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The link between social value orientations and the interaction partner's emotional facial expression as regards the perception of other individuals' traits and a change in the observer's social value orientation

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Abstract

The paper fits into the trend in the research into the link between social value orientations and the perception of a facial emotional expression. The issues addressed in this paper relate to two topic areas: the link between social value orientations and the assessment of the characteristics of another individual displaying various emotions on their face, and a possible change in the observer's social value orientation under the influence of a specific emotional expression being perceived on another individual's face.

An "*omnibus*" type representative survey was carried out according the the experimental scheme, entirely via the Internet (N = 972). The following tools were used: for the measurement of social value orientations, a modified version of the Ring Measure of Social Values (Liebrand, 1984); for the experimental manipulation, photographs of facial expressions (happiness, anger, neutrality); a scale for the assessment of the perception of the individuals presented on the photographs.

As expected, a link was demonstrated between the cooperative orientation and a high level of trust in, and positive assessments of a person displaying a facial expression of happiness. What was also revealed was the diversity of the perception of a person displaying various facial expressions (especially neutrality and happiness) depending on the type of (general and specific) indicators of social value orientations. In general, a person with a smiling and neutral facial expression was assessed significantly more positively (and more trust was put in that person) by prosocials (those with a high degree of the *orientation on the others*; cooperators and altruists) than by those oriented proself (those with a high degree of the *orientation on oneself*; competitors and individualists).

In the light of the data obtained, one may, for the very first time, speak of social value orientations as of a dimension being susceptible to a change under the influence of a facial expression. A diversity of the indicators of the *orientation on the others* was shown, as well as of the distribution of the groups of the dominant social value orientations before and after the experimental manipulation, depending on the type of a basic facial emotional expression being presented (happiness vs anger). Directional predictions were confirmed with regard to the negative manipulation which was followed by a reduction in the *orientation on the others* and a reduction in the total number of altruists, while the positive manipulation resulted in

a general increase being observed in the number of altruists, which remains in line with the trend in predictions that observation of a positive facial expression triggers prosocial tendencies, while observation of a negative facial expression undermines prosocial tendencies.

The results were given an interpretation, and areas were suggested in which it was worth planning additional researches that might provide the knowledge required to draw final conclusions. The fact was highlighted that specific methodological solutions which might have influenced the structure of results were applied.

Keywords*:* social value orientations, prosociality, perception of people, variability of social value orientations, Ring Measure of Social Values, facial emotional expressions.

INTRODUCTION

Since the development of the first concept of social value orientations (Messick, & McClintock, 1968) which are currently defined by a significant proportion of researchers as fixed patterns of the inter-situational variability of preferences as to how to allocate resources between the self and another person (Grzelak, 1982, 2003), numerous researches have been carried out in this field. It has been proven, *inter alia*, that the orientations are a very important factor modifying the perception and evaluation of a situation and a partner (Kelley, & Stahelski, 1970; Liebrand, Jansen, Rijken, & Suhre, 1986; Sattler, & Kerr, 1991), as well as affecting human behaviour (Kuhlman, & Marshello, 1975; McClintock, & Liebrand, 1988). On the other hand, factors influencing a change in the preference was discovered (Abric, & Kahan, 1972; Swingle, & Santi, 1972; Hamburger, Guyer, & Fox, 1975; Latane, & Nida, 1981; Grzelak, Ossewska, Wyszogrodzki, & Bobrowski, 1994).

Among the empirical reports, researches have occurred which linked social value orientations with facial expression, and concerned the coding and decoding of orientations at the level of facial nonverbal behaviour, as well as the decoding of orientations on the basis of static images of facial emotional expressions (Kuhlman, & Carnevale, 1984; Kuhlman, Fasolo, Kiotas, & Pomare, 1989; Shelley, Page, Rives, Yeagley, & Kuhlman, 2009). The results as obtained so far indicate that emotions being displayed on the face of a stranger allow accurate determination of that person's social value orientation, particularly when he/she is adopting an expression of happiness or anger, while the observation of an emotionally neutral face does not provide such an opportunity (Shelley, Page, Rives, Yeagley, & Kuhlman, 2009). In addition to the nonverbal indications of social value orientations, factors affecting the attractiveness of an interaction with a person being observed, such as *inter alia* the traits of a potential interaction partner, have also been analysed (Grzelak, Kuhlman, Yeagley, & Joireman, 2009); moreover, an opportunity to infer the characteristics of a stranger from his/her nonverbal, facial emotional expressions.

The aim of this paper is to present the results of an experimental research focused on research questions about the link between social value orientations and inference from facial emotional expressions. Detailed inquiries concern the specificity of perceiving the traits of individuals' (including trust being put in them) who display contradictory expressions (happiness, anger) on the face, and a possible change in the social value orientation under the influence of the type of a facial expression being

worn by an interaction partner. Social value orientations have thus been treated as an independent and dependent variable. Focusing on the facial expression arises from the fact that it is considered, on the basis of numerous researchers (conducted by, *inter alia,* Bahrick, Bahrick, & Wittlinger, 1975; Field, Woodson, Greenberg, & Cohen, 1982; Hirshberg, & Svejda, 1990; Johnson, Dziurawiec, Ellis, & Morton, 1991; cf. also: Doliński, 2003; Ohme, 2003; Biele, 2002), to be the most important channel of nonverbal communication, which operates most autonomously and, most often, is sufficient by itself for the information being provided to be accurately interpreted. The use of expressions of happiness and anger in own research for the experimental manipulation arises from the fact that those modalities of emotion have received, in the cross-cultural studies (Ekman, Sorenson, & Friesen, 1969; Ekman, & Friesen, 1971; Friedman, 1979), the highest indicators of recognition accuracy, and is also due to the great accuracy in determining the social value orientation of a person who is displaying those particular modalities of emotion on his/her face (Shelley, Page, Rives, Yeagley, & Kuhlman, 2009).

Definition of social value orientations

The authors of the earliest classifications of social value orientations (Messick, & McClintock, 1968) initially introduced four basic motifs (orientations) for which a definition was developed, namely the fixed preferences about how to allocate outcomes (resources) between the self and a partner. Those preferences may take a form of efforts to maximise: own gains (individualism), the partner's gains (altruism), own advantage over the partner (competition), and the combined own and partner's gains (cooperation). The Charles Graham McClintock's model as extended (Griesinger, & Levingstone, 1973) to include a total of eight social value orientations still emphasised the fixed nature of the preferences. The subsequent years of interest in the issue of orientations have resulted in a major theoretical postulate being proposed, which dealt with the interactive nature of the resource allocation preferences. The existence of a number of situational factors affecting the orientations was indicated (Grzelak, 1982), while emphasizing at the same time that the individual orientation pattern in different situations was stable and typical of a given individual. For example, where person A exhibits less competitive behaviour while being in a confrontation with a partner enjoying considerable prestige than while being in a situation where he/she is facing up to a partner of a similar status, the difference will occur in each situation where person A is in an interaction with partners having different levels of social prestige. Hence, the individual's preferences are determined by both the orientations (configuration of orientations) and the situational factors (Grzelak, 2003).

Therefore, a proportion of researchers are currently inclined to define the social value orientations as fixed patterns of the inter-situational variability of preferences as to how to allocate resources between the self and other persons (Grzelak, 1982, 2003). In the light of this definition, the assessment of social value orientations is, therefore, not universal: individuals being cooperative in certain spheres (e.g. in social relationships) may be competitive in other spheres (e.g. in their professional life). Social value orientations are thus dependent on the situation (Grzelak, 1982,

2003), and the main factors resulting in the same person being able to change his/her outcome allocation preferences include, *inter alia*: the number of persons, the mode of representing results, the effect of instructions, the effect of information on the other person's strategy, and the opportunity for communication (Mazur, 2002). In the light of the above data, it is difficult to divide people into "pure" individualists, altruists, cooperators etc.; actually, it is assumed that each person's orientation is characterized by the adopted indicators determining the intensity of particular orientations. Therefore, each person exhibits a certain, most pronounced orientation being supplemented by a set of several others. Depending on the situation, the person starts exhibiting either behaviour associated with the dominant orientation or behaviour typical of the other ones. Therefore, in certain extreme situations an individualist (an individual with the proself orientation being dominant) may exhibit altruist behaviour, while in other situations e.g. competitive ones. However, in most situations this individual will behave in accordance with his/her dominant proself orientation.

Models of social value orientations differ in the number and type of orientations. Quite often, one may find in the literature on the subject an empirically and theoretically justified division of orientations into *prosocial* (referred to by van Lange as *cooperative*) which include cooperative, altruistic and maximin orientations (the latter being a preference for maximizing the lowest outcome regardless of whose the outcome is (Schulz, 1968, quoted from: Grzelak, 2003), and *proself* (referred to by van Lange as *egoistic*) being represented by individualistic and competitive orientations (van Lange, 2000; cf. also: Rutkowska, & Szuster, 2008). The nature of the division of social value orientations into *prosocial* and *proself* has already been emphasized by John Thibaut and Harold H. Kelley, who argued that individuals transform the representation of a specific situation of social interdependence in accordance with their own social motives (Kelley, & Thibaut, 1978) by either adopting the *egoistic motivation* i.e. pursuing maximum own outcomes while ignoring the partner's outcomes, or being guided by the *prosocial motivation* i.e. searching for good outcomes for both oneself and the partner(s).

In summary, social value orientations may be treated as either individual, generalized inclinations to exercise particular types of control, or states of needs evoked on an *ad hoc* basis in a particular situation (Grzelak, 2002). The author of this paper is inclined to favour the latter definition, and has been examining, *inter alia*, the variability of orientations under the influence of various facial expressions being displayed by an interaction partner.

Orientations and the perception and assessment of the others (orientations as an independent variable)

Researches into social value orientations indicate an evident influence thereof on the processing of information on the social world, and on the assessment of interaction partners (Kelley, & Stahelski, 1970; Grzelak, 1982, 2003). Depending on the social value orientations, people pay attention to various elements of the social world, and use those elements in order to form a specific assessment of the surrounding reality.

Results of classical studies ("the triangle hypothesis") indicate that competitive persons perceive the others as being competitive as well, while persons with the cooperative orientation consider other people to be more flexible i.e. either cooperative or competitive (Kelley, & Stahelski, 1970); on the other hand, a "diagonal hypothesis" also exists, being opposed to the above one and empirically confirmed, which indicates the egocentric bias; according to the latter hypothesis, everybody perceives the others as being similar to oneself (Codol, 1976; quoted from: Grzelak, 2001; Kuhlman, & Wimberley, 1976; Liebrand, 1984; Schulz, 1986). The results supporting the "diagonal hypothesis" indicate that persons with prosocial orientations (cooperation, altruism) attribute the possession of prosocial orientations to the others to a greater extent than persons with proself orientations (individualism, competition) tend to do. A link was also demonstrated between the social value orientations and the accuracy of the judgement on the others: cooperators and individualists guess their partners' intentions more accurately than competitors do (Maki, & McClintock, 1983). The differences also concern the criteria applied for the assessment of the others: individualists and competitors perceive the social world in terms of power and strength, while persons with the cooperative orientation perceive it in terms of moral categories i.e. good and evil (Liebrand, Jansen, Rijken, & Suhre, 1986; Sattler, & Kerr, 1991). Paul van Lange and Wim Liebrand (1989) concluded that cooperators perceived other cooperators to be intelligent, while non-cooperators were perceived by them as unintelligent and weak. The perception of persons with non-cooperative orientations is opposite (Kopelman, Weber, & Messick, 2002).

So far, it has not been directly examined as to whether social value orientations diversify the assessment of the same person displaying various facial expressions. The very fact of the influence of the identification of a sender's emotions on the type of the judgement on the sender being generated is obvious – identification of a facial expression, just like every categorization, simplifies and reduces the stimuli getting through; it selectively channels the attentions, which allows grouping and predicting the traits of any category item; it also allows constructing of a consistent system of general knowledge of other people, while specifying the expectations concerning the patterns of either typical behaviour or possible deviations therefrom. On the other hand, the expectations associated with the facial expression being observed affect the judgements on the sender of the message (Cantor, & Mischel, 1993).

As regards the link between the social value orientations and generating different judgements on other persons on the basis of facial emotional expressions being observed, there are reasons to argue that at least the cooperative orientation is conducive to putting trust in persons displaying positive expressions on the face. Generally, a happy facial expression is interpreted by people as an indicator of the cooperative orientation (Carnevale, 1977; Kuhlman, & Carnevale, 1984; Kuhlman, Fasolo, Kiotas, & Pomare, 1989; Frank, 1988; Frank, Gilowich, & Regan, 1993), and assessing a person on the basis of the facial expression as being happy correlates with perceiving that person as being "trustworthy" (Shelley, Page, Rives, Yeagley, & Kuhlman, 2009). On the other hand, it only occurs in the group of cooperators that attributing the cooperative orientation (which often involves a positive emotional state being expressed on the face) to a person correlates with assessing that person to be "trustworthy"

(Shelley, Page, Rives, Yeagley, & Kuhlman, 2009). Possibly, the facial expression of a positive emotional state not only inspires cooperative observers to feel trust and expect cooperation, but also to make positive assessments in other dimensions. Józef Kozielecki (1975), while referring to the tradition of studies on social perception, and examining the assessments concerning both cooperators and competitors, indicated that in accordance with the concept of stereotypes, the cooperators have been attributed many other positive traits, e.g. the absence of greed or empathy, while the non-cooperators have been assesses as being selfish, egocentric, egoistic and unscrupulous. Similarly, researches as conducted by Gregory Shelley and Peter Rives (quoted from: Shelley, Page, Rives, Yeagley, & Kuhlman, 2009) consistently indicate that the assessments of cooperators are more positive than those of non-cooperators in terms of such traits as: unselfishness, honesty, kindness and cooperation. Other researches also show that persons with prosocial orientations make a more positive impression on the others than persons with proself orientations. Judith Maki, Warren Thorngate and Charles McClintock (1979) demonstrated that persons making individualistic and competitive choices have been assessed as being more egoistic, evil and unfriendly than persons exhibiting altruistic and cooperative behaviour. Furthermore, the respondents with prosocial orientations have been assessed as being more moral as well as fair and honest, as compared to those proself-oriented (Liebrand, Jansen, Rijken, & Suhre, 1986). An important question is whether the assessment of a smiling person (most often associated with a tendency to cooperate), and of a person displaying a facial expression of a negative emotion, will vary depending on the observers' social value orientation (*proself* vs *prosocial*).

It is also interesting to see how the others are assessed by the representatives of social value orientations other than cooperation, depending on the facial expression being observed.

A change in the orientation depending on the facial expression being observed (orientations as a dependent variable)

In accordance with the definition of social value orientations, which considers the variability thereof depending on the external characteristics of the situation, researches have been carried out on the factors affecting the preferences for resource allocation. Those factors included one being the most significant from the point of view of the investigations conducted under own research, namely the information on the interaction partner. The image of the interaction partners affects our attitude towards this person and, consequently, our social value orientations. The information that the partner is a cooperator evokes a cooperative attitude towards him/her (Abric, & Kahan, 1972), similarly to a message that this person possesses the same orientation as we do (Kaufman, 1967; Tornatzky, & Geiwitz, 1968). Other researches have shown that we are more willing to cooperate with persons of whom we know that they are moral (van Lange, & Liebrand, 1989) or have authority (Abric, 1976, quoted from: Grzelak, 1988).

Signals of the emotions being felt by the interaction partner, flowing from the key channel of nonverbal communication, undoubtedly constitute information which

may be immediately processed into a specific assessment of the interaction partner's intentions, and thus, possibly, affect our social value orientation. Reaction to another person's emotional face is a range of various processes – not only perceptual and cognitive but also emotional and behavioural. Observation of an expression results in it being linked with behavioural categories determining the future behaviour of the sender (e.g. an expression of anger – attack, happiness – affiliation), which in turn affects the future behaviour of the receiver, and his/her motivation for approaching, avoidance, isolation, and the quality of mutual interactions (Fox, 1991, Oster, 1989, quoted from: Dolata, 2001). Research as conducted by Grzegorz Pochwatko and Joanna Sweklej (2003), concerning the specificity of behavioural reactions (approaching – distancing) with regard to the facial communication of emotions, indicated that photographs showing the expression of happiness triggered a smaller distance in relation to the stimulus than photographs showing the expression of negative emotions. Intuitive inference of intentions on the basis of someone's self-presentation finds support in other empirical reports directly referring to social value orientations – self-presentation affects the social value orientations of the sender of messages (Iedema, & Poppe, 2001) – since the nature of facial expressions being displayed by a person (and being indicative of his/her orientation) inclines one to activate an appropriate attitude and action towards this person, which is expressed through specific social value orientations of the receiver of messages.

Since the cooperative tendencies are evoked in us by other cooperators whom we apparently recognize by the happy facial expression, it is likely that observation of a positive facial expression being displayed by the interaction partner will evoke prosocial tendencies towards him/her. In turn, in accordance with the so-called *evolutionary stable strategy* (Slatkin, & Maynard Smith, 1979, quoted from: Wojciechowski, 2008) in a form of the "tit-for-tat" reaction, similarly to cooperation inducing cooperation, egoistic behaviour is very likely to induce a reciprocal, non-cooperative choice. Therefore, where a partner displays (as in own research) a negative facial expression of anger, by no means suggesting in this manner a tendency for cooperation, he/she is thus likely to undermine the other party's willingness to cooperate.

Method

The research was carried out via the Internet according to the experimental scheme; it allowed the determination of assessments being generated in relation to a person displaying various facial expressions, depending on the observer's social value orientation, and the determination of a change in a social value orientation, depending on the facial expression being observed.

The following techniques were applied in the research: a version of the Ring Measure of Social Values, as modified by Michael Kuhlman (2007), for the measurement of social value orientations, and photographs of a man (as obtained from the set of unpublished materials of M. Kuhlman (2007)[2] displaying expressions of happiness, anger and neutrality on his face, for the performance of an experimental manipulation. For the purposes of the research, a scale for assessing the perception

2 The materials were obtained courtesy of M. Kuhlman, professor at the University of Delaware.

of a person being presented, his facial expression, and trust being put in this person.

In the research, the following variables were used:

independent variables:

- social value orientations
- the type of a facial expression being displayed (the intra- and interpersonal factor)

dependent variables:

- the perception of the person (in the dimensions of traits in terms of competence, predictability, intentions and being trustworthy) displaying various expressions on the face
- a change in the social value orientation depending on the facial expression being observed.

Tools for the measurement of variables. Indicators

Method of the measurement of the independent variable: social value orientations

For the measurement of social value orientations, a version of the Ring Measure of Social Values (Liebrand,1984), as modified by M. Kuhlman. In this method, the respondents made 12 choices between three options (A, B and C), with each option presenting a specific distribution of points between self (You) and the Person in the photograph (Fig. 1). An accurate and rather complex method of the analysis of results as obtained using the Ring Measure of Social Values is provided in a paper written by the author of this technique (Liebrand, & McClintock, 1988).

Figure 1. An example of one of the offers in the modified Ring Measure of Social Values, in the version involving the distribution of points between self and the person in the photograph

A)	You receive 50 The person in the photograph receives –86
B)	You receive 70 The person in the photograph receives –70
C)	You receive 60 The person in the photograph receives –79

Source: Materials of M. Kuhlman (2007).

Using the tool as described, two types of indicators of social value orientations were developed:

1) a general indicator: *orientation on the self* (I) and *orientation on the others* (he)

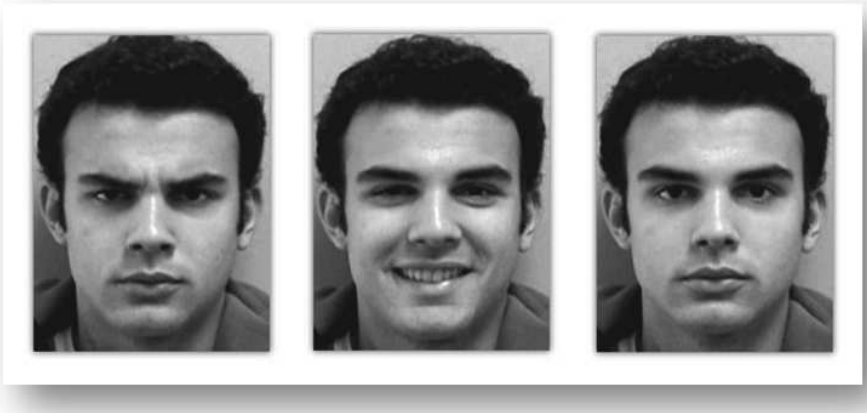
2) specific indicators: *dominant social value orientations*: competition, individualism, cooperation, altruism.

Method of the measurement of the dependent variable: the type of a facial expression being displayed

Under the research procedure, a type of manipulation was applied which involved a change in the emotional expression being displayed on the face of a person with whom the respondent is in a situation of social interdependence, and distributes points being important for both parties. For this purpose, photographs of a man were used (having been selected from a couple of dozen of photographs of

human faces (from Kuhlman's collection), tested for the lack of ambiguity of the facial expressions being presented (a study as conducted by Kuhlman's team, 2006, 2007), and chosen due to the appearance of the face being typical of a Polish citizen (studies for the purpose of the paper by Hubert Jakubiec, MSc, 2008) and on the basis of opinions of competent judges), presenting facial expressions of anger, happiness and neutrality (Fig. 2).

Figure 2. Photographs of a man displaying expressions of anger, happiness and neutrality, as used in the research



Source: Materials of M. Kuhlman (2007).

The photograph of a person displaying a neutral expression (who was presented in the research as a partner for the distribution of points being important to both parties) was shown to all respondents, while for the purpose of bringing about a change in the image of the partner concerned, a proportion of the respondents were shown a photograph of the same man with a smiling face, and the remaining respondents were shown a photograph of him displaying the facial expression of anger.

Method of the measurement of the dependent variable: the perception of a person displaying various expressions on the face

In order to determine the perception of the same person, depending on the emotional expression being displayed by him on the face, a scale for the assessment of the person in the photograph was developed for the purposes of the research. Questions concerned the intentions of the man being presented (e.g. whether or not he is willing to cooperate, help others, or rather compete or have mainly his own interest in mind), his competence (whether or not he is able, wise, and competent), and his predictability (whether or not he keeps his promises, is predictable). Respondents also assessed the degree of their trust in the person being presented in the photograph and, as part of the test of the manipulation, specified the type of

the emotion being displayed on the face. Respondents made their assessments on a five-point scale (1-yes, 2-rather yes, 3-difficult to say, 4-rather no, 5-no) twice: in relation to the man with a neutral expression on his face, and in relation to the same man displaying a specific (either positive or negative) facial emotional expression.

Respondents

The research was carried out entirely via the Internet on a random address sample of Polish residents, with the use of an application especially developed for the purposes of the research, which was put up on the website: *www.badanie.ankieta.pl* for the duration of the experiment. A computer system selected, by drawing of lots, a several tens of thousands of mail addresses (from the so-called mailing list), to which information on the opportunity to participate in the research, including a link to the research, was sent. The respondents willing to participate in the research visited the indicated website and followed the instructions. They were informed that the research contributed to the development of Polish science, concerned the perception of people, and had been prepared by the personnel of the Faculty of Psychology at the University of Warsaw. Respondents were encouraged to participate in the research with the possibility of being provided with collective feedback.

In total, over 2000 persons participated in the research, yet only 972 persons met the eligibility criteria for being included in analyses. A considerable proportion of respondents discontinued their participation in the research even before having completed the first task, or at a stage where it was not possible to collect sufficient data for performing analyses. The time of the beginning and end of the research was controlled using a filter rejecting persons filling in the questionnaire too quickly (in less than five minutes, which is only enough for mechanical checking of randomly selected answers) and too slowly (in more than 40 minutes – such an amount of time creates a risk of the occurrence of a pause between completing particular tasks, and thus a significant disturbance to the manipulation effect). The average amount of time for completing the task was 20–25 minutes.

Ultimately, the group of respondents consisted of 972 persons, including 603 women and 293 men (in 76 cases, no data on the participants' sex was available). The respondents' age fell within the range of 10–77 years, with the average age of 26 years. The sample included 136 persons aged below 18 years.

The course of research

The research was individualized, and basically consisted of 3 parts. Parts 1 and 2 required that points be distributed between the self and the person as seen in photographs in a situation where the person concerned displayed, on one occasion, a neutral expression on his face, and on another occasion the same person displayed one of the basic emotions. The 3rd part involved making assessments, using a scale, of the person in the photographs, depending on the facial emotional expression being displayed by that person, and concluded with filling in the demographics section.

Deliberately, the respondents had no opportunity to return to the previously displayed screens (yet they could return to the instructions). Making use of a computer and a specially developed application for the purposes of the research is, in this case, very helpful, since the researcher can acquire the certainty that the amounts of time spent by respondents for viewing the photographs were not too long or too diverse. Certainly, due to the Internet-based access to the research, there is a possibility that the same person may be willing to participate in the research many times. In practice, however, it should be assumed that during the subsequent visit to the research website, that person will not complete the entire set of tasks but only view the screens being of interest to him/her, and thus will not be included in analyses.

In the first part of the research, all participants were shown (in a rotational order) photographs of the same man who, on one occasion, displayed a neutral facial expression, and on another occasion displayed one of two basic emotions (happiness, anger). The respondents were therefore assigned (randomly) to one of 4 subgroups which differed in both the order of exposure of facial expressions, and the type of a basic emotion being presented:

- 1st subgroup of respondents: 1. exposure of a neutral facial expression 2. exposure of a facial expression of happiness,
- 2nd subgroup of respondents: 1. exposure of a neutral facial expression 2. exposure of a facial expression of anger,
- 3rd subgroup of respondents: 1. exposure of a facial expression of happiness 2. exposure of a neutral facial expression,
- 4th subgroup of respondents: 1. exposure of a facial expression of anger 2. exposure of a neutral facial expression.

In order to intensify the impact of a facial expression on the receiver of the message, both the exposure of a neutral facial expression and the specific basic emotion were presented three times. The photographs showing the face displaying one specific emotional modality only differed in the borders (which prevented the viewer's impression that the same photograph was being viewed; at the same time, a pilot study using the presented material indicated no differentiating effect of the type of photograph border on either the reception of the modality of the emotion being presented or the perception of the person in the photograph). The respondents viewed each photograph for approx. 4 seconds following the previously given instruction that they do not need to remember any details but only take a look at the photograph.

After having viewed a series of 3 photographs, the respondents distributed points (being important to both parties) between the self and the person as seen a moment ago in the pictures, using a modified version of the Ring Measure of Social Values. In this way, the respondents' social value orientations were determined, which were under the influence of the observed partner's facial expression in the situation of social interdependence.

Subsequently, the respondents were to assess (during a pause) the attractiveness of 3 advertisements, using a scale. All the advertisements were in a form of photo-

graphs of products, and included a written content either recommending a given commodity or informing of a certain campaign. Little known advertisements showing no human faces had been deliberately selected, so that their contents did not interfere with the facial expressions used in the experimental manipulation.

The next part involved the presentation of photographs of the face of the man known from the first part of the research, with the facial emotional expressions being appropriately changed (depending on the subgroup). The instruction preceding the presentation of photographs, and the duration of the exposure, were the same as in the first part. After that, another measurement of social value orientations was carried out using the same tool as in the first part of the research (a modified Ring Measure of Social Values).

In the third part of the research, the respondents were requested that they recall, in the first place, the photographs of the man as presented at the very beginning of the research, and assess it on the scale in accordance with the first impression they had had of him; subsequently, they were requested that they recall the photographs of the same man as shown to them in the second part of the research, and express their impression of him on the rating scale. In order to verify the accuracy of the reception of the material as used in the experimental manipulation, the respondents were asked about what type of facial emotional expressions had been presented in both parts of the research. The research concluded with the demographics section and acknowledgements for having participated, along with the information on the possibility of receiving the feedback on the research and relevant results.

HYPOTHESES

Hypothesis I. Indicators of the perception of a person displaying various facial expressions are varied depending on the type of general (*orientation on the self/the others*) and specific (the dominant category) indicators of social value orientations.

I.I The cooperative orientation coincides with high levels of trust in, and positive assessments of a person displaying a facial expression of happiness.

Hypothesis II. The type of a facial expression of a basic emotion (happiness vs anger) being presented affects both the diversity of the indicators *orientation on the self* and *orientation on the others,* and the distribution of the groups of the *dominant social value orientations* before and after the experimental manipulation.

II.I The impact of a facial expression of happiness results in an increase (in relation to the impact of the neutral expression) in both the indicator *orientation on the others* and the number of changes in orientations from proself to prosocial ones (cooperation and/or altruism), while the impact of a facial expression of anger results in a decrease (in relation to the impact of the neutral expression) in both the indicator *orientation on the others* and the number of changes in orientations from proself to prosocial ones (cooperation and/or altruism).

Presentation of results

Results of the Kolmogorov–Smirnov test indicated that the distribution of both the variables being the general indicators of social value orientations (*orientation on the self* vs *orientation on the others*) and the perception of persons and emotions was significantly different ($p < 0.001$) from a normal distribution. In view of the above, in order to achieve the statistical correctness, appropriate non-parametric tests were mainly used for analyses, although in verifying certain hypotheses analyses were carried out using also parametric tests (e.g. ANOVA), which, however, had a status of exploratory analyses or analyses further confirming the hypotheses being verified, in order to achieve a greater correctness using mainly non-parametric tests.

The manipulation stimulus in each group of the dominant social value orientations was interpreted in accordance with the assumptions, and thus rendered the manipulation effective (Wilcoxon test; $p< 0.05$).

All expectations as articulated in both hypotheses concerning the research were, at least partially, confirmed.

Results of analyses for hypothesis I: on the diversity of indicators of the perception of a person displaying various facial expressions, depending on the type of general (*orientation on the self/ the others*) and specific (the dominant category) indicators of social value orientations.

Among the descriptions of traits as used for the assessment of the person in the photograph, 2 phrases may be distinguished that describe the traits being more negative than positive ("willing to compete" and "prone to have his own interest in mind"), while the remaining 9 phrases describe the positive traits, including one concerning the issue of trust ("trustworthy").

Hypothesis I was confirmed by the results indicating the diversity of the perception of a person displaying various facial expressions (especially neutrality and happiness), depending on the type of both (general and specific) indicators of social value orientations.

A correlational study on the *orientation on the self* and *orientation on the others* was carried out in relation to the assessments of traits of the person displaying facial expressions of neutrality, happiness and anger in the photographs. The obtained results mostly indicate a very weak or weak correlation; however, the absolute values of the correlation coefficients reach, at a high *N* value, the threshold values which allow recognizing the relationship between the variables as being significantly greater than zero.

Orientation on the others coincided with positive assessments in relation to the person displaying on his face both the happy and neutral expressions (Table 1).

Table 1. Relationships between the *orientation on the others* and the assessments in relation to a person with a smiling face (manipulation +) and a neutral face (Spearman's rank correlation)

	Orientation on the others (manipulation +)	Orientation on the others (neutral face)
Willing to cooperate	0.171***	0.066*
Willing to compete	-	-
Prone to have his own interest in mind	-0.135***	-0.083*
Willing to help	0.110**	-
Willing to distribute evenly	0.123**	0.100**
Able	0.110**	-
Wise	0.124**	-
Competent	0.105**	-
Meets his promises	0.124**	-
Predictable	-	-
Trustworthy	0.185***	0.076*

* - significance at the level of 0.05 ** - significance at the level of 0.01 *** - significance at the level of 0.001

Source: Own research.

Cooperators and altruists (a high degree of the *orientation on the others*) assessed the person in the photograph (both smiling and displaying a neutral facial expression) more positively, and put more trust in him, than individualists and competitors did (Table 2 and 3).

Table 2. Comparison of the categories of social value orientations as determined before the manipulation in terms of the assessment of a person displaying the expression of happiness (ANOVA)

		An average value in the group before the manipulation				F-statistics	Significance of the F-test
		Competition	Individualism	Cooperation	Altruism		
SMILE	Willing to cooperate	3.78	3.96	4.19	4.12	4.327	0.005
	Competent	3.33	3.38	3.61	3.56	2.771	0.041
	Meets his promises	3.51	3.4	3.68	3.68	3.115	0.026
	Trustworthy	3.09	3.12	3.44	3.59	4.269	0.005

Source: Own research.

Under the conditions of a positive manipulation, the highest ratings in relation to the indicated (as significantly differentiating) positive traits were those of cooperators and altruists; moreover, further *post-hoc* analyses indicated that, generally, altruists and cooperators assessed, in terms of the traits as indicated, the person displaying a smile on his face significantly ($p < 0.05$) more positively than competitors and individualists did, and also put more trust in that person.

Table 3. Comparison of the categories of social value orientations as determined before the manipulation in terms of the assessment of a person displaying the neutral expression (ANOVA)

		An average value in the group before the manipulation				F-statistics	Significance of the F-test
		Competition	Individualism	Cooperation	Altruism		
NEUTRAL FACE	Willing to cooperate	3.4	3.56	3.69	3.82	3.303	0.020
	Willing to help	3.13	3.27	3.43	3.31	2.557	0.054
	Willing to distribute evenly	2.62	2.86	3.03	3.04	5.396	0.001
	Meets his promises	3.12	3.21	3.38	3.13	2.957	0.032
	Trustworthy	2.83	2.82	3.09	3.09	3.541	0.014

Source: Own research.

In the division into categories of orientations, in all cases (except for one case concerning individualists), the highest ratings in relation to the traits indicated (as differentiating significantly or, in one case, at the level of a statistical tendency) were those of altruists or cooperators. Further *post-hoc* analyses indicated that, generally, altruists and cooperators assessed, in terms of the traits as indicated, the person displaying a neutral expression on his face significantly ($p < 0.05$) more positively than competitors and individualists did, and also put more trust in that person. An exception was the distribution of assessments in terms of the trait "meets his promises", where the significantly highest rating values, as compared to the other groups, were those of cooperators, with no differences being recorded between the assessments made by altruists, competitors and individualists.

Orientation on the self coincided with negative assessments, including the lack of trust, especially in relation to the person with the neutral expression on his face, and, to a lesser extent, in relation to the person displaying a happy expression (Table 4).

Table 4. Relationships between the *orientation on the self* and the assessments in relation to a person with a neutral face and an expression of happiness (manipulation +) (Spearman's rank correlation)

	Orientation on the self (neutral face)	Orientation on the self (manipulation +)
Willing to cooperate	-0.090**	-
Willing to compete	0.083*	-
Prone to have his own interest in mind	0.083**	-
Willing to help	-0.093**	-
Willing to distribute evenly	-0.138***	-0.129**
Able	-0.081*	-0.088*
Wise	-0.095**	-
Competent	-0.082*	-0.117**
Meets his promises	-0.102**	-0.106**
Predictable	-0.076*	-
Trustworthy	-0.126***	-0.113**

* - significance at the level of 0.05 ** - significance at the level of 0.01 *** - significance at the level of 0.001

Source: Own research.

On the other hand, individualists and competitors (a high degree of *orientation on the self* with negative *orientation on the others*) assessed the person in the photograph less positively, and put in him less trust, than altruists and cooperators did.

Orientation on the others (as opposed to the *orientation on the self*) also coincided with the perception of the selected positive traits in the person displaying an expression of anger on the face (Table 5).

Table 5. Relationships between the *orientation on the others* and the assessments in relation to a person with an expression of anger on the face (manipulation –) (Spearman's rank correlation)

	Orientation on the others
Willing to cooperate	0.109
Willing to compete	-0.049
Prone to have his own interest in mind	-0.138*
Willing to help	0.125*
Willing to distribute evenly	0.136*

* - significance at the level of 0.05 ** - significance at the level of 0.01 *** - significance at the level of 0.001

Source: Own research.

In general, prosocials assessed significantly more positively (and put more trust in) a person with a smiling and neutral expression on the face, than those oriented proself did.

As a result of a (+) manipulation, in all categories of the dominant social value orientations, there was (even if varied) an increase in the positive perception of the person in the photograph. To put it more specifically: in the group of competitors, there was a significant increase in the indicator of 5 positive assessments (out of 9 possible ones); in the group of individualists, there was a significant increase in the indicator of 6 positive assessments; in the group of cooperators, there was an increase in the indicator of 8 positive assessments; and in the group of altruists, there was an increase in the indicator of 4 positive assessments. Moreover, in each group, significant decreases in the indicators of negative assessments occurred as a result of manipulation (+): in the groups of individualists and cooperators (when assessing the smiling face), there was a decrease (in relation to the assessment of the neutral face) in the indicators of 2 negative assessments (out of 2 possible ones), while in the group of altruists and competitors, there was a decrease in the indicator of 1 negative assessment (in the group of competitors, at a level of the statistical tendency).

On the other hand, as a result of a (–) manipulation, in all categories of the dominant social value orientations, there was a decrease in the positive perception of the person in the photograph. The smallest diversity in the assessments was observed among the representatives of the category of competitive orientation (significant diversity in relation to 3 traits) and altruistic orientation (changes only at a level of the statistical tendency). In the group of individualists, there was a significant decrease in the indicators of 8 positive traits (out of 9 possible ones), and a significant increase in the indicator of 1 negative assessment (out of 2 possible ones). In the group of cooperators, there was a significant decrease in the indicators of 6 positive traits (out of 9 possible ones), and a significant increase in the indicator of 1 negative assessment (out of 2 possible ones).

It is worth noting that in relation to the research being described, an analysis of standardized data using parametric tests confirmed the results as obtained when using non-parametric tests.

Hypothesis I.I, which concerned the link between the cooperative orientation and a high level of trust in, and positive assessments of a person displaying a facial expression of happiness, was also confirmed.

Cooperators positively assessed the person with a smile on his face – an average rating for the positive traits exceeded 3.6, and, as regards the expectation of cooperation, it amounted to 4.19 (the highest results as compared to the other groups). It was also only cooperators (out of the other groups) who, while comparing the person with a neutral face and the person with a smiling face, assessed significantly (and in one case, at a level of the statistical tendency) more positively the happy face in relation to all 11 descriptions of traits as mentioned in the research ($p = 0.000$).

The average value for trust in relation to the smiling face was, in the group of cooperators (similarly to the group of altruists), significantly higher than that in the other groups, and amounted to 3.44. For comparison, a significantly lower average value for trust in relation to the neutral face amounted, in the group of cooperators,

to 3.14 (W = –3.616; p = 0.000), and the trust in the face expressing anger maintained at a level of 2.59. In turn, the correlation coefficient for the *orientation on the others* with the indicator of trust in relation to the smiling person turned out to be the highest (as compared to the other correlation coefficients in that group) and significant at a level of $p = 0.001$, which seems to be translated into the picture of cooperators (being characterized by a high degree of the *orientation on the others*).

Results of analyses for hypothesis II: on the impact of the manipulation (positive vs negative) on the change in the general indicators of orientations and the distribution of groups of the dominant social value orientations.

As regards the predictions as included in hypothesis II, there was a diversity of the indicators of the *orientation on the others* (no diversity of the *orientation on the self* was revealed) and the distribution of groups of the dominant social value orientations before and after the experimental manipulation, depending on the type of a basic facial emotional expression being presented (happiness vs anger). As for the negative manipulation, there was a more than two-fold decrease in the orientation on the others than for the positive manipulation.

The directional predictions as articulated in hypothesis II.I were confirmed in relation to the negative manipulation which was followed by a decrease in the *orientation on the others* (Table 6) and a decrease (at a level of the category of orientations) in the total number of altruists ($Chi^2(9) = 101.703$ at $p < 0.001$; Cramér's V = 0.358 at $p < 0.001$), and partially (since only at a level of the category of orientations) in relation to the positive manipulation which was followed by the observed general increase in the number of altruists ($Chi^2(9) = 341.218$ at $p < 0.001$; Cramér's V = 0.436 at $p < 0.001$).

Table 6. Comparison of the degree of the *orientation on the others* between the first and second measurement[3] in the case of the negative (–) manipulation (Wilcoxon test)

	Measurement 1		**Measurement 2**		**W-statistics**	**Significance of the W-test**
	Average value	Standard deviation	Average value	Standard deviation		
Orientation on the others	19.35	35.31	13.75	37.22	-2.975	0.003

Source: Own research.

A supplement to the results for hypothesis II.I, concerning the changes within the category of social value orientations, was the results indicating significant diversity of the transfers of cooperators to the group of altruists, depending on the type

3 The intra-object factors (the type of a facial expression being displayed – a neutral face vs face expressing a basic emotion) were measured in a randomized manner; however, prior to the analyses, they were reorganized to the following pattern:
1st measurement = exposure of a neutral face
2nd measurement = exposure of a face expressing a basic emotion (depending on the manipulation group: happiness vs anger).

of manipulation. In the case of the (+) manipulation, significantly more transfers of cooperators to the group of altruists were observed than with the (–) manipulation, $Chi^2(1) = 4.673$ at $p < 0.05$. On the other hand, the results being significant at a level of the statistical tendency indicated that the (+) manipulation resulted in more cooperators and altruists than the (–) manipulation, and the (–) manipulation resulted in more individualists than the (+) manipulation.

The other diversities as expected according to hypothesis II, the direction of which was not foreseen, occurred at a level of the statistical tendency and indicated that in the case of the positive manipulation, the indicator of the *orientation on the self* decreased (in relation to the values from the first measurement), and increased in the case of the negative manipulation.

Analysis of the changes in the general indicators of orientations under the influence of both types of manipulation, as carried out within each of the four groups of the dominant social value orientations (which, in such a form, was not the subject of hypothesis II but seems to be an interesting detailed expansion thereof), demonstrated that individualists (in the case of the positive manipulation) and cooperators (in the case of the negative manipulation) operated in accordance with the predictions as articulated in hypothesis II.I in terms of the impact of the type of manipulation on the change in the *orientation on the others* (Table 7 and 8).

Table 7. Comparison of the indicators of the *orientation on the others* between the 1st and 2nd measurement in the case of the positive (+) manipulation in the group of persons with the individualistic orientation being dominant (Wilcoxon test)

	Measurement 1		Measurement 2		W-statistics	Significance of the W-test
	Average value	Standard deviation	Average value	Standard deviation		
Orientation on the others	0.41	11.63	0.53	21.88	-0.127	0.014

Source: Own research.

In the case of the (+) manipulation, the indicator of the *orientation on the others* significantly increased in the group of individualists.

Table 8. Comparison of the indicators of the *orientation on the others* between the 1st and 2nd measurement in the case of the negative (–) manipulation in the group of persons with the cooperative orientation being dominant (Wilcoxon test)

	Measurement 1		Measurement 2		W-statistics	Significance of the W-test
	Average value	Standard deviation	Average value	Standard deviation		
Orientation on the others	51	21.57	37.5	32.2	-4.244	0.000

Source: Own research.

In the group of cooperators, in the case of the (–) manipulation, the indicator of the *orientation on the others* decreased significantly in the second measurement (in relation to the first measurement).

Discussion of the results, and implications for further researches

The research indicated a link between social value orientations and the assessment of an interaction partner depending on his/her facial emotional expression. Generally speaking, it can be concluded that the cooperative orientation as well as (when expanding the scope to include altruists) the prosocial orientation were associated with a greater trust and more positive assessment of other people (including those with a negative emotional expression) than it was observed in the case of the proself orientation. The results demonstrating this positive attitude of prosocials indirectly correspond to the previous empirical findings which indicate that prosocials attach positive significance to the situation and outcomes of another person (Grzelak, 1988).

The results outlined a fairly consistent picture of persons with the prosocial orientation (cooperators and altruists) as opposite to the picture of those oriented proself (individualists and competitors).

Proselfs assessed positively and put trust in not only a smiling person (whom they considered to be competent and willing to cooperate) but also a person displaying a neutral facial expression. Possibly, the prosocials, as opposed to those oriented proself, preferred to analyse an ambiguous expression in positive terms, and were thus able to have confidence in the person with a neutral facial expression. Prosocials, which by definition are characterised by a high degree of the *orientation on the others*, were also able to discern selected positive traits in a person with an angry face. The cooperators themselves tended to trust, and attribute the traits of "trustful" and "honest" to a person with a positive facial emotional expression, discern positive emotions in a facial expression showing a negative emotional state, and assess a person with a neutral expression on the face as the one to most certainly keep his promises, and trustworthy as well (as compared with the assessments in the other groups of orientations). In general, the cooperative orientation was associated with the tendency to trust everybody (regardless of the type of facial expression) and assess them (as compared with the non-cooperators' assessments) to be honest. Therefore, the cooperative orientation seemed to perform the role of spectacles allowing them to perceive other people as being more positive and put trust in them even where the emotional expression on their faces was ambiguous or negative.

The cooperators' tendency to perceive the surroundings in positive terms was also indicated by the results of own pilot studies (not described in this paper). One of such studies, as carried out on 168 persons, concerned the link between social value orientations and the perception of persons with a emotionally neutral facial expression (a modified version of a Kuhlman's study). It turned out that with an increase in the degree of the observers' cooperative orientation, the tendency to assess persons with a neutral facial expression as being friendly also increased (Pearson's $r = 0.247$; $p < 0.01$).

In turn, the results for the proself-oriented persons (competitors, individualists) showed them (as compared with the prosocials) as those less positively assessing, and putting less trust in persons with a neutral and happy facial expression. They tended to assess a person with an angry face as one having his/her own interest in mind.

The obtained results also provided evidence for the existence of the effect of a change in the social value orientation depending on the interaction partner's facial expression. In general, a negative expression triggered a definitely greater decrease in the orientation on the interaction partner (as compared with a positive expression), greater focus on the self (at a level of the statistical tendency) and, therefore, a decrease in the altruistic behaviour, while a positive expression on the partner's face triggered a (close to significance) decrease in the orientation on the self, and an increase in the prosocial behaviours. As for the group of altruists, the sign of the facial expression being observed differentiated the number of shifts between groups of social value orientations: in the case of a manipulation using a positive expression, the number of altruists increased, while a manipulation using anger resulted in a decrease in the number of altruists. The manipulation also significantly differentiated the number of transfers of cooperators to the group of altruists – a positive manipulation triggered more transfers of cooperators to the group of altruists than a manipulation using a negative expression.

While commenting on the methodology of research, it is worth noting that for the purpose of the experimental manipulation, the emotional expressions being most accurately recognized in researches as carried out by *Paul Ekman* and Wallace V. *Friesen* (1971), namely happiness and anger, were deliberately used, which lent maximum credence to the accurate recognition of the modalities of emotions by respondents. The choice of the expression of anger out of the negative emotions was additionally dictated by the reports that the sight of an angry face triggered an exceptionally strong emotional arousal (the so-called maximum amplitude when measuring the brain's action potential) (Lang, & Nelson, 1990, quoted from: Dolata, 2001). This is supposed to significantly increase the probability of the perceptible impact of a manipulation stimulus on the respondents. However, when planning future researches to continue the empirical exploration of the subject being raised in this paper, it is worth considering the introduction of manipulations using other modalities of the basic emotions as well.

A methodologically debatable issue is the fact that the respondents were shown a photograph of one man displaying various facial expressions. Such a situation has its advantages, since it allows one to compare reactions to particular facial expressions without the interference of various types of human faces. On the other hand, however, the choice of no less than a man's face may be considered as odd – the author of the research was influenced by the information that the positive expressions are predominant in women (as compared with men), and that women are classified in the group of the "weaker sex", which may result in a more frequent manifestation of cooperative behaviour towards women. Moreover, there are more cooperators among women than among men, and we tend to respond to cooperation with cooperation. However, one question which remains unanswered is whether or not the obtained relationships between the perception of facial emotional

expressions and social value orientations would have differed significantly if the model had been a woman?

In addition to the sex of a person displaying particular facial expressions, another important issue may prove to be the very appearance (physical elements) of that person's face. Psychoneuroendocrinology, physiology and evolutionary psychology provide arguments for the existence of universal (in terms of the species), stable physical characteristics of a person's face, which communicate that person's social value orientation (Fehr, Kosfeld, Heinrichs, Zak, & Fischbacher, 2005; Buss, 2001; Solomon, Berg, Martin, & Villee, 1996). Therefore, one can speak of the parallel shaping of both the psyche and the body by the same physiological factor, and thus of the existence of model faces being more feminine and "estrogenic", which reveal the cooperative tendencies, and of model faces being more masculine and "testosteronic", which are indicative of a given person's competitive tendencies. Therefore, when selecting a person to present expressions in further researches, it is worth ensuring that the person's face is not representative of an extreme type. The most general morphopsychological analysis of the face of a man being presented in own researches classifies it (with certain exceptions) as being of the expansive, or open, type, with the outline of the face being wide, thick, solid, and compact; the receptors (eyes, mouth, nose) being large, wide, and thick; and all the three levels of the face (mental, emotional and instinctive) being large and well-developed (Jones, Little, Boothroyd, DeBruine, Feinberg, Smith, Cornwell, Moore, & Perrett, 2005). The dominant characteristics of such a person include extroversion, expansiveness, openness, and optimism, as well as the tendency to "force oneself upon others" with a smile (Binet, 2003), which is crucial to the subject of the paper. Of course, each type of a face implies certain probable psychological characteristics. However, it is worth controlling how the face of a person displaying expressions may be perceived, due to the possible, dependent thereupon interpretation of the facial emotional expression being exposed.

Another methodologically important issue is to what degree a person displaying emotions is physically attractive to a participant of the research. Joseph Forgas (1987, quoted from: Dolata, 2001), carried out a research with the aim of determining how the physical attractiveness of a sender affects the perception of the expressions being emitted by him/her. With the severability of those two characteristics, attractive persons, similarly to individuals emitting positive expressions, are assessed to be better adjusted socially, more competent, responsible, valuable and, what is particularly interesting to us, trustworthy. If, therefore, a man as presented in own research seemed physically attractive to a proportion of the participants of the experiment, then, regardless of the type of a facial expression being displayed, they might have assessed him more positively. In turn, the research as carried out by Waldemar Frąckiewicz (2000) shows that the persons preferred for cooperation are those with facial features similar to those of one's mother, which, in the context of own research, may enhance the cooperative orientation towards a person resembling mother. Therefore, when planning further research concerning the link between an emotional expression and prosociality, it seems essential to control the variable of the respondent's assessment of physical attractiveness of a person displaying emotions.

Another important aspect is the nature of the facial emotional expression being presented i.e. whether it is posed or spontaneous. In the research, the first type was used intentionally since, particularly in a situation where a facial expression was to be an unambiguous manipulation stimulus, the researcher was keen on it being interpreted as accurately as possible. On the other hand, according to Emilia Dolata (2001), posed facial expressions are recognized very well, while the spontaneous ones are not. On the other hand, the author is aware of the questionable ecological validity of the material being in a form of static, posed photographs of facial expressions, and recognizes the legitimacy of planning researches with the use of techniques enhancing the naturalness of the expressions being presented by models (e.g. allowing one to encompass the dynamics of expression, being the key determining the intensity of an affect, and the truthfulness or falseness of an expression), or even arranging and analysing real situations involving an interaction of two persons. However, one needs to be aware, while implementing the above idea, that the range of stimuli affecting the observer of expressions will expand from exclusively facial expressions and include pantomimic expressions and the entire context of the situation, since in the everyday interactions with people, we draw conclusions about their emotions also using contextual factors, other than the facial expressions, which are found in other nonverbal behaviour (gestures, body movements, the direction of the look, acoustic information as contained in the speech, tone, and nonverbal vocalization), or what we know of a given person. Therefore, the use of static photographs of faces in own research significantly simplified the stage of operationalization of variables and analysis of the results, and allowed the drawing of very preliminary, general conclusions which, however – where one is willing to ponder on the perception of another human in situations of social interactions – undoubtedly need to be supplemented by more detailed researches also taking account of non-facial factors.

Expanding the context of own research may also move towards the additional controlling of variables having a significant impact on the perception of facial emotional expressions, and possibly being able to interact with the social value orientation of the observer of emotions. Examples of such factors include the personality traits associated with the ability to discern and understand emotions: openness to experience, conscientiousness, extroversion or neuroticism (Dolata, & Czerniawska, 2005). Various diseases also have a documented impact on the perception of facial expressions, e.g. depression (deficits in the recognition of happiness, with elevated indicators of the identification of sadness and disgust: Dolata, & Czerniawska, 2005); schizophrenia (difficulties in recognizing the expressions of, particularly, happy and neutral faces: Lane, 2003); social anxiety disorder (increased sensitivity to faces expressing anger, as opposed to happy and neutral ones: Mogg, & Philippot, 2004); ADHD (deficits in the recognition of facial expressions of anger and sadness: Pelc, Kornreich, Foisy, & Dan, 2006). It is worth specifying in the interview whether or not the respondents are under the influence of certain pharmacological agents affecting the processes of cognitive analysis of expressions. For example, antidepressants reduce the ability to identify facial expressions of anger and fear (opposite effects are observed after having taken amphetamines). Longer-term intake of alcohol (studies on alcoholics following detoxification) or diazepam leads to deficits in

the recognition of all facial emotional expressions (Dolata, & Czerniawska, 2005). As regards this issue, the mediation of the Internet in receiving the above data from respondents seems to give rise to certain difficulties. While identifying the personality traits being significant to the research involves asking for filling in an additional questionnaire, asking a question about possible taking of psychoactive substances may give rise to resistance in respondents to providing an answer, since Internet users are aware that anonymity on the Internet is illusory, and may tend to avoid situations in which they could consciously present themselves in a bad light.

As regards the very procedure of carrying out the research, its Internet-based nature has its advantages which encouraged the author to use exactly this form. Making use of the Internet allowed receiving, in a rather short time, results from nearly 1000 respondents, which lent maximum credence to establishing sufficiently large subgroups which were distinguished on the basis of the type of the dominant social value orientation. Moreover, extensive socio-demographic data was received, which will be used for other analyses in the field of research into social preferences. The issue of the reliability of the obtained results depended, to a large extent, on the control of respondents' diligence at the time of following the research procedure; this is why numerous filters were used for rejecting persons failing to comply with the specified criteria for the correctness of task completion (in total, over 2000 persons participated in the research, yet only 972 met the eligibility criteria for being included in the analysis). Therefore, employing an Internet-based method involves the need to reach a group of respondents being much larger than the expected, sufficiently numerous group. Due to the sense of anonymity being found on the Internet, which results in lower motivation for performing a given task in a diligent and complete manner (and because of the absence of a personal contact with the researcher), many respondents provide data which is eventually excluded from the analysis.

Therefore, when developing researches to be carried out via the Internet, it seems that the real challenge is to actually motivate the Internet users to genuinely engage in following instructions in a diligent manner, and, on the other hand, to develop more and more precise tools controlling the quality of the completion of a given task by a respondent. Financial incentives remain a debatable issue, and are not always feasible, if only because of the nature of the content being studied, and the psychological influence of such motivation on the answers being provided.

Another important issue is the opportunity to compare the data as collected during the Internet-based procedure with the data as obtained in researches on social value orientations carried out in a traditional manner (e.g. the pilot studies as mentioned in this paper). As regards the latter, there is biased selection at the stage of drawing of the sample, which often results in over-representation of a certain group, e.g. students, in a sample. Due to the nature of the study population, being differentiated between both forms of research, one must not usurp the right to describe the relationships as revealed in both researches as systematic trends. On the other hand, based on the obtained results concerning one issue, yet obtained during another research procedure, we have no reason to believe that the method of collecting the data affected the results as obtained. At no point during the research as described in the paper do the results contradict the results as obtained from the

previously conducted pilot studies, and due to the size of the sample in the Internet--based research, the subject can be approached in a more detailed manner.

Carrying out experimental researches via the Internet is convenient (for both the researcher and the respondent) and, undoubtedly, has good prospects. In the era of the permanent lack of time, the fact that the research reaches the respondent, and not vice versa, is not without significance. Moreover, the influence of the person carrying out an experiment and his/her expectations on the results being generated by a respondent is eliminated. The data is collected 24 hours a day and, at the same time, the costs of operating the laboratory (e.g. rooms, paper, personnel or equipment) are significantly reduced. However, a major problem is still the lack of control over the setting of the respondent (the need to eliminate distractions), and the risk that technologically advanced users get access to the protected subsites and thus expose the conditions of the experiment even prior the completion of the research. However, we are successfully leaning towards transferring researches to the Internet, while simultaneously developing increasingly sophisticated tools necessary for conducting research activity in the virtual world.

In conclusion – the empirical data as obtained in own research seems to provide another "building block" of a new piece of knowledge on the link between social value orientations and the perception of facial emotional expressions and, consequently, the perception of people, at the same time revealing a number of variables and areas which need to be watched with interest in order to be able to speak, more confidently and in a wider context, of the relationships between a facial expression and social preferences. Moreover, the obtained results definitely confirm the utility of the Internet for carrying out experimental psychological researches.

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