendly relations. Facial expressions are, in my opinion, the best to express basic emotions. All figures in the selected images express happiness via shared facial expressions such as relaxed mouths and raised cheeks. Some figures have open mouths, others have closed ones. Some figures have wrinkles in the nose, others do not. Some have open eyes while others have closed ones. As a result, there is a variety of facial semiotic
sources, but all show happiness. The intensity of happiness is mainly judged by the wideness of the mouth. Consequently, figures in images number (2), (3), (6), (16) and (20) display the strongest sense of happiness. The researcher believes that the final two images are the best to express the positive relations between Russia and Egypt, and in particular the last image is the most powerful one to encode positive meanings. This very last image is about something stronger than close relations or friendly relations, it is about oneness and unification – the unification of the two nations, namely Russia and Egypt, into one entity symbolized by one flag with a Russian part and an Egyptian part.

References


Appendix (1a): Figures
Appendix (1a): Figures

The Face
- Forehead: wrinkled, horizontal, vertical
- Eyebrows: whole brow raised/lowered, inner corners raised/lowered, drawn together
- Eyes: wide open/narrow/closed
- Lower face: nose wrinkled, cheeks raised, mouth tensed/closed, relaxed/open

Emotion resources in facial expression.

Appendix (1b): Figures

Touch
- Contact part: body distance, reciprocity, non-reciprocal
- Movement: vector toward agent/patient, velocity, strength, duration

Emotion resources in touch.

Appendix (1c): Figures

Body orientation
- Vertical: up, down
- Horizontal: forward, backward

Emotion resources in body orientation.

Appendix (2): Images

(1)
A SEMIOTIC APPROACH INCLUDING FACIAL EXPRESSIONS, TOUCH, etc...

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(2)

(3)
A SEMIOTIC APPROACH INCLUDING FACIAL EXPRESSIONS, TOUCH, etc...

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