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THE CHAMELEON EFFECT AND THE STEREOTYPES OF NONBELIEVERS HELD BY RELIGIOUS PERSONS

The study aimed to verify whether the chameleon effect can be used as an effective technique of stereotype modification. It has already been shown that individuals whose behaviors were mimicked showed an increased positive disposition as well as readiness to help not only the mimicker but also other people – and, in general, this seems to be an effective tool of social influence. Persons who adjust their behaviors start to act cooperatively. The pilot study presented here, run as a natural experiment, aimed to employ the chameleon effect in order to modify the stereotype of nonbelievers as perceived by participants declaring themselves to be believers. The results showed that even though mimicry positively influenced the perception of the stereotyped group, the scope of the modification was somewhat patchy. This means that the mechanism can be effectively applied as a means for the modification of stereotypes and prejudices within certain limits. Since this is one of the first studies venturing to explore this area, further work is necessary to delineate the abovementioned limits and the applicability of the measures that we discuss in the final part of this paper.

Keywords: chameleon effect, imitation, stereotype, faith, religion, stereotype modification.

Surely everyone has at some point come across prejudice, which Allport defined as “an antipathy based upon faulty and inflexible generalizations . . . directed towards a group as a whole, or an individual because he/she is a member of that group” (Allport, 1954, p. 10). Let us note that prejudices are constructed of such components as emotions, values, and stereotypes. The impor-

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tance of emotions in maintaining prejudices has already been remarked on by Allport (1954), who wrote: “. . . prejudices are maintained long term on the affective level . . .” (p. 328, see also Stanley, Phelps, & Banaji, 2008). And conversely, emotions evoke reactions at the level of nonverbal communication when we signal our uneasiness or insecurity (Dovidio & Gaertner, 2008). Personal system of values also is a variable determining the maintenance of prejudices (Stephan, Renfro, Esses, Stephan, & Martin, 2005). Finally, stereotypes are a component of prejudices that manifest themselves in behavior in the form of discrimination.

The concept of stereotype was introduced in 1922 by Lipmann, who wrote that everybody entertains special images in their mind that serve the function of mental simplification of the world, which leads to perceiving people as similar based on arbitrarily selected common features. A stereotype is, then, an individual, partial, and schematic image which is inaccurate but also difficult to modify. Because it is stereotype modification that is the core of the current study, let us begin by answering the question about stereotype composition. Zanna (1994) indicates three factors that constitute attitudes: the cognitive component including beliefs, the affective component – i.e., the emotional response, and the behavioral one – i.e., behaviors directed at the attitude’s object. A similar triad can also be identified in case of stereotypes: discrimination, prejudice, and stereotyping. Even though only discrimination can be tied to an attitude, many authors (e.g., Bond, DiCandia, & MacKinnon, 1988; Jarymowicz, 2001) point out the dovetailing of these theoretical constructs. It is also well known that the cognitive element is particularly prominent in stereotypes, the emotional one in prejudices, and the behavioral one in discrimination. We also can introduce a similar distinction when considering the mechanisms of stereotype modification and categorize them either as cognitive or affective – the latter being the core of this study. In their work delineating the methods used for the modification of stereotypes, Kenrick, Neuberg, and Cialdini (2002; see also Allport, 1954) claim that putting members of various groups in the same location would serve this purpose. Unfortunately, detailed studies (Amir, 1969; Cook, 1962; Miller & Brewer, 1985; Pettigrew, 1998; Stephan & Stephan, 1984) failed to confirm this claim. In order for the contact mechanism to be effective, contacts must be frequent and based on a close relationship (Cook, 1962). Other relevant factors identified are: acceptance for differences (Hewstone & Brown, 1986); cooperation (Sherif, 1966; Brown, 2000) in personalized settings (Miller, Brewer, & Edwards, 1985) and related to the self (Galinsky & Moskowitz, 2000), high levels of empathy (Bilewicz, Ostolski, Wójcik, & Wysocka, 2004), equal status (Amir, 1976), eva-

lative conditioning (DeHouwer, 2011; see also Pettigrew & Trop, 2000; Wolsko, Park, Judd, & Bachelor, 2003; Voci & Hewstone, 2003).

An analysis of studies in which evoked affect plays a key role in stereotype modification (Huntsinger, Sinclair, Dunn, & Clore, 2010; Isen, Daubman, & Nowicki, 1987; Lambert, Khan, Lickel, & Fricke, 1997; Park & Banaji, 2000) shows the high effectiveness of affective techniques in reducing negative stereotypes, which became the key finding on which we base the present study. The research presented here was devoted to the cognitive component of a stereotype (a generalized opinion about an individual or a group). We attempted to modify the stereotype by using the chameleon effect – a phenomenon based on affect. This term was originally introduced in 1999 by Chartrand and Bargh, who showed that people not only spontaneously copy the interlocutor's bodily gestures of but also that such mimicry evokes an increased liking of the "chameleon."

As regards the efficacy of the chameleon effect in stereotype modification, the results of Tanner, Ferraro, Chartrand, Bettman, and van Baaren (2007) are of special significance. They verified whether positive emotions evoked by the chameleon effect attach themselves only to the partner or to an object present during the interaction. The results show that participants liked the objects better if they had been mimicked. Castelli, Pavan, Ferrari, and Kashima (2009) asked the participants to have a conversation with an experimenter's assistant, who uttered opinions consistent (or inconsistent – in another condition) with the general image of an elderly person. The participants showed a higher tendency for mimicking their interlocutors when their utterances were more stereotyped and coincided with the participants' opinions. The study of the relationship between stereotypes and mimicry was taken a step further by Leander, Chartrand, and Wood (2011). Their results showed that individuals who had been mimicked confirmed the stereotype on which the study was based. The level of performance on an arithmetic problem was lower among the stereotyped individuals.

A different procedure was employed by Inzlicht, Gutsell and Legault (2012). Their results showed that the mimicking of negatively stereotyped individuals caused a lowering of prejudice towards them. Another experiment (Castelli et al., 2009) showed that stereotyped information increases mimicry in participants. Another one (Leander et al., 2011) seems to point to a reverse relationship – an increase in stereotyped behaviors after mimicking the gestures of other people. The present study aims to fill the research gap (as yet, there have been no studies where the participant is being mimicked and the potential reduction of stereotype is measured). Our secondary aim, though one of theoretical significance, was to introduce a control condition (no manipulation at all). Let us note that the sche-

ma employed so far required the experimenter to mimic the participants' gestures or – in the situation of no mimicry – to refrain from presenting any gestures at all. That is why we cannot be sure whether the chameleon effect results in a more positive attitude towards the mimicker (in this study we are primarily interested in the reduction of stereotype), or whether the lack of mimicry causes the strengthening of stereotype. In order to achieve this goal, we ran a natural experiment with participants who declared themselves to be believers of a religious creed. The experimenter (engaging in mimicry or not) declared himself as a nonbeliever. For the purpose of this study and as a result of the above theoretical overview, two hypotheses were formulated:

H1. Manipulation in the form of mimicry causes participants to issue a more positive judgment about nonbelievers as measured by Osgood's semantic differential (Osgood, Suci, & Tannenbaum, 1957).

H2. Manipulation in the form of mimicry causes participants to issue a more positive judgment about the interaction and the partner.

METHOD

Participants

In order to achieve the aim of the study, it was important to find a group of participants with a distinct stereotype of a nonbeliever. The choice was made to select believers (Roman-Catholics) based on their own self-declaration. Forty-eight people took part in the study (their age ranged between 21 and 85 years; $M = 46.02$, $SD = 17.69$).

Measures

In the present study, only one independent variable was used – three levels of mimicry. In one group, the participants were nonverbally mimicked by their partner (the experimenter). In the second group, the experimenter interviewed the participants but took care not to mimic them (these two conditions corresponded to the schema in Chartrand and Barg's second experiment, 1999). The last group underwent no intervention – there was no interaction.

Dependent variables were measured with two tools. The first of these was semantic differential (Osgood et al., 1957), measuring the way believers perceived nonbelievers. Following Ida Kurcz (1994), the study used 18 bipolar 7-level scales. Participants marked their opinions closer to the term that, in their view,

more accurately described nonbelievers. The second dependent variable – the assessment of the interaction and of the partner – was taken from the research of Chartrand and Bargh (1999, Study 2); it contained three statements about the interaction (e.g., the conversation was pleasant). The participants were required to assess, on a 5-point scale, the extent to which they agreed with them.¹

Procedure

As mentioned above, the three groups were made up of participants undergoing three kinds of manipulation. Further in the discussion they will be presented, respectively, as the group with mimicry (a condition in which the participants took part in a conversation and were nonverbally mimicked by their partner), the group without mimicry (a condition in which the participants took part in a conversation and were not mimicked by their partner), and the control group (a condition in which the participants took part in no interaction). Thus, interaction with the experimenter took place only in the groups with and without mimicry.

After obtaining the potential participants' consent, and having made sure that they described themselves as believers, they were taken to a previously set table where the experimenter was awaiting them in order to have a conversation about faith. The experimenter asked a list of questions. In order to activate the stereotype of a nonbeliever right at the beginning of the conversation, upon hearing the answer to his first question, she would casually say: "*Although I myself am a nonbeliever, I get your meaning perfectly well.*" In the group with mimicry she would additionally copy the nonverbal behaviors of her interlocutors – namely, she would adopt the same body posture and imitate all the movements of their legs and arms. In the condition without mimicry, the experimenter would not make any gestures. After conducting the interview, all participants were asked to fill the semantic differential (Osgood et al., 1957) and the questionnaire for the assessment of the interaction and the partner. The participants assigned to the control group, who did not interact with the experimenter, were only asked to fill in the semantic differential (Osgood et al., 1957), which was supposed to ascertain the general image of nonbelievers held by believers.

¹ The data collected during the selection study satisfied the assumptions of factor analysis. Bartlett's sphericity test showed that the correlation matrix was not a unitary matrix ($\chi^2 = 280.490$; $p < .001$). The KMO measure was .075, which makes it possible to run a factor analysis. Cronbach's α was .99, which indicates that the tool has a high reliability (although it may be worth mentioning that only three questions were analyzed). As a result of running an exploratory factor analysis using the principal components method with Oblimin rotation, one factor was extracted that explained 98% of the variance.

RESULTS

Differences in the General Perception of Nonbelievers Between the Studied Groups

When analyzing the results of the semantic differential (Osgood et al., 1957), it was assumed, following Kurcz (1994), that the average values between 3.25 and 4.75 eliminate the scale from the set of characteristics included in the stereotype. A characteristic is considered to be relevant for the stereotype when the average of the ratings falls closer to any of the extremes. In this study, though, all scales were analyzed, not only those whose results fulfilled the above condition and indicated stereotyped characteristics. The information about the inclusion or exclusion of a given characteristic in the set was taken into consideration in result description and interpretation. The results in all scales were summed up and averaged for each of the participants. They were prepared for the analysis based on the assumption that averages above 4 indicate the characteristics perceived as typical for nonbelievers. Consequently, it was assumed that the higher the results on the scales are, the higher the level of their stereotypization. One-way *ANOVA* did not show any significant effects of the variable referred to as *the type of manipulation* on the dependent variable (semantic differential – Osgood et al., 1957), $F(2, 45) = 0.09, p = .91$. But the results for selected scales obtained after the post hoc NIR, presented in Table 1, show some differences. In the mimicry group, nonbelievers were described as more tolerant, modest, friendly, and having a higher level of education than in the control group and as conceited and unfriendly in the control group. It is worth noting that after manipulation, according to Kurcz's criterion (1994), the terms "friendly" and "educated" became the stereotyped characteristics while the term "conceited" lost this distinction.

In the group with mimicry, as compared to the group without it, nonbelievers were described as more honest and modest. In the group without mimicry they were termed as conceited. As a result of manipulation in the form of mimicry, the term "honest" became the stereotyped characteristic, while the term "conceited" lost this distinction.

Nonbelievers were perceived as more tolerant in the group without mimicry than in the control group. After the manipulation, the term "tolerant" turned out to be part of the stereotype. Some results approached the level of statistical significance. Nonbelievers were perceived as unfriendly by the group without mimicry and as friendly by the group with mimicry; they were perceived as better educated in the group without mimicry than in the group with mimicry. Both of

these groups perceived them as generous, whereas the control group regarded them as greedy.

Table 1

Post Hoc Test Results (NIR) in One-Way ANOVA

Category of Characteristics	Dependant variable	(I) Experimental Group	(J) Experimental Group	Mean (J)	SD (J)	Significance
Morality	honest/ dishonest	control	without mimicry	4.1875	1.04682	.383
			with mimicry	5.4375	1.71148	.193
		without mimicry	control	4.6875	1.92246	.383
			with mimicry	5.4375	1.71148	.033
		with mimicry	control	4.6875	1.92246	.193
			without mimicry	4.1875	1.04682	.033
Morality	intolerant/ tolerant	control	without mimicry	5.5000	1.50555	.025
			with mimicry	5.4375	1.75000	.032
		without mimicry	control	4.0625	1.98221	.025
			with mimicry	5.4375	1.75000	.920
		with mimicry	control	4.0625	1.98221	.032
			without mimicry	5.5000	1.50555	.920
Morality	modest/ conceited	control	without mimicry	4.8125	1.42449	.152
			with mimicry	3.6250	1.31022	.000
		without mimicry	control	5.5000	1.26491	.152
			with mimicry	3.6250	1.31022	.016
		with mimicry	control	5.5000	1.26491	.000
			without mimicry	4.8125	1.42449	.016
Morality	generous/ greedy	control	without mimicry	3.6250	1.37022	.069
			with mimicry	3.6250	1.45488	.069
		without mimicry	control	4.5000	1.21106	.069
			with mimicry	3.6250	1.45488	1.000
		with mimicry	control	4.5000	1.21106	.069
			without mimicry	3.6250	1.37022	1.000
Personality	friendly/ unfriendly	control	without mimicry	3.8125	1.72119	.409
			with mimicry	2.6875	1.57982	.009
		without mimicry	control	4.3125	1.77834	.409
			with mimicry	2.6875	1.57982	.067
		with mimicry	control	4.3125	1.77834	.009
			without mimicry	3.8125	1.72119	.067
Capability	not educated/ educated	control	without mimicry	5.0000	1.89737	.623
			with mimicry	6.1250	1.02470	.027
		without mimicry	control	4.6875	2.21265	.623
			with mimicry	6.1250	1.02470	.081
		with mimicry	control	4.6875	2.21265	.027
			without mimicry	5.0000	1.89737	.081

Note: Results are given only for those scales that showed differences near or above the significance level.

Differences in Interaction and Partner Assessment

Student's *t*-test was performed to determine the differences between the two experimental groups. The results (see Fig. 1) confirm that there is a strong relationship between mimicry and the positive assessment both of the interaction and of the partner. Satisfaction after interaction with the experimenter was significantly higher in the group of mimicked participants, $t(30) = 3.35$, $p = .002$, Cohen's $d = 1.19$, than in the non-mimicked group, which is in compliance with the hypothesis. This constitutes a replication of the general conclusion of studies on the chameleon effect.

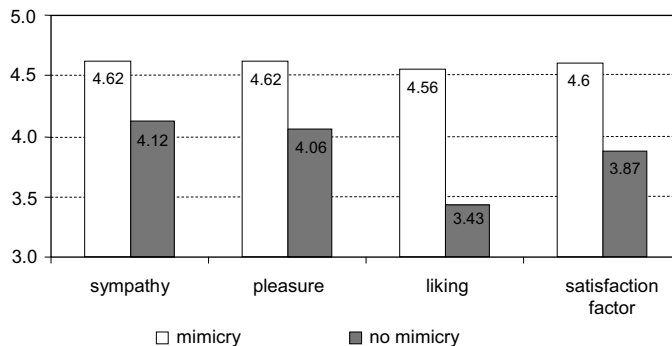


Figure 1. Differences in the assessment of interaction and the interaction partner between groups with and without mimicry.

DISCUSSION

The aim of this study was to verify the new method of stereotype modification – from negative to more positive – by means of the chameleon effect. The first studied variable was the level of stereotype exhibited by participants as measured by semantic differential scales (Osgood et al., 1957). The analysis did not reveal any significant differences. The more detailed analyses, run separately for each of the scales under study, revealed some relationships, which indicates that the chameleon effect has a rather limited effectiveness. The assessments noted turned out to be more positive among the participants who had been mimicked as compared both to the group of non-mimicked participants and to the

control group; the discrepancy was the largest between the mimicked group and the control group. The believers' judgment about nonbelievers was influenced by the interaction alone, even in the condition without the chameleon effect being employed. As compared to the control situation, the participants who had been mimicked issued significantly more positive judgments about nonbelievers.

An additional variable under study was the assessment of the interaction and the partner. In compliance with the hypothesis, it turned out to be significantly higher as a consequence of the participants having been mimicked. This confirms that the technique of stereotype modification analyzed here – the chameleon effect – is responsible for the results obtained in the group with mimicry. Thus, the presented study can be viewed as a contribution to the emerging trend to apply the chameleon effect in the domain of stereotype modification. It must be noted, though, that these are just preliminary results and further studies are warranted to explore the limitations of its applicability.

It is also well worth noting that, considering the division of characteristics suggested by Kurcz (1994) in the case of all the terms used in the semantic differential (Osgood et al., 1957), the largest number of differences were registered in morality scales – the moral assessment of a nonbeliever was improved to the greatest degree. Based on the principles of the Catholic creed, we may venture to assume that the question of morality was the category of greatest importance to the participants. Can we thus assume that the manipulation's strongest influence is exerted on issues considered as particularly meaningful? Such results compel us to continue studies on the influence of mimicry on different aspects of cognitive assessment of the stereotyped object. Future studies should be devoted to the depth of the influence exerted by mimicry with the aim of ascertaining if the influence is indeed the greatest in the area of special import. Another issue well worth exploring is how durable the positive results of manipulation are. It seems to be of special significance in view of the practical application of the results referred to thus far. In order to establish that, studies are needed that will employ repeated measurements to pin down the likely changes of the stereotype over time. Let us consider a few possible study scenarios that seem to be called for in order to reach a fuller understanding of the effect in question.

It would be advisable to include a larger sample in a future replication study that would help eliminate a large number of results just below the level of statistical significance. It might also be a good idea to study individuals whose place of residence is somewhat more varied than in our study, which was based on metropolitan participants. This factor may be responsible not only for the direc-

tion of the changes resulting from the manipulation but also for the original image of a nonbeliever, prior to the manipulation.

It would also be helpful to vary the time of the interaction. It is the impression of the authors of this study that the length of mimicry that would be needed for evoking a positive feeling towards the partner may have been too short (even though past studies [e.g., Chartrand & Bargh, 1999; van Baaren et al., 2004] served as a benchmark for our experimental design). Another issue well worth considering would be making a stronger point of the experimenter's declaring his or her lack of religious faith. This study showed that many participants gave a negative answer when asked if they realized their partner was a nonbeliever. So, it is likely that the experimenter's attitude was not associated with the stereotype under study. On the other hand, the results seem to contradict this notion – we have established that mimicry led to a more positive perception of nonbelievers. This may be an instance of unconscious acquisition of information about the partner being a nonbeliever, because without the participants registering this piece of information the change of the stereotype would not have taken place.

Future studies should also examine other stereotypes. In the authors' opinion, the stereotype of a nonbeliever in Poland may have some special features resulting from the well established traditions and culture. It would be worthwhile to examine the influence of mimicry on other attitudes relating to aspects not so heavily ingrained in the Polish mentality, such as a not-too-smart blonde or a student of a private university. One could also refer to areas where a negative stereotype may have a stronger negative impact on its objects (e.g., ex-inmates or Muslims). The results related to stereotypes of a different nature may be quite varied and so they may prove to be of particular interest and bring new important insights.

Even though it is difficult to relate the study presented in this paper to studies on relationships between mimicry and stereotype (which points to the uniqueness of this study and to the fact that it fills a gap in our knowledge), we can find many similarities and reasons for further studies. It should be noted that this is a relatively young area of research, which may serve as an additional incentive for taking it up. Preliminary studies showed that stereotyped information increases people's readiness for mimicry (Castelli et al., 2009). Leander et al. (2011) reached different conclusions, contrary in a way to the ones following from this research. They showed that as a result of mimicry participants behave in ways compliant with a stereotype. Thus, mimicry led not to the weakening but to the activation of a stereotype. The results of this study seem to be in line with

those obtained by Inzlicht (et al., 2012). The novelty of our study lies in the fact that the stereotype has been shown to be modified not in the mimicker but in the mimickee.

To sum up, we would like to point out that the chameleon effect is likely to become a factor supporting the contacts between antagonist groups – all the more so as it seems relatively easy to employ while having a vast impact on social perception. The issue obviously requires further research in the context of stereotypes and prejudices; analyses need to be taken further and studies replicated and extended.

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