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Non-verbal signs of personality: Communicative meanings of facial expressions*

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Abstact. There is a lot of evidence that most people are capable of recognizing emotions by facial expressions. What information does a facial expression usually provide? Can emotions be shown without facial expressions? Can there be facial expressions without a corresponding emotional state? Are there individual facial expressions? The studies of various aspects of non-verbal communication show both similarities and differences in non-verbal behavior. It is argued that similarities are most evident at the individual level, when the focus is on the objective, formal features of behavior, while differences are more likely to be found when the analysis focuses on the relationship between individuals and interpersonal meanings of behavior. Despite the rapid expansion of research on non-verbal communication, most of it describes simple differences in the display of non-verbal signals. Although they differ in almost every other respect, most facial measurement methods focus on what is seen, on what the researcher can identify when seeing some facial movements. Most of the research methods applied are not sufficient for the study of this complex, multidimensional issue. Like all basic studies of communicative processes, proxemics is more about how than why, and more about structure than content. The article focuses on the question whether non-verbal behavior reflects cultural similarities or differences, and whether different levels of analysis allow to observe both cultural homogeneity and diversity inherent in most acts of non-verbal behavior. The authors consider the data of laboratory experiments on the relationship between emotions and adults' facial expressions: some studies confirm the high consistency between fun and smiling, and from the low to moderate consistency between other positive emotions and smiling. The available evidence on surprise and disgust suggests that these emotions are accompanied by their 'traditional' facial expressions or even some components of such expressions only in a minority of cases. The American anthropologist, one of the founders of kinesics, Birdwhistell introduced this term for the complex study of facial expressions, poses, gait, and visible movements of arms and body. Birdwhistell argues that body language is determined by cultural environment rather than universal genetic programs. Birdwhistell defines kinesics as "the study of body-motion as related to the non-verbal aspects of interpersonal communication". He argues that communication with body motion is systemic, socially learned and communicative unless proven otherwise. The article considers in detail the works and theories of Birdwhistell who often had to admit that some of his ideas were controversial. The authors conclude that Birdwhistell's works have serious mistakes, and other researchers failed to develop his theory of kinesics. Thus, the authors consider the research in this field focusing on the so-called recognition of the communicative meanings of facial expressions.

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"Image is a form of reflection on an object in the human mind, a visual representation of something. The public forms a certain idea and a specific image of the object of interest". For instance, an image of the leader is "a representation of this leader, which has developed in the public opinion" [54. P. 413]. All people are born with unique personality traits, and the main ones cannot be changed by external factors. Many personality traits remain stable and change only under serious events and significant social factors. Psychologists focus on the personality development as related to the emergence of individual differences in behavior, which determine the uniqueness of every person. People involved in social relations become social beings while retaining their individuality, and such a double process seems paradoxical. However, this development maintains a balance between the naturally determined personality traits and the socially determined individual changes.

It is no coincidence that for decades sociologists have focused on socialization as a process of internalization of cultural norms and rules of behavior. According to Hurrelmann, socialization as a type of the social development of the individual can be defined as "the process of the emergence, formation, and development of the human personality in dependence on and in interaction with the human organism, on the one hand, and the social and ecological living conditions that exist at a given time within the historical development of a society on the other" [32]. For most people, the term 'non-verbal communication' means communication by non-verbal means. In practical communication, verbal and non-verbal means cannot be clearly divided into two separate categories (and in practical interaction one hardly strives to do this). Usually, when speaking of non-verbal behavior, we mean those signals to which a certain meaning can be attributed.

Morphological and social features of the face

Psychological structure of personality determines the most characteristic qualities of a particular person. The combination of such qualities and their parameters constitutes a holistic psychological type of personality. Facial expression is a complex phenomenon that provides the best external and internal feedback from all body parts, which makes it easier to follow certain rules of expression. Not all expressions reflect one emotion, some reflect a mixture of emotions. Sometimes the face expresses certain aspects of an emotion that the person does not actually feel, such as facial marks that are a commentary on the emotion. The question of how often everyday facial expressions are spontaneous reflections remains controversial.

There is sufficient evidence that morphological and social features of the face form signals about personality and behavior. Some people, such as professional card players, practice controlling their facial expressions in order to hide excitement and their feelings. However, it is extremely difficult to completely hide emotions (only

some individuals with distinctive features and special training succeed in this), and facial expressions are a vital part of human communication.

In the study of facial expressions, it is difficult for the observer to decide on whether an expression is artificial or sincere, on the way the face is presented (in films, on photographs, etc.), on the influence of knowledge of the context, etc. Certainly, all these factors can affect the accuracy of identifying facial expressions.

Relationship between facial features and personality traits

The increasing number of research link facial images to personality, because people are able to perceive certain personality traits of each other with a fair degree of accuracy [41]. In addition to emotional expressions and other non-verbal facial behavior forms that inform about psychological processes, the research has revealed that meaningful conclusions about personality traits can be made even from static images of the face with neutral expressions [56]. The results of such studies suggest that people can use signals from each other's faces to adjust communication based on emotional responses and the perceived personality of the interlocutor. Such signals should be informative and repetitive enough to allow recipients to reliably take advantage of the information received.

The research of the objective characteristics of human faces has revealed some relationship between facial morphology and personality traits. For instance, some authors argue that facial symmetry predicts extraversion [50]; another widely used measure is the facial width to height ratio (fWHR), which is related to various personality traits such as achievement [44], cheating [29], dominance [58], aggression [9] and risk taking [61]. The fWHR index ensures reliable results, and the judgmental accuracy suggests that the human perceptual system has evolved to be sensitive to static features such as a relative facial width [25]. The studies based on this index prove that a person with a high fWHR, i.e. with a broad face, is perceived as more aggressive and dominant.

Conversational facial expressions are not just a reflection of emotions but also a means of communication, which involves configurations of the face, eyes, and/or head synchronized with words and other gestures. There are several reasons to believe that there is a relationship between facial image and personality traits. First, the genetic background affects both the face and personality. In addition to shaping the face, genes play a role in the development of various personality traits such as risk taking [8], and the contribution of genes to some traits exceeds that of external factors [45]. Recent studies have shown that some static facial features such as the supraorbital region could have evolved as a means of social communication [26].

The relationship between appearance and personality throughout life has been analyzed in longitudinal studies indicating such effects as 'self-fulfilling prophecy' and 'self-defeating prophecy' [63]. Some personality traits are related to the frequently repeated patterns of emotionally expressive behavior. Habitual emotional

expressions can form static facial features leading to the formation of wrinkles and/or development of facial muscles. The research has identified links between objective features of facial images and general personality traits, because people's faces reflect the full range of continuous personality characteristics embedded in various individual facial features.

The study of relationships between facial images and personality traits faces a number of challenges. First, the number of specific facial features is very large, and some of them are difficult to quantify. Second, the effects of specific facial features tend to be weak and become statistically significant only in large samples. Third, the links between objective facial features and personality traits can be interactive and non-linear. Finally, studies based on the real-life photographs face an additional challenge of the distortion of image characteristics (e.g., head angle, facial expression, make-up, hairstyle, etc.)

Judgments about personality based on the common visual representational system

The holistic approach aims to identify the mechanisms of the human face perception and the ways in which people make judgments about each other's personality. This approach is supported by the research on the human face perception, which proves that faces are perceived and encoded by the human brain in a holistic way [59]. Thus, when people identify others, they do not look at individual parts of the face (eyes, nose, and mouth) as independent pieces of information but consider them together, as a whole [62]. Like face identification, personality judgments involve the extraction of invariant facial markers from the relatively stable characteristics of individual behavior. The evidence suggests that various social judgments can be based on the common visual representational system that includes the holistic processing of visual information [57]. Thereby, although the relationship between isolated facial features and personality traits, which physiognomists have always striven to find, turned out to be weak, contradictory and irrelevant, the holistic approach seems quite acceptable for understanding the relationship between the face and personality.

An additional challenge in the search for relationship between the face and personality is the inconsistency of the personality traits analysis; therefore, many experts are needed for obtaining reliable personality traits' assessments for the analysis of every photograph. However, recent attempts to use the algorithms of machine (electronic) tools have shown that the capabilities of robotic tools can surpass the expert capabilities of humans. For instance, quite recently, the composite approach of partial least squares has been applied to analyze the dense 3D facial images obtained under the controlled conditions, and has revealed a significant relationship with personality traits (stronger for males than females) [40]. A similar approach can be implemented with the advanced machine learning algorithms such as artificial neural networks (ANNs) that can extract and process important features

in a holistic way. Recent studies, based on neural networks to analyze human faces, body poses and behaviors in order to identify obvious personality traits [40], have confirmed that this approach leads to a higher prediction accuracy compared to the results of individual observers.

Do basic emotions evoke predicted facial expressions under non-laboratory conditions? Available studies in naturalistic settings rarely test causation and show a surprisingly little correlation between emotions and their predicted facial expressions. These field data are more consistent with the fact that facial behavior has multiple causes, functions and meanings than support the idea that facial expressions are fixed signals of basic emotions [18].

Various facial expressions of certain emotions

Facial expressions are a central topic for the theory and research of emotions and emotional development. Facial expressions related to emotions play an important role in social interaction. Studies of the emotional facial expressions of infants, children and adults, conducted mainly in the 21st century, provide a basis for future research and allow to make the following conclusions: the early theories of emotional facial expressions, developed in the late 20th century, need significant changes; multimodal coding systems for emotions are more desirable than coding systems that rely solely on facial expressions [7]. Japanese researchers provide additional empirical evidence on the creation of emotional facial expressions, which suggests that the theory of universal, prototypical facial expressions for basic emotions needs to be modified based on empirical data.

In previous theoretical studies conducted in the West, authors argue that there are universal, prototypical facial expressions for basic emotions. However, the results of some Japanese empirical studies that tested the development of emotional facial expressions based on specific scenarios only partially confirm these findings and provide additional empirical indicators for emotional facial expressions. Participants of these studies were asked to make facial expressions for six basic emotions (anger, disgust, fear, happiness, surprise, sadness) in specific scenarios. According to the basic condition of the study, participants were to reproduce photographs of the prototypical facial expressions. The created facial expressions were automatically encoded with the FaceReader in terms of emotion intensity and facial expression units. Unlike photographic studies, in which all target emotions were clearly captured, this scenario revealed the target emotions clearly only for happy and surprised expressions. Thus, the studies with photographs and scenarios showed different emotion-intensity profiles and facial expression units for all expressions tested. These results partially support the theory of universal, prototypical facial expressions for basic emotions and indicate that certain modifications are needed for specific cases [53].

Although many scientists refer to such situations as universal signals of non-verbal communication, spontaneous facial expressions remain partially defined.

Many psychological studies prove that the turned down corners of the mouth, raised chin, and asymmetric brow movements (a combination of raising the inner brow and lowering the brows) express sadness; however, no report has described facial expression patterns under the controlled circumstances — when people experience an unequivocal emotion of sadness.

Japanese researchers conducted a study to collect data on the spontaneous facial expressions of sadness. They recorded the spontaneous facial expressions of a group experiencing sadness during the emotion-revealing task, which required from the participants to recall neutral and sad memories while listening to music. The researchers conducted a detailed analysis of the sad and neutral expressions based on the facial-actions coding system. In the earlier studies, the prototypical facial expressions of sadness were not observed when people experienced sadness as an inner state in non-social circumstances — on the contrary, they expressed tension around the mouth, which can serve as a form of suppression. Moreover, the results show that some facial actions present not only sadness but also other emotions — disgust, fear, anger, and happiness. This study proved that new facial expressions contribute to the experience of sadness as an inner state [47].

Some authors argue that body language can ensure from 60% to 65% of information exchange in communication. If we consider all non-verbal means, including proxemics (distance and placement), the use of silence (pauses), paralanguage (voice volume, speech rate, voice modulations, visual contact, etc.), sound (for example, music), tactile effects and color perception, with non-verbal means we can get up to 80% of information about a person [55]. In some cases, facial expressions can reveal true feelings about a particular situation. For instance, if a person says that he feels good, while his facial expression says otherwise, people will feel insincerity [21]. Facial expression is an inseparable combination of affective information and social signals that influence the behavior of people. Ekman found evidence for the universality of various facial expressions for certain emotions — joy, anger, fear, surprise, and sadness [12]. Fernández-Dols and Crivelli summarized the ongoing debate about the universal recognition of basic emotions for both predefined and spontaneous facial expressions [16].

Eyes are often called the ‘windows to the soul’, because they can tell a lot about what we feel or think. When an interlocutor starts a conversation with another person, eye tracking is a natural and important part of communication. Some common noticeable signs include whether people make a direct eye contact or look away, how often they blink, and whether their pupils are dilated. When assessing body language, we should focus on the eyes’ signals: gaze — if a person looks directly into your eyes during your conversation, this indicates that he is interested and pays attention. However, a prolonged eye contact may seem threatening; on the other hand, breaking eye contact and frequent looks away indicate that a person is distracted, uncomfortable or trying to hide his true feelings [10]. Blinking is a completely natural process that can be caused by an eyewinker. However, the

interlocutor should pay attention to whether the person blinks too often or too rarely. People often blink faster when they feel upset or uncomfortable; too rare blinking indicates that a person is deliberately trying to control his eyes' movements [46]. For instance, poker players learn to blink less when trying to appear unperturbed about their cards. Pupil size is a very subtle non-verbal communication sign. Dilation or contraction of the eyes' pupils is a natural reaction to a change in illumination. However, a person can control pupil dilation so that emotions cause smaller changes in the pupil size. Greatly dilated eyes indicate that a person is interested or even excited [38].

Smile is one of the most expressive signs of body language, but smiles can be interpreted in different ways including sincere joy, false happiness, sarcasm and even cynicism. Brannigan and Humphries [5] identified 9 types of smiling (different forms and degrees of intensity), many of which occur in mutually exclusive situations. Ekman and Friesen used an anatomical coding system to identify over 100 types of human smiles [13].

Let us consider possibilities of generalizing the forms of the social context influence on facial expressions in response to negative stimuli, and assess whether these effects are mediated by social motives, and how this is consistent with behavioral ecology. Evidence for the 'behavioral ecology interpretation' [22] of human facial expressions comes mainly from studies of smiling in response to positive emotional stimuli. Smile can be considered a special case, because it clearly can and often does perform a communicative function.

To assess the generalizability of the social context influence on facial expressions in response to negative emotional stimuli and whether these effects are mediated by social motives (according to behavioral ecology), Jacobs, Manstead and Fischer conducted an experiment. Pairs of friends or strangers watched videos of varying degrees of sad impact; the control group participated in the experiment by watching videos being alone. The dependent variables included facial expressions, subjective emotions, and social motives. The manifestations of sadness depended on the intensity of stimuli and were lesser in all social conditions than when being alone. Surprisingly, the social context effects were identified for smiling [37].

Do basic emotions evoke predicted facial expressions under non-laboratory conditions? The available studies in naturalistic settings rarely check causation but show surprisingly little correlation between emotions and their predicted facial expressions. Field data are more consistent with the fact that facial behavior has multiple causes, functions and meanings than with its interpretation as fixed signals of basic emotions. At the Olympic Games, gold medalists were filmed twice: behind the pedestal of honor where no one could see them, and on the pedestal of honor in front of the flag and listening to the national anthem (looking at the public and important people) [17]. Despite the fact that the feeling of joy hardly had time to change much from shot to shot, the winners smiled the most in the second situation, which proves that facial expressions are determined not only by feelings at a given time.

Reizenzein, Studtmann and Horstmann considered the data of laboratory experiments on the relationship between adults' emotions and facial expressions. Several studies proved high consistency of fun and smiling, and low to moderate consistency of other positive emotions and smiling. The available evidence on surprise and disgust suggests that these emotions are accompanied by their 'traditional' facial expressions. The evidence on sadness, anger and fear is very limited. For instance, one study shows that in specific situations, there can be high consistency of emotional expression for sadness but not for anger and fear. Insufficient intensity of emotions and suppression of facial expressions do not seem to explain the observed dissociations between emotions and facial expressions that are determined rather by basic emotions common to many people (i.e., innate behavior with functional value from the evolutionary past). The simplest empirical test is the study of how facial expressions develop [51].

Arguments for naturalistic research

Laboratory experiments are often used to study facial expressions because they facilitate observation of causality by placing many participants in an identical situation, obtaining self-reports of emotions, recording facial behavior in a consistent and often unobtrusive way, and creating situations that minimize participants' motivation to hide their facial expressions. On the other hand, laboratory experiments have serious limitations: for instance, when examining manifestations of grief, it is difficult for participants to endure an hour of testing. Ethical and practical considerations determine limitations for the study of happiness, fear, sadness, and anger.

Naturalistic studies allow to assess the ecological frequency of specific emotions and facial expressions and their co-occurrence without the experimenter's intervention. The advantages of the naturalistic approach also include the study of strong and lasting emotions in situations that cannot be created in the laboratory. Experimental results should be supported by naturalistic studies to ensure reliable conclusions. When conducting such studies, researchers check the joint appearance of facial expressions and emotions. Certainly, naturalistic studies also have limitations: they are often considered 'dirty', because their situations are rarely identical for all participants, there are no self-reports of emotions, and recording of facial expressions is fragmentary and complicated. Thus, available studies in naturalistic settings rarely test causality, and such field data are more consistent with facial behavior as having multiple causes, functions and meanings rather than being fixed signals of basic emotions [18].

Naturalistic studies confirm that facial expressions can be influenced by the audience even when we are completely alone and behave 'naturally', because even in such moments we can imagine social interaction. For instance, Fridlund [22] found out that people watching a pleasant movie smiled more when they watched the movie with friends than when they were alone; and people who

watched a pleasant movie alone but knew that their friends were also watching it in the next room also smiled more than those who watched the movie alone. Thus, the imaginary presence or emotions of other people can stimulate or contribute to particular facial expressions.

Most studies of smiles focus on the role of the social-context information in emotion classification, such as whether a display is perceived as belonging to a specific type of emotion, like whether the influence of context extends to the interpretation of emotional expressions (smiles) as posed or spontaneous manifestations of underlying positive emotions. "A between-subjects design (N = 93) was used to investigate the perception and recall of posed smiles, presented together with a happy or polite social context scenario. Results showed that smiles seen in a happy context were judged as more spontaneous than the same smiles presented in a polite context. Also, smiles were misremembered as having more of the physical attributes (i.e., Duchenne marker) associated with spontaneous enjoyment when they appeared in the happy than polite context condition. Together, these findings indicate that social context information is routinely encoded during emotion perception, thereby shaping the interpretation and recognition memory of facial expressions" [43].

One of the most complex and amazing mechanism of facial expressions consists of the types of smiles. The common basis of all smiles is the so-called zygoma major muscle which stretches lips when we smile. Ekman showed that the frequency, duration and intensity of the zygoma major muscle activity differed in facial expressions for two 'joyful' films depending on how happy people felt while watching them [14]. However, other muscles play a decisive role in understanding the real meaning of smiling.

Recently, researchers have challenged the previous assumptions that facial expressions follow specific emotional events and relate to other specific emotional responses. We consider these issues by comparing spontaneous expressions of anger, sadness, laughter and smiling with the simultaneous 'online' assessment topics based on narrative data, and by examining whether the consistency between facial expression and assessment components depends on an increase in emotional feeling. According to the statement that emotional systems are weakly interconnected, expressions of anger and sadness coincided moderately with the expected assessment topics, and when they did the emotional feeling was stronger. The results for positive emotions were more complex, but they confirm the hypothesis that laughter and smiling are different: smiling correlates with pride but never with anger estimates; on the contrary, laughter was more often accompanied by anger estimates, which is consistent with the recent evidence linking laughter with the dissociation or eradication of negative emotions [4].

Mouth expressions and movements are also important when interpreting body language. For instance, chewing of the lower lip indicates that a person feels anxiety,

fear or insecurity. Covering one's mouth may be an attempt to be polite if a person yawns or coughs, but it can also be an attempt to hide disapproval.

When evaluating body language, we should pay attention to the following mouth and lip signals: pursed lips can be a sign of disgust, disapproval or distrust; people sometimes bite their lips when they are worried, anxious or stressed; when people want to hide an emotional reaction, they cover their mouth to avoid showing smiles or smirks; small changes in the mouth can be subtle indicators of what a person feels — when the mouth is slightly raised, it indicates that a person feels happy or optimistic, while a slightly drooping mouth can be an indicator of sadness, disapproval or even an obvious grimace.

Facial dynamics: communication messages

In a normal turn-by-turn conversation, there are situations when the communicator wants to emphasize, amplify, minimize or refute a message. Such signals can be given by both the speaker and the listener. For instance, a sad verbal message may require an additional emphasis made by the eyebrow movement that usually accompanies expressions of sadness; smiling can soften the message; the OK gesture can be accompanied by a wink which leaves no doubt in approval.

Ekman and Friesen [13] introduced the term 'facial emblems' which, like other gesture-emblems, can be clearly decoded. Facial emblems differ for certain emotional expressions, especially when someone tries to talk about an emotion showing that he does not really feel it. Facial emblems usually appear in the context that does not contribute to the actual emotional expression; facial emblems usually have a longer or shorter duration than real expressions; for facial emblems, as a rule, only one part of the face is used.

People of different cultures express their emotions in different ways and, accordingly, people from other cultures interpret them in their own way. Ekman argues that there are universal facial expressions for certain basic emotions, which are interpreted in the same way in all cultures [36]. Facial expressions were studied by Ekman, Sorenson and Friesen [15] who refute the thesis that facial expressions are completely determined by social factors. When a person drops his jaw and leaves his mouth open for a while (without other signs of surprise), this means that he is dumbfounded by what he heard. Dilated eyes (without other signs of surprise or fear) can show the same — as if saying 'Wow!'. If a person wrinkles his nose or raises his upper lip, he non-verbally expresses disgust.

Facial movements play an important role in the conversation control [1]. The most common function of facial movements is syntactic (display). Syntactic facial signs act as symbols of words and sentences; they help to organizationally structure the dialogue by marking its beginning, end, resumption, continuation, and underlining. Raising or lowering eyebrows is the main syntactic signal. Facial signs of the speaker, which are directly related to the content of the message, are called semantic signals/display and can be supplemented by verbal signs

or additional verbal comments (personal reactions). The listener's reactions are also reflected in the face: these are primary facial signals facilitating the flow of communication and including personal reactions and signs in the form of mimicry. Although all this information provides a general overview of how the face is used to manage communication, it does not fully reflect the complexity required for analysis.

Face and hand gestures often occur together creating a single visual image as an ensemble of gestures and speech. The analysis of semantic features shows how speakers adjust the use of visible and audible expressive resources to the context. Speakers who communicate face-to-face (compared to speakers who do not see their addressee) rely more on face and hand gestures than on words to describe the key semantic features, and their gestures are more likely to explain information that was not in the words [1].

Face and expression of emotions: Darwin and followers

The intellectual roots of the contemporary interest in facial expressions can be found in the middle of the 19th century. Charles Darwin's *The Expression of the Emotions in Man and Animals* [11], not as famous as his other works on natural selection, became the most important theoretical and empirical study of facial expressions. For Darwin, the study of emotional expressions was closely related to his theory of evolution, since he believed that the ability to communicate with non-verbal signals had developed in the same way as brain and skeleton. When climbing the phylogenetic ladder, the face becomes more mobile. Most animals' face is a fixed mask, while already primates have a greater variety of facial expressions. Darwin considered it extremely important to document similarities of emotional expressions in different animal species and in different human cultures, as this confirms his theory of evolution. Darwin suggested that the orbicularis oculi muscle (responsible for wrinkles in the eyes' corners), which is not involved in the fake or mechanical smile, is involved in the 'sincere' or really happy smile. "The idea of innate and universal facial expressions that have links with human emotions was given the status of scientific hypothesis by Darwin (1872/1965). Substantial evidence, old and new, supports his hypothesis" [35].

Darwin's followers explore several features of the face, including the judgments analysis, i.e., what meanings observers attribute to various facial expressions and movements of facial muscles, and also facial expressions that can enhance reflection of emotions. One tradition, dating back to Darwin and now associated with the works of Ekman and Izard [36], emphasizes the close relationship between facial expressions and emotions as having the biological basis. This approach determined the development of very ambitious cross-cultural research programs on facial expressions recognition. According to this theory, simply stated, a particular emotion always produces a particular expression (generated by a single muscular movement or a complex set of movements), and vice versa, a certain expression means that

a specific emotion is being experienced at a given moment. Thus, according to Ekman and Izard, facial expression is always a reflection of the inner state.

However, there are reasons to consider this simplified approach with a certain degree of skepticism, because people can simulate emotions by deliberately creating certain facial expressions. In the late 1990s, Kraut and Johnston [42] found out that after a good throw, bowlers smiled much more when they looked at their friends than when they were still looking at the pins. Football fans watching the game on TV smile at the best moments of the game much more when in direct contact with friends; when being alone, their faces express several emotions not observed under the direct contact [19].

The research show that the intensity of facial 'motor imitation' — an expression of what another person is feeling (for instance, we wince when someone pinches his finger, our facial expression changes when a friend tells about a miraculous escape of death) — reduces when no one can see our facial expressions [2]. If an infant expects to make an eye contact with his mother, he is more likely to smile; if he does not expect such an eye contact, he will not smile [39].

According to Fridlund's ecological theory, facial expressions are never purely emotional, on the contrary, they always serve certain social purposes [22]. Spontaneous emotional expressions are not of the evolutionary origin, because they often serve interests of other people rather than interests of the person himself (for example, emotional expressions provide him with the ability to deceive). Fridlund's hypothesis (facial expressions should inform not just show) is confirmed by many examples of functional expressive behavior in the animal world and by observations of human interaction.

However, most authors seem to disagree with the idea that facial expressions are not purely emotional. The fact that the audience can have an opposite effect (i.e., people can be less emotionally expressive in the presence of others) suggests that people prefer to suppress some spontaneous emotional reactions, i.e., facial expressions do not always have a social-consumer orientation. To check the correspondence of facial expressions to inner emotional states, we can compare studies in which expressions were manifested in various social situations. Another way is to compare expressions with a certain indicator of emotions; however, when this method was used in the experiment (participants were asked to describe their emotions while watching neutral and scary parts of the film), there was almost no correspondence [20] — the expressions of only 2 out of 35 respondents theoretically corresponded to the emotions experienced, and 3 participants' facial expressions did not correspond at all to the emotions they described.

"Cross-cultural and laboratory research indicates that some facial expressions of emotion are recognized more accurately and faster than others. We assessed the hypothesis that such differences depend on the frequency with which each expression occurs in social encounters. Thirty observers recorded how often they saw different facial expressions during natural conditions in their daily life. For

a total of 90 days (3 days per observer), 2,462 samples of seen expressions were collected. Among the basic expressions, happy faces were observed most frequently (31%), followed by surprised (11.3%), sad (9.3%), angry (8.7%), disgusted (7.2%), and fearful faces, which were the least frequent (3.4%). A significant amount (29%) of non-basic emotional expressions (e.g., pride or shame) were also observed. We correlated our frequency data with recognition accuracy and response latency data from prior studies. In support of the hypothesis, significant correlations (generally, above 0.70) emerged, with recognition accuracy increasing and latency decreasing as a function of frequency. We conclude that the efficiency of facial emotion recognition is modulated by familiarity of the expressions" [6].

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Too many works focus on the measurement of non-verbal signs of the personality image, while this article considers the communicative meanings of facial expressions. We use our faces as regulators to open or close communication channels, complement or change the behavior of others, and replace verbal messages. Face is a multi-signal system capable of informing about personality, one's interests and sensitivity in interaction, emotional state, and wish to present oneself to others. Although we know that people relate personality traits to certain facial expressions and features, laboratory studies do not provide clear answers to the questions that arise. Observations of spontaneous expressions (without the researcher's intervention) indicate the possibility of their accurate recognition. Thus, certain emotions are not a necessary or sufficient condition for certain spontaneous expressions.

The accuracy of facial expressions' recognition is quite high for prototypical expressions. Moreover, in different cultures, people accurately identify basic emotions: fear, disgust, sadness, happiness, surprise, and contempt. The psychophysiological approach clarified our understanding of facial behavior. People with more expressive faces (compared to less expressive ones) have less active nervous systems; and this observation has medical implications. Under certain conditions, facial expressions can affect emotions, i.e., face not only expresses emotions but also produces them. Studies of the smallest facial movements show that people subconsciously repeat expressions of other people, even if such expressions are too fleeting for conscious perception. Researchers are learning increasingly more about how the brain and nervous system work with different emotions, and the research results prove that facial expressions can have a significant impact on people in social interaction.

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Невербальные признаки образа личности: коммуникативные значения выражений лица*

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Аннотация. Существует множество свидетельств, что большинство людей вполне способны распознавать эмоции по лицу. Какую информацию обычно передает выражение лица? Могут ли проявляться эмоции без изменения выражения лица? Могут ли на лице отражаться эмоциональные признаки при отсутствии соответствующего эмоционального состоя-

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ния человека? Существуют ли индивидуальные отличительные выражения эмоций на лице? На эти вопросы авторы стараются ответить в статье. Анализ результатов исследований различных аспектов невербальной коммуникации показывает наличие как сходств, так и различий в проявлениях невербального поведения. Считается, что сходства наиболее очевидны, когда анализ проводится на уровне индивида и основное внимание уделяется объективным, формальным свойствам поведения; различия с большей вероятностью обнаруживаются, когда анализ проводится на уровне отношений между индивидами, т.е. акцент делается на межличностном значении поведения. Несмотря на то, что они отличаются почти во всех других отношениях, большинство методов измерения выражений лица сосредоточены на том, что видно, что исследователь может различить, когда видит движение лица. Как и все базовые исследования коммуникативного процесса, проксемика больше связана с как, чем почему, и со структурой, нежели с содержанием. Статья фокусируется на вопросе, отражает ли невербальное поведение культурные сходства и различия. Учет уровней анализа позволяет наблюдать как культурную однородность, так и разнообразие, присущее большинству актов невербального поведения. В статье рассмотрены данные лабораторных экспериментов, оценивающих взаимосвязи между эмоциями и выражениями лица у взрослых. В последние десятилетия исследования невербальной коммуникации начали смещаться от описания того, что делают разные люди, к более систематическому анализу контекстуальных аспектов невербального поведения, поскольку межкультурные недопонимания часто бывают следствием незнания элементарных основ языка тела, в частности физиогномики. Американский антрополог, один из основателей кинесики, Р. Бердвистел считал, что язык тела большей частью определяется культурной средой, а не универсальными генетическими программами, и в статье разбираются работы Бердвистела, в частности, часто критикуемые его идеи.

Ключевы слова: эмоции; выражения лица; невербальная коммуникация; невербальное поведение; методы измерения выражений лица; проксемика; культурные сходства и различия; кинесика