Lateral attitude change in social groups

The role of group similarity and individual differences

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LIST OF ABBREVIATIONS AND SYMBOLS

a	The a-path refers to path between X and M in mediation analysis
a, *b, c*	Estimated values of unstandardized regression coefficients in mediation analyses (italicized letters - in contrast to non-italicized letters for the paths a, b and c in the mediation model)
AMP	Affective Misattribution Procedure
ANOVA	Analysis of variance
APE	Associative-propositional evaluation (model)
b	The path between M and Y under the control of X in mediation analysis
c, c’	path c refers to the total effect, path c’ to the direct effect in mediation analysis
CI	Confidence interval
CS	Conditioned stimulus
D-score	Index value for the association strength in an IAT
EC	Evaluative conditioning
ELM	Elaboration Likelihood Model
F	F-distribution, Fisher's F ratio
IAT	Implicit association test
ICC	Intraclass correlation coefficients
IPC	Indirect prejudice change model
ISI change	Indirect stereotype-incongruence induced change
K-S test	Kolmogorov-Smirnow test
LAC	Lateral attitude change
M	Mean
MANCOVA	Multivariate analysis of covariance
MANOVA	Multivariate analysis of variance
MCM	Meta–Cognitive Model
MCPR	Motivation to control prejudiced reactions
MODE	Motivation and Opportunity as Determinants (model)
n	Number of cases (in a subsample)
N	Total number of cases
ns	Not statistically significant

OSF	Open Science Framework
p	Probability; probability of a success in a binary trial
PFC	Preference for consistency
P-P plot	Probability-probability plot
r	Estimate of the Pearson product—moment correlation coefficient
R^2	Multiple correlation squared; measure of strength of association
SC-IAT	Single-Category IAT
SD	Standard deviation
SDO	Social Dominance Orientation
SE	Standard error
ST-IAT	Single-target implicit association test
US	Unconditioned stimulus
W	The moderator variable in conditional process analysis (moderated mediation)
X, M, Y	Independent/antecedent (X) variable, mediator (M) variable and depended/consequent (Y) variable in mediation analyses
α	Cronbach's index of internal consistency (a form of reliability)
η^2	Measure of strength of relationship (eta squared)
η_p^2	Measure of strength of relationship (partial eta squared)

ABSTRACT

The current work investigated how stereotypes and prejudice about a focal social group also impact the evaluation of other groups. What kind of collateral damage can be caused by media coverage? Does the devaluation of a certain social group lead to other groups also being evaluated differently? The focus of this work was the moderating role of perceived group similarity, but individual difference variables such as motivation to control prejudiced behavior, empathy, and preference for consistency were also included in the analysis. Results showed that a changed evaluation of a primary, focal group indeed frequently affected other, lateral groups, and that the indirect effect of a positive or negative portrayal in a newspaper article or a stereotype activation on these lateral groups was moderated by several factors and sometimes different for explicit and implicit evaluations.

The first study examined how a (fictive) newspaper article about Sinti and Roma influenced not only the subsequent evaluation of Sinti and Roma, but also of a similar social group (Romanians) and a dissimilar group (Chinese). Apart from group similarity, motivation to control prejudiced reactions (MCPR) was included as a moderator. Results showed that explicitly only the evaluation of Sinti and Roma was significantly affected by the article valence, but mediation analysis showed that Romanians were indirectly affected by the manipulation as well, through a changed evaluation of Sinti and Roma. The more positively Sinti and Roma were evaluated after participants read a positive article about them, the more positively Romanians were evaluated as well, but the direct effect of the newspaper article on attitudes toward Romanians was not significant. In contrast, implicit measures showed an effect only on Romanians, but in a contrasting way. Romanians were evaluated more negatively from participants in the positive condition than in the negative condition. No indirect effects were found for implicit attitudes. MCPR positively affected the explicit attitudes about Sinti and Roma, and an interaction between condition and the explicit evaluation of Romanians was found. Although participants high in MCPR evaluated Romanians according to the article valence (more positively in the positive, and more negatively in the negative condition), participants who scored low in MCPR did not differ depending on condition. Conditional process analysis further showed that MCPR possibly moderated the indirect effect of the manipulation on the explicit evaluation of Romanians such that those participants who scored higher on the

MCPR generalized their attitudes from Sinti and Roma to Romanians. However, this effect was very small and has to be interpreted with caution (as the index of mediated moderation was not different from zero).

Study 2 was intended to replicate Study 1 while addressing an issue of low power and to examine the effect of an additional moderator, empathy. Results showed that the manipulation of a newspaper article again significantly affected the explicit evaluation of Sinti and Roma only, but indirectly (by trend) also affected the evaluation of Romanians such that the more positive (or negative) evaluation of Sinti and Roma affected the subsequent evaluation of Romanians accordingly. The small effect of the manipulation on the explicit evaluation of Sinti and Roma also indirectly affected the implicit evaluation of Romanians. After 40 participants were excluded from the analysis (because they indicated that the groups Roma and Romanians were either identical or unknown to them), a contrast effect for the explicit evaluation of Romanians was found. Participants who had read the positive article about Sinti and Roma evaluated Romanians negatively, but participants who had read the negative article about Sinti and Roma evaluated Romanians positively afterwards. Moderation analysis showed that participants who felt high levels empathy with Sinti and Roma evaluated this group generally more positively than those participants with low empathy levels. Only the latter differed in their evaluation of Sinti and Roma depending on condition, showing that they evaluated Sinti and Roma more positively in the positive condition than in the negative condition. Using empathy with Sinti and Roma as an antecedent variable in the mediation analysis showed that the level of empathy with Sinti and Roma not only affected this groups' evaluation in the following, but indirectly also affected the explicit evaluation of Romanians. In addition, the direct effect of empathy with Sinti and Roma on the explicit evaluation of Romanians was significant as well. These results showed that the presentation of a focal group (either positive or negative) can have effects on feeling empathy with this group, but also affects the subsequent evaluation of another, similar group. This lateral attitude change (LAC) can operate directly, but also indirectly, through a change in the evaluation of the focal group. No significant effects for MCPR were found in Study 2.

The third study did not use a newspaper article as a manipulation, but rather used a stereotype activation procedure. In addition, no minority groups were included as

targets, but the evaluation of European nationalities was assessed. As the study was conducted in Norway, the effect of a stereotype activation regarding Germans was investigated, and possible side effects of this manipulation on another nationality that was perceived to be similar to Germans (Austrians) and a dissimilar nationality (Greeks) were investigated. Participants were asked to write down three positive (positive condition) or negative (negative condition) associations with Germans. Using a MANOVA for repeated measurements with the groups as within factors showed a marginally significant interaction between similarity and condition. Although Germans were explicitly evaluated negatively in the negative condition and positively in the positive condition, as were Austrians by trend as well, Greeks were evaluated more negatively in the positive condition. In contrast, Greeks were evaluated more positively than Germans after a negative German stereotype activation. A direct comparison of the two groups (Germans and Greeks) confirmed this trend and showed a significant contrast effect, and mediation analysis showed that the evaluation of Austrians was indirectly affected by the manipulation through a changed evaluation of Germans. However, this effect did not reach significance, possibly due to the relatively small sample. No effects on implicit measures were found.

As the found contrast effect between Greeks and Germans was unexpected, Study 4 was designed to shed some light on the effects of group similarity, but also on possible antagonistic relations between groups. For this reason, a focal and four lateral groups were chosen – Turks, and groups seen as highly similar or highly dissimilar (e.g. Albanians or Swedes). In addition, the effect of another moderator was explored, preference for consistency (PFC). As in Study 3, participants were asked to produce three positive or negative associations with Turks and to evaluate this group and the lateral groups subsequently. Results showed that groups that were (subjectively) similar to Turks were evaluated more negatively, irrespective of condition. In addition, exploratory analysis of the given associations with the focal and the lateral groups revealed the expected pattern and showed that thinking positively or negatively about Turks also affected later associations with the lateral groups. The valence of the associations that participants had with the lateral groups (e.g. “Albanians are very loud and criminal” or “Swedes are very friendly”) depended on group similarity and condition. Generally, the group’s evaluations were more positive when similarity with Turks was low, but the evaluation of the similar lateral

groups (especially Albanians and Kosovars) also depended on the stereotype activation condition. When asked to write down anything that came to their mind when thinking about Albanians and Kosovars, participants who wrote down three negative associations with Turks also wrote down more negative associations with these groups subsequently and vice versa for the positive condition. In contrast, associations with Swedes were always more positive and did not depend on the previous stereotype activation regarding Turks. Some small effects of MCPR were found on the explicit evaluations of groups, but PFC did not show any significant effects. Results of the implicit measure were rather mixed and small in size. No indirect effects were found in the mediation analyses. Results of this study again indicated that LAC depends on group similarity, but effects can be quite subtle and might not always be visible on the first sight.

Finally, a fifth study was planned to determine whether the pattern of findings replicates in a design using fictional groups, thereby controlling for possible effects of current media coverage or previous experiences with the groups. In this study, a first group (the “Laapians”) was presented negatively, and a second group (the “Niffians”) was presented rather positively or neutrally and looked either similar or dissimilar to the Laapians. Effects of the group presentations on the evaluations were assessed directly, and again some days later. Mediation analysis showed that the way the Niffians were described (positively or neutrally) not only affected the subsequent evaluation of this group (in the expected direction), but it also affected the evaluation of the Laapians. The more positively the Niffians were evaluated, the less positive was the evaluation of the Laapians. This finding constitutes another contrast effect and was found at both measurement points. Results of Study 5 thus show that LAC can happen irrespective of previously existing attitudes and the mere association of two groups (either based on similarity or pure co-occurrence) can result in positive or negative evaluations of the groups.

Results of the five studies are discussed within the frame of the model of LAC (Glaser et al., 2015). Based on the LAC model, a more concrete model of lateral attitude change regarding social groups was developed, which was called the “indirect prejudice change model” (IPC). The IPC model should not be understood as an alternative to the LAC model, but rather as a concretization of it, with reference to social groups and prejudices.

INTRODUCTION

Close your eyes for a moment and imagine what you think is a typical Turk. Perhaps you see an old man happily enjoying a meal with his extended family. Perhaps you see the owner of a kebab snack bar, who welcomes his guests openly and congenially. You may also see a man giving orders to his intimidated wife. Or you may even see an aggressive young man shouting Turkish nationalist slogans. These descriptions are some examples of the associations with Turks participants mentioned in one of the experiments of this dissertation. How these associations can influence the evaluations of Turkish people in general but also other social groups is the focus of this dissertation.

When people think of a social group, they tend to transfer personal experiences or available information to the people of a certain group and the group as a whole. Social categorization means constructing categories based on what is perceived to be the norm. Stereotyping goes one step further in that certain characteristics are generalized to all members of a certain group, without considering variations between the group members (Aronson et al., 2004). This may not be so bad when people think of happy, big families or friendly store owners for example. If, however, this leads to Turks typically being seen as aggressive and nationalistic, and Turkish women as oppressed, dependent women, it becomes clear that this generalization can pose major problems for a multicultural society. The stereotype people have of a social group determines what attitude they have toward that group and individuals from the group as well as how they behave toward individual group members (Aronson et al., 2004). It might happen that a person has had a bad experience with a young, aggressive Turkish man and afterwards – in the sense of "They are all the same!" – devalues the entire group of Turks. It might also be possible that a negative attitude can be transferred to groups who are assumed to be similar to Turks and therefore should also correspond to the stereotype. Therefore, a negative experience with one Turkish man can lead to a devaluation of this man, generalize to the group of Turks as a whole, but also to groups that are perceived as similar.

One model that describes the effect of attitude generalization is the LAC model by Glaser et al. (2015). According to LAC model, new information about an object can not only change the evaluation of that focal object, but can also change the

evaluation of similar, lateral objects. How this model can be applied to the context of prejudice research is another subject of this thesis.

ATTITUDES AND ATTITUDE CHANGE

The research on attitudes has a long history, and the concept of attitude has been described to be “probably the most distinctive and indispensable concept in contemporary American social psychology”, as early as in 1935 by Gordon W. Allport (1935, p. 798), a declaration that can still be considered to be correct (cf. Bohner & Dickel, 2011). An understanding of attitudes and attitude change is fundamental to the work presented in this thesis, which focuses on prejudice toward social groups, because prejudice is usually defined as negative attitudes towards social groups or members of social groups.

In this work, attitudes are defined as evaluations of an object of thought (cf. Bohner & Dickel, 2011). These objects of thought can be anything a person has in mind, from things, to people, groups or ideas. Although most researchers would agree with such a core definition, differences exist in whether an attitude is seen as a stable entity stored in memory (as in the Motivation and Opportunity as Determinants (MODE) model by Fazio, 2007, or the Meta-Cognitive Model (MCM) by Petty, 2006; Petty et al., 2007), or whether attitudes are evaluative judgements that are constructed based on situationally available information (as for example in the Associative-Propositional Evaluation (APE) model by Gawronski & Bodenhausen, 2006, or in the models by Conrey & Smith, 2007, or Schwarz, 2007). More intermediate positions combine both views, including *evaluation*, attitude *object* and a psychological *tendency* (Eagly & Chaiken, 2007), or the view that “current evaluations are constructed from relatively stable attitude representations through the iterative reprocessing of information” (Cunningham et al., 2007, p. 736). In their iterative reprocessing model, Cunningham et al. (2007) also include the notion that varying strengths of connections might make some evaluations more accessible and cause them to be activated relatively automatically across time and situations. All positions certainly have their strengths and limitations, and future research would most likely benefit from integrating all perspectives and taking into account both stable and situational aspects of attitudes (for a review see Bohner & Dickel, 2011).

The different conceptualizations also impact the understanding of attitude change. Bohner and Dickel (2011, p. 397) describe attitude change as “whenever people process information with the result of forming an evaluation of an object of thought”. According to a constructionist perspective, attitude change results from a different set of information being activated and considered at the time an evaluation is made, but the more stable perspective on attitudes (also called the “file-drawer perspective”, as attitudes are assumed to be stored in long-term memory and be accessed when needed, as in a file-drawer, cf. Bohner & Dickel, 2011) assumes that attitude change reflects a change in the memory representations of the respective attitude (Bohner & Dickel, 2011). A challenge for constructionist views lies in explaining relatively stable attitudes, but the file-drawer perspective is challenged to explain why attitude changes sometimes lead to relatively unstable attitudes that vary with context. Within the MCM model (Petty et al., 2007), it is assumed that after an attitude change, the old attitude still remains in memory but is tagged as “invalid”. Situational malleability could thus result from differential accessibility (retrieval is based on motivation, ability, opportunity, etc.) of the old and new memory representations and their respective validity tags.

EXPLICIT AND IMPLICIT ATTITUDES

Another important development that has been made in the last three decades of psychological research is the notion of automaticity. Although human behavior was previously seen as resulting from deliberate reasoning, behavior is now viewed as also resulting from spontaneous, automatic processes, even without people’s awareness or control (Bargh, 1997; Moors & De Houwer, 2006). Referring to attitude research, “explicit” attitudes are now often contrasted with automatic, “implicit” attitudes, which present “introspectively unidentified (or inaccurately identified) traces of past experience” (Greenwald & Banaji, 1995; Petty et al., 2008). However, more recent research does not assume implicit attitudes to be unconscious. Within the APE model, for example, people are generally assumed to have some degree of conscious access to their automatic affective reaction, and that they tend to rely on their automatic affective reactions to make evaluative judgements (Gawronski & Bodenhausen, 2006). The finding that the correlations between explicit and implicit attitudes increases when people are motivated to respond “honestly” is consistent with this argumentation (Nier, 2016). However, Gawronski and Bodenhausen (2006)

do not rule out the possibility that certain affective reactions are below the threshold of awareness (for a review on the “unconsciousness” of implicit attitudes see for example Gawronski et al., 2006). Although explicit attitudes are usually equated with self-reported, deliberative evaluations, implicit attitudes are usually indirectly inferred from people’s performance on reaction time measures, such as the Implicit Association Test (IAT; Greenwald et al., 1998) or priming tasks (Fazio et al., 1995; Wittenbrink et al., 2001). Traditional questionnaires collect consciously constructed and expressed attitudes, but implicit measures can measure spontaneous, automatic assessments of stimuli and possibly predict more spontaneous, uncontrolled behavior. A large number of association-based measures have been developed in the last 20 years (for a review see for example Fazio & Olson, 2003; Wittenbrink & Schwarz, 2007).

ASSOCIATIVE VS. PROPOSITIONAL PROCESSES

Many different dual-process models exist to explain the different processes of attitude change, some with a general focus on attitudes (e.g. the Elaboration Likelihood Model (ELM) by Petty & Cacioppo, 1986, the MODE model by Fazio, 1990, or the APE model by Gawronski & Bodenhausen, 2006), others with a focus on impression formation (e.g. the continuum model by Fiske & Neuberg, 1990, or the dual-process model of impression formation by Brewer, 1988), stereotyping (e.g. the dissociation model by Devine, 1989), or social behavior (e.g. the reflective-impulsive model by Strack & Deutsch, 2004). For an overview on dual-process models see Gawronski and Creighton (2013).

According to the ELM (Petty & Cacioppo, 1986) information can be processed with high or low effort, leading to situational or stable attitude change. The ELM proposes two major routes of persuasion: a central and a peripheral one. Whether the central route (high elaboration – careful and thoughtful consideration of information) or the peripheral route (low elaboration – using cues and simple heuristics such as credibility or source attractiveness) are taken depends on the person’s motivation and ability to process the information. High elaboration is assumed to lead to attitude change with relatively stable and resistant new attitudes, but low elaboration should lead to an unstable attitude that is susceptible to change.

In an attempt to integrate new findings about the explicit or implicit nature of attitudes, and to explain their sometimes complex interplay, Gawronski and Bodenhausen (2006) presented the APE model. Drawing from the distinctions in the ELM, the APE model assumes that attitudes can be rooted in two different forms of mental processes: *associative evaluation* and *propositional reasoning*. Associative links can be activated automatically and do not require much cognitive capacity or intentions to evaluate an object. In addition, associative evaluations can be activated regardless of whether a person thinks that those associations are accurate or inaccurate. Instead, feature similarity and spatio-temporal contiguity are determinants of association (Gawronski & Bodenhausen, 2006). Based on the concept of pattern activation (Smith, 1996), Gawronski and Bodenhausen (2006) assume that the same object may activate different associative patterns and respective affective reactions depending on the context in which the object is encountered (in addition to preexisting associations in memory). Associative processes are understood as the basis for implicit attitudes. On the other hand, propositional processes allow for deliberative and conscious declarations of truth or falsity and are considered to be the basis for explicit attitudes (Gawronski & Bodenhausen, 2006). Evaluations resulting from propositional processes are based on syllogistic inferences derived from any information that is considered relevant for a judgement. In contrast to associative processes, propositional processes depend on truth values, that is, whether a person considers an evaluation accurate or inaccurate. The activation of associative evaluations is independent of the assignment of truth values (Gawronski & Bodenhausen, 2006).

According to Gawronski and Bodenhausen (2006), people usually use their affective automatic reactions toward an object as a basis for a judgement about the object, and automatic reactions are checked for validity only if propositional processes start. However, evaluative judgements can also be made independent of automatic affective reactions, if the automatic affective reactions are seen as an invalid basis for an evaluative decision. Perceived validity depends on the consistency of a certain proposition with other propositions that seem relevant in the respective situation. As an example, the propositional implication of a negative affective reaction toward a

minority member (e.g. “I do not like Sinti and Roma[1]”) might be considered inconsistent with propositional implication of another attitude (e.g. “It is bad to have prejudice regarding minorities”) and non-evaluative propositions (e.g. “Sinti and Roma are a minority group”). However, the negative affective reaction might be considered a valid basis for an evaluative judgement if the person considers either the propositional evaluations of the other attitude invalid, or the non-evaluative proposition (e.g. “It is okay to dislike minorities” or “Sinti and Roma are no longer a minority group”). Cognitive consistency is of concern only for propositional reasoning, not for associative processes, because it is based on the assignment of truth values, and inconsistencies can only be solved by propositional reasoning. In addition, hypothetical propositions (i.e. propositions that are not assigned a clear truth-value yet), and mere knowledge of a proposition (e.g. of another person) can activate corresponding associations in memory (Gawronski & Bodenhausen, 2006). As an example, mere knowledge of a cultural stereotype can lead to automatic negative reactions toward a member of that group, even when the stereotype is considered inaccurate (Devine, 1989). If this happens to a minority member, automatic negative reactions toward the in-group can be activated, but these negative associations might be rejected at a propositional level, resulting in a negative correlation between explicit and implicit evaluations.

ATTITUDE CHANGE FROM THE VIEW OF THE APE MODEL

According to the APE model, implicit attitude change occurs either because of an incremental change of the associative structure (learning of a new evaluation), or because of a situational activation of the associative network (already existing evaluations stored in memory, cf. Smith, 1996). The prototypical case for implicit attitude change resulting from changes in the associative structure is evaluative conditioning (EC), which is a change regarding the evaluation of a certain attitude object due to the pairing of that object with another positive or negative object. EC will be discussed in more depth in the corresponding section on “Evaluative

[1] The internationally used term “Roma” was extended in Germany to take into account the heterogeneity of the groups in question and to also include the Sinti group, who has been living in Germany and Austria for centuries (cf. Trauschein, 2014). However, it has to be noted that the term “Sinti and Roma” does not do justice to the heterogeneity of all the groups in question either, neither is it accepted by all people that are meant by it (cf. Hammarberg, 2012). For the ease of reading, the umbrella term “Roma” will be used in the following, except when concrete verbal stimuli of the experiments are presented, as they used the common German terminology “Sinti and Roma”.

conditioning". Temporal changes in the associative network (pattern activation) depend on context cues, which activate different subsets of the respective representation. As an example of a situational change in pattern activation, participants in a study by Dasgupta and Greenwald (2001) showed less implicit bias against black people after admired African-American persons were presented. Similarly, Wittenbrink et al. (2001) showed that participants showed less implicit bias against African-Americans when they were presented with photos of a barbecue of a black family as compared with a group of black men in the streets.

Within the APE model, explicit attitude change can result for three reasons: a (1) change in the evaluation of the attitude object, (2) change in the set of relevant propositions for an evaluative judgement, or (3) change in the strategy used to achieve consistency between propositions (Gawronski & Bodenhausen, 2006). It is important to note here that changes in the associative structure (e.g. by EC) are not assumed to influence a certain evaluation directly, but that change in activation influences the associative evaluation of an attitude object, which then may mediate the effect of a new stimulus on the explicit evaluation of an object. As an example of explicit attitude change resulting from differences in pattern activation, several studies showed that contact with members of a social group (or activation of single exemplars) influence judgements about this group in general (e.g. Bodenhausen et al., 1995; Henderson-King & Nisbett, 1996; Sia et al., 1999; Wilder et al., 1996). According to the APE model, change of the propositions that are considered relevant for an evaluative judgement (2) can stem from the acquisition of new propositional beliefs about the world or by additional consideration of already established propositions that imply change in the evaluation of an object. In the latter case, merely thinking about reasons for a certain proposition might change them, but the same is not true for thinking about feelings (Gawronski & Bodenhausen, 2006). The third case that can lead to explicit attitude change, changing in the strategy to achieve consistency, is reflected in research on cognitive dissonance (cf. Festinger, 1957; Gawronski & Strack, 2004). Cognitive inconsistency, and thus cognitive dissonance, can be resolved either by rejecting one proposition as false or by finding another proposition that resolves inconsistency.

Both associative and propositional processes can operate independently or be mediated by each other. Different kinds of influences on associative and

propositional processes do not occur in isolation. Gawronski and Bodenhausen (2006) describe eight cases in which associative evaluation and propositional reasoning may independently or jointly produce effects on implicit and explicit attitudes (cf. Gawronski & Bodenhausen, 2006). These cases are presented briefly in Table 1, with some relevant cases discussed in greater depth in the discussion sections of the following experiments.

Table 1

Propositional and associative processes according to the APE model

Case	Theoretical description
1	Associative evaluations are directly influenced by a given factor, and this change in the associative evaluations affects evaluative judgements
2	Associative evaluations are directly influenced, but evaluative judgements are neither directly nor indirectly affected
3	Propositional reasoning is directly affected, but associative evaluations are neither directly nor indirectly affected
4	Propositional reasoning is directly affected, which then in turn indirectly affects associative evaluations
5	Propositional reasoning and associative evaluation are directly influenced, but the two change in different ways, resulting in non-corresponding changes in explicit and implicit attitudes
6	Involves a direct influence on propositional reasoning, and an indirect effect on propositional reasoning through change in associative evaluations (mediation)
7	Direct influence on associative evaluations with an additional indirect effect mediated by propositional reasoning
8	A complex pattern resulting from direct influences on propositional reasoning and associative evaluations, with mutual indirect influences, which lead to corresponding changes in explicit and implicit attitudes

Although Gawronski and Bodenhausen (2006) discuss numerous empirical findings for the eight cases, they also acknowledge that many real-life situations may involve multiple, mixed influences. However, the APE model presents a useful framework for investigating and discussing the different processes and effects that lead to changes in implicit and explicit attitudes.

In summary, the APE model proposes two different levels of information processing that can take place independently or mediate each other. Associative processing is characterized by mere pattern activation and assumed to be the basis of implicit attitudes. Propositional reasoning is based on subjective truth of evaluations and beliefs and assumed to be the basis for explicit attitudes. Eight cases that describe the complex interplay of associative evaluations and propositional reasoning and its effects on implicit and explicit attitude change are presented.

STEREOTYPES, PREJUDICE AND DISCRIMINATION

Understanding attitudes is one basis for understanding stereotypes and prejudice. As for attitudes, definitions of stereotypes and prejudice have changed over time, and generally simplified. A prejudice is now usually defined as “a negative attitude toward a group or towards members of the group” (Stangor, 2009, p. 2), leaving out the three aspects of inaccuracy, negativity and overgeneralization that had been included in Allport’s original definition (1954). The term stereotype was first used by journalist Walter Lippmann (1922), who described stereotypes as “pictures in our heads”. As for prejudice, different definitions of stereotypes now exist, though most researchers agree that stereotypes represent traits that are viewed as characteristic of social groups or their individual members, especially those traits that differentiate groups from each other and that come to mind quickly when people think about the groups (Stangor, 2009). Although stereotypes can be positive (e.g. women are nurturing, Asians are good in math), they usually tend to be, and are seen as, negative (Stangor, 2009).

According to the traditional tripartite view, attitudes are composed of cognition, affect and behavior (e.g. Breckler, 1984). Drawing upon this view, in category-based attitudes, these aspects are represented as prejudice (affective), discrimination (behavioral) and stereotyping (cognitive; Cuddy & Fiske, 2002).

Discrimination is considered to be the behavioral consequence of prejudice and refers to a biased treatment of people based on their group membership (Levy & Hughes, 2009). Being the victim of discrimination can have effects on physical health (for a review see for example Krieger, 2014), mental health and well-being (e.g. Williams et al., 2003; Williams & Williams-Morris, 2000), access to health care (e.g. Williams & Rucker, 2000), housing and credit markets (e.g. Pager & Shepherd,

2008), job hiring decisions (e.g. Pingitore et al., 1994), performance ratings (e.g. Glick et al., 1988), and many other aspects of life (for reviews see for example Pascoe & Smart Richman, 2009; Schmitt et al., 2014).

Social categorization is a natural process that occurs spontaneously in everyday perception and the accompanying stereotype activation occurs quickly and unintentionally when we first see another person (Banaji & Hardin, 1996; Campbell, 1958; Stangor et al., 1992; Taylor et al., 1978). In “The nature of prejudice”, Gordon Allport stated that social categorization is an inevitable process, as “the human mind must think with the aid of categories” and that, once formed, “categories are the basis for normal prejudgment. We cannot possibly avoid this process. Orderly living depends upon it” (Allport, 1954, p. 20). Categorization enables people to process information and make decisions more quickly. Stereotypes, the traits associated with social categories, represent an important form of social knowledge (Stangor, 2009), but although categorization normally is a useful tool for processing the social world, it can sometimes result in unfair or incorrect inferences (cf. Gaertner & Dovidio, 2009; Zárate, 2009), for example because differences between group members are neglected and attributes are generalized (Tajfel, 1969). Overall, differences within groups are minimized and differences between groups emphasized, which leads to distorted perceptions of social differences and group distinctiveness (Gaertner & Dovidio, 2009).

Stereotypes can be activated and influence social cognition even when people do not believe in the stereotype or are motivated to behave non-prejudiced. In a study by Greenberg and Pyszczynski (1985), participants who heard a racist remark of another study participant (actually a confederate) evaluated the debating skills of a black person more negatively than participants who did not hear such a remark. The authors concluded that the racist remark activated existing stereotypic assumptions of black people. Correspondingly, Henderson-King and Nisbett (1996) showed that a negative, rude behavior of a black confederate led white study participants to evaluate black people as more hostile and also to avoid subsequent contact with other black persons (individual-to-group generalization). Finally, they also showed that simply overhearing that a black person was alleged to have assaulted someone, led to black people being evaluated significantly more antagonistic (stereotype). These studies suggest that stereotypes may lurk just below the surface and, once

activated, can have negative consequences for the evaluation and treatment of individuals and entire outgroups.

Cohen (1981) showed that activation of a stereotype can not only lead to better remembrance of stereotypic traits, but also of non-conforming traits. In an initial study, she showed that participants more accurately remembered features of a woman who was presented in a short film when these features corresponded with the expected occupation of the woman. Those participants who were told that the woman worked as a waitress better remembered waitress-like traits (e.g. drinks beer), but those who were told that the woman worked in a library remembered more librarian-consistent traits (e.g. wears glasses). These results were also true for a subgroup who gave their impressions of the presented woman with a delay of four days. So, the processing advantage for prototype-consistent information was apparent immediately as well as several days later. In a second experiment, participants learned about the woman's occupation either before or after watching the video tape. Results replicated the prototype-consistency effect from Study 1, and also showed that prior knowledge of the occupation not only led to higher accuracy in remembering stereotype-consistent information, but also better remembrance of stereotype-inconsistent features. These findings point to the possibility that a stereotype provides some sort of organizing scheme, which facilitates remembrance of both, stereotype-consistent and stereotype-inconsistent attributes.

AUTOMATICITY AND CONTROL OF STEREOTYPES AND PREJUDICE

One of the most influential models on automaticity and control of stereotypes and prejudice was published by Patricia Devine (1989). Based on models from cognitive psychology, which differentiated between intentional (conscious) and unintentional (unconscious) components of human thought and behavior (e.g. Neely, 1977; Shiffrin & Schneider, 1977), Devine (1989) suggested that group-based responses were influenced by a combination of controlled, consciously held beliefs about groups and automatic, pre-conscious stereotyping processes, and that these two processes are dissociable (i.e., independently operable and measurable). Within the model, automatic responses were defined as occurring unintentionally, without effort or awareness, and without interference with other cognitive processes, but controlled responses were considered to be within the person's conscious awareness, under

the person's control, and effortful, which in turn made controlled responses depend on cognitive capacities (Devine, 1989).

Though early research was heavily influenced by the dual process conceptualization of prejudice, more recent research moves beyond this strict dual process conception proposed by Devine (1989) and investigates how automatic and controlled processes interact and influence thought, judgements and behaviors (Devine & Sharp, 2009). One main, enduring problem has been that methodology and processing mode were confounded, and no task is indicative of only automatic or only controlled processing (Devine & Sharp, 2009). Using the gun-identification task and a racism scale for example, Payne (2001) was able to show the effects of stereotype-priming on both automatic and controlled processes, which should act together if a response is congruent with automatic tendencies (e.g. a picture of a black face and choosing a gun in contrast to a tool), and they should act in opposition to each other in incongruent conditions.

Apart from the strict dual process conceptualization, another of Devine's (1989) basic assumptions that has been challenged is that intergroup biases are unconditionally activated in response to group members. In newer research, stereotype activation is no longer regarded as an inevitable process, independent of conscious beliefs or reported level of prejudice (Devine & Sharp, 2009). As Devine and Sharp (2009) note, research suggests that a stereotype object must be perceived as a social object for automatic stereotype activations to occur (e.g. Macrae et al., 1997; Macrae et al., 2002). However, as other people are typically perceived as social objects, stereotypes are also often (but not always) activated by the mere presence of (minority) groups.

Another factor that seems to play a role in the automatic activation of stereotypes is cognitive load. A study by Gilbert and Hixon (1991) showed that participants under experimentally induced cognitive load (being asked to remember an eight-digit number) gave *less* stereotypical answers in a word-completion task after being exposed to an Asian assistant than did participants who were not in the cognitive load condition. However, in a second experiment, participants who were cognitively busy during the stereotype application phase (but not during the activation phase) were *more* likely to apply stereotypes to the Asian assistant when asked to evaluate her (i.e. they gave more descriptions seen as typically stereotypic for Asian-

Americans, such as timid or intelligent). The authors summarize that “cognitive busyness may decrease the likelihood that a particular stereotype will be activated but increase the likelihood that an activated stereotype will be applied” (Gilbert & Hixon, 1991, p. 509).

The third assumption of Devine’s (1989) model to be challenged was that stereotype change was a very hard, time-consuming process that required intentional effort. Recent research has shown that situational and contextual manipulations could also effectively reduce automatic intergroup bias, with little or no intentional effort (Devine & Sharp, 2009). In a study by Macrae et al. (1995), for example, participants who were exposed to a Chinese woman eating with chopsticks responded faster to traits stereotypic for Chinese in a lexical decision task than did participants who saw the woman putting on make-up. The latter responded faster to traits stereotypic of women, a pattern that Macrae et al. (1995) attributed to a lateral inhibition process that produced differential stereotype activation effects. As this process is assumed to appear automatically, it could be seen as some kind of automatic control process. As people can belong simultaneously to various social categories, context can play an important role in which stereotypes are activated, and which are not. These findings and others (for an overview see Devine & Sharp, 2009) suggest that automatic biases might be easier to change than conventionally thought.

However, there are also mechanisms that refer to controlled processes for regulation of automatic stereotypes and evaluations. One option, which is based on dual process models of person perception (e.g. Brewer, 1988; Fiske et al., 1999; Fiske & Neuberg, 1990), is that stereotypic biases can be reduced by replacing categorical processing with more individuated processing, which is only likely to occur when sufficient motivation and ability are present. Furthermore, the person has to believe that bias is operating (awareness) and has to have an idea about the direction and magnitude of the biasing effect of stereotypes on responses (cf. Devine & Sharp, 2009).

Apart from correcting for bias, individuals can also (try to) suppress unwanted thoughts – though this type of stereotype control has been shown to have the power to rebound and produce even stronger stereotypic responses, or a hyperaccessibility of stereotypic thoughts (Macrae et al., 1998; Macrae et al., 1994; Monteith et al., 1998). This type of rebound effect is also said to be moderated by the magnitude of

prejudiced attitudes, personal values, social norms or situation variables (Monteith, Sherman et al., 1998; Monteith, Spicer, 1998; Wyer et al., 1998).

Other possibilities to reduce automatic stereotypic biases include perspective taking (e.g. Galinsky & Ku, 2004; Galinsky & Moskowitz, 2000), priming creativity (e.g. Sassenberg & Moskowitz, 2005), or training of unbiased reactions by repeated exposure to social stimuli unrelated to an expected stereotype (i.e. race and crimes; e.g. Plant & Peruche, 2005; Plant et al., 2005). Recent research has also increasingly used measures of neural activity, which have shown that though automatic bias can act quickly, mechanisms of control can also be deployed very rapidly, even without awareness or controlled processes (e.g. Amodio et al., 2004; Cunningham et al., 2004). However, it has to be noted that the type of control assessed with functional magnetic resonance imaging (fMRI) or event-related potential (ERP) studies differs from the type of control in behavioral tasks, where responses and intentions can be measured more directly. Moskowitz and Li (2011) showed that the activation of egalitarian goals resulted in automatic stereotype inhibition, even when participants were not aware of this inhibition or an intention to inhibit stereotypes. So although previous accounts of bias correction focused on effortful, propositional processes (e.g. Wegener & Petty, 1995), more recent evidence has suggested that bias correction can also occur automatically (e.g. Glaser & Knowles, 2008; Moskowitz & Li, 2011).

Fehr et al. (2012) showed that a strong internal motivation to behave in a non-prejudiced way, both when motivation is manipulated but also when simply measured, leads to more efficient intentional control of activated stereotypes. Amodio et al. (2008) or Glaser and Knowles (2008) also highlighted the impact of the internal motivation to behave as non-prejudiced on the spontaneous, unintentional, control of activated stereotypes (see also section on motivation).

Furthermore, participants who were instructed to respond in a non-biased way to several outgroups showed that they were able to control automatic bias, especially when they were given concrete instructions about how to control their responses (e.g. Blair & Banaji, 1996; Kim, 2003). However, research has also shown that implicit bias seems to be quite easy to induce but hard to unlearn (in contrast to explicit self-report measures; e.g. Gregg et al., 2006; Petty et al., 2006).

Building upon previous neuroscientific findings, Amodio and Devine (2006) further argued that affective and cognitive systems, corresponding to the key components of bias, prejudice and stereotyping, are distinct in a way that "implicit stereotyping reflects cognitive processes and should predict instrumental behaviors such as judgments and impression formation, whereas implicit evaluation reflects affective processes and should predict consummatory behaviors, such as interpersonal preferences and social distance" (Amodio & Devine, 2006, p. 652). This conceptual distinction has already been used when examining explicit biases and the respective contribution of prejudice and stereotypes to different forms of discrimination (cf. Park & Judd, 2005), and past research has also pointed to a distinction between implicit stereotyping and implicit evaluations (e.g. Greenwald et al., 2002a; Greenwald & Banaji, 1995).

Esses and Dovidio (2002), for example, showed that affect-based measures were more predictive of approach/avoidance tendencies (willingness to have intergroup contact), but cognition-based measures were supposed to be better predictors of endorsement of stereotypes and support for social policies (though this contrast could not be shown significantly). Studies of implicit biases have generally found a comparable pattern, for example that implicit evaluative bias was predictive of unfriendly behavior toward a black experimenter, but not predictive of participants' views on social politics (which correlated with an explicit measure only, Fazio et al., 1995).

However, research has given little attention to affective vs. cognitive distinctions in the relationship between implicit bias and its implications for behavior. Using two separate IATs for implicit stereotyping and implicit evaluative race bias, Amodio and Devine (2006) examined whether implicit stereotypes and implicit evaluations affected instrumental vs. consummatory behaviors differently. Results showed that consummatory behaviors (approach-avoidance tendencies, namely preference for an African American student as a potential friend and seating distance) were predicted only by implicit evaluations, though instrumental behaviors (impression formation, namely the use of stereotypes when evaluating an African American student and expected task-performance of an African American student for either academic vs. nonacademic tasks such as sports or math) were only predicted by implicit stereotypes (and not by implicit evaluations). Furthermore, scores on the stereotyping

and evaluative IATs were not correlated, which further supported the double-dissociation hypotheses, whereby implicit stereotyping is rooted in semantic processes and is uniquely predictive of discrimination associated with instrumental behaviors, whereas implicit evaluations are rooted in affective processes and are uniquely predictive of discrimination associated with consummatory responses. However, “these two forms of bias typically operate in concert” (Amodio & Devine, 2006, p. 659).

If implicit evaluations and stereotyping thus arise from different processes, this also suggests that they can be unlearned through different mechanisms. Devine and Sharp (2009) note that implicit evaluations could be learned more quickly and unlearned more slowly than implicit stereotypes, which would certainly impact different strategies to reduce prejudice.

REDUCTION OF STEREOTYPES AND PREJUDICE

CONTACT THEORY

Research to date focuses on one factor as key to invalidating prejudices, which is intergroup contact. It is assumed that positive contact with a member of a an outgroup should lead to a reduction of prejudices against both the specific member of the outgroup and the entire outgroup (Allport, 1954). Oliner and Oliner (1988) presented an impressive example of this when they tried to find out what differentiated the helpers of Jews in the Nazi dictatorship from citizens who did not help. The most serious difference was that the rescuers had already had contact with Jews before the war, whether as neighbors, friends or co-workers. Even under the worst possible conditions, intergroup contact can have a powerful positive influence on the evaluation and treatment of outgroup members. In addition to having had more contact with Jews, rescuers also reported having had a wider variety of friends when they were growing up. This finding might already suggest a spread of positive contact experiences (cf. Pettigrew, 2009; see also section “Attitude generalization: The secondary transfer effect”).

Numerous studies have now produced evidence of the effect of intergroup contact on the reduction of prejudice (for reviews see e.g. Paolini et al., 2018; Hewstone & Swart, 2011; for meta-analyses see e.g. Pettigrew & Tropp, 2006, 2008; Pettigrew et

al.; for a longitudinal study see Binder et al., 2009). One of the most potent forms of intergroup contact is cross-group friendships (Davies et al., 2011; Hamberger & Hewstone, 1997; Pettigrew, 1997). With regard to the accumulated evidence for the "contact hypothesis" (Allport, 1954), one can now speak of contact effects as an integrated theory (Hewstone & Swart, 2011).

Over time, intergroup contact has become an umbrella term for the investigation of a broader "contact space" (Harwood, 2010). Apart from the original, direct contact experiences, research has also investigated indirect contact experiences (for a comparison and review of direct and indirect contact see Hewstone & Swart, 2011). Indirect contact includes *extended contact* (i.e. knowing that an ingroup member has outgroup friends, e.g. Dovidio et al., 2011; Liebkind & McAlister, 1999; Paterson et al., 2015; Wright et al., 1997), *vicarious contact* (i.e. observing an ingroup-member having positive outgroup-contact; e.g. Mazziotta et al., 2011), *parasocial contact* (i.e. contact through the media; Harwood et al., 2016), or *imagined contact* (e.g. Crisp & Turner, 2012; Harwood et al., 2011).

Some studies have also investigated how these different forms of contact experiences coexist or influence each other in responses to social groups (e.g. Christ et al., 2010; Paolini et al., 2007; or see the special issue on indirect effects in Group Processes & Intergroup Relations, Eller et al., 2011). In a study by Harwood et al. (2011), participants who imagined a positive contact experience with an illegal immigrant subsequently also showed reduced prejudice against other outgroups, e.g. Mexican Americans. These kinds of generalization effects seem to be mediated by an attitude change regarding the focal group, or the group that was previously contacted, and moderated by perceived similarity between the first and second outgroup (e.g. Pettigrew, 2009, for a detailed discussion of attitude generalization and similarity effects see the respective sections).

In 2006, Pettigrew and Tropp conducted a meta-analysis on the contact effect, including 713 samples from 515 studies. As expected, most studies showed positive effects of intergroup contact on the evaluation of members of the involved outgroups (reduced prejudice). At the same time, they found another effect that was only slightly weaker and will play an important role in this dissertation: intergroup contact not only reduced prejudice against the contacted group, and generalized to the whole outgroup, but also reduced prejudice against other, completely uninvolved outgroups.

Accordingly, contact with one group can also have positive effects on the evaluation of a completely different group that has never been involved in this contact (Lolliot et al., 2013; Pettigrew & Tropp, 2006; Tausch et al., 2010; van Laar et al., 2005). This kind of attitude generalization will be discussed in more depth below.

The focus of research has mainly been on positive contact, although possible negative effects of intergroup contact have been investigated (Brylka et al., 2016; Lissitsa & Kushnirovich, 2018; Mähönen & Jasinskaja-Lahti, 2016). Importantly, negative contact experiences seem to have stronger (negative) effects on intergroup attitudes than positive contact experiences have positive effects (Barlow et al., 2012; Graf et al., 2014; Techakesari et al., 2014), at least for contact experiences with stigmatized groups (Paolini & McIntyre, 2019). However, positive contact experiences seem to be more common than negative experiences (Graf et al., 2014). This dissertation also aimed to contribute to the literature distinguishing between generalization and transfer effects of positive and negative contact.

THE INFLUENCE OF SOCIAL CONTEXT

Social context influences the activation of stereotypes and subsequent evaluation of the respective groups (Dasgupta, 2009). Wittenbrink et al. (2001) showed for example that black Americans were evaluated more positively if they were presented in a positive context (e.g. a family barbecue), as compared to no context (and vice versa for a negative context; see also Barden et al., 2004). Similarly, Park et al. (2007) found a decrease in Anti-Muslim bias if participants were exposed to positive information about the cultural and historical contributions of Arab cultures (as compared to a neutral condition). This means that with increasing salience of counterstereotypic, positive cues, implicit bias can be reduced by activating positive associations. These findings seem particularly relevant against the background of positive effects of counterstereotypic priming (e.g. exposure to admired exemplars of an outgroup) and it seems especially evident for people who do not have much opportunity for intergroup contact in everyday life (Dasgupta & Rivera, 2008). Dasgupta (2009) further discussed the possibility that repeated exposure to counterstereotypic information might enhance accessibility of counterstereotypes and reduce accessibility of stereotypic beliefs, therefore decreasing the possibility of biased evaluations.

The influence of social context cues also depends on individual and group differences, such as social dominance orientation, own group membership, or beliefs in a dangerous world. For an overview about the malleability of implicit stereotypes and prejudice see Dasgupta (2009).

MOTIVATION

Motivation has been included in several attitude and stereotype models as a moderating factor for mostly deliberative/propositional processes (e.g. Devine, 1989; Fazio, 1990; also Gawronski & Bodenhausen, 2006). However, some studies also alluded to the fact that automatic reactions might be affected by motivation (e.g. by chronic egalitarian goals, Moskowitz et al., 1999; or an implicit motivation to control prejudice, Glaser & Knowles, 2008). As an individual difference variable that influences whether (racial) prejudices are displayed overtly or inhibited, Dunton and Fazio (1997) developed a scale to assess MCPR. They wanted to measure the factors that accounted for the “motivation to engage in more deliberative processing when negative racial attitudes are automatically activated” (Dunton & Fazio, 1997, p. 318). Results of their analysis showed a stable, two-factor structure of MCPR. People differ to the extent that they (a) are concerned with acting prejudiced, which involves personal commitment to avoid prejudiced reactions and also an aversion to other persons displaying prejudiced behavior; and (b) try to avoid dispute, which involves a willingness to inhibit thoughts or feelings that might result in a dispute. In an attempt to construct a German scale to assess MCPR, Banse and Gawronski (2003) developed a scale to assess motivation to behave without prejudice not only against black people, but also against minorities in general. Their scale was planned to yield only a one-factorial solution that was conceptually equivalent to the “concern with acting prejudiced” subscale of the MCPR scale.

MCPR was found to moderate the expression of a wide array of prejudice, such as racial prejudice (e.g. Banse & Gawronski, 2003; Dunton & Fazio, 1997), sexism (e.g. Banse & Gawronski, 2003), or anti-gay prejudice (e.g. Steffens et al., 2015). MCPR has been further shown to moderate the relationship between explicit and implicit measures (Akrami & Ekehammar, 2005; Banse & Gawronski, 2003; Fazio et al., 1995). People who show a high level of MCPR are motivated to control their prejudiced reactions, but are usually only able to adapt them explicitly, which is why they still show automatic bias (for a control of implicit attitudes see Glaser & Knowles,

2008). The difference between MCPR and social desirability is that the latter depends on the presence of another person or group and may also change direction of influence. In a highly-prejudiced environment, for example, it would be desirable to express prejudice. In contrast, MCPR should always be associated with lower levels of discrimination. Banse and Gawronski (2003) found a positive but small correlation between the two constructs.

Apart from MCPR, emotion can also be a source of motivation. That is, as certain emotions, such as anger or disgust, are associated with behavioral intentions (e.g. aggress or avoid), these emotions can also trigger biased evaluations of social or fictive groups, even if the cause for the emotion does not have anything to do with the respective group (Dasgupta, 2009). Behavioral tendencies can just spill over from the original source to the outgroup. Threats to the personal or social identity can motivate people to use more stereotypes and to derogate outgroups (e.g. Sinclair & Kunda, 1999; Spencer et al., 2016) in an attempt to recover their personal or ingroup regard (Dasgupta, 2009).

Other forms of motivation that influence the implicit and explicit activation and implementation of stereotypes include the regulatory focus (prevention vs. promotion, e.g. Sassenberg et al., 2007) and the motivation to conform with peers and therefore adapt attitudes to perceived social norms (e.g. Sechrist & Stangor, 2001).

ATTITUDE GENERALIZATION: THE SECONDARY TRANSFER EFFECT

The social psychologist Gordon Allport already noted in 1954: “One of the facts of which we are most certain is that people who reject one out-group will tend to reject other out-groups. If a person is anti-Jewish, he is likely to be anti-Catholic, anti-Negro, anti any out-group” (1954, p. 68). Since the studies on the syndrome of the authoritarian personality were able to provide early empirical evidence for this assumption (Adorno et al., 1950), research on the syndrome of group-focused enmity and attitude generalization has repeatedly shown that different types of prejudices are related to each other and share a common core that is strongly predicted by a generalized ideology of inequality (Aosved et al., 2009; Pettigrew, 2009; Zick et al., 2008).

Positive intergroup contact can change beliefs and reduce prejudice (e.g. Allport, 1954; Cook, 1978; Desforges et al., 1991; Pettigrew, 1998; Pettigrew & Tropp, 2006;

Wright et al., 1997, see section “Contact theory” above). It has been shown in several studies that contact experiences with an individual outgroup member generalize to the evaluation of the whole outgroup, a process that can be called “individual-to-group generalization” (for a review see for example McIntyre et al., 2016). A moderator of this effect seems to be the number of exemplars and their respective outgroup typicality – a greater number and a moderate typicality (as compared to high or low typicality) seems to lead to the greatest generalization effects (McIntyre et al., 2016). Furthermore, a moderate typicality prevents the danger of “subtyping”, that is, that members of an outgroup that disconfirms a certain outgroup stereotype enable perceivers to group these disconfirming members into an “extra category” and treat them as exceptions, unrepresentative of the group as a whole (e.g. Hewstone et al., 2000; Maurer et al., 1995; Weber & Crocker, 1983; for a review see for example Richards & Hewstone, 2016).

One of the first studies showing attitude generalization processes was conducted by Clément et al. in 1977. They showed that students who had had much contact with French-speaking Canadians during a school trip evaluated not only French-speaking Canadians more positively afterwards (a contact effect), but also French people in general. Pettigrew and Tropp (2008) also found a small but significant correlation between contact with one group and reduced prejudice against another group in a meta-analytic evaluation of 18 studies.

Pettigrew (1998) specified three types of generalization processes resulting from contact experiences: situational (if attitude change generalized across different situations), individual to group (from the specific outgroup member to his or her whole outgroup) and generalization to uninvolved groups (groups not involved in the contact experience). For the last case, Pettigrew (2009) coined the term “secondary transfer effect”, with reference to the process when “decreased prejudice from contact with one outgroup extends to another group not involved in the contact” (Pettigrew, 2009, p. 55). This case will be of special interest for the current dissertation. For a meta-analysis on all three types of generalization see Pettigrew and Tropp (2006).

Pettigrew (2009) referred to group similarity as one underlying factor for secondary transfer effects. However, similarity is a concept that is hard to operationalize; “it may well reflect the dominant stereotypes held of the groups more than any objective

similarity of the groups. Or it could simply reflect prior association of the groups in a person's experience" (Pettigrew, 2009, p. 58).

Of course one could ask whether contact with foreign groups comes first, or whether people with a more tolerant attitude seek more contact with outgroups, or if people who have contact with one outgroup will tend to have more contact with other outgroups as well (the *secondary contact problem*, Tausch et al., 2010). Yet, a study by Pettigrew (1997) suggests that secondary contact effects are relatively independent of previous attitudes, experiences, and personality traits. Contact also has a positive and generalizing effect when political conservatism, relative deprivation of the ingroup, political interest, national pride, place of residence (urban or rural), education and age are controlled (Pettigrew, 1997). In addition to the mostly cross-sectional data, Tausch et al. (2010) found support for the attitude generalization hypothesis using a two-wave longitudinal design. In a sample from Northern Ireland, contact with the ethno-religious outgroup at time 1 improved attitudes toward the outgroup one year later, and this effect again generalized to racial minorities, even after previous attitudes and contact toward this secondary group were controlled for.

Since the term "secondary transfer effect" refers specifically to a generalization of contact experiences, "attitude generalization" will be used in the current work for any generalization of attitudes from one group to another, irrespective of contact experiences. In the language of the LAC model (Glaser et al., 2015, see below), attitude generalization is defined as "a change in the evaluation of a lateral attitude object Y that goes along with a change in the evaluation of focal attitude object X" (Glaser et al., 2015, p. 3). Secondary transfer effects can therefore be seen as one sort of attitude generalization process, resulting from contact experiences. As will be discussed below, "attitude generalization" is also terminology used for a proposed mediator of secondary transfer effects, which will be referred to the "attitude generalization hypotheses" in this context.

MEDIATORS OF SECONDARY TRANSFER EFFECTS

As meditating processes for secondary transfer effects, Pettigrew (1997, 1998) proposed *empathy* and *identification with the outgroup* (via intergroup friendship) and reappraisal of the ingroup (*deprovincialization*). Pettigrew (1998) suggests that

intergroup friendships may generate cross-group empathy and that close affective ties (as generated by friendship) should lead to cross-group identification. The deprovincialization thesis states that interethnic contact leads to a relativization of one's own views, which is followed by a re-appraisal and distancing from one's own group. As a result, contact can broaden individual horizons and the value of other cultures can be more easily perceived and accepted. People get a less "provincial view of outgroups in general" (Pettigrew, 1998, p. 72). Evidence for the deprovincialization hypothesis was provided by Verkuyten et al. (2010), who operationalized deprovincialization with multiculturalism, and Pettigrew (2009), who used national identity as an operationalization. However, other studies were not able to confirm the deprovincialization hypothesis (e.g. Pettigrew, 2009; Tausch et al., 2010, except for Study 1). These mixed results might be explained by the relative difficulty to operationalize deprovincialization, which has been operationalized and measured as group identification (Pettigrew, 2009), multiculturalism (Verkuyten et al., 2010), and ingroup attitude (Tausch et al., 2010). Pettigrew (2009) also suggested social identity complexity as a proxy for deprovincialization. In addition, the link between ingroup and outgroup attitudes is not always clear (Brewer, 1999).

Attitude generalization, on the other hand, describes a process by which attitudes toward a certain object generalize to other, similar objects. The attitude generalization hypothesis states that attitudes toward a primary outgroup mediate the relationship between contact with the primary outgroup and attitudes toward a secondary group (Pettigrew, 2009; Tausch et al., 2010). In other words, the hypothesis predicts that contact with the primary group has positive effects on attitudes toward this group, which then generalize to attitudes toward secondary outgroups. The hypothesis of attitude generalization has since received the most support of all mediators of secondary transfer effects (e.g. Fazio et al., 2004; Harwood et al., 2011; Pettigrew, 2009; Ranganath & Nosek, 2008; Schmid et al., 2012; Shook et al., 2007; Tausch et al., 2010; Walther, 2002; for an overview about mediators of the secondary transfer effects see for example Lolliot et al., 2013). In Pettigrew's (2009) study for example, attitudes toward foreigners mediated the relationship between having more immigrant friends and attitudes toward two other outgroups, homeless and homosexual people. Tausch et al. (2010) provided longitudinal data showing that contact with the primary group at time 1 predicted reduced prejudice toward a secondary group at time 2, even after controlling for prior

contact with the secondary group. Finally, Harwood et al. (2011) provided experimental evidence for the attitude generalization hypothesis by showing that people who imagined a positive contact experience with an illegal immigrant also showed improved attitudes toward secondary groups that were similar to the primary group (see section “Group similarity” for a discussion of the moderating role of similarity).

A methodological threat for the attitude generalization hypothesis is that the use of similar measures will inflate the relationship between the variables that are considered, in this case attitudes toward the primary and secondary groups (cf. Podsakoff et al., 2003). However, several studies also showed the secondary transfer effect when using different attitude measures for primary and secondary groups (e.g. Pettigrew, 2009; Schmid et al., 2012).

Finally, empathy and identification with the outgroup had been suggested by Pettigrew (1997, 1998) as other possible mediators of the secondary transfer effect. Pettigrew (1997) suggested that cross-group friendships should lead to greater perspective-taking abilities, which should result in more empathy with the whole outgroup (Pettigrew, 1998). How exactly empathy was supposed to mediate secondary transfer effects was not specified. Studies that included empathy (sometimes operationalized as perspective-taking) as a possible mediator for attitudes towards secondary groups yielded mixed results, which might (as with deprovincialization, discussed above) be explained by the different operationalizations of empathy, and their focus on either cognitive forms (i.e. perspective taking) or affective forms of empathy (cf. Lolliot et al., 2013; for a deeper discussion of the effects of empathy see Study 2).

In their review of mediating processes of the secondary transfer effect, Lolliot et al. (2013) concluded that they found “substantial support for the attitude generalization hypothesis, mixed support for the deprovincialization hypothesis, and initial evidence for the mediating role of intergroup empathy” (p. 95).

Another factor that has been proposed as a mediator of secondary transfer effects is intergroup anxiety (Vezzali & Giovannini, 2012). Intergroup anxiety refers to a feeling of uneasiness in the presence of an outgroup (cf. Stephan et al., 2009). As the present dissertation will focus on attitude generalization and empathy as possible

mediators, see Lolliot et al. (2013) for an overview of intergroup anxiety and other possible mediators of the secondary transfer effect.

UNDERLYING PROCESSES OF SECONDARY TRANSFER EFFECTS

EVALUATIVE CONDITIONING

EC is defined as “a change in the valence of a stimulus that results from pairing the stimulus with another stimulus” (De Houwer, 2007, p. 230). More concretely, it is about the change in the liking of a neutral stimulus (the so-called conditioned stimulus; CS) that results from pairing that stimulus with other positive or negative stimuli (the unconditioned stimulus; US). Typically, the CS will be evaluated more positively after it has been paired with a positive US than after it has been paired with a negative US (De Houwer, 2007).

EC is assumed to be a potential underlying process for LAC (Glaser et al., 2015, see below) and other forms of attitude generalization and has been shown repeatedly to affect (or be a source of) attitude change. A meta-analysis of EC by Hofmann et al. (2010) revealed a medium effect size across 214 studies, and showed, among other findings, that EC effects were stronger when contingency awareness between the stimuli was high (rather than low), and presentation of the US was supraliminal (rather than subliminal), and measures were explicit (rather than for implicit). In addition, EC effects seem to be independent of a match of US and CS – US and CS do not need to be matched in terms of modality or be perceptually similar. The meta-analysis also showed that EC effects are sensitive to extinction in that unpaired CS presentations after the CS-US pairings can reduce the EC effect. The authors speculated that EC effects might be stronger for attitude formation processes than for attitude change (Hofmann et al., 2010). For a review on EC, see for example De Houwer (2011).

In her research, Eva Walther showed that if a photo of an unknown person’s face (a therefore neutral stimulus) was paired repeatedly with a disliked face, this new face was subsequently evaluated negatively as well (Walther, 2002). According to Walther, EC can be described as “the learning of likes and dislikes, that is, as the acquisition of preferences” (Walther, 2002, p. 920).

When attitudes further generalize from the CS to other objects that were merely associated with the CS, Walther (2002) calls this a *spreading attitude effect*. In her studies she was also able to show that “bad company” not only decreased the likability of an initially neutral, but subsequently negatively evaluated face, but also of another face that just looked similar to the CS. Gast and De Houwer (2012) showed that EC effects also occurred when the CS-US pairings were not experienced directly, but even when participants were only told that there might have been a pairing of the two stimuli. These experiments also point to the inclusion of propositional processes in EC (see also Mitchell et al., 2009).

These findings are important when investigating secondary effects of media coverage, (indirect) contact effects or effects of stereotype activation: not only the primary or focal group, but also associated groups that may just be similar to the first group, might be affected. Correspondingly, Glaser and Kuchenbrandt (2017) showed that evaluative conditioned attitudes towards members of a social category (alien creatures of a fictitious tribe or employees of a fictitious company) generalized to other stimuli of the same social category (non-presented alien creatures of another tribe/employees of another fictitious company), but also to the superordinate category itself (alien tribes/the fictitious companies).

Generally, the spreading attitude effect can also be applied to the influence of media coverage on the evaluation of individuals and social groups. Implications for the social psychology of attitude formation are quite clear: “Attitudes are not always based on a direct positive or aversive experience. Many prejudiced people have never encountered the objects of their antipathy. Instead, attitudes are often based on prior experiences with similar attitudinal objects, on second-hand information, or on mere association” (Walther, 2002, p. 921). A (single) newspaper article on the associations of Roma and organized crime might be enough to link Roma and criminality, and thus devaluate Roma in general, or, as Baeyens et al. (1988) put it, “once in contact always in contact”.

ILLUSORY CORRELATIONS

The increased representation of minorities as criminal, sexist, fundamentalist, not integrable, etc., can also lead to so-called illusory correlations (cf. Fiedler, 2000). In addition, more salient stimulus persons also receive more attention and are perceived to exert more social causality than less salient persons, as McArthur

(1980) discussed in a review on illusory causation and illusory correlation. Groups can be associated with properties that seem to be particularly characteristic of them, though no such relationship objectively exists. More generally, the definition of illusory correlations also includes over- and underestimates, reversals and other distortions of objective correlation (cf. Fiedler, 2000). This might happen because rare or novel occurrences tend to be salient and therefore capture attention more strongly, but also because stereotypes can lead people to expect certain traits to better fit better some groups or individuals than others. Fiedler (2000) discusses two possible underlying principles: the congruency principle, which implies an advantaged processing of expected stimuli, and the distinctiveness principle, which assumes enhanced processing of unexpected events. The seeming conflict behind these positions could be resolved with the help of the Brunswikian Induction Algorithm for Social cognition (BIAS framework; Fiedler, 1996), which integrates various cognitive process assumptions (e.g. expectancy effects, similarity effects, distinctiveness or infrequency effects), proposing an associative algorithm in one integrative framework. Within this learning model, the potentially inverse influences of expectancies and distinctiveness can be located in different facets of the same cognitive process, as was shown in a simulation study (Fiedler, 2000).

The well-known experiment by Hamilton and Gifford (1976) already alluded to the fact that the representation of individual, particularly conspicuous, members of a group can lead to illusory correlations whereby the occurrence of such rare cases is subsequently overestimated, a finding that has since been replicated numerous times (for a meta-analytic integration see Mullen & Johnson, 1990). This finding is especially applicable to minority groups and group members, because minorities “are, by definition, less numerous than majorities, and negative behavior is norm deviant and therefore less frequent than positive, normconforming behavior”, as Fiedler (2000, p. 34) states with reference to Taylor (1991), who investigated the asymmetrical effects of positive and negative events. The findings of Hamilton and Gifford (1976) also mean that even if the same ratio of positivity in large and small groups prevails, impressions and cognitive representations of minorities will be relatively negative, because the combined infrequency of a small group and rare behaviors leads to negative minority behavior being particularly distinctive and salient. Consequently, information that belongs to the most distinctive category should be encoded and memorized more deeply, which in turn is assumed to

mediate the resulting illusory correlation (Fiedler, 2000; Hamilton & Gifford, 1976). However, other research also alludes to the influence of sample size: if a certain behavior prevails to the same ratio in a small and a large group, the behavior will be associated more strongly with the larger group simply because of the higher sample size or learning observations (Fiedler, 2000).

Another explication for the effect comes from the research of group entitativity, which refers to the perceived homogeneity of members of a certain group (cf. Dasgupta et al., 1999; Hamilton et al., 2009). The moderating effect of group entitativity will be discussed later in this thesis (see section “Group entitativity”). Within the context of the research on group entitativity, the tendency to see a relationship between group membership and an activity or trait can be strengthened by the media. Media coverage about Islamic terrorism for example, can lead to attitude generalization regarding the entire group of Muslims. The same also applies to the link between Eastern Europeans and “social fraud” or “poverty migration” depicted in the media (cf. Brücker et al., 2013; see section “Effects of media coverage on attitudes” below).

COGNITIVE DISSONANCE

Consistency theories refer to the motivational principle of achieving harmony between cognitions (e.g. Festinger, 1957, for a review see Harmon-Jones & Harmon-Jones, 2007). Inconsistency between cognitions, or when one cognition opposes another, is assumed to lead to a state of stress. This unpleasant state is assumed to motivate change in the cognitive system to re-establish harmony. This harmony or concordance of cognitions can be achieved by either adding an additional cognition, subtracting one cognition that opposes the other, or by substituting one cognition with a new one (Festinger, 1957).

The idea of seeking harmony can also be applied to LAC. Glaser et al. (2015) suggest that if an attitude towards a focal object is changed, such as after persuasion, it might become inconsistent with lateral attitudes. Attitude generalization might therefore present one solution to re-establish cognitive consistency. However, in two studies Gawronski and Strack (2004) showed that although explicit attitudes might change due to the feeling of cognitive dissonance, implicit attitudes were unaffected by dissonance manipulations.

MODERATORS OF SECONDARY TRANSFER EFFECTS

Apart from the question *how* secondary transfer effects take place (mediation), it is also interesting to know *when* they take place. Which factors moderate secondary transfer effects? Research to date has examined several possible factors, including group similarity, group entitativity and valence, which will be detailed in the following sections. An additional possible moderator for the secondary transfer effect that will not be discussed in this thesis is Social Dominance Orientation (SDO, e.g. Schmid et al., 2012). Schmid et al. (2012) showed that intergroup contact only reduced negative attitudes (or had positive effects) when the person whose perception was assessed was low in SDO; individuals who scored high in SDO (thus supporting inequalities and hierarchies) seem to be more resistant to the beneficial effects of intergroup contact. For a discussion of additional possible moderators (and mediators), see Lolliot et al. (2013).

GROUP SIMILARITY

Secondary transfer effects seem to depend on similarity between groups, for example regarding ethnicity, language, and social status or stigma (Bowman & Griffin, 2012; Clément et al., 1977; Pettigrew, 2009; Tausch et al., 2010; van Laar et al., 2005). Harwood et al. (2011) examined experimentally whether the size of the secondary transfer effect could be explained by a *stimulus generalization gradient*, or the similarity between the focal and the secondary groups. The authors assumed that "attitudes are organized in some sort of semantic network, and that changes to one attitude will generalize to others that are proximal in the network but will not affect ones that are more distant" (Harwood et al., 2011, p. 182). In their study, participants were asked to imagine a positive or negative contact experience with an illegal immigrant. Results showed that a positive imagination task not only affected subsequent evaluation of illegal immigrants, but also generalized to other, similar, groups. However, only indirect (mediation) effects of the manipulation reached significance; no direct effects were found. Supporting the prediction that group similarity accounts for variation in the strength of secondary transfer effects, a significant correlation was found between the indirect path coefficients and the earlier similarity rankings from three independent coders.

In a classic study on impression formation, Lewicki (1985) showed that participants were more likely to choose an interaction partner who resembled a person with whom

he or she had a positive previous contact experience. However, if a previous experience was unpleasant, participants were more likely to choose a dissimilar partner for the next task. In both cases, participants were not aware of the effect of similarity on their choice. In a study by Verosky and Todorov (2010), who used morphed faces, the authors showed that this kind of affective generalization increased as a function of similarity. Effects of resemblance were stronger for faces with higher similarity to known faces. Günaydin et al. (2012) found comparable results with morphed faces of unknown persons and the romantic partner of the participants, even when participants were not aware of the resemblance. Especially for female participants with high relationship satisfaction, morphed faces that resembled the partner were more liked than unknown faces, suggesting that activated partner representations (rather than familiarity) drive the effects. The authors concluded that “objective facial resemblance to a significant other influences snap judgments of liking automatically, effortlessly, and without conscious awareness” (Günaydin et al., 2012, p. 350).

Another very famous example of the importance of similarity comes from van Laar et al. (2005). In their study, university students from the United States were randomly assigned to Latin, African, Asian or European American roommates and the impact of this allocation on the evaluation of other ethnic groups was investigated longitudinally. The authors found that contact with roommates decreased prejudice not only toward the ethnic group of the roommate, but also (in most cases) toward other ethnic groups. A generalization effect was found particularly from black roommates to Latinos and vice versa. In contrast, contact with Asian students increased prejudice toward other groups (van Laar et al., 2005). The authors discussed two possible reasons for this finding. First, it might be possible that Asian Americans have become a “model minority” in society, which increases the likelihood for negative comparisons between Asian Americans and other ethnic groups of lower status (e.g. Latinos, African Americans). Second, the Asian American students in their study showed higher levels of racial prejudice than the other groups included in the study, and this might have resulted in a prejudice-induction effect (van Laar et al., 2005).

Most of the studies discussed above used direct measures of group evaluation that require (or at least permit) deliberative thinking. Gawronski and Quinn (2013) argued

that although these studies' findings point to the automaticity of evaluative responses, they do not address the automatic nature of the evaluative response itself. To show the automaticity of generalized evaluations, they used an alternative measure, the evaluative priming task from Fazio et al. (1995). Results showed that 50% morphs of unknown and known faces were evaluated according to the valence of the known faces (positive or negative). The principle of objective similarity should have caused an averaging effect such that the evaluations should have fallen in between baseline evaluations for known faces and unknown faces, but an assimilation effect was found instead: automatic evaluations of the morphs showed the same extremity as the baseline evaluations for known faces (Gawronski & Quinn, 2013). These results are consistent with the idea of assimilative processing rather than processing of objective similarity, such that "if a critical threshold of perceptual similarity is passed, unknown faces are assimilated to existing representations of known faces, thereby eliciting automatic evaluations of the same extremity" (Gawronski & Quinn, 2013, p. 124). In addition, the study used pictures of either positive or negative unknown persons (in contrast to significant others, such as the partner or friends), and therefore they also showed that the effects of evaluative generalization did not stem from familiarity with the targets (cf. Günaydin et al., 2012; see also Fazio, 2007).

GROUP ENTITATIVITY

Dasgupta et al. (1999) used physical similarity (skin color) as a proxy for group entitativity. Group entitativity (a term going back to Campbell, 1958) refers to the perceived cohesiveness of a group, or how homogeneous members of a certain group are perceived to be. Entitativity and similarity, though closely intertwined, are not the same concepts (Crump et al., 2010). Similarity has been shown to be an important factor that contributes to perceived entitativity (Lickel et al., 2000), but it is not sufficient to generate perceived entitativity, as has been shown by Brewer et al. (1995). In their studies, participants were better at remembering who said what when two groups differed with regard to sweatshirt color and if this difference was based on a meaningful feature (a personality variable). Lickel et al. (2000) showed that in addition to similarity, several other variables were positively associated with perceived entitativity: the amount of intragroup interaction, importance of group membership and whether group members share common goals and outcomes.

Furthermore, the authors speculated that group size (which was negatively correlated with perceived entitativity) might have an indirect effect on perceived entitativity through perception of heightened interaction. Some researchers also argued that entitativity might be more important for the ingroup (especially for highly-identified individuals; e.g. Yzerbyt et al., 2000), whereas similarity plays a more important role in outgroup categorization, resulting in the outgroup homogeneity effect, whereby outgroup members are perceived as more similar to each other than ingroup members are perceived to be (e.g. Boldry et al., 2007; Ostrom & Sedikides, 1992). In fact, Crump et al. (2010) showed that outgroup member were indeed evaluated as more similar to each other than ingroup members were evaluated to be, but ingroup members were perceived as more entitative (homogenous) than outgroup members. These results were based on perceptions of ingroups/outgroups of different types (e.g. political groups, friendship groups) and on an experimental manipulation of similarity/entitativity.

Though categorization processes are an important source of stereotypes (see above), people who share one feature (e.g. being left-handed, shopping in a grocery store) are not necessarily perceived as a homogeneous group and are not necessarily stereotyped as a group either. According to Hamilton et al. (2009), it is the quality of “groupness” that differentiates between types of groups. Intimacy groups (e.g. families, friends) have the highest level of perceived entitativity, task groups (e.g. work groups) fall somewhere in between, and social categories (e.g. women, Americans) should only have a moderate level of entitativity (but still more than loose associations, e.g. people at a bus stop; cf. Lickel et al., 2000). Important factors for making entitativity judgements include group size, degree of spatial proximity and interaction between the group members, the social identity value of the group to its members and perceived common goals and outcomes. Although higher degrees of perceived entitativity should predict higher levels of stereotyping, the relationship seems to be a bit more complex. Social categories, for example, are perceived to have only moderate levels of entitativity, but are usually strongly stereotyped. Hamilton et al. (2009) suggested that this might be because social categories might be perceived as contrasting and competing (e.g. men vs. women), which enhances the perception of intergroup differences and makes stereotyping more likely. Crump et al. (2010) also showed that ethnic outgroups were perceived as more entitative than ethnic task groups.

As a consequence of perceived entitativity, the perceived homogeneity of a group rises and this in turn facilitates overgeneralization, stereotyping and the perception that group members are interchangeable (Hamilton et al., 2009). Highly homogeneous groups tend to elicit more dispositional attributions (e.g. Yzerbyt et al., 1998). The results of Dasgupta et al. (1999) showed that highly entitative groups were also evaluated to be psychologically homogenous (i.e. acting homogenously against another group) and they elicited strong negative evaluations (see also Abelson et al., 1998). This might in part be because highly entitative groups are perceived as highly organized as well, and capable of acting collectively against outsiders (Abelson et al., 1998), which makes them more threatening (Dasgupta et al., 1999). Another explication for the tendency to evaluate entitative groups more negatively may emerge from an illusory correlation between distinctive stimuli (Dasgupta et al., 1999; cf. section “Illusory correlations” above). People who are confronted with a highly entitative group seem to overestimate the influence of group characteristics on individual group member behavior, and they disregard the impact of situational forces (Hamilton et al., 2009). As Dasgupta et al. (1999, p. 1001) described, “even in the absence of group-relevant knowledge, similarity in perceptual features can transform groups into unitary purposeful organisms that appear threatening to observers outside the group”. For a deeper discussion of the underlying processes and effects of perceived group entitativity, see Hamilton et al. (2009).

Though both the concepts of similarity and entitativity seem important for the emergence of stereotypes and prejudice, the current dissertation focuses on similarity when manipulating group associations for secondary transfer effects. It was hypothesized that attitudes, whether positive or negative in valence, generalize more strongly to groups that are perceived to be similar to a primary group. However, group entitativity might play an important role when interpreting the results, as it is thinkable that, for example, highly similar outgroups may be perceived to belong to one superordinate category (e.g. Roma, Romanians), and attitude generalization could then be explained through a perception of high group entitativity.

VALENCE

In the so-called “BeanFest Paradigm”, Fazio et al. (2004) investigated the influences on generalization using abstract evaluation objects. In the studies, participants

learned in a computer game that some beans earned them points and others deducted points. These “good” and “bad” beans differed externally in shape and number of spots. After the learning phase, new beans that resembled the “good” or “bad” beans were brought into play. As expected, generalization effects on the evaluation of the new beans took place. However, these generalization effects were more pronounced for negatively evaluated beans than for positively evaluated ones. This stronger effect for negative information was replicated by Shook et al. (2007), who showed that this pattern was also stronger for extreme than for mild evaluations. It goes along with the other findings in the literature that negative information is weighted more strongly than positive information – “bad is stronger than good” (cf. Baumeister et al., 2001; Ratliff & Nosek, 2011). Negativity and extremity thus seem to be other important moderators for generalization effects. Referring directly to contact experiences, a recent meta-analysis by Paolini and McIntyre (2019) showed that negative contact experiences indeed had a stronger effect on individual-to-group generalization effects than positive experiences had, but only for stigmatized outgroups. For admired outgroups, positive experiences had a stronger impact on generalization than negative contact experiences had.

LATERAL ATTITUDE CHANGE

In 2015, Glaser et al. presented a theoretical framework for LAC, or attitude change regarding secondary (lateral) groups. This model allows for distinguishing between “(a) *generalization* effects, where attitude change toward a focal object transfers to related objects, and (b) *displacement* effects, where only related attitudes change but the focal attitude does not change” (Glaser et al., 2015, p. 1). The theoretical framework integrates results from several research domains and also discusses different possible moderators for LAC processes (see below). Attitude change is defined in accordance with the APE model as being based on two distinct processes: associative and propositional change.

Generalization processes (as outlined above, e.g. Clément et al., 1977; Pettigrew, 2009) are defined as attitude change regarding a lateral attitude object Y, based on an attitude change and evaluative spread regarding the focal object X. They can be based on both automatic and propositional reasoning. A stimulus not only affects the evaluation of the focal object, but also of other, lateral objects. As an example, people who have a positive experience with a member of a derogated group (e.g.

immigrants) will most likely not only change their evaluation of the group of the contacted person, but also of other derogated groups (e.g. homeless people; Pettigrew, 2009). Accordingly, one of the first approaches that generated evidence for attitude generalization was the contact hypothesis (Allport, 1954; see above).

Associative changes occur when lateral objects are associated with the focal object to the extent that their evaluation is automatically activated. This might be the case when the two objects are perceived as similar. The subsequent automatic (implicit) change of the lateral object's evaluation can then also mediate changes in explicit measures. In addition, explicit changes can also be caused by propositional processes, for example when people consciously think about how valid it is to adapt the attitude toward the lateral objects to the evaluation of the focal object. If they consider the transfer to be valid, generalization should become explicitly measurable. If the transfer is perceived as invalid, generalization should not occur explicitly, but it is still possible it will occur implicitly.

Displacement refers to the process in which the attitude toward the lateral object changes, but attitudes toward the focal object do not. An early example of a displacement effect is reported in a study by Alvaro and Crano (1997). They showed that when minority members advocated for a certain topic, majority members changed their evaluation of related topics but not of the message's central topic. However, after a delay of several days, attitudes toward the focal object also changed (see also: Crano & Chen, 1998). If a person deliberately resists changing his or her attitude toward a focal object despite new information, his or her automatic evaluations might still be changed and transferred to associated objects. This change should not be measurable in explicit attitude change toward the focal object, but toward the lateral objects.

Another example of a displacement effect comes from research on stereotype suppression. Participants who were instructed to suppress their stereotypes of skinheads produced a less stereotypic text about a male skinhead (focal object), but subsequently showed more stereotypic thoughts when writing about another skinhead (lateral object) than did participants in the control group who had not been asked to suppress stereotypes (Macrae et al., 1994). Similar research showed that this rebound effect of stereotype suppression also occurred for lateral objects that were not part of the same social category (i.e. more stereotypes were expressed

regarding the elderly or businessmen after participants were asked to suppress stereotypes regarding a young antisocial man (a “chav”); Geeraert, 2013). Three motivational forces for monitoring the focal attitude are explained within the heuristic systematic model (HSM model; Bohner et al., 1995): judgement accuracy, defense of existing beliefs, and making a favorable impression. These reasons may contribute to monitoring a focal attitude (resulting in no change), but attitude change regarding the lateral attitude might still be possible (a displacement effect; Glaser et al., 2015).

According to Glaser et al. (2015), empirical evidence for displacement effects is however scarce yet. This might be due mainly to the fact that usually only focal objects are examined and possible effects on lateral objects are disregarded. As for generalization, both associative and propositional processes can be involved here. Displacement occurs when a change in evaluation of the focal object is rejected but change in evaluation of the lateral object is observed. Such a pattern can be explained with associative processes, when evaluative spread from the focal to the lateral object occurs automatically (cf. Smith, 1996). In this case, the displacement effect should be best measured with implicit measures. However, if changes in explicit measures can also be observed, they should then be mediated by implicit changes (cf. Gawronski & Bodenhausen, 2006, APE model, Case 1). Purely propositional processes are less intuitive in this respect, but nevertheless also conceivable (Glaser et al., 2015). Purely propositional processes might happen when a person explicitly rejects a focal attitude change (e.g. because of reactance), but then nevertheless intentionally decides to change attitudes toward a lateral object (if this fits for example his or her general attitude). People may also observe themselves to experience an automatic LAC and confirm that change propositionally. If the processes leading to displacement are mainly propositional, they can be best measured explicitly (Glaser et al., 2015). Though they should be measurable implicitly in this case as well, these changes should be mediated by change in explicit evaluations (cf. Gawronski & Bodenhausen, 2006, Case 4).

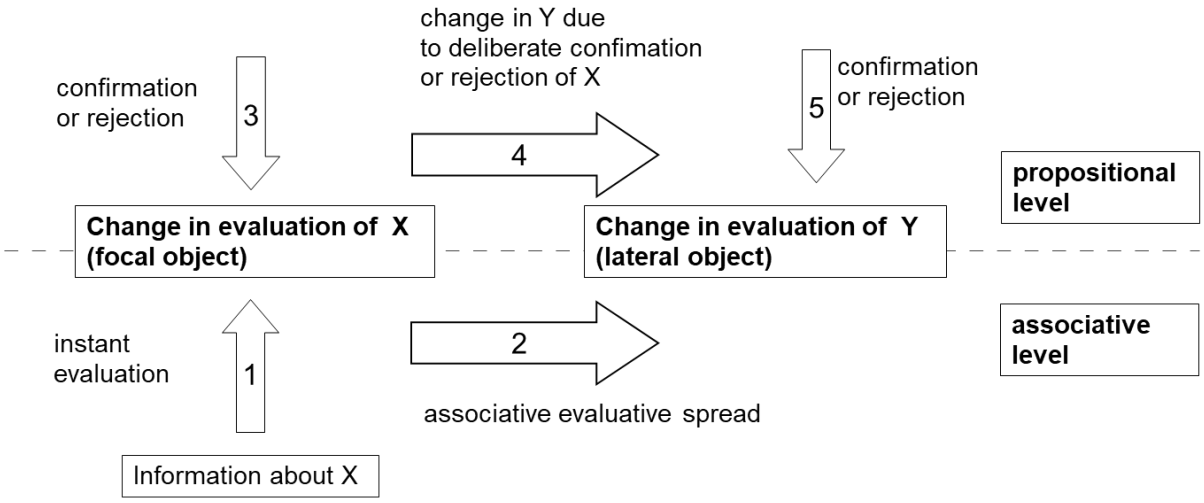
POSTULATES OF LAC

Both processes, generalization and displacement, are based on the automatic activation of associative structures related to the focal attitude. When automatic evaluations of a focal object X are activated, related concepts Y, Z, and so on, will be activated in line with the evaluation (Glaser et al., 2015). For reasons explained in

more detail above, explicit evaluations of X, Y, and Z can still differ from one another (e.g. due to subjective reasons against generalization). Glaser et al. (2015) proposed six postulates within the framework of LAC model that account for explicit and implicit generalization and displacement effects. The LAC model is displayed in Figure 1.

Figure 1

The LAC model



Note. Numbers refer to the different postulates. It is assumed that without propositional reasoning, implicit evaluations carry over to explicit evaluations because confirmation of implicit evaluations is the default (Glaser et al., 2015). Graphical representation according to Linne et al. (2018).

According to the first postulate, an influence attempt aimed at the evaluation of a focal object activates a general evaluation of that object that is consistent with the new information is automatically activated.

According to the second postulate, this evaluation then also spreads to lateral objects. This transfer can be explained, for example, by classical associative network models such as the Activation Theory of Memory (Anderson, 1983). According to this theory, the cognitive units of memory are interconnected and form a network. When a mental concept is activated, this activation spreads along the connections to related concepts. The connections represent how strongly the concepts are associated with each other. The stronger the association between two concepts, the more likely it is that the activation of one concept will activate the other (Anderson, 1983). Another

approach to explain automatic spread comes from distributed connectionist models (for an overview see Smith, 2009). In contrast to associative models, which assume that activation spreads more strongly when concepts are closely related, connectionist models assume that not the individual processing units, but the overall activation patterns present a meaningful concept (cf. pattern activation, Smith, 1996, see above). Accordingly, connectionist models assume that similar attitude objects are stored in the same set of connections, and overlapping activation patterns will be reinforced and differences will be neutralized. Therefore, central features will be emphasized and result in a prototype representation (Smith, 1996). Within the LAC model, both representations – the associative networks and connectionist models – can be used to explain automatic spread from X to Y (Glaser et al., 2015; for a discussion of the two perspectives see Bohner & Dickel, 2011).

In the third postulate, Glaser et al. (2015) explained how propositional thinking affects generalization and displacement effects. In line with Gawronski and Bodenhausen (2006), Glaser et al. (2015) argued that people generally rely on their automatic reactions toward an object as a basis for evaluative judgement. If propositional thinking about the activated concepts confirms the automatic evaluation of the focal object, which, according to the authors, is the default case, attitudes generalize to the lateral objects. If, however, the automatic evaluation of the focal object is rejected, displacement effects should occur, because automatic evaluations of X are activated involuntarily, and these activations should spread to Y (see above). In addition, the lateral attitude object might not be monitored consciously, and therefore attitude changes might go unnoticed. Hence, automatic spread of X to Y should mediate explicit LAC. Since automatic activations of implicit evaluations is assumed to be hard to suppress, displacement effects should show up explicitly, and implicit measures should show generalization patterns (change in X and Y, Glaser et al., 2015).

The fourth postulate says that the conscious decision to accept or reject the automatic evaluation of the focal object can trigger motivational or cognitive processes, which in turn can affect the evaluation of lateral objects. When people consciously think about the relationship between the focal and a lateral object, they might find subjective reasons for or against generalization (e.g. group similarity). Generalization effects do not have to occur automatically in the sense of associative

change; they can also be consciously caused by propositional changes. In the case of subjective reasons against generalization, transfers are consciously avoided and attitudes toward the focal object should explicitly change, but evaluations of lateral objects should only change implicitly. However, after a propositional rejection of change toward the focal object, people might still change their evaluation of Y. As Glaser et al. (2015) explained, a persuasive message about the benefits of eating vegetables might not lead to more vegetable consumption (if for example people do not like vegetables), yet might nevertheless lead to a deliberative change in deciding to eat more fruit (lateral object).

The fifth postulate deals with what happens when people become aware that they are changing their attitudes toward lateral objects. In that case, they can accept or reject the change on a propositional level (cf. section on “Associative vs. propositional processes”). According to Glaser et al. (2015), the default case here is that the attitude change is approved and an explicit generalization effect is shown. But it is also possible that the change is deliberately rejected, which should result in no explicit change even though observable, implicit attitude change may occur. Glaser et al. (2015) argued that people are rarely aware of LAC and so a propositional rejection of attitude change regarding Y should rarely occur. However, this pattern has been found, for example, by Ratliff and Nosek (2011). Following receiving negative information about one black person, participants also devaluated another black person implicitly, but resisted generalizing explicitly.

Sixth and finally, delayed generalization is possible, as people might forget the subjective reasons for the rejection of an evaluation change. As explicit evaluations are assumed to be based on automatic associations, forgetting why automatic affective reactions were rejected should lead to delayed generalization (Glaser et al., 2015). Evidence for this postulate can be found in a study by Ranganath and Nosek (2008). Though participants resisted generalizing a negative evaluation of one group member to another group member, they showed implicit generalization immediately and explicit evaluation after a delay of some days. The authors explained this finding through a memory decay that led participants to forget the source of their evaluation (who did what).

MODERATORS OF LATERAL ATTITUDE CHANGE

Propositional thinking, affirmation or rejection, is supposed to be the main factor that influences whether generalization or displacement effects occur. If people are motivated not to change their attitudes after receiving persuasive messages, displacement effects may still result. However, if people are open to change, generalization effects are possible as well.

The LAC model proposes several moderators of lateral attitude change: *diagnosticity of the focal object, hierarchical level of focal change, association strength, striving for consistency*, and *processing effort*. Change in evaluations of objects that are diagnostic for a category should lead to more change in lateral objects of the same category (Glaser et al., 2015). Diagnosticity can be increased by negativity, which should make generalization and displacement effects of negative evaluations more likely (cf. Baumeister et al., 2001; Rozin & Royzman, 2016). According to Glaser et al. (2015) this should be the case because negative information is more salient and receives more attention (Dijksterhuis & Aarts, 2003; Pratto & John, 1991; Wentura et al., 2000), and because the information is potentially threatening (e.g. pictures of angry faces; Öhman et al., 2001). This might also result in stronger generalization tendencies for lateral objects that are associated with a negatively evaluative object, as the costs for failing to avoid a threat should be higher than the benefits of approaching a reward (e.g. Baumeister et al., 2001). Glaser et al. (2015) therefore predict stronger generalization of negative focal attitudes. Diagnosticity can also be increased by extremeness (of stimuli features or evaluations), as this should lead to higher salience and accessibility (cf. Shook et al., 2007). In addition, Glaser et al. (2015) state that diagnosticity might also be increased due to positivity of an information (e.g. within a highly negative context), stereotype-disconfirming information, or, more globally, unexpectedness and other parameters that influence attitude strength (cf. Krosnick et al., 1993; Pomerantz et al., 1995). In summary, stronger LAC effects are expected to result from information negativity, extremity or unexpectedness (Glaser et al., 2015; also see section “Valence”, above).

Glaser et al. (2015) further assume that LAC should be more likely when the attitudes that change are at a high level in the cognitive structure. Evaluations of Y and Z (lateral objects) can be inferred from attitudes toward X, if Y and Z belong to subcategories. As an example, attitudes toward Chinese immigrants in general

should generalize more easily to Turkish and Russian immigrants than to Feminists or Jews, based on the superordinate category “immigrants”. However, if the superordinate category “high competence groups” is activated, this pattern might be the other way around.

Another proposed moderator of LAC is the strength of association between the focal and lateral attitude (Glaser et al., 2015). If the associations are below the level of awareness, implicit attitude generalization is expected to take place automatically, even with only minimal associations and without subjective reasons for transfer (e.g. association in time and space).

Perceived similarity should further strengthen apparent associations of focal and lateral objects, and therefore also increase the likelihood of generalization across attitudes. Crawford et al. (2002) showed for example that experimentally manipulating group entitativity led to higher levels of generalization (see section on “Group entitativity” above). Other studies on the secondary transfer effect also showed stronger generalization of attitudes for groups that had been evaluated as more similar (e.g. Harwood et al., 2011; Rees et al., 2013, also see section “Group similarity” above). Although higher similarity should lead to more generalization, Glaser et al. (2015) expect a bell-shaped relationship between perceived similarity and LAC for displacement effects. Even if the attitude toward the focal object does not change, opposite implicit evaluations of the lateral object are assumed to be possibly activated automatically for a short time span (Glaser et al., 2015). High similarity should lead to deliberate resistance against generalization, but low similarity should result in no attitude transfer. If, however, similarity is moderately high, the association might not be noticed consciously, and explicit generalization from X to Y could take place. These predictions will be tested empirically in Study 4.

Striving for consistency is assumed to be a possible, fourth moderator of LAC. People who have a strong personal need for consistency should show stronger generalization effects after an attitude change regarding a focal object, or weakening of the association between the focal and lateral object (e.g. “they are *not* the same”). Inconsistency, particularly in people with a strong PFC, should lead to an uncomfortable feeling and people should attempt to re-establish consistency (cf. Festinger, 1957, also see section “Cognitive dissonance” above). Individual differences in PFC should influence generalization via propositional processes

(Glaser et al., 2015). A possible method to assess the personal need for consistency is the PFC scale (Cialdini et al., 1995), which will be presented in more detail in a later chapter of this dissertation (Study 4, Pretest 2: PFC Scale).

Finally, processing effort was presented as another possible moderator of LAC (Glaser et al., 2015). According to persuasion theories (e.g. Bohner et al., 1995; Kruglanski & Thompson, 2009), more effortful (propositional) processing of a certain topic will lead to more change in line with the valence of the thoughts generated, and since attitude strength is assumed to moderate attitude generalization (e.g. Fazio et al., 2004), processing effort may moderate LAC because higher levels of elaboration lead to stronger attitudes (e.g. McGuire, 1964). Glaser et al. (2015) further assumed that displacement effects become possible when a person puts a great amount of effort into defending (not changing) a focal object and thereby lateral objects are no longer in the focus of attention. Greater resistance to attitude change is therefore more likely to result in displacement effects, but people who are motivated to accept attitude change are more likely to show generalization effects (Glaser et al., 2015).

SUMMARY OF LAC

When a person is confronted with a persuasive message, stereotypes are activated or negative/positive contact with an outgroup member takes place, attitudes toward the object of persuasion, stereotypes or the social group that was contacted are likely to change according to the valence of the experience. In addition, this attitude change regarding the focal object is likely to activate also related concepts, such as attitudes toward social groups that are perceived to be similar to the focal group. The amount of processing effort, diagnosticity of the focal object, hierarchical level of focal change, association strength, striving for consistency, processing effort, and resistance to change should then determine whether an attitude generalizes so that the lateral group is evaluated in accordance with the focal group, or whether attitudes toward the focal group are controlled and the automatic activation of lateral concepts only leads to change regarding the lateral objects, a displacement effect.

The LAC model proposed by Glaser et al. (2015) presents a unitary framework to explain different sorts of generalization effects. It makes use of the findings of consistency theories (e.g. Festinger, 1957; Harmon-Jones & Harmon-Jones, 2007), persuasion models (e.g. Petty & Cacioppo, 1986) and EC (e.g. De Houwer, 2007),

and propositions of the APE model (Gawronski & Bodenhausen, 2006), which are included as underlying processes within the LAC framework.

Thus far, several studies showed that attitudes generalize depending on association strength, but empirical findings regarding displacement effects are scarce.

INDIRECT STEREOTYPE CHANGE

Another perspective on the interconnectedness of stereotypes was presented by Maris and Hoorens (2012) and Maris et al. (2016) with the “Indirect Stereotype-Incongruence Induced (ISI) Change phenomenon”. According to McCauley et al. (1980), stereotypes are understood as “generalizations about a class of people that distinguish that class from others” (p. 197). Maris and Hoorens (2012) showed that presenting stereotype-incongruent information about one group may change the stereotypes of another group, especially if the incongruent information was about a competent group.

If stereotypes imply that a target group differs from another group in some aspects, stereotype-incongruent information would not only have an impact on the target group, but also reduce the stereotype-based expectations about the alternative group. At the same time, stereotype-hyperconsistent information (evidence that the stereotype should be even more extreme than it is) could also enhance both groups’ stereotypes. Maris et al. (2016) had participants read a text about task- or relationship-oriented leaders, specified as females or males. The authors showed that if male leaders were presented as more relationship-oriented than task-oriented (in the stereotype-inconsistent condition), male leaders were subsequently evaluated as being more relationship-oriented, but not less task-oriented. In contrast, if female leaders were presented as more task-oriented than relationship-oriented (again, the stereotype-inconsistent condition), female leaders were subsequently evaluated as being more task-oriented but also less relationship-oriented. After reading the article presenting male leaders as task-oriented (hyperconsisent condition), participants evaluated male leaders as even more task-oriented than before reading the article, but not less relationship-oriented. However, after reading an article presenting female leaders as relationship-oriented (hyperconsistent condition), participants evaluated women as more relationship-oriented than before reading the article, and less task-oriented. The consistent stereotype with the target group (men) contradicted the

stereotype of the alternative group (women), but presenting information inconsistent with the male stereotype enhanced the stereotype-incongruent evaluation (male leaders were evaluated as more relationship-oriented) and also enhanced the stereotype-incongruent evaluation of female leaders as being more task-oriented.

The difference between lateral attitude change and indirect stereotype change lies in the similarity of the observed groups. LAC is expected to occur when groups are a priori considered similar, but ISI change is expected to occur when the two groups are a priori considered different (Maris et al., 2016). Though both models (LAC and ISI change) result in stereotype changes for the included groups, indirect stereotype change should result in stereotypes of the two groups becoming more different (if stereotype-consistent information is presented) or more similar (if stereotype-inconsistent information is presented), but LAC can result in both generalization and contrast effects (in case of over-corrections, for example; Glaser et al., 2015). Which process occurs when? Although men and women differ, they also share attributes (e.g. “being human”) that make them appear more similar in comparison to another group (e.g. animals).

In addition to the question of when to expect LAC vs. ISI change, understanding possible contrast effects may elucidate how attitudes change. Information consistent with one group’s stereotypes (i.e. being competent) could enhance the respective evaluation of this group, but worsen the respective evaluation of another group (which might be perceived as incompetent). The studies in this thesis (especially studies 3 to 5) are also designed to investigate the circumstances of such contrast effects.

EFFECTS OF MEDIA COVERAGE ON ATTITUDES

In her Master’s thesis, Ebbeler (2014) explored the influence of group similarity on the generalization of prejudice. Most previous research looked at “similarity” as a global factor, but this study tried to explore different facets of perceived group similarity, namely physical appearance, religion and perceived threat. Based on the results of a pretest, 35 social groups (nationalities, ethnic or religious groups) were chosen as comparison groups that differed with regard to the three similarity facets in comparison to Salafists and Roma. A similar physical appearance was taken as one operationalization, because it is obviously one of the first attributes to assign people

to a certain group (cf. Brewer, 1988), and because groups who are perceived as physically similar are often perceived as psychologically similar as well (cf. section “Group similarity” above). As a second operationalization, perceived religious similarity was used because it had potential to be especially important for the generalization from Salafists to other groups being perceived as Muslim. In addition, given that Muslims are expected to identify more strongly with their religion than Christians do and to be more supportive of terrorism (Fischer et al., 2016), perceived religious similarity in this case should also increase perceived threat. An equal amount of perceived threat was taken as a third operationalization of similarity due to its strong influence on prejudice (Riek et al., 2006; Stephan et al., 2009; Stephan & Renfro, 2002).

To investigate the influence of media coverage on prejudice generalization, participants were assigned randomly to one of four experimental conditions and received a fictive newspaper article about either Roma or Salafists, with either a positive or negative valence. It was expected that the respective valence of the newspaper article would have a stronger influence on the subsequent evaluation of the comparison groups, the more similar these groups were perceived in comparison to the group mentioned in the article. However, a MANOVA for repeated measurements with the similarity dimensions as within-factors and article valence as a between-factor showed that the influence of similarity seems to be more complex. The article valence influenced nearly all group evaluations in the respective direction (irrespective of similarity), but in the Salafist condition this effect was further strengthened by physical similarity and perceived threat. A dissimilar physical appearance but similar perceived threat level had negative effects in both conditions, but similar religion only affected group evaluations negatively in the Salafist condition. These results suggest that generalization effects of media coverage can increase when groups are perceived as similar, but similarity to minorities or especially threatening groups (e.g. Salafists) also had effects irrespective of the media. It is possible that the groups (e.g. Roma and Romanians or Salafists and Afghans) had already been associated with each other and attitudes had already generalized so that the valence of a single newspaper article did not have much additional influence these attitudes.

Before the presidential election in the United States in 1968, McCombs and Shaw (1972) showed that people evaluated those topics that were currently displayed in the mass media (e.g. foreign policies or civil rights) as more important than other topics. Media coverage has the potential to make some topics more salient than others. This observation led to the development of the so-called agenda-setting theory (for an overview see McCombs, 2005). The theory states that if certain topics are very present in the media, for example the increase in refugees, it becomes more likely that media consumers will also think more about the increase in refugees. In turn, populist right-wing parties could benefit from this salience, as it gives their topics greater media attention (Rydgren, 2005).

In addition, research has shown that people prefer information that fits their previous attitudes or decisions, a phenomenon known as the selective exposure effect (cf. Fischer & Greitemeyer, 2010). This phenomenon has been explained with the help of dissonance theory (see above), and defense and accuracy motivation (cf. Hart et al., 2009; for an integrative model see Fischer & Greitemeyer, 2010). Growing evidence also shows that people selectively seek media featuring ingroup (rather than outgroup) members, based on similar age, gender, race, or political preferences (e.g. Harwood, 1997; Iyengar & Hahn, 2009; Knobloch-Westerwick et al., 2008; Knobloch-Westerwick & Hastall, 2016), and social identity motivations (e.g. social enhancement, social uncertainty reduction) have shown to predict media attractiveness (Joyce & Harwood, 2018).

Taken together, the media can make certain topics more salient, people are motivated to seek media contents that fit their existing attitudes and group identity, and people also rate these contents as more attractive.

The frequent pairing of minority groups and criminality or other negative features can also lead to illusory correlations (Fiedler, 2000, see section “Illusory correlations” above). A study by Arendt (2013) showed that participants who had read tabloid newspaper articles about criminal foreigners subsequently showed stronger automatic associations between foreigners and crime in an IAT than participants who had not read these articles showed, even if the mass media content was perceived as invalid. The author explained his findings as a priming effect of the media, which strengthened the automatic association between the two concepts of foreigners and crime in memory.

Correspondingly, Igartua et al. (2011) showed that people who read newspaper articles focusing on criminal activities of immigrants subsequently evaluated immigration and its consequences more negatively and reported more negative emotions, such as disgust, contempt, anger and fear toward asylum seekers. The authors interpreted their findings as a framing effect (cf. Scheufele, 1999, 2009), which suggests that news are always presented in a certain context of meaning, a so-called frame, and this frame influences subsequent evaluations of the target (see also de Vreese et al., 2011; Igartua & Cheng, 2009; Tewksbury & Scheufele, 2007). This is particularly relevant for prejudice research, as for example media coverage about minority groups has been linked more often with negative than positive aspects (e.g. Avraham et al., 2000; Bleich et al., 2015; Domke et al., 2016; Hussain, 2000). *How* media coverage affects attitudes seems to depend further on the specific outgroup. A study by Brader et al. (2008) showed for example that media coverage about the costs of immigration for United States citizens had more negative effects on attitudes toward immigration policies when the featured immigrants were Latinos than if they were European (see also Igartua & Cheng, 2009). Igartua et al. (2011) also showed that participants reported stronger negative emotions against Moroccan immigrants than against Latino immigrants, but only in the condition where news about immigration was presented in a delinquency frame rather than in a frame of positive economic contribution. The authors discussed that this finding might be caused by automatic stereotyping processes such that Moroccans were already linked to crime, which intensified the effect of the delinquency frame. The news might have activated a persisting stereotype.

Overall, agenda setting and framing present two powerful theories to explain how the media affects differences in public and individual attitudes. Effects of media coverage on lateral groups will be tested in studies 1 and 2.

OVERVIEW OF THE EXPERIMENTS

Five studies were designed to test how an activation of associative knowledge about a focal group also impacts the evaluation of other secondary groups. In other words, it was intended to examine the “collateral damage” of judgemental news or stereotype activations regarding social groups on uninvolved other groups. Three

different manipulations were used to trigger secondary transfer effects (stereotype activation, fictive group descriptions and newspaper articles). Several factors thought to have an additional (moderating or mediating) impact on the processes (group similarity, MCPR, empathy and PFC) were included in the studies. The reported experiments extend existing research in that generalization and displacements effects on secondary outgroups were tested using explicit and implicit measures and existing social groups were used to examine the effects of media coverage or stereotype activation on (minority) groups and especially on groups that were not part of a contact situation.

The first experiment was designed as a slightly adapted replication of the study by Ebbeler (2014). It was assumed that a newspaper article about Roma would not only affect the subsequent evaluation of Roma, but also of another group that was judged to be similar (Romanians). As a control group, evaluations of a dissimilar group (Chinese) were assessed as well. MCPR was included as a possible moderator of generalization effects.

Study 2 was a replication of the first experiment with the addition of empathy with the focal group included with MCPR as a potential moderator. It was assumed that feeling empathy with a primary group should also have (indirect) effects on the evaluation of lateral (similar) groups. To dismiss a possible sample bias, similarity ratings were not only assessed from an independent sample in a pretest (to select the lateral groups), but also at the end of the study by the same participants.

In the third study, a stereotype activation procedure was used to examine LAC effects, but this time not regarding minority or stigmatized groups, but relatively neutral nationalities (Germans, Austrians, Greeks). Again, it was hypothesized that attitudes would generalize to a similar but not a dissimilar group and that this effect would be moderated by MCPR.

A fourth study further investigated the unexpected contrast effect that was found in Study 3. To be able to take a closer look at the different possible effects of group similarity and under which conditions a dissimilar group would be affected by a manipulation regarding the focal group as well, the number of lateral groups was extended from two to four. These lateral groups were chosen to be very similar, rather similar, rather dissimilar, and very dissimilar (contrary) to a focal group (Turks).

Finally, to be able to factor out the effects of preexisting attitudes on LAC, a fifth experiment used fictive groups instead of existing social groups.

ANALYTICAL PROCEDURE

Due to the topic of this work, the focus of the analyses will be on the examination of indirect effects. According to Andrew Hayes (2018) mediation analysis asks for *how* X influences Y, moderation analysis shows *when* X influences Y, and both questions can combined in the form of a conditional process model. Although this type of data analysis cannot be used to prove causal claims, it can tell whether the data are consistent with a proposed causal process. This approach and the theoretical background of mediation analysis are described in more detail in the section "Mediation analysis: basic principles" within the method section of Study 1.

In general, the first step in the analysis was to examine descriptive statistics. In addition, MANOVAs and MANOVAs for repeated measurements were conducted to investigate direct effects of the respective manipulation (newspaper article, stereotype activation, or group description vignettes) on the evaluation of the focal and lateral groups. Moderation analysis were conducted to examine the effects of MCPR, empathy and PFC on the constructs of interest, using version 3.2.01 of the PROCESS macro by Hayes (2018). Indirect effects were examined with mediation analysis, also with the help of the PROCESS macro. If applicable, conditional process analysis were conducted to investigate possible moderating effects on the mediation.

If not stated differently within the text, assumptions for statistical analysis were tested and met. Otherwise, alternative analysis methods were run (e.g. nonparametric tests) or corrections were made (e.g. Greenhouse-Geisser). The concrete requirements for the respective methods and their respective tests were based on the recommendations of Field (2009).

Like all parametric tests, *t*-tests are based on *normal* data distribution. In addition, data have to be measured at least at *interval level*. For the independent *t*-test, *homogeneity of variance* is another assumption, and *scores should be independent* (since they come from independent respondents). Kolmogorov-Smirnow tests (K-S tests) were run to investigate whether the data were normally distributed. However,

according to the central limit theorem, normal distribution can be assumed for larger samples (i.e. $n > 30$; cf. Field, 2009), which is why the K-S-test was not necessary in all cases (and because it is also assumed to be too conservative in large samples, cf. Field, 2009). Homogeneity of variances was tested using Levene's tests.

Pearson's product moment correlation require at least *interval scale level* (though one variable might be categorical, if it has no more than two categories), and *normal distribution of the sample distribution* (can be assumed when sample data are normally distributed or in large samples; cf. Field, 2009).

Assumptions for ANOVA are *normal distribution, variance homogeneity* (whether variances are similar in each condition), *independence of observations, random sampling,* and at least *interval scale level* for all independent and dependent variables (see assumptions for *t*-test). The assumptions of independence of observations and random sampling were assumed to be met due to the experimental design of the studies.

MANOVA has similar assumptions to ANOVA, but with some variation for the multivariate case. *Multivariate normality* assumes that the dependent variables are normally distributed within the groups, and was tested using K-S tests for each dependent variable (if not $N > 30$). *Homogeneity of covariance matrices* is given if variances in each group are roughly equal for each dependent variable and the correlations between any two variables are the same across groups. This assumption was tested using Box's test. However, when sample sizes are equal, this test can be ignored because with equal sample sizes some MANOVA test statistics (e.g. Pillai-Bartlett trace) are robust to violations of this assumption (Field, 2009).

For the MANOVA for repeated measurements, the same assumptions as for MANOVA are important, and the assumption of *sphericity* has to be tested in addition. Sphericity refers to the equality of variances of the differences between treatment levels, which is why at least three levels are needed to make sphericity relevant. It was tested using Mauchly's test.

As mediation analysis is based on simple and multiple regressions, the assumptions of regression analyses were relevant here as well (cf. Berry, 1993, as cited by Field, 2009). Referring to the *variable types*, predictor variables should be quantitative or categorical, and the outcome variables should be quantitative or continuous. *Predictor variances* should not be zero. Assumptions further include *normal*

distribution of the residuals, which were checked using Probability-probability plots (P-P plots). In these plots, the values of the residuals that would be expected if normal distribution were given are plotted on the x-axis and the values of the actually observed residuals are plotted on the y-axis. If the values form a diagonal, normal distribution can be assumed (Field, 2009). However, it has to be noted that bootstrapping (an analysis technique based on random sampling with replacement, see “mediation analysis: basic principles” below) is robust against violations of the normality assumption. Further assumptions are *linearity* of the relationship between the included variables and *homoscedasticity*, which is the assumption that residuals at each level of the predictor variables have similar variances. Linearity and homoscedasticity were examined with residual plots, plotting the standardized residuals (or errors; ZRESID) against the standardized predicted values of the dependent variable (ZPRED). A plot of the studentized residuals (SRESID) against ZPRED was further inspected to check homoscedasticity. The assumption of *independence of the errors* was examined using Durbin-Watson tests.

STUDY 1: MEDIA EFFECTS ON LATERAL ATTITUDE CHANGE

To address the influence of media effects on attitude generalization and displacement effects, a study that used fictive newspaper articles as a manipulation was designed. Two newspaper articles about Roma were created to manipulate the perception of Roma people and subsequently assess possible effects on two lateral groups that were chosen based on similarity or dissimilarity to Roma.

Roma were chosen as the focal group because throughout European countries they represent one of the most harshly stigmatized and discriminated against ethnic minorities (cf. Hammarberg, 2012).

PRETEST 1

To find groups perceived as similar or dissimilar to Roma people, a pretest was run using a preselection of social groups as identified by Ebbeler (2014).

METHOD

From a total of 67 comparison groups identified as being similar or dissimilar to Roma by Ebbeler (2014), the five most similar and the five most dissimilar relevant groups were chosen for the current study: Albanians, Chinese, Bulgarians, Romanians, Jews, black people, Greeks, Pakistanis, Turks, and Hungarians. In contrast to Ebbeler (2014), similarity for this study was assessed on a global level, and not separately for physical appearance, religion and perceived threat.

SAMPLE

From 100 distributed questionnaires, 91 were re-collected, of which 14 had to be excluded due to obvious answer patterns (e.g. all groups rated as “very similar”) or missing answers, which resulted in a final sample of $N = 77$. Of these participants, 35% indicated being male, 64% female, and 1% another gender. Mean age was 21 years ($SD = 3.34$ years, Range = 17-31 years).

MEASURES

Participants received a one-sided questionnaire with the information that the survey was about group perception, that participation was voluntarily, all information gathered anonymously, and the instruction to rate the similarity of 10 groups in comparison to Roma on an eight-point Likert scale, ranging from 1 = “very dissimilar” to 8 = “very similar”. Finally, age and gender were assessed, and an e-mail address was given for possible queries.

PROCEDURE

Data collection took place before a lecture in the Institute of Psychology at the University of Bonn. Participants were informed that the study was part of a Bachelor’s thesis about the “perception of groups”.

RESULTS

As the scale ranged from 1 to 8, groups with a mean score greater than 4 were treated as “similar”, and groups with a mean score less than 4 were treated as “dissimilar”. Only Romanians, Bulgarians, Hungarians, and Albanians were perceived as similar to Roma, with Romanians being the most similar ($M = 6.22$, $SD = 1.47$). Chinese were evaluated as the most dissimilar group ($M = 1.78$, $SD = 1.46$).

Levene's tests indicated that variance homogeneity was given for nearly all groups (with the exception of Greeks). Therefore, *t*-tests were run to check for any sex differences in group perception and an additional Mann-Whitney U test was run for the evaluation of Greeks (see Norman, 2010, for a review on using parametrical methods despite not all assumptions being met). Results showed that participants' gender had no influence on the group evaluations. In addition, no significant correlations for age and group evaluations were found.

DISCUSSION

Although Jews (M = 2.6, SD = 1.45) would have been more suitable as a comparison group with regard to an equal dissimilarity and similarity balance (Jews being on average 1.6 points ways from the extreme minimum, Romanians 1.78 from the extreme maximum of the scale), it was decided to use Chinese as the dissimilar lateral group (though being only 0.78 points away from the extreme pole of the scale). Jews represent a minority group that is often stigmatized in Germany and results of the study might have be hard to interpret taking antisemitism into account.

MAIN STUDY

The objective of the current study was to investigate the effects of media coverage (namely newspaper articles) on the evaluation of a focal group (Roma) and two lateral groups (Romanians and Chinese). It was hypothesized that explicit attitudes toward Roma should change after reading a positive or negative newspaper article, and that this evaluation should generalize to a group perceived as similar to Roma, namely Romanians. By contrast, no explicit effects of the manipulation were expected for the dissimilar lateral group, Chinese. In addition, MCPR was expected to act as a moderator such that participants scoring high in MCPR should adjust their explicit evaluations of Roma and Romanians to compensate for the persuasive message of the manipulation. As the newspaper article should not affect the evaluation of Chinese, attitudes toward this group should not be affected or adapted. For implicit measures, it was expected that the negative newspaper article would lead to a more negative implicit evaluation of Roma than the positive newspaper article. This evaluation was predicted to generalize to the implicit evaluation of Romanians, but not Chinese. MCPR was expected to moderate the association of implicit and

explicit measures in a way that this association should be lower for a high-MCPR individual than a low-MCPR individual.

METHOD

SAMPLE

Participants who indicated they were Sinti, Roma, Romanian or Chinese were planned to be excluded from the analysis. In addition, participants who indicated that they thought 100% of the Roma living in Germany came from Romania were planned to be excluded since they did not perceive Roma and Romanians as two different groups. As this did not apply to any participant, the final sample comprised 61 participants, 23% identifying as female, 75.4% male and 1.6% another gender. Mean age was 25.69 years (*SD* = 11.01, *Range* = 15-62 years), 19.7% declared having a history of migration (German: “Migrationshintergrund”) and 64% of the final sample were psychology students.

MEASURES

Implicit evaluations

The Implicit Association Task (IAT; Greenwald et al., 1998) is a measure to assess the strengths of associations between two concept categories (e.g. white and black people) and evaluative attributes (e.g. good and bad). The strength of an association is operationalized by the time a participant needs to correctly assign a target word (e.g. a photo of a black person) to a category (e.g. “black people” or “bad”). A short reaction time is thought to indicate a stronger association between the target and the evaluative attribute (Greenwald et al., 1998). The IAT has been shown to have good validity and reliability (for an overview about its psychometric properties see Nosek et al., 2005). In contrast to the classic IAT, the Single-Target IAT (ST-IAT; Wigboldus et al., 2006) and the Single-Category IAT (SC-IAT; Karpinski & Steinman, 2006) measure the evaluation of a specific target category (e.g. Sinti and Roma) without the need to simultaneously assess a counter-category as well. The strength of the association between the target and an evaluative category (e.g. “negative”) can then be compared to the strength of the association with the evaluative counter-category (e.g. “positive”). To put it simply, the question is: Is the respective target associated rather with positive or negative attributes? In contrast to the IAT, SC-IAT and ST-IAT

allow the assessment of absolute strengths of single associations, not only relative strengths of pairs of associations. Previous research suggests that ST-IAT and SC-IAT are valid and reliable instruments to measure associations with a single category or target (e.g. Bluemke & Friese, 2008; Karpinski & Steinman, 2006). Furthermore, an experiment by Karpinski and Steinman (2006) showed that the SC-IAT susceptibility to faking was not higher than for an average IAT, and that when participants with high error rates were removed (which would be the standard IAT procedure), no significant faking effect could be observed.

Differences between the ST-IAT and the SC-IAT are rather small. The SC-IAT applies a response window with a maximum latency of 1,500 or 2,000 ms to create a sense of urgency and to decrease the likelihood of controlled processing during the task (Karpinski & Steinman, 2006). The ST-IAT further includes a practice block with only evaluative stimuli (20 items), though the actual SC-IAT uses both evaluative and target word (24 items) for the practice block. ST-IAT also uses fewer target words in each stage, which might be one reason why its internal consistency tends to be lower than that of the SC-IAT (Karpinski & Steinman, 2006). In addition, although Wigboldus et al. (2006) include only target trials for the calculation of their index score, Karpinski and Steinman (2006) also use attribute stimuli, which results in a higher reliability for the SC-IAT than for the ST-IAT. However, ST- and SC-IAT differ only in minor procedural details, and there are more similarities than dissimilarities between the two IAT variants. The current (and following) study will use a variant of the ST/SC-IAT[2], but rely on Karpinski and Steinman (2006) for the calculation of the D-score. For this reason, the term “SC-IAT” will be used in the following.

The SC-IAT consists of four blocks: two practice blocks and two test blocks. The task in each block is to categorize the presented stimuli as quickly and error-free as possible by pressing a key, which participants were told during the instructions before the test starts. The five target stimuli were presented first, three of them accompanied by an explanation of the stimulus (e.g. “Romni: This is the female singular form for Roma”), to ensure that participants understood and remembered the stimuli they had to categorize. Subsequently, participants trained the correct categorization of 10 randomly chosen positive and negative words, for example by pressing the “E” key

[2] In contrast to Karpinski and Steinman (2006) fewer items and no maximum response time was included. Participants were free to take as long as they wanted to categorize the stimuli, though they were asked to respond as quickly and correctly as possible.

for positive words (happy, wonderful, beautiful, loving and nice) and the “I” key for negative words (hideous, cruel, evil, bad and terrible). A first real practice block (Block 1), with both target and attribute stimuli contained a total of four trials. Subsequently, the task was to press the “E” key for positive and target words and the “I” key for negative words (Block 2: initial block). The initial block contained a total of 76 trials. In the second part of the test, the reversed block, key assignments changed so the “E” key had to be pressed for positive words and the “I” key for negative words and group stimuli. After another short practice block (Block 3) with four trials, the reversed block (Block 4) started, and it also consisted of a total of 76 trials.

All target and attribute stimuli appeared centered on the screen. Category reminder labels were positioned on the upper fourth of the screen. Evaluative dimensions were labeled “Positive” and “Negative”. Participants were informed about mistakes by the appearance of a red “X” in the middle of the screen. Correct responses were not flagged specifically (as for example by an “O”, see Karpinski & Steinman, 2006). After each response, a pause of 150 ms was inserted before advancing to the next trail. The target stimuli used in the SC-IATs are listed in Table 2.

Table 2

SC-IAT target stimuli in Study 1

Target group	Stimuli (German original)	Explanation
Sinti and Roma	Sinti	-
	Roma	-
	Sinto	This is the male singular
	Romni	This is the female singular
		This is the general symbol of Sinti and Roma
Romanians	Romanians (Rumänen)	-
	Romanian (Rumänisch)	-
	Bukarest	This is Romania's capital
	Dacian Ciolos	He is Romania's head of government
		This is Romania's flag
Chinese	Chinese people (Chinesen)	-
	Chinese language (Chinesisch)	-
	Peking	This is China's capital
	Li Keqiang	He is China's head of government
		This is China's flag

Explicit evaluations

To measure explicit evaluations of the three social groups, participants were asked to evaluate Sinti and Roma, Romanians and Chinese using semantic differentials. These seven-point scales were anchored at either end by polar-opposite adjective pairs: *likable - not likable, good - bad, pleasant - unpleasant, honest - dishonest, competent - not competent*. The semantic differential technique goes back to Osgood et al. (1957). In addition to the semantic differentials, a feeling thermometer was used to assess how cold or warm participants felt regarding the different groups. Previous research has shown that the feeling thermometer seems to tap in between explicit measures like semantic differentials and implicit measures as the IAT when it comes to prejudice and social desirable answers (cf. Greenwald et al., 1998). The extremes were labeled "0" (corresponding to "very cold") and "100" degrees (corresponding with "very warm feeling toward this group"). Ratings below 50 degrees corresponded

to rather cold and negative feelings; ratings above 50 to rather positive feelings; and the middle of the scale, 50 degrees, corresponded to a neutral feeling toward the respective group.

The seven explicit measures (six semantic differentials and the feeling thermometer) were highly correlated and were therefore combined to one explicit evaluation measure per group. In all three cases, the feeling thermometer values were highly correlated with the semantic differential mean scores (Chinese: $r(59) = .66$, $p < .001$; Roma: $r(59) = .75$, $p < .001$; Romanians: $r(59) = .76$, $p < .001$; all values *z*-standardized). Cronbach's alpha for the explicit measure regarding Chinese (7 items) was .89[3], reliability of the explicit measure regarding Roma was $\alpha = .93$, and of the explicit measure regarding Romanians $\alpha = .93$.

Other measures

In addition to explicit and implicit evaluations, MCPR was assed as a moderator using the German version of Dunton and Fazio's (1997) MCPR scale by Banse and Gawronski (2003). Reliability of the MCPR scale was good with $\alpha = .81$. Mean value for the whole sample was 4.10, which is relatively high for a scale ranging from 1-5.

The demographic section comprised items concerning the participant's age, gender, migration history, and whether the participant was a psychology student. Political orientation was assessed using self-placement on a seven-point, left-right scale. As a manipulation check, participants were further asked to rate how positively or negatively Roma were presented in the respective article on a seven-point scale, with the extremes labeled "very negatively" and "very positively". Participants in the negative condition who evaluated the article as very positive toward Roma were excluded from the analysis, as it could not be assured that they actually read the article and/or the manipulation was successful (and vice versa for the positive condition). As cover story items, participants were asked to rate the newspaper article using semantic differentials with seven-point scales. The word pairs were *uninteresting - interesting, one-sided - balanced, understandable - not understandable, boring - exciting, unobjective - factual, incomplete - complete, persuasive - unpersuasive, not informative - informative*.

[3] Reliability would have augmented to $\alpha = .90$ without inclusion of the item competent - not competent, but for reasons of comparability with the other two groups, this item was not excluded.

To exclude participants who could not differentiate between Roma and Romanians, one item was used to ask the percentage of how many Roma in Germany came from Romania.

PROCEDURE

Participants were recruited by a psychology student who gathered data within the frame of her Bachelor's thesis. She used several psychology courses and public bulletins in the Institute of Psychology at the University of Bonn, to recruit participants. In addition, participants were recruited from her personal network. The study was introduced as being about "the presentation and perception of social groups in the media".

The experiment took place in the laboratory in the Institute for psychology at the University of Bonn. Participants were greeted and asked to take a seat in one of four separate boxes at a desk with a computer using Inquisit 3 Software. It was explained that all information would appear on the screen. After confirming that they had read the instructions and wanted to participate in the study, participants were asked to read a randomly chosen newspaper article (either the positive or negative article about Roma; see Appendix A for the used articles), which was presented for a minimum of 10,000 ms (it was not possible to click the forward button before the time elapsed). For sake of the cover story, participants were subsequently asked to evaluate the newspaper article (e.g. regarding readability, interestingness). Afterwards, participants answered the explicit measures, followed by the three SC-IATs (in randomized order between participants). At the end, participants were asked to fill in the MCPR scale, followed by the manipulation check, the question about how many Sinti and Roma were Romanians, their hypotheses about the purpose of the study and finally demographic items. After finishing the experiment, participants were debriefed about the real purpose of the study and informed that the newspaper article had been fictive. Participants were thanked for their participation. Students of psychology received course credit for taking part in the study.

ANALYTICAL PROCEDURE

To get a first overview over the data, descriptive statistics were inspected. Furthermore, MANOVA and moderation analysis were conducted to test for effects of the manipulation and the moderating role of MCPR. Finally, to investigate the

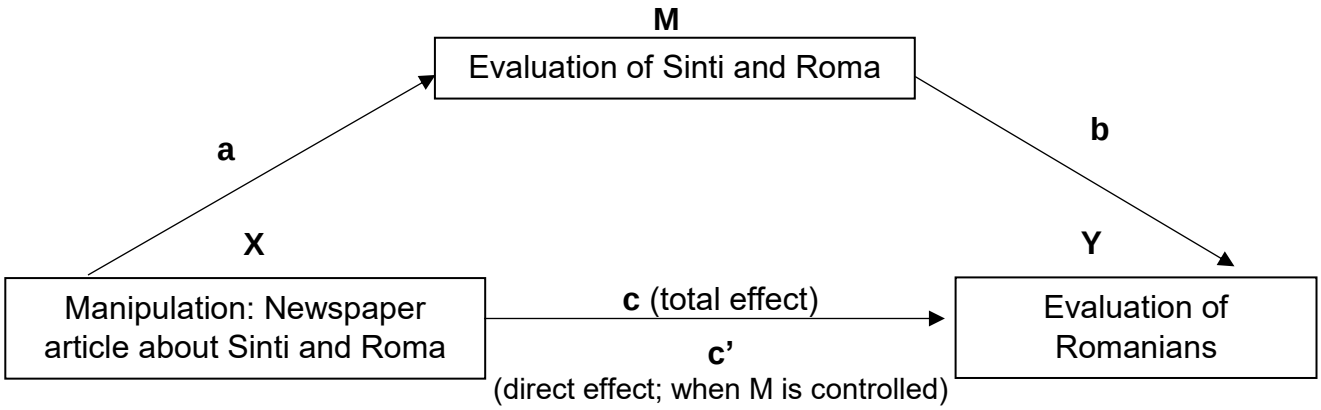
possible mediating role of attitudes toward Roma on the association between the newspaper article about Sinti and Roma and the subsequent evaluation of Romanians, mediation analyses were conducted.

Mediation analysis: basic principles

Conceptually, a mediator (M) explains the relationship between an independent variable (X) and a dependent variable (Y)[4]. Accordingly, in a mediation the connection between X and Y is explained, and the mediator thus represents the responsible process. In the current study, it is assumed that secondary transfer effects are caused by an attitude change with respect to the primary group. Concretely, a manipulation regarding Roma should change the evaluation of Roma, and this changed evaluation could in turn affect the evaluation of Romanians. So even if a newspaper article about Sinti and Roma does not affect the evaluation of Romanians *directly*, it could have an *indirect* influence, through a changed evaluation of Roma.

Figure 2

Indirect and direct effects on the evaluation of the secondary group



If X is manipulated and M is measured, the following procedure is proposed to test mediation (cf. Hayes, 2018). First, the a-path is established (the path between X and M; cf. Figure 2), and tested for significance. The resulting regression coefficient *a* quantifies how much two cases that differ by one unit on X are estimated to differ on

[4] In this context, the independent variables are also called input variables, predictors, antecedents or explanatory variables, and dependent variables are also called criterion, outcome, or consequent variables (cf. Hayes, 2018).

M. However, according to Hayes (2018), for the entire indirect effect (i.e. a x b), it is also sometimes sufficient to come close to $p = .05$ because the indirect effect is quantified as the product of paths (cf. Hayes, 2018, p. 520). Second, the b-path is established (the path between M and Y under the control of X). This indicates whether M is related to Y independent of X. The resulting *b* coefficient can be interpreted analogous to *a*. Two cases that differ by one unit on M but that are equal on X are estimated to differ by *b* units on Y. Third, the entire path a x b (the indirect effect, which equals c-c') is simultaneously tested for significance. If a x b ≠ 0, it indicates a significant indirect effect or mediation.

Path c' is called the *direct effect*, and c is also referred to as the *total effect*. The direct effect shows how the relationship of X and Y would be if M did not exist. Therefore, M is controlled for in c'. In contrast, *c* quantifies how much two cases that differ by one unit on X are estimated to differ on Y. The total effect of X on Y is equal to the sum of the direct and indirect effects of X. The *indirect effect* of X on Y through M is the product of a and b. Two cases that differ by one unit on X are estimated to differ by a x b units on Y as a result of the effect of X on M which, in turn, affects Y (cf. Hayes, 2013).

There is a debate on the significance of the c-path (cf. Zhao et al., 2010). Many researchers have argued that the significance of the c-path has to be shown (e.g. Baron & Kenny, 1986). If X leads to M and M to Y, then X should also lead to Y. However, there are substantive and statistical arguments against this requirement. The two most important ones are certainly suppressor effects (i.e. an opposite a x b path, or a variable M2, which suppresses the relationship XY; cf. MacKinnon et al., 2000) and substantial power disadvantages in statistical testing of the c-path compared to the a x b path (cf. Kenny & Judd, 2014). Newer research argues that it is possible for M to be causally between X and Y even if X and Y are not associated (e.g. Hayes, 2009). However, some prefer to avoid the term mediator when describing M and instead refer simply to X's indirect effect on Y through M as an "indirect effect" (cf. Mathieu & Taylor, 2006, for a discussion of the distinction between indirect effects and mediation).

Harwood et al. (2011) investigated secondary transfer effects by examining the indirect path from the manipulation they used (imagined contact experience) through attitudes about their focal group to attitudes of the secondary group. The authors

state that examination of this path constitutes the most direct test of a secondary transfer because it explicitly tests for the transfer of only the experimentally induced portion of attitudes toward the focal group to the secondary group.

The analysis was done using bootstrapped tests of the indirect path with effects calculated using the SPSS PROCESS macro (version 3, Hayes, 2018). Bootstrapping is a non-parametric method based on resampling with replacement which is done many times (e.g. 10,000 times). Then, the indirect effect is computed from each of these samples, and a sampling distribution can be empirically generated. With the distribution, a confidence interval can be determined (along with other coefficients). If this interval does not contain zero, the indirect effect can be assumed to be different from zero (Hayes, 2018). Several authors showed that bootstrapping methods are superior to other indirect effects analysis techniques (e.g. the “classic” sequential tests approach by Baron & Kenny, 1986) in that they increase power while not increasing Type 1 error and because they do not rely on tests of unnecessary effects, such as the significance of the overall effect of X on Y (cf. Hayes, 2009; MacKinnon et al., 2002; Zhao et al., 2010). Bootstrapping should also be preferred to Sobel tests, as bootstrapping is more rigorous and powerful and, in contrast to Sobel, does not require the assumption that the sampling distribution of the indirect effect is normal (Zhao et al., 2010; Hayes, 2009), because it is based on an empirically generated representation of the sampling distribution.

Data preparation for implicit measures

Before the analysis, data were prepared in accordance with Karpinski and Steinman (2006). Trials with extremely long reaction times (> 10,000 ms) were discarded (coded as missing), as well as those with very short reaction times (< 350 ms), and all practice trials. Error responses were replaced with the block mean (using the correct latencies per block only) plus an error penalty of 400 ms. Participants with an error rate greater than 20% in one of the three SC-IATs were planned to be excluded from the analysis. However, as this did not apply to any participant, the sample for the analysis stayed $N = 61$. The resulting average error rates (wrong assignments of target items to categories) for the SC-IATs were quite low, with 4.71% for the Roma SC-IAT, 5.25% for the Romanian SC-IAT and 4.63% for the Chinese SC-IAT.

For the calculation of a D-value, mean scores and standard deviations were calculated block-wise for all SC-IATs, using the correct responses or error responses

with penalty. D-Scores were calculated by subtracting the mean latency of the positive block (Block 2, e.g. Chinese + positive) from the mean latency of the negative block (Block 4, e.g. Chinese + negative) and dividing the result by the mean standard deviation over the two test blocks (Block 2 and 4). Consequently, a positive D-score indicates that reactions were faster when group stimuli and positive words were assigned to the same key than when group stimuli were combined with negative words. Such an effect can thus be regarded as a positive implicit attitude of the respective group (Greenwald et al., 1998). With reference to Cohen (1988), the D-values can be interpreted as follows: an effect of .20 is referred to as “weak”, up to .50 as “medium” and from .80 as “large”.

To calculate the reliabilities of the SC-IATs, three separate D-Scores were calculated for each SC-IAT. Therefore, mean latencies for the first third of the positive block were subtracted from the first third of the negative block, and vice versa for the second and last third, without dividing by the standard deviation of correct response times. Reliability could then be approximated by the correlations of these scores. As dividing the SC-IAT into thirds still underestimates the reliability of the measure (cf. Karpinski & Steinman, 2006), the Spearman-Brown correction was applied to compensate for this underestimate. As reported by Karpinski and Steinman (2006), these adjusted reliability coefficients are conceptually equivalent and comparable to the Cronbach’s alphas computed for the explicit measures. Spearman-Brown coefficients of the three SC-IAT scores showed that consistencies were different for the three SC-IATs, with an adjusted r = .38 for Roma, adjusted r = .61 for Romanians, and adjusted r = .60 for Chinese.

RESULTS

IMPLICIT MEASURES

Descriptive analysis showed that all groups (except Romanians in the positive condition) were associated with positive rather than negative traits, with most mean values being close to zero (see Table 3). D-scores of Roma and Romanians were positively correlated ($r(59) = .34$, $p = .009$), as were D-scores of Roma and Chinese ($r(59) = .28$, $p = .033$), but not of Chinese and Romanians ($p = .735$).

Table 3

Implicit evaluations of the groups in Study 1

D-score	condition	*n*	*M*	*SD*
D Chinese	negative	28	0.13	0.29
	positive	31	0.07	0.30
	total	59		
D Sinti and Roma	negative	28	0.02	0.24
	positive	31	0.05	0.33
	total	59		
D Romanians	negative	28	0.08	0.30
	positive	31	-0.09	0.27
	total	59		

*Note. V*alues were calculated after exclusion of two outliers.

A MANOVA[5] showed that the condition (positive or negative newspaper article) had no significant effect on the implicit evaluation of Roma and Chinese (both *F*s < 1, *p* = .632 and *p* = .480, respectively), but significantly affected the evaluation of Romanians (*F*(1, 57) = 4.78, *p* = .033, partial eta squared (η_p^2) = .077), after two participants who were outliers in the IAT were excluded from the analysis. Participants who read the positive newspaper article evaluated Romanians less positively than those who had read the negative article. When MCPR was included into the analysis as a covariate, no significant effects were shown, but the effect of condition on the implicit evaluation of Romanians became a little larger (*F*(1, 56) = 5.23, *p* = .026, η_p^2 = .085). With inclusion of the two outliers (one participant who evaluated all groups very positively, one participant who evaluated Roma very negatively), results were for nonsignificant for all groups, but trends stayed the same (for Romanians: *F*(1, 61) = 2.62, *p* = .111, η_p^2 = .043, for Roma and Chinese both *F*s < 1, *p*s > .639).

Moderation analysis using the PROCESS macro by Andrew F. Hayes (version v2.16.3; Hayes, 2013) showed that the total model did not reach significance (*F*(3, 55) = 2.39, *p* = .079, R^2 = .12), but explained at least 12% of variance. No significant interaction between condition and MCPR was found.

[5] Homogeneity of covariances was not given, as assessed by Box's test (*p* < .001). However, since group sizes were equal, MANOVA was assumed to be robust against this violation (cf. Field, 2009).

EXPLICIT MEASURES

On average, Roma were evaluated less negatively than Chinese or Romanians. Correlational analysis showed that explicit evaluations of Roma and Romanians were significantly associated ($r(61) = .59$, $p < .001$), as were evaluations of Romanians and Chinese ($r(61) = .44$, $p < .001$), but not of Chinese and Roma ($r(61) = .08$, $p = .520$). Mean values for the three groups divided by condition are shown in Table 4.

Table 4

Explicit evaluations of the groups in Study 1

Group	condition	*n*	*M*	*Median*	*SD*
Sinti and Roma	negative	28	-.26	-.14	.78
	positive	33	.22	-.05	.84
	total	61	.00	-.08	.84
Romanians	negative	28	-.14	-.27	.75
	positive	33	.12	-.19	.89
	total	61	.00	-.19	.84
Chinese	negative	28	-.03	-.29	.77
	positive	33	.03	-.05	.78
	total	61	.00	-.10	.77

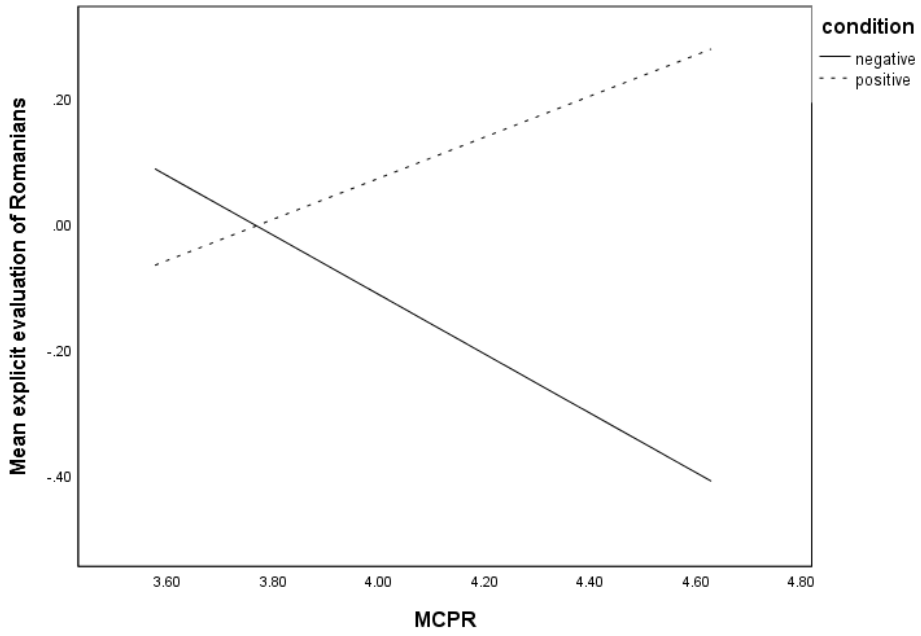
Multivariate analyses showed significant effects of the article manipulation on the explicit evaluation of Roma, but not on the other two groups. Participants rated Roma more positively in the positive, and more negatively in the negative condition ($F(1, 59) = 5.23$, $p = .026$, $\eta_p^2 = .081$). Entering MCPR as a covariate into the analysis showed a significant effect of MCPR only on the evaluation of Roma with high-MCPR participants evaluating Roma more positively ($F(1, 56) = 5.67$, $p = .021$, $\eta_p^2 = .089$). Inclusion of MCPR slightly decreased the effect of condition on the evaluation of Roma ($F(1, 58) = 4.71$, $p = .034$, $\eta_p^2 = .075$). Effects for the two lateral groups went in the same direction but were nonsignificant (Romanians: $F(1, 59) = 1.45$, $p = .234$, $\eta_p^2 = .024$; Chinese: $F(1, 59) = .08$, $p = .785$, $\eta_p^2 = .001$). After exclusion of five outliers[6], no effect reached significance, though effect directions stayed the same (all Fs < 1.05, ps > .311).

[6] Two participants from the negative and three participants from the positive condition were excluded. The two participants from the negative condition evaluated Sinti and Roma -1 *SD* from the mean value, and the three participants from the positive condition evaluated Sinti and Roma and Romanians (1 participant) +1 *SD* from the mean value.

Moderation analysis for MCPR using the PROCESS macro by Hayes (2013) revealed a small increase in R^2 due to the interaction between MCPR and condition regarding the explicit evaluation of Romanians ($F(1, 57) = 3.80$, $p = .056$, 95% CI [-.021, 1.61]). MCPR only moderated the effect of condition on the explicit evaluation of Romanians for high-MCPR participants, such that participants with MCPR values at least one *SD* above the mean evaluated Romanians positively in the positive condition, and negatively in the negative condition (MCPR: 4.63, effect: .69, $t = 2.25$, $p = .028$, 95% CI [.08, 1.30], see Figure 3). Participants low in MCPR did not generalize from the Roma article to the evaluation of Romanians ($p = .610$). This moderation effect was not significant after five outliers were excluded, although trends stayed the same (effect of high MCPR on evaluation: MCPR: 4.64, effect: .40, $t = 1.46$, $p = .151$, 95% CI [-.15, .95). No moderation effect from MCPR was found regarding the evaluation of Chinese or Roma, though for the latter the trend was the same as for Romanians (after outlier exclusion: $F(1, 52) = 3.04$, $p = .086$, 95% CI [-.09, 1.26]; before outlier exclusion: interaction between MCPR and condition was ns with $p = .56$). Participants with high MCPR levels showed a stronger effect of the manipulation (evaluation according to the article valence, MCPR: 4.64, effect: .49, $t = 1.97$, $p = .054$, 95% CI [-.01, .98) than participants low in MCPR (who always evaluated the group more negatively).

Figure 3

Moderation effect of MCPR on the explicit evaluation of Romanians.



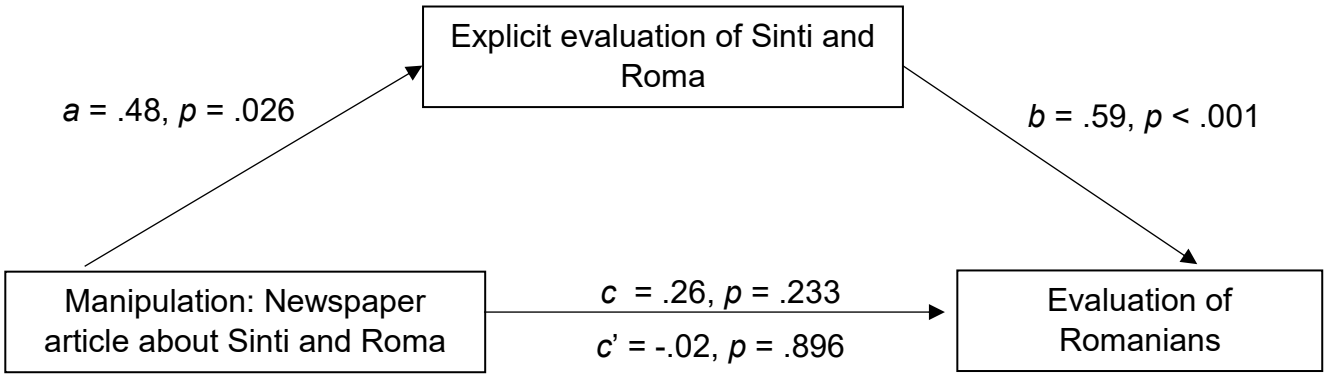
INDIRECT EFFECTS

For each indirect effects model (of this and the following studies), condition was the independent variable, attitude toward the focal group was the mediator, and attitude toward the lateral/secondary group(s) was the dependent variable. Separate analyses were performed for each of the secondary groups (Romanians and Chinese).

For reasons of easier interpretation, and because standardized regression coefficients are not meaningful in case of dichotomous X, because they are influenced by the distribution of cases between the two groups and differences in group means, reported coefficients are always the unstandardized coefficients (cf. Hayes, 2018). CIs for indirect effects were based on 10,000 bootstrap samples in all studies.

Figure 4

Indirect and direct effects on the explicit evaluation of Romanians



As shown in Figure 4 and Table 5, a positive (vs. negative) newspaper article about Sinti and Roma affected the subsequent explicit evaluation of this group (*a* = .48), which then influenced attitudes about Romanians (*b* = .59). The bootstrapped confidence interval for the indirect effect was entirely above zero (coefficient = .28, *SE* = .14, bootstrapped 95% CI [.04, .56]). There was no evidence that the newspaper article about Sinti and Roma affected the evaluation of Romanians directly. Neither the direct nor the total effect of the manipulation was significant (*p*s for c and c' both >.10).

In summary, the indirect effect was significant in this model, whereas the direct relationship was not. Given that the total effect was also not significant, these results are consistent with the hypothesis of an indirect effect.

Table 5

Model coefficients for the explicit evaluation of Romanians

		Consequent						
		M (Evaluation Roma)				Y (Evaluation Romanians)		
Antecedent		*Coeff.*	*SE*	*p*		*Coeff.*	*SE*	*p*
X (Manipulation)	*a*	.48	.21	.026	*c'*	-.02	.18	.906
M (Evaluation Roma)		-	-	-	*b*	.59	.11	< .001
Constant		-.26	.15	.098		.01	.13	.922
		R^2 = .08 $F(1, 59) = 5.23$, $p = .026$				R^2 = .35 $F(2, 58) = 15.47$, $p < .001$		

Note. The mediator (M) explains the relationship between an independent, antecedent, variable (X) and a dependent, consequent, variable (Y); *a*, *b, c* and *c'* refer to the unstandardized regression coefficients for the respective paths in the mediation model; coeff. = coefficient.

To check how the implicit evaluation of Romanians was affected by the manipulation and changes in the evaluation of Roma, another analysis was run. No indirect effects were found through the implicit evaluation of Roma (as this was not affected by the manipulation itself), but an indirect effect via the explicit evaluation of Roma was found and is depicted in Figure 5 and Table 6. The significant direct effect mirrors the contrast effect of the manipulation, which was already discussed above. Romanians were evaluated less positively in the positive condition than in the negative condition and vice versa. Nevertheless, the indirect path showed that a positive newspaper article resulted in more positive explicit evaluations of Roma, which in turn lead to more positive implicit evaluations of Romanians. As the indirect and the direct effects were in opposite directions, this indicated a suppression effect (cf. MacKinnon et al., 2000). However, as the confidence interval for the indirect effect contained zero (effect: .05, *SE* = .03, bootstrapped 95% CI [-.00, .13]), this effect has to be interpreted with caution and is possibly not different from zero.

Figure 5

Indirect and direct effects on the implicit evaluation of Romanians

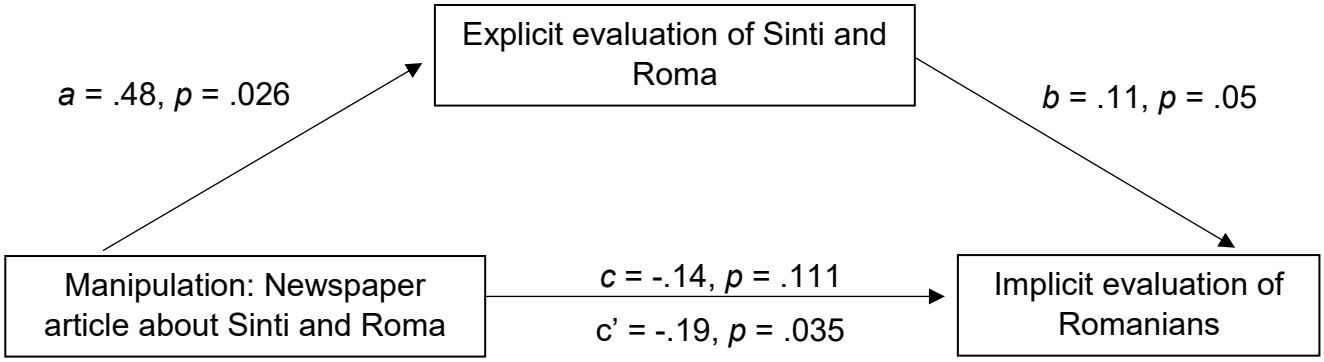


Table 6

Model coefficients for the implicit evaluation of Romanians

		Consequent						
		M (Roma explicit)				*Y* (Romanians implicit)		
Antecedent		*Coeff.*	*SE*	*p*		*Coeff.*	*SE*	*p*
X (Manipulation)	*a*	.48	.21	.026	*c'*	-.19	.09	.035
M (Roma explicit)		-	-	-	*b*	.11	.05	.050
Constant		-.26	.15	.098		.10	.06	.116
		R^2 = .08 $F(1, 59) = 5.23$, p = .026				R^2 = .10 $F(2, 58) = 3.38$, p = .041		

Note. X = independent (antecedent) variable; Y = dependent (consequent) variable; M = mediator; *a*, *b* and *c'* = unstandardized regression coefficients.

No direct or indirect effects of the manipulation on the explicit and implicit evaluation of Chinese were found (all *p*s >.10).

Moderated mediation

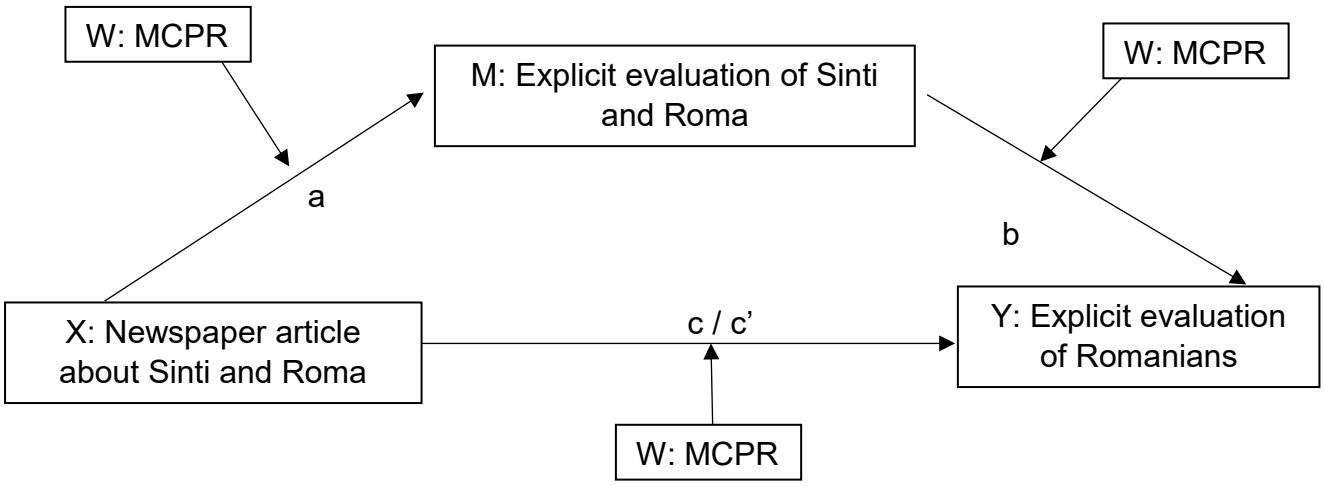
As it is possible that MCPR not only influences the group evaluations directly, but also affected the indirect effects, a moderated mediation analysis, also known as a "conditional process analysis" (cf. Hayes, 2018) was run. Moderated mediation occurs when "the proposed moderator variable has a nonzero weight in the function

linking the indirect effect of X on Y through M to the moderator" (Hayes, 2015, p. 3). In these models, the moderator is usually abbreviated as *W*. MCPR was expected to influence the a- and the c-path, but it would also be possible for it to influence attitude generalization from Roma to Romanians, that is, the b-path.

A first conditional process model was developed to address this question. The model included MCPR as a moderator of the relationship between condition and explicit evaluation of Roma (the a-path), attitudes toward Roma and toward Romanians (the b-path), and the relationship between the condition and attitudes toward Romanians (the c-path). Again, the PROCESS macro was used (Hayes, 2018), with model number 59 specified. The resulting model in displayed in Figure 6.

Figure 6

Conditional indirect and direct effects on the explicit evaluation of Romanians



Results are presented in Table 7 and indicated that only the b-path was moderated, as shown by a significant interaction between attitudes toward Roma and MCPR in predicting attitudes toward Romanians ($t(1,55) = 3.91$, $p < .001$, 95% CI [.32, 1.00].

Table 7

Model coefficients for the conditional process model in Figure 6

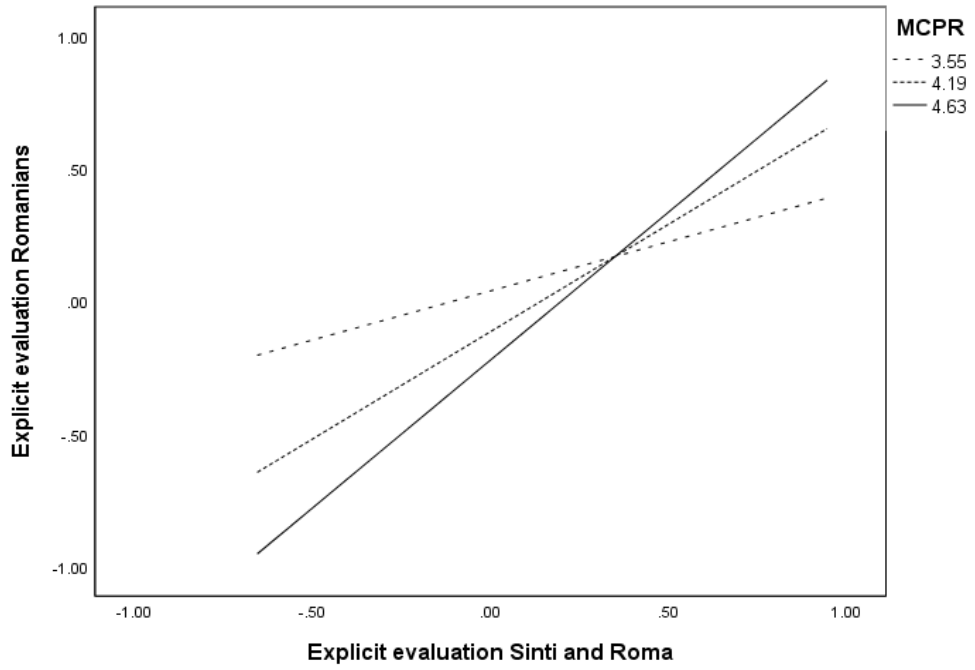
		Consequent						
		M (Roma explicit)				Y (Romanians explicit)		
Antecedent		*Coeff.*	*SE*	*p*		*Coeff.*	*SE*	*p*
X (Manipulation)	*a*	-.51	1.62	.755	*c'*	-.82	1.30	.535
M (Roma explicit)		-	-	-	*b*	-1.96	.67	.005
W (MCPR)		-	-	-		-.34	.24	.163
M x W		-	-	-		.66	.17	< .001
Constant		-1.58	1.22	.201		1.37	.99	.171
		R^2 = .17 $F(3, 57) = 3.84$, $p = .014$				R^2 = .55 $F(5, 55) = 13.33$, $p < .001$		

Note. X = independent (antecedent) variable; Y = dependent (consequent) variable; M = mediator; W = moderator variable; *a*, *b* and *c'* = unstandardized regression coefficients.

As can be seen in Figure 7, participants higher in MCPR generalized attitudes from Roma to Romanians. Examining the conditional indirect effect at MCPR values of the 16th, 50th and 84th percentiles revealed that it was only unequal to zero at 50th percentile and higher MCPR values.

Figure 7

Prediction of attitudes toward Romanians by attitudes toward Roma at the values of the moderator MCPR



According to Hayes (2018), the finding that not all expected paths were significantly moderated can lead to either modifying the model, or to forging ahead if the individual components of the model are not the focus of interest. In this case, modifying the model and constraining the a- and c-path to be rather unconditional was preferable because leaving the interactions in the model necessarily influences the other estimates (in this case, for example, the a-path was longer significant). Using model 14 in PROCESS (instead of model 59) showed that a newspaper article about Roma influenced the evaluation of Roma, which then influenced the evaluation of Romanians, and this last relationship was moderated by MCPR (see Figure 8, Table 8). Especially people high in MCPR generalized their evaluation of Roma to Romanians (cf. Figure 7).

Figure 8

Conditional indirect and direct effects on the explicit evaluation of Romanians

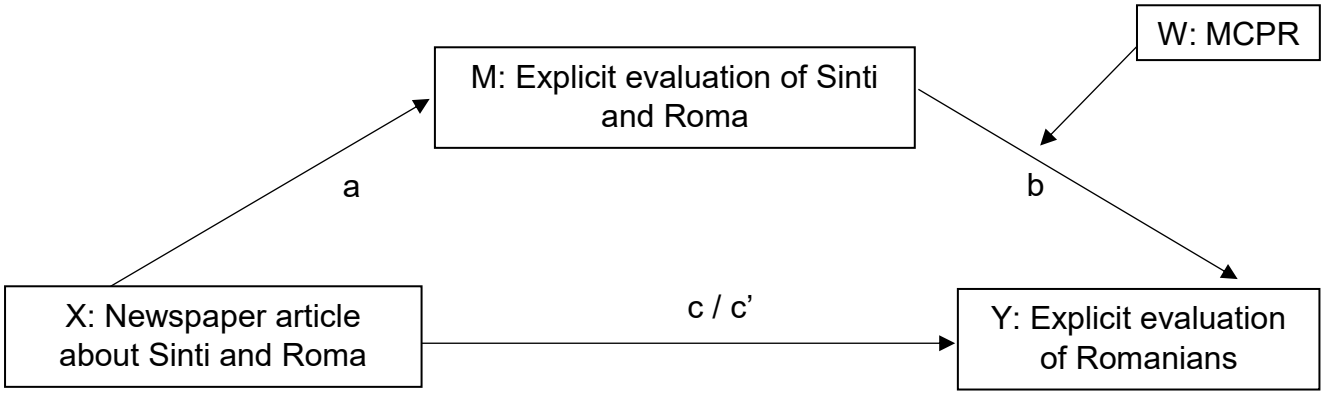


Table 8

Model coefficients for the conditional process model in Figure 8

		Consequent						
		M (Roma explicit)				Y (Romanians explicit)		
Antecedent		*Coeff.*	*SE*	*p*		*Coeff.*	*SE*	*p*
X (Manipulation)	*a*	.48	.21	.026	*c'*	-.13	.16	.399
M (Roma explicit)		-	-	-	*b*	-2.09	.62	.001
W (MCPR)		-	-	-		-.24	.15	.114
M x W		-	-	-		.69	.15	< .001
Constant		-.26	.15	.098		.97	.63	.129
		R^2 = .08				R^2 = .55		
		$F(1, 59) = 5.23$, $p = .026$				$F(4, 56) = 16.81$, $p < .001$		

Note. X = independent (antecedent) variable; Y = dependent (consequent) variable; M = mediator; W = moderator variable; *a*, *b* and *c'* = unstandardized regression coefficients.

The index of moderated mediation, as proposed by Hayes (2015), presents a measure to probe conditional indirect effects, analogous to probing ordinary moderation analysis by analyzing simple slopes. In doing so, the index focuses not only on the individual pieces of a model, the respective interaction(s), but on the model as a whole, by examining whether the weight for the moderator in the function defining the size of the indirect effect is different from zero. As a result, it examines

whether two (random) indirect effects conditioned on different values of the moderator are statistically different from each other. The index for the model above is .33 (*SE* = .24), but the bootstrapped confidence intervals includes zero (-.01, .84). Given that the confidence interval includes zero, it cannot be claimed that the indirect effect is moderated (for a more in-depth discussion of why this is the case see Hayes, 2015, 2018). The idea that a moderation effect cannot be claimed is in conflict with the significant interaction (moderation of the b-path) presented earlier. Some researchers have presented other ways to probe moderation of mediation (e.g. Preacher, Rucker, & Hayes, 2007). However, according to Hayes (2015), the index of moderated mediation should be given more weight in the judgement when such a conflict arises.

ASSOCIATIONS OF IMPLICIT AND EXPLICIT MEASURES

Implicit and explicit measures correlated positively for all three groups[7] (Roma: $r(54) = .37$, $p = .006$; Romanians: $r(54) = .43$, $p = .001$; Chinese: $r(54) = .15$, $p = .279$). To test whether these associations were moderated by MCPR, the PROCESS macro was used for moderation analysis (Hayes, 2013). Explicit evaluations were entered as the outcome variable, implicit evaluations as independent variable and MCPR as the moderator. Analysis revealed no significant interaction effects, and therefore no moderation for any of the three groups.

OTHER MEASURES AND POST HOC ANALYSES

Asked for their own assumptions about the background of the study, one participant stated that the study was about prejudices against Roma and about how they are associated with Bulgarians (sic; subject 44). Another participant noted that the survey was about the overlap of prejudice regarding Roma and Romanians (subject 7). Several participants noted that the study might be about how the media influences prejudices. Excluding participants 44 and 7 did not change the results substantially.

[7] After exclusion of seven outliers.

DISCUSSION

The manipulation affected the explicit evaluation of Roma, who were evaluated more positively by participants who read the positive newspaper article and more negatively by participants who read the negative article. Indirectly, this effect also generalized to the explicit and implicit evaluation of Romanians such that that the manipulation affected the evaluation of Romanians through the changed evaluation of the focal group. This pattern constitutes a secondary transfer effect. The evaluation of the dissimilar group, Chinese, was neither directly nor indirectly affected by the manipulation.

Indirect effect analyses showed that a more positive explicit evaluation of Roma not only affected the explicit evaluation of Romanians, but also their implicit evaluation, but implicit evaluations of Roma were not affected by the manipulation. It is possible that though the newspaper articles were not able to change implicit evaluations of Roma, it prompted participants to evaluate them more positively and this more positive evaluation in turn activated more positive concepts of Romanians, which were then implicitly evaluated more positively as well.

The indirect effect on Romanians' explicit evaluation through the change in explicit evaluation of Roma could be explained through cognitive dissonance: If this one group isn't so bad, maybe that other, similar group isn't so bad, either. The explicit evaluation of Roma generalized to the explicit and implicit evaluation of Romanians.

Roma might be perceived as a highly entitative group (although they are objectively very diverse). As Hamilton et al. (2009) noted, people seem to overestimate the influence of group characteristics on individual group member behavior if the group is highly entitative, and people tend to disregard the impact of situational forces. That means that negative news about a male Roma or "a criminal Roma family" will also have an impact on the evaluation of Roma in general. In an attempt to be politically correct, German newspapers often try not to mention the cultural background of the person or group of interest. Alternatively, they speak of "clans from Eastern Europe" or "Romanian extended families", although it will be clear for most readers that Roma families are meant[8]. The news therefore not only impacts the evaluation of Roma, but also of the so-called Eastern Europeans, or Romanians in general. In terms of an

[8] E.g. "Rumänische Großfamilien prügeln sich nahe dem Polizeipräsidium", 2018; "Sozialbetrug", 2019.

illusory correlation (cf. Fiedler, 2000), these groups are then easily associated with properties that seem to be particularly characteristic of them, though no such relationship objectively exists.

That the implicit evaluation of Romanians changed in contrast to the manipulation of Roma (negative direct effect) appears paradoxical at the first glance, but fits when considered in context of the LAC model (Glaser et al., 2015) regarding displacement effects. For this kind of LAC Glaser et al. (2015) assumed not a linear, but rather a bell-shaped relationship between attitude change and perceived group similarity. Although the authors assume that explicit attitudes toward the focal object might not change, opposite implicit evaluations could be activated automatically for a short time (Glaser et al., 2015). In the case of the ostensibly high association of Roma and Romanians, opposite implicit evaluations of the focal group might have been activated by the manipulation and generalized automatically to the similar group, though the evaluation of the focal attitude object was relatively resistant to change (at least implicitly). In contrast, the very low similarity between Roma and Chinese resulted in neither a generalization nor a displacement effect. Explicit and implicit evaluations of Chinese were not affected at all by the Roma manipulation.

Explicitly, the manipulation had a significant effect on the evaluation of Roma, which can be interpreted as a manipulation check. That people high in MCPR evaluated Roma more positively than participants low in MCPR did fits the assumptions underlying this moderator. People who try to control their prejudiced reactions evaluated Roma (a highly stigmatized minority group) more positively, but MCPR had no effect on the evaluation of Chinese or Romanians (who do not seem to have the status as a stigmatized group).

Moderation analysis showed that only participants high in MCPR showed a different evaluation of Romanians based the version of the article they read. Those participants who had read the negative article about Roma evaluated Romanians more negatively than those participants who had read the positive article. Participants low in MCPR did not show these effects. One plausible explanation is that high-MCPR participants controlled their evaluations of Roma for the expected effect of the article manipulation, but failed to do so for the similar group. The negative article also alluded to the fact that other asylum seekers might have better chances to be offered sanctuary in Germany than Roma and that the depicted project Amaro Kher should

take better care of their resources. Though this claim plays minority groups against each other and does not really make sense (a school for Roma cannot focus on other minority groups, as it is specialized), it is possible that people high in MCPR were especially susceptible to such claims of responsibility. Maybe refugees present a group that should be evaluated particularly positively in the perspective of a person high in MCPR, and Roma thus "subducted" resources illegitimately. Finally, it would also be possible that people high in MCPR are simply more open to new information and are motivated to adapt their evaluations according to new information, to be "fair". In contrast, people low in MCPR might have more stable and robust attitudes toward other groups, thus making their attitudes harder to change.

After exclusion of six outliers, the effects of the condition on the explicit evaluations of the three groups was no longer apparent, which can be interpreted in two ways: the decrease in sample size caused by the exclusion may have weakened the power, or the found effects were driven by these outliers. However, the direction of the effects did not change, suggesting option one is more likely: the sample was simply too small.

A post-hoc power analysis for an analysis of fixed effects, main effects and interaction (ANCOVA) using the program G*Power (Faul et al., 2007) revealed that assuming a small effect size (d = .20) and a total N of 61, test power was at .336 level, which is very low given that a power level of .80 is accepted as reasonable in psychology (cf. Cohen, 1988; Field, 2011). A total sample size 199 would have been needed to find the expected effects. The very low observed power in the study might explain the small and non-significant effects. Future studies should take the expectedly small effect sizes in generalization studies into account and use larger samples and/or simpler study designs.

It must also be noted that the number of practice trials in the SC-IATs was very low. Karpinski and Steinman (2006) suggested to use a minimum of 24 practice trials, but the current study used only four practice trials for each test block. This may have contributed to the lower reliability.

In summary, the current study showed that a manipulated newspaper article not only affected the depicted focal group, but also a lateral group. A secondary transfer effect of the evaluation of the focal group on the similar group was found. A newspaper article about Roma also indirectly affected the evaluation of Romanians through a

change in the evaluation of Roma. Implicit measures further showed an interesting contrast effect: Romanians were evaluated less positively in the positive than in the negative article condition. Several analyses also pointed to the influence of MCPR, though the effects were rather small and must be interpreted with caution. These effects should be replicated with a larger sample and in a study with higher power to achieve a clearer picture about which effects are robust and which are artefacts.

STUDY 2: MEDIA EFFECTS ON LATERAL ATTITUDE CHANGE REVISITED

The second study was designed to replicate Study 1 and to shed more light on the implicit contrast effect found in Study 1. Romanians were evaluated less positively by participants who had read the positive article about Sinti and Roma than by participants who had read the negative article. Although implicit attitudes toward the focal object did not change in Study 1, opposite implicit evaluations regarding the similar group were found. This was contrary to the hypotheses, but consistent with the model set forth by Glaser et al. (2015), who noted that opposite implicit evaluations could be activated automatically by persuasive information, at least for a short time. This consideration might also apply to the similar secondary group. Study 1 also found that Roma were evaluated more positively by participants who read a positive article than a negative article and that this effect generalized to Romanians. The evaluation of Romanians changed because of the changed evaluation of Roma – as indicated by a significant indirect effect. Participants high in MCPR also showed a direct effect of the manipulation and explicitly evaluated Romanians according to the valence of the article about Roma.

The current study was designed to test whether the findings from Study 1 replicated within a larger sample and with an adequate level of test power. As an extension to Study 1, the present study included a similarity rating of the focal and lateral groups at the end of the study and a second moderator in addition to MCPR, empathy.

Empathy has been found to be a possible mediator of the effect of intergroup contact on outgroup attitudes (e.g. Lolliot et al., 2013; see above). Studies by Batson et al. (1997, 2002) have shown that increased empathy with a single person can lead not only to higher caring for that particular person, but also to more positive attitudes

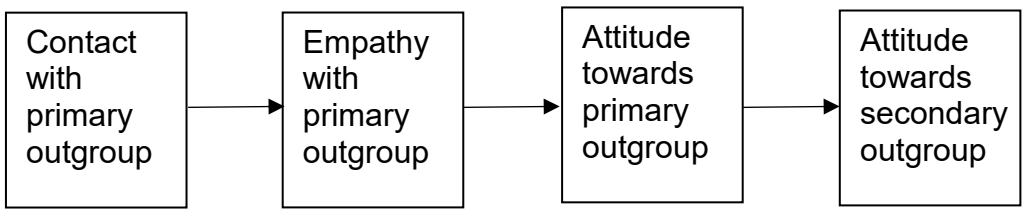
toward the person's group. Tarrant and Hadert (2010) extended these findings and investigated how empathizing with a single member of a stigmatized group would also generalize to the evaluation of other, lateral groups. They showed that for groups who belong to the same superordinate category (such as burglars and murderers, in the superordinate category of social deviants), a generalization effect occurred. If participants felt empathy with the target person, they not only evaluated the person's group more favorably, but also a second, similar group.

In contrast, Vescio et al. (2003) found that participants who were asked to take the perspective of an African American who reported experiences of racism evaluated the targets' group more favorably afterwards, but these effects did not generalize to the evaluation of women or homosexuals. Tarrant and Hadert (2010) discussed these different findings, stating that although all three groups could be categorized as disadvantaged groups, this collective category did not seem to be salient enough for the participants, but the superordinate category "social deviant" for burglars and murderers seemed more obvious. Mediational analysis by Tarrant and Hadert (2010) confirmed their hypotheses that feeling empathy with a target group affected the evaluation of a secondary group through a changed evaluation of the target group.

As attitudes toward a primary outgroup can generalize to other outgroups, Lolliot et al. (2013) note that empathy may influence attitudes toward secondary outgroups through attitudes toward the primary group, with empathy itself mediating the relationship with group contact. This possible pattern is depicted in Figure 9.

Figure 9

Mediating role of empathy in secondary transfer effects



Note. The double-mediated model illustrates how intergroup contact with a primary outgroup can improve attitudes toward secondary outgroups through outgroup empathy and attitude (Figure adapted from Lolliot et al., 2013, p. 94).

Evidence for the proposed association was presented by Vezzali and Giovannini (2012). They showed that contact with a primary outgroup (immigrants) led to more favorable attitudes toward this group, and this relationship was mediated by an increase in perspective taking (a cognitive form of empathy, cf. Lolliot et al., 2013). In addition, they were able to show that intergroup contact led to a feeling of less social distance from immigrants, mediated by an increased level of perspective taking with immigrants. The reduced social distance from immigrants was then again associated with reduced social distance from other outgroups (disabled and homosexual people). In addition, they tested another double-mediation model and found that intergroup contact with a primary group also increased perspective taking with secondary groups (mediated by heightened perspective taking with the primary group), and this in turn led to reduced social distance from the secondary groups as well. Citing the relatively complex nature of the models and lacking evidence from longitudinal studies and experimental studies, Lolliot et al. (2013) noted that further research is needed to determine the merits of the (double) mediation models and the influence of empathy on the secondary transfer effect.

Previous studies (e.g. Batson et al., 1997; Tarrant & Hadert, 2010; Vescio et al., 2003) induced empathy by asking participants either to take the perspective of a single individual (try to imagine how the target was feeling) or to take an objective perspective. The current study did not actively manipulate empathy, but asked participants to indicate how much empathy they felt when reading a fictive newspaper article about Sinti and Roma. The design facilitated investigation of whether a newspaper article would evoke different reactions in people who empathize with the depicted group versus those who do not. If it could be shown that generalization effects only (or more strongly) occur if participants feel empathy with the target group, then newspaper articles that focus on eliciting empathy might increase caring for the focal group, which should then lead to more positive attitudes toward the group, but these articles might also have positive effects on the evaluation of other groups (cf. the three-step model; Batson et al., 2002).

Based on previous research, it was expected that a newspaper article ending with a negative tone regarding a social group (Sinti and Roma) would influence not only the subsequent evaluation of that group, but also of a similar group (Romanians). Although the positive newspaper article was expected to have rather small positive or

no effects on the evaluation of the groups, the negative article (negative condition) was expected to lead to generalization and contrast effects.

1. For a group with high perceived similarity (Romanians), an explicit contrast effect was expected in the negative condition, as participants should recognize a persuasion attempt through the manipulation and correct their evaluation accordingly. After reading a negative newspaper article about Sinti and Roma, Romanians should be evaluated more positively than after a positive newspaper article. However, implicitly, the negative evaluation of Roma should generalize to Romanians.
2. A dissimilar group (Chinese) was not expected to be affected by the newspaper article about Sinti and Roma, as this group should not have any connection to Sinti and Roma.
3. Empathy was expected to moderate the evaluations such that participants with high levels of empathy for the focal group would show stronger generalization effects than participants low in empathy (especially in the positive condition).
4. MCPR was expected to moderate the evaluations such that participates low in MCPR would show stronger generalization effects than participants high in MCPR.

PRETEST

A pretest was run to check whether the lateral groups in Study 2 would be perceived as similar and dissimilar by a convenience sample from the internet (compared to the group from Study 1, which was primarily university students).

METHOD

SAMPLE

In total, 163 participants took part in the survey. Mean age was 40.02 years (*SD* = 14.87, Range = 16-70 years), 79.8% indicated to be female, 20.2% male.

MEASURES

Participants were asked to rate the similarity of 10 groups in comparison to Sinti and Roma on a 9-point Likert scale ranging from “very dissimilar” to “very similar”. They

also had the option to click “group unknown”. The following groups were used: Albanians, Bulgarians, Chinese, Greeks, Jews, Pakistanis, Romanians, black people, Turks, and Hungarians. Participants were also asked to indicate their gender and age.

PROCEDURE

The study was advertised as a pretest in Facebook groups and several forums between April the 5th and May 16th, 2018. The first page informed participants that the study was a pretest for a study on perceived similarity of social groups, that all information would be anonymous and that there were neither right nor wrong answers. Participants for this pretest were recruited by a psychology student who gathered data within the frame of her Bachelor’s thesis.

RESULTS AND DISCUSSION

Romanians were rated most similar to Sinti and Roma (M = 5.95, SD = 1.99), followed by Bulgarians (M = 5.30, SD = 1.79), and Albanians (M = 5.14, SD = 1.88). In contrast, Chinese were evaluated to be the most dissimilar group (M = 1.58, SD = 1.11), followed by black people (M = 1.91, SD = 1.28) and Jews (M = 2.12, SD = 1.56). These findings were consistent with the results of the first study. Consequently, Romanians were chosen as the similar lateral group and Chinese as the dissimilar lateral group.

MAIN STUDY

METHOD

The study was preregistered via Open Science Framework (OSF). The preregistration document can be found at https://osf.io/sp42q/

SAMPLE

The software program G*Power was used to conduct a power analysis. Aiming to achieve a .80 power, a priori power analysis for MANOVA with special effects and interactions and for MANOVA with repeated measures and within-between interactions at an Bonferroni-corrected alpha level of .008 revealed that a sample between 240 and 309 would be needed, expecting effects between small and

medium size (f^2 = .085 and f = .2, respectively). To reach this sample size, the goal was set to recruit 320 participants, assuming that some participants would later be excluded from the analysis due to extreme values, high error rates SC-IAT or the like.

A total of 2,357 people clicked on the link to the study and 332 participants finished the whole study. One case was deleted as it constituted a test run. From the resulting sample of N = 331, 49.8% indicated being female, 48.9% male, and 1.2% another gender. Mean age was 32.43 years (SD = 13.27, Range: 16-67). A total of 39 participants indicated having a migration background. As having a migration background (a history of migration in the family) did not correlate with any analyzed variable, it will not further be reported separately. Regarding their political orientation, mean value was 2.56, which is in the middle of a five-point scale (SD = .86, Range: 1-5, Median: 3). Of the final sample, 150 participants had been recruited via Prolific[9], and about 10 participants were psychology students from the University of Bonn (estimate based on number of students that asked for course credit in return for participation).

MEASURES

As dependent variables, explicit and implicit evaluations of the three groups were assessed. Explicit evaluations of Roma, Romanians and Chinese were measured with five semantic differentials (7-point scales): *honest - dishonest, good - bad, competent - incompetent, likable - not likable, pleasant - unpleasant* and a feeling thermometer to assess "cold" or "warm feelings" toward the groups. As the feeling thermometer ratings were positively correlated with the semantic differentials (for Roma $r(331)$ = .68, for Romanians $r(331)$ = .61, and for Chinese $r(331)$ = .42), these measures were collapsed. Cronbach's alpha for the explicit evaluation of Roma was then α = .95, for the explicit evaluation of Romanians α = .94, and for Chinese α = .88. For implicit evaluations, three SC-IATs were used with verbal stimuli and pictures for the three groups (e.g. "Romanian" or picture of the country's flag). Reliabilities for the SC-IATs were α = .60 for Roma, α = .60 for Romanians and α = .51 for Chinese.

[9] For exploratory reasons, a MANOVA was run to analyze whether participants recruited via Prolific differed from the other participants regarding demographic, dependent and moderator analysis. The only two significant results showed that more Prolific participants were male rather than female or another gender ($F(1,232)$ =18.03, p < .001, η^2 = .072) and politically left-wing rather than right-wing ($F(1,232)$ =6.21, p = .013, η^2 = .026). Samples were therefore collapsed.

These values are slightly below the reliabilities Karpinski and Steinman (2006) reported.

As a potential moderator, MCPR was assessed with the German MCPR scale by Banse and Gawronski (2003). Cronbach's alpha was α = .86. Empathy was assessed using five questions asking participants how much they felt the following emotions when reading the newspaper article: compassion, empathy, understanding, moved, sympathy (cf. Batson et al., 1997; Tarrant & Hadert, 2010). Reliability of the scale was α = .85.

To make the cover story (perception of media coverage) more believable, participants were asked to rate the newspaper article on several semantic differentials (7-point Likert scale: *very uninteresting - very interesting, very incomprehensible - very comprehensible, very one-sided - very well-balanced, very boring - very exciting, very subjective - very objective, very incomplete - very complete, not informative at all - very informative, not convincing at all - very convincing*)[10]. Cronbach's alpha for the newspaper article evaluation was .84.

Demographic variables (age, gender, political orientation, migration history, own group membership, Prolific ID) were assessed for exploratory reasons. Time spent on the different pages of the questionnaire was recorded as well. Participants did not have the option to click "forward" before the article was presented for at least one minute. The total time spent on the page was recorded with the plan to analyze it as a moderator variable in the analysis, but as it did not correlate with any dependent or moderator variable, further analyses were not conducted. Two items were used to assess perceived similarity between Roma and Romanians and between Roma and Chinese (1 = "very dissimilar", 5 = "very similar"). Participants also had the option to answer "group unknown" or "identical groups". One item was used as a manipulation check, asking participants how they thought Roma were depicted in the newspaper article (1 = "very negatively", 7 = "very positively"). Finally, participants were asked about the background or purpose of the study and had the opportunity to make comments (both items in open-answer format).

[10] These cover story items were not included in the preregistration.

PROCEDURE

Participants were recruited online and were either paid for participation (if recruited via Prolific Academic), given compensation in terms of points for their own research (if recruited via Pollpool or Surveycircle), or did not receive any incentives. Psychology students from the University of Bonn received course credit for participation. To attract a sample as heterogeneous as possible, the link to the experiment was advertised in different Facebook groups, on websites (e.g. google+) and in several forums with the help of a psychology student who gathered data for her Bachelor's thesis.

Participants were randomly assigned to one of two conditions. They were asked to read a newspaper article about a "randomly chosen group" within the frame of a study on the "presentation of social groups in the media". Newspaper articles only differed at the end, producing either a positive or a negative tone about Sinti and Roma (see Appendix A for the two articles). Afterwards, participants were asked to evaluate the newspaper article (cover story items) and then the three groups (dependent variables). Presentation of the explicit evaluation items and order of subsequent SC-IATs was randomized and followed by assessment of MCPR and empathy. Finally, participants were asked to rate the groups' similarity, to give demographic information, and to write down comments or hypotheses about the study. The last page thanked participants for their participation and informed them about the true purpose of the study, and also informed them that both newspaper articles had been fictional.

RESULTS

For a first overview over the data, correlational analyses (which were not preregistered) were conducted. Condition (1 = positive or 2 = negative newspaper article) was significantly correlated with only the control item assessing how Sinti and Roma were depicted in the article ($r(331) = .22$, $p < .001$). Participants in the negative condition were more likely to indicate that Sinti and Roma were presented negatively rather than positively. A small, nonsignificant correlation was also found for condition and the explicit evaluation of Roma ($r(331) = .10$, $p = .064$). Participants in the negative condition tended to evaluate Roma more negatively.

Participants who felt higher levels of empathy when reading the newspaper article evaluated Roma (explicit: $r(331) = .50$, $p < .001$, implicit: $r(331) = .15$, $p = .015$) and Romanians (explicit: $r(331) = .35$, $p < .001$, implicit: $r(331) = .18$, $p = .002$) significantly more positively, but not Chinese ($r(331) = .10$, $p = .060$, implicit: $r(331) = .04$, $p = .462$), though the trend for the explicit evaluation went in the same direction. Investigating both conditions separately showed that explicit associations were stronger (nearly double) in the negative condition than in the positive condition. Empathy was also highly correlated with MCPR ($r(331) = .52$, $p < .001$), participants' gender ($r(331) = .23$, $p < .001$), how positive the newspaper article was evaluated ($r(331) = .46$, $p < .001$) and the participants' political orientation ($r(331) = -.23$, $p < .001$). Due to the scoring of the scale, the latter finding shows that higher empathy was associated with a more left-wing than right-wing orientation.

Participants with higher levels of MCPR evaluated Roma ($r(331) = .47$, $p < .001$) and also Romanians ($r(331) = .34$, $p < .001$) explicitly more positively. In contrast to the more positive evaluation of Roma people themselves, higher levels of MCPR were associated with a most negative evaluation of how Roma were depicted in the article ($r(331) = -.13$, $p = .023$). MCPR was further associated with gender ($r(331) = .35$, $p < .001$) and political orientation ($r(331) = -.40$, $p < .001$), both of which are consistent with previous findings and theoretical considerations.

The more participants evaluated their political orientation to be right rather than left, the more they explicitly devaluated Roma ($r(331) = -.32$, $p < .001$), and Romanians ($r(331) = -.25$, $p < .001$), and the less empathy they felt when reading the article ($r(331) = -.23$, $p < .001$).

DIRECT EFFECTS OF THE MANIPULATION

To investigate the effects of the newspaper article, a MANOVA[11] with condition (article valence) as the between-subjects factor and the implicit and explicit evaluations of the focal and lateral groups as dependent variables was conducted. Condition had a significant effect on the explicit evaluation of Roma ($F(1, 256) = 5.95$,

[11] According to Levene's test, the assumption of variance homogeneity was violated for the explicit evaluation of Roma. As Levene's test quickly becomes significant with large sample sizes, Hartley's F_{Max} (i.e. the variance ratio) was inspected in addition (cf. Field, 2009). Dividing the largest variance by the smallest (0.91/0.69 = 1.32) did not yield a critical value for Hartley's test ($\alpha = .05$; cf. additional material by Field, 2018). For this reason, MANOVA was conducted as usual.

p = .015, η^2 = .023), but not on the other group evaluations (all ps > .247). For exploratory reasons, empathy and MCPR were entered in a second step as covariates in the MANOVA. Corresponding with the correlational results, MCPR showed an effect on the explicit evaluation of Roma (F(1, 254) = 27.73, p < .001, η^2 = .098) and Romanians (F(1, 254) = 8.66, p = .004, η^2 = .033), and so did empathy (on Roma: F(1, 254) = 24.56, p < .001, η^2 = .088 and on Romanians: F(1, 254) = 4.85, p = .029, η^2 = .019). Inclusion of the two covariates strengthened the effect of condition on the explicit evaluations, but had no impact on the overall results.

In a second step, participants who indicated feeling like a member of one of the three groups (Roma, Romanians or Chinese; n = 12), and participants who indicated a correct hypothesis about the purpose of the study (n = 4), were excluded from the analysis. Those participants who indicated “prejudice” or “influence of media coverage on attitudes” were not excluded. The plan in advance had been to also exclude participants with extreme values, but boxplots showed only some outliers for the dependent variables and the two moderators, but no extreme values, so no participants were excluded based on extreme values. Exclusion of the 16 participants did not change any reported results (some effects became a little bigger or smaller, but only on the second decimal place). Additionally, the effect of empathy on the implicit evaluation of Romanians reached significance (F(1, 242) = 4.64, p = .032, η^2 = .019) and a small trend emerged for the effect of empathy on the implicit evaluation of Roma (F(1, 242) = 2.97, p = .086, η^2 = .012). Both groups were evaluated more positively by participants who reported higher levels of empathy when reading the newspaper article.

To test the effects of group similarity, two MANOVAs for repeated measures[12] were conducted. Valence was included as the between-subjects factor, similarity as a within-subjects factor, and the implicit or explicit evaluations of the focal and lateral groups as dependent variables. Polynomial contrasts were conducted to analyze the trend form (linear or quadratic trend). For the explicit evaluations neither the effect of similarity, nor the interaction between similarity and condition reached significance (all ps > .125). Polynomial contrasts indicated that the evaluations showed a

[12] A significant Box’s test (p < .001) showed that homogeneity of covariance matrices was not given, but as group sizes were equal, MANOVA was assumed to be robust against this violation (cf. Field (2009). In addition, as sphericity was not given, the values were Huynh-Feldt corrected (cf. Girden, 1992).

quadratic trend (F(1, 329) = 4.12, p = .043, η² = .012). Roma were evaluated most positively, followed by Chinese, and Romanians were evaluated least positively.

For the implicit evaluations, the MANOVA[13] showed a significant influence of the within-subjects factor similarity (F(1.963, 502.649) = 7.30, p = .001, η² = .028) and polynomial contrasts showed that this effect had a quadratic form (F(1, 256) = 12.99, p < .001, η² = .048). In this implicit evaluation, the dissimilar group, Chinese, were evaluated most positively, followed by Roma and then Romanians.

In a second step, participants who indicated identifying as a member of one of the three groups or indicated a correct hypothesis about the purpose of the study were again excluded from the analysis (n = 16). Exclusion of these participants led to a change in the distribution of the explicit evaluations. Though not significant, the trend form in the polynomial contrasts was now rather quadratic (F(1, 313) = 3.62, p = .058, η² = .011). Romanians were explicitly evaluated most positively, followed by Chinese and then Roma. For the implicit evaluations, distribution of the groups also changed. After exclusion of the 16 participants, the effect of similarity was still significant (F(1.970, 480.728) = 6.41, p = .002, η² = .026), but descriptive statistics and a significant polynomial contrast for quadratic trend form (F(1, 244) = 10.87, p = .001, η² = .043) showed that now Chinese were implicitly evaluated most positively (M = .15, SD = .40), followed by Roma (M = .09, SD = .42) and then Romanians (M = .03, SD = .41).

For exploratory reasons (not pre-registered), participants who had indicated that the groups Roma and Romanians were either identical or unknown to them (n = 40) were excluded from the analysis. The MANOVA for repeated measurements[14] afterwards showed a significant interaction effect between similarity and condition (F(1.832, 529.590) = 3.13, p = .049, η² = .011) regarding explicit evaluations, a trend that was also shown when using the total sample, though it had not been significant then. Although Roma and Chinese people were explicitly evaluated positively by participants who had read the positive newspaper article and negatively or neutrally by participants in the negative condition, this pattern was the other way around for

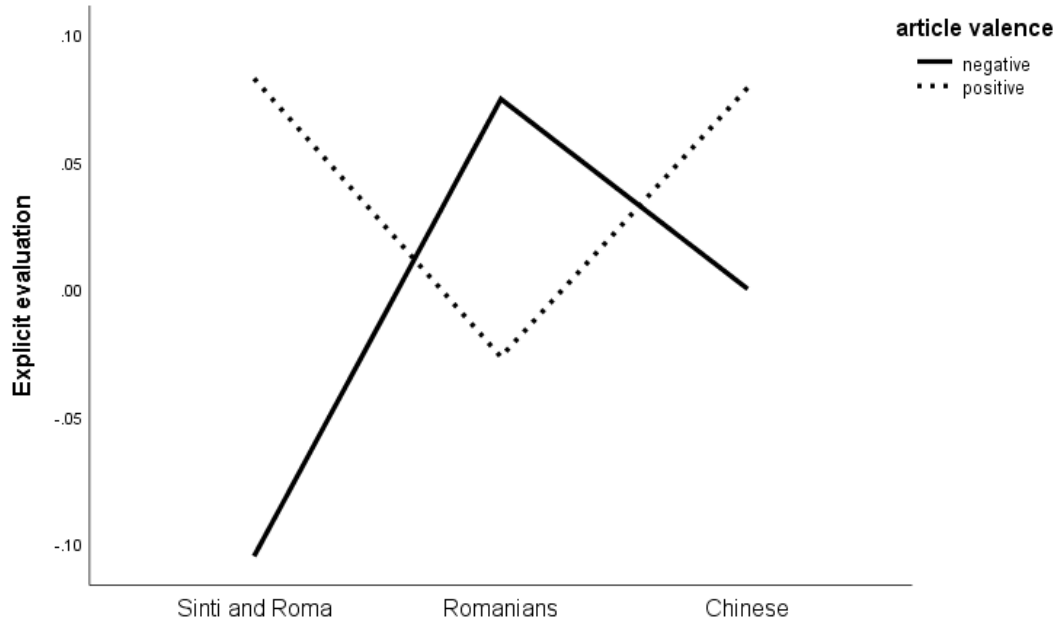
[13] As Mauchly's test indicated that sphericity was not given, values were Huynh-Feldt corrected (cf. Girden, 1992).

[14] A significant Box's test (p = .004) indicated that homogeneity of covariance matrices was not given, but as group sizes were equal, MANOVA was assumed to be robust against this violation (cf. Field, 2009). In addition, as sphericity was not given, the values were Huynh-Feldt corrected (cf. Girden, 1992).

the evaluation of Romanians – a contrast effect. Participants who had read the positive article about Roma evaluated Romanians negatively, but participants who had read the negative article about Roma evaluated Romanians positively afterwards (see Figure 10). Accordingly, polynomial contrasts showed a quadratic trend form for the interaction similarity and condition ($F(1, 289) = 7.52$, $p = .006$, $\eta^2 = .025$). Excluding three more participants, who had additionally indicated that Roma and Chinese were unknown to them, resulted in a smaller, non- significant effect ($F(1.822, 521.197) = 2.78$, $p = .068$, $\eta^2 = .010$), but the trend form stayed the same.

Figure 10

Interaction of similarity and article valence



Note. Evaluation values are z-standardized.

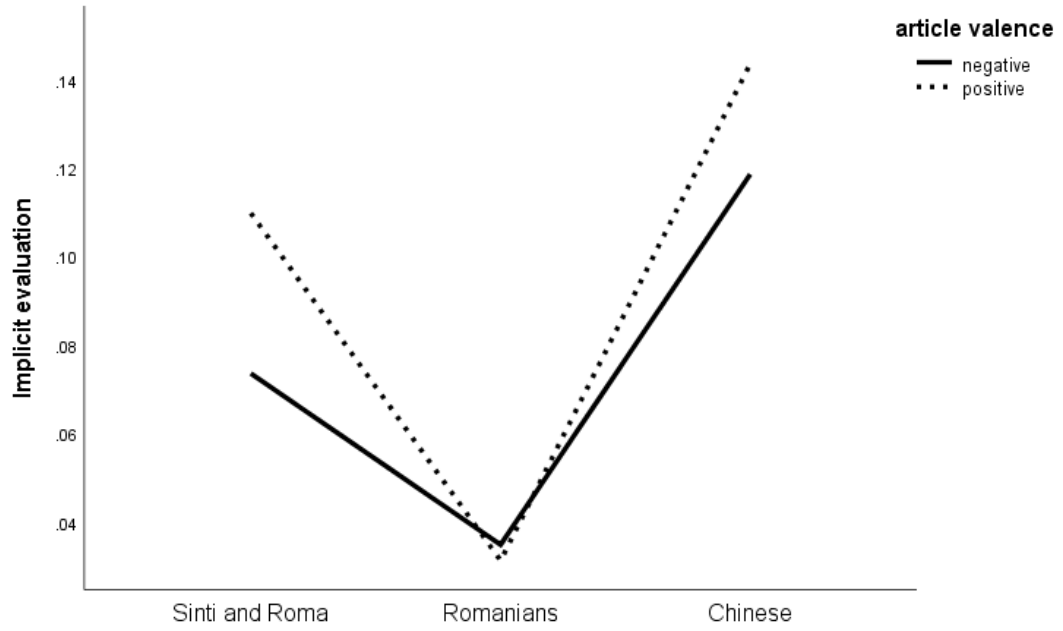
For the implicit evaluations, excluding the participants who indicated that Roma and Romanians were identical or unknown resulted in a significant effect of group similarity ($F(1.961, 458.795) = 4.72$, $p = .010$, $\eta^2 = .020$)[15]. Romanians were evaluated less positively than Roma and Chinese irrespective of the condition (interaction of similarity and condition was not significant; $p = .811$). Polynomial

[15] As Mauchly's test indicated that sphericity was not given, values were Huynh-Feldt corrected (cf. Girden, 1992) .

contrasts showed a quadratic trend form for this effect ($F(1, 234) = 9.07$, $p = .003$, $\eta^2 = .037$; see Figure 11).

Figure 11

Implicit evaluations of the groups, effect of similarity

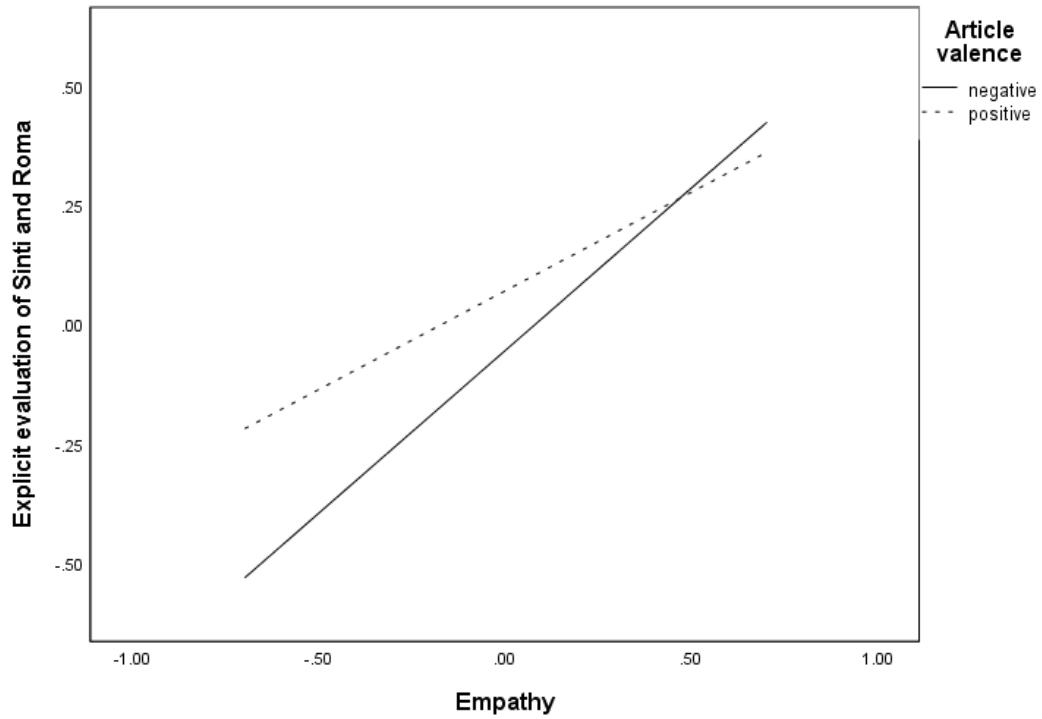


MODERATION ANALYSIS

To test the effects of empathy and MCPR, several moderation analyses were conducted using the PROCESS macro by Hayes (2013). Analyses showed that empathy moderated the effect of the condition on the explicit evaluation of Roma (R^2 change due to interaction = .01, $F(1, 327) = 6.04$, $p = .015$). Those participants who reported feeling low levels of empathy when reading the article evaluated Roma more positively in the positive condition than in the negative condition (effect: .31, $t = 2.73$, $p = .007$, 95% CI [.09, .54]). In contrast, participants who reported average or high levels of empathy did not differ significantly in their evaluation of Roma based on the article version they read. Generally, those with high empathy levels evaluated Roma more positively than those participants with low or average empathy levels. This association is depicted in Figure 12. No other moderation effect for empathy reached significance.

Figure 12

Moderation of empathy levels on the association between explicit evaluation of Roma and article valence



Note. Evaluation values are z-standardized.

Entering MCPR as the moderator revealed no significant effects.

For exploratory reasons, implicit group evaluations were entered as dependent variables in a moderation analysis, explicit evaluations as independent variables and MCPR or empathy as a moderator. Neither empathy nor MCPR moderated any association between explicit and implicit evaluations. Exclusion of 16 participants who had either reported feeling like a member of one of the three groups (Roma, Romanians or Chinese) or who had indicated correct hypotheses about the purpose of the study did not change these results.

INDIRECT EFFECTS

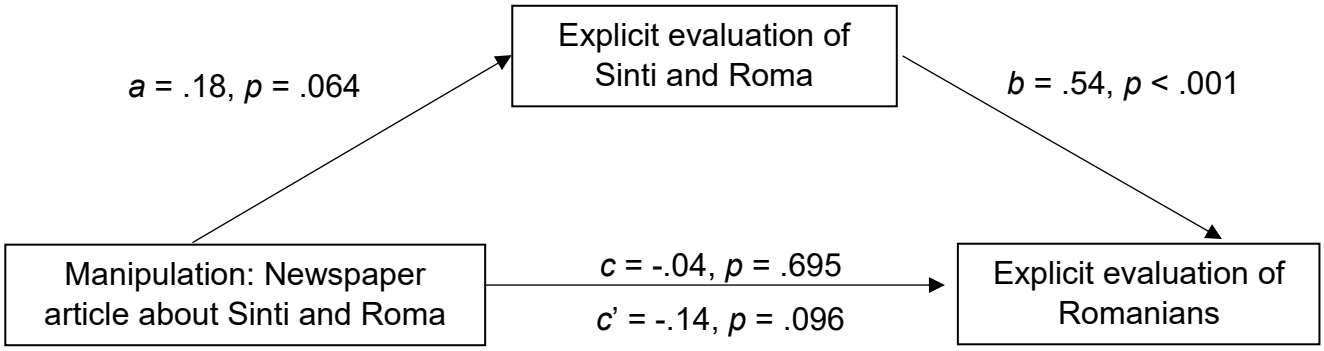
As in the previous study, it was examined whether the manipulated newspaper article affected the evaluation of the secondary group through a change in the focal groups'

evaluation. Including all participants in the indirect effect analysis[16], results showed that the small effect of the manipulation on the explicit evaluation of Roma also affected the explicit evaluation of Romanians (see Figure 13). The bootstrapped mediation coefficient for the indirect effect on the evaluation of Romanians was .10 (*SE* = .05, bootstrapped 95% CI [-.00, .20]). As the a-path was nonsignificant (though it showed a small trend), the confidence interval included zero and the effects have to be interpreted with caution.

After exclusion of those participants who had indicated that Roma and Romanians were identical or unknown to them, overall results did not change, but the negative direct effect now reached significance (c' = -.20, *t* = -2.31, *p* = .022, 95% CI [-.37, .03]). Further exclusion of those participants who had also indicated that Chinese were identical to Roma or unknown to them slightly weakened the effects, but trends stayed the same.

Figure 13

Indirect and direct effects on the explicit evaluation of Romanians



As in Study 1, the newspaper article did not directly affect the implicit evaluation of Roma, but it had some impact on their explicit evaluation, which then in turn affected the implicit evaluation of Romanians (indirect effect: .02, *SE* = .01, bootstrapped 95% CI [.00, .04]). This association is depicted in Figure 14 and Table 9. Exclusion of participants (see above) did not change these results substantially.

[16] P-P plots showed that normal distribution of the explicit evaluation of Roma could not be assured, but as bootstrapping was used for the analysis of the indirect effects, the procedure was assumed to be robust.

Figure 14

Indirect and direct effects on the implicit evaluation of Romanians

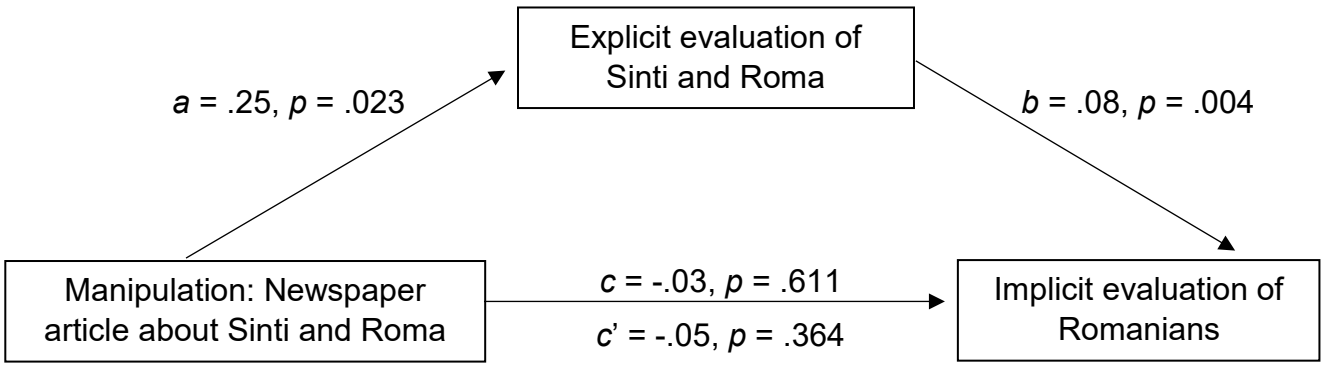


Table 9

Model coefficients for the implicit evaluation of Romanians

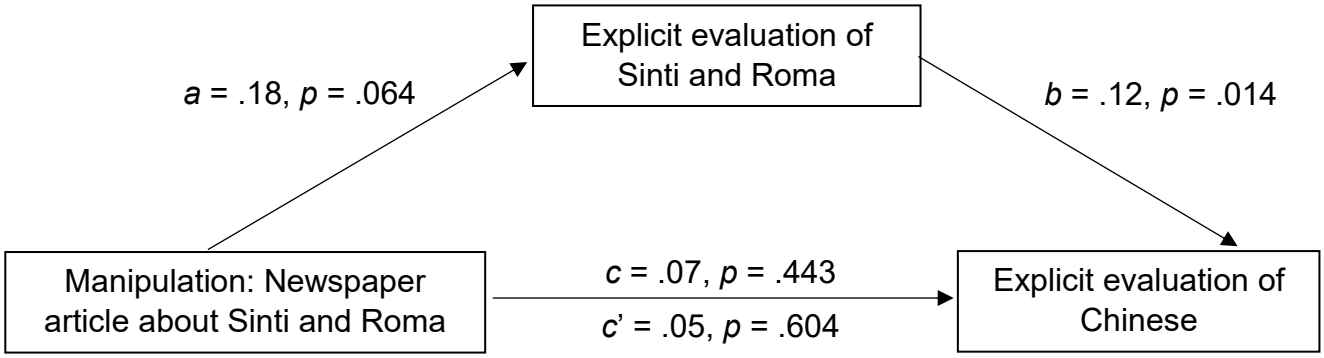
		Consequent						
		M (Roma explicit)				*Y* (Romanians implicit)		
Antecedent		*Coeff.*	*SE*	*p*		*Coeff.*	*SE*	*p*
X (Manipulation)	*a*	.25	.11	.023	*c'*	-.05	.05	.364
M (Roma explicit)		-	-	-	*b*	.08	.03	.004
Constant		-.37	.11	.034		.09	.08	.235
			R^2 = .02				R^2 = .03	
			$F(1, 277) = 5.24$, p = .023				$F(2, 276) = 4.40$, p = .013	

Note. X = independent (antecedent) variable; Y = dependent (consequent) variable; M = mediator; *a*, *b* and *c'* = unstandardized regression coefficients.

For the explicit evaluation of Chinese, results showed that the newspaper article affected the explicit evaluation of Roma, which then influenced the evaluation of Chinese (see Figure 15; indirect effect: .02, *SE* = .02, bootstrapped 95% CI [-.00, .06]). Again, the confidence interval included zero, which is why this cannot be considered clear evidence for an indirect effect. Exclusion of participants (as above) did weaken, but did not substantially change these results.

Figure 15

Indirect and direct effects on the explicit evaluation of Chinese

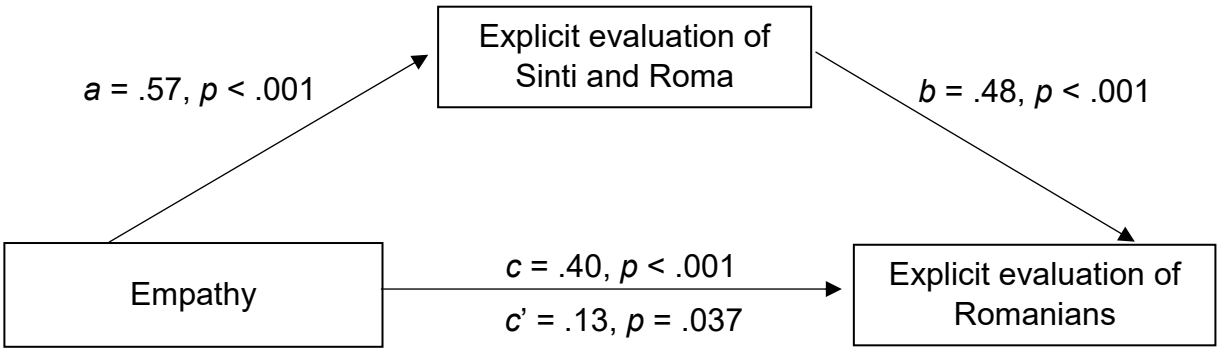


In accordance with the procedure by Tarrant and Hadert (2010), another analysis was run to investigate whether empathy affected the evaluation of Romanians through a change in the evaluation of Roma. A significant indirect effect showed that this was the case (indirect effect: .27, *SE* = .05, bootstrapped 95% CI [.18, .36]). As illustrated in Figure 16, higher empathy with Roma was associated with a more positive evaluation of Roma (and Romanians, see direct effect), and the more positive evaluation of Roma in turn positively affected the evaluation of Romanians. The model showed the same trend for the evaluation of Chinese, but did not reach significance (indirect effect: .06, *SE* = .04, bootstrapped 95% CI [-.02, .13]).

Exclusion of participants (see above) did not change these results substantially.

Figure 16

Indirect and direct effects of empathy on the explicit evaluation of Romanians



DISCUSSION

A newspaper article about Sinti and Roma not only affected the subsequent evaluation of Roma, but also had an influence on the evaluation of Romanians, *through* a change in the evaluation of Sinti and Roma. As in Study 1, the explicit evaluation of Roma changed due to the manipulation and then again affected the explicit and implicit evaluation of Romanians. However, the indirect effect regarding the explicit evaluations did not reach significance (CI included zero), though other analyses also suggested that the manipulation had a small effect on the explicit evaluation of Roma. Subsequently, this changed evaluation also generalized to the explicit and implicit evaluation of Romanians. In this study, another small effect for a generalization on Chinese was found: explicitly, they were also affected indirectly by the manipulation, through a changed evaluation of Roma. As the manipulation only affected the evaluation of Roma themselves to a very small degree, indirect effect models did not reach significance and the results have to be interpreted with caution. A stronger manipulation might be needed to analyze the effects more deeply.

Results of the MANOVA and the direct effects in the mediation analyses suggest that media coverage can have contradictory effects for secondary groups as well. Although Romanians were explicitly evaluated in contrast to the article valence, the indirect effects via a changed evaluation of the focal group, Roma, was positive. These contradictory effects might be one reason why overall effects were rather small – conflicting tendencies might have cancelled each other out.

Future research is needed to explore which one of these effects is stronger, or which factors influence whether the direct or indirect effects have more power. A possible starting point for such considerations could be the results found regarding the moderator empathy, and regarding the effect of political orientation.

Correlational analysis and a MANOVA showed that feeling empathy when reading about Roma affected not only the subsequent evaluation of Roma themselves, but also the evaluation of Romanians. Tarrant and Hadert (2010) interpreted comparable findings as an indicator of a generalization effect. In line with their results and discussion that generalization is confined to groups that share the same superordinate category, empathy in this study only had a significant effect on the similar group, not on the dissimilar. An exploratory mediation analysis supported this reasoning.

Empathy also seemed to be associated with political orientation. Participants who evaluated their own political orientation as right-wing rather than leftist showed less empathy and also evaluated Roma and Romanians less positively. Participants with lower levels of empathy with Roma evaluated Roma and Romanians differently, depending on condition. In contrast, participants who reported high levels of empathy evaluated Roma and Romanians generally more positively –irrespective of the article version they had read. These results imply that positive or negative media coverage about a social group might have especially strong effects on people who show low empathy (and probably identify with rather right-wing political attitudes as well). Higher empathy with Roma had direct positive effects on the evaluation of Roma and Romanians, and the more positive evaluation of Roma again affected the evaluation of Romanians positively. Inducing empathy could thus be a powerful tool that moderates the effect a positive or negative media article can have on the evaluation of primary and secondary outgroups. Especially for people with a rather negative attitude against outgroups (as is expected for people with a right-wing orientation), inducing empathy could be an alternative to trying to change attitudes directly. Feeling empathy with one group also showed positive effects on other groups, and appeared to be a motor for secondary transfer effects on similar outgroups.

One criticism of the present study could be that it was not verified how participants evaluated the groups before the manipulation. Thus, no possible change in the assessments could be determined and it could not be verified that the evaluations of the groups actually changed due the respective articles, especially for a social group that had been discussed in the media quite controversially. However, although reading the manipulation articles may not have formed a new attitude, any positive or negative associations that already existed were increasingly called to mind and thus might have had a decisive influence on the evaluation (see e.g. Fazio et al., 1986; Walther, 2002). Media coverage can influence attitudes not only directly by changing attitudes, but possibly also by activating certain associations that were already present in mind.

Asked about their hypotheses or comments about the study, 14 participants noted explicitly that the SC-IATs were very difficult, tiring, and annoying, and that they felt uncomfortable with them. Many also noted that they had problems not making many mistakes in the categorization or that they were overstrained. There were also many

participants who just kept the keys pressed (resulting in reaction times below 350ms), did not respond (reaction times above 1.5 seconds), or made many mistakes (error rates larger than 20%)[17]. These points indicate a topic also noted in previous studies: some tests that might work well with (psychology) students seem to overcharge "normal" participants. This could also be a possible explanation for the lack of significant results regarding the implicit dependent variables. Future studies should possibly consider an alternative to the IAT, although this measure has been proven many times in literature, at least in laboratory settings with students (e.g. Greenwald & Nosek, 2001; Nosek et al., 2005).

STUDY 3: STEREOTYPE ACTIVATION AND LATERAL ATTITUDE CHANGE

To avoid too much influence by prevailing media discussions and existing attitudes, the third experiment was designed to investigate the effects of stereotype activation without using minority groups or newspaper articles. Instead, the influence of a stereotype-activation about Germans on the subsequent evaluation of a similar and a dissimilar nationality were investigated.

As a study by Ranganath and Nosek (2008) suggested, explicit generalization processes might take several days, but implicit generalization can happen immediately. Although participants in the study explicitly resisted generalizing the evaluation of positively or negatively presented group members to a new group member, they implicitly evaluated the new individuals in the same way as the respective group. However, after several days, both explicit and implicit evaluation of the presented individuals generalized to the new individuals. The authors suggest that simple associative links between people (for example a shared group membership), are sufficient for at least implicit generalization. Furthermore, the effects were explained in the context of classic (and modern) conceptions of cognitive balance (e.g. Greenwald et al., 2002b; Heider, 1958): if one person has several negative characteristics and a second person belongs to the same group as this person, then the second person should be evaluated negatively as well.

[17] These patterns resulted in 56 participants for whom no D-score for Sinti and Roma was calculated, no D-score for Romanians for 52 participants and no D-score for Chinese for 53 participants.

PRETEST 1

Study 3 was conducted in Norway using three groups that were not minority groups. Germans were chosen as a focal group with the plan of assessing the influence activation of a stereotype regarding Germans might have on evaluation of a similar and a dissimilar group. To get an idea about how many stereotypes about Germans are easily accessible in Norway, a female Norwegian investigator asked 13 students at the Norwegian University of Science and Technology (NTNU) in Trondheim, Norway, to write down their associations with Germans. Another eight students were asked to write down their positive or negative associations with students (a comparison group). Results showed that participants retrieved on average 7.54 associations with Germans. It therefore seemed reasonable to ask participants to list three positive or three negative associations in the main study (as the manipulation). Most associations listed in the pretest belonged to one of three clusters: Second World War (e.g. Hitler, fascism, Anne Frank), German customs (e.g. Oktoberfest, lederhosen, beer), and/or characteristics (e.g. hard-working, effective, strict). As a neutral comparison group, students were chosen. Participants who were asked to write down associations with students also easily managed to find three positive or negative associations. The group “students” was therefore chosen for the control condition in the main study. This group should not have any affiliations with nationalities (such as specific sports, like soccer, might have). Yet, it does present a social group.

PRETEST 2

To assess similarities between Germans and different European nationalities form a Norwegian perspective, another pretest was run at the Norwegian University of Science and Technology (NTNU) in Trondheim, Norway.

METHOD

SAMPLE

Twenty-one participants took part in the study, 57.1% of them female, 42.9% male. Mean age was 23.52 years (*SD* = 3.91). All participants were Norwegian students who listed their subjects of study as psychology (38.1%), media studies (28.6%),

finance (19%), and history (4.8%). Two participants (9.5%) did not specify a subject of study.

MEASURES

Participants were asked to rate the similarity of 27 EU countries' inhabitants and Norwegians as compared to Germans on a 4-point Likert scale with the extremes labeled 1 = "very dissimilar" and 2 = "very similar". The questionnaire further included demographic questions about gender, age, and nationality of the participants, and their subject of study (if they were students).

PROCEDURE

Participants were approached by a male Norwegian investigator at the NTNU university campus "Dragvoll" in Trondheim, Norway. Participants who agreed to take part in the study were given a short questionnaire that they filled out on the spot. Completed questionnaires were folded and put into an envelope.

RESULTS

Participants rated Austrians (M = 3.67, SD = .58) as the group most similar to Germans, followed by Dutch (M = 3.29, SD = .90), and Belgians (M = 2.95, SD = .81). On the other side, Cypriots (M = 1.25, SD = .44) were rated as most dissimilar, followed by Greeks (M = 1.33, SD = .48), and Croatians (M = 1.48, SD = .51).

To achieve a balanced selection regarding extreme ratings (very dissimilar - very similar), Greeks were chosen as the dissimilar and Austrians as the similar group for the main study. Both groups' mean ratings differed 0.33 points from the extremes.

MAIN STUDY

Based on the LAC model (Glaser et al., 2015), the aim of the main study was to compare the effects of stereotype activation regarding Germans on the evaluation of Germans themselves (the focal attitude object), and another similar or dissimilar social group (the lateral attitude objects; Austrians and Greeks, respectively). Evaluations were assessed explicitly and implicitly.

Based on existing research, the activation of (positive/negative) stereotypes about Germans was expected to (automatically) lead to an activation of related positive or

negative associative structures with the similar group (Austrians), but not with the dissimilar group (Greeks). MCPR (Banse & Gawronski, 2003; Dunton & Fazio, 1997) was expected to play a moderating role. Taking this possible moderator into account, the manipulation was predicted to affect implicit evaluations of Germans and Austrians but not of Greeks for all participants in both valence conditions (positive and negative). Effects on explicit evaluations were expected to be moderated by MCPR in the negative condition, and (although less strongly) in the positive condition. Participants scoring *low* in MCPR were expected to explicitly devaluate Germans and the similar group in the negative condition (generalization), but not the dissimilar group. The reverse was expected for the positive condition. However, effects were expected to be stronger in the negative condition, as negative information seems to generalize more strongly (Fazio et al., 2004). Participants scoring *high* in MCPR were expected to cancel out the apparent effect of the manipulation, which would result in no explicit devaluations, but only implicit effects. Based on research regarding thought suppression (e.g. Macrae et al., 1994, Monteith, Spicer et al., 1998, Wenzlaff & Wegner, 2000), exploratory analyses were planned to analyze a possible rebound effect. It is plausible that a negative stereotype activation results in a “bad mood”, which again might affect the evaluation of other groups. The negative valence might be displaced to a lateral group. Especially participants scoring high in MCPR were expected to be motivated to suppress their stereotypes regarding the focal group (Germans), but they might have no reason to do so regarding another, dissimilar group, if attitude manipulation was not obvious. In addition, effects should be stronger on implicit measures, as these should be less easily susceptible.

METHOD

Data collection took place during a one-week period at NTNU university campus Dragvoll in Trondheim, Norway. Participants were approached by two female investigators and asked if they would like to take part in an experiment about “the perception of social groups”. Participants could either participate directly or write their email address into a timetable. In addition, the project was briefly explained at the beginning of three university lectures, to recruit more participants. Interested students were asked to write their email addresses into the timetable that was then passed around. As a third recruiting strategy, the experiment was posted on Facebook and the e-learning platform of NTNU. Interested students were asked to write an email if

they would like to participate. Participants who gave their emails addresses received a brief reminder email a day or some hours before the experiment started.

SAMPLE

Participants who indicated to be German, Austrian or Greek were excluded from later analysis (n = 2)[18]. The final sample comprised N = 110 participants, of which n = 56 were assigned to the experimental group, and n = 54 to the control group. Of the total sample, 37.3% were male. Mean age was 22.17 years (SD = 2.27; Range: 18-31 years).

MEASURES

Explicit evaluations

To assess explicit evaluations of the social groups, participants were asked to indicate how likeable/dislikable and incompetent/competent they perceived Germans, Austrians, Greeks and students to be, on a seven-point Likert scale with only the two extremes labeled “very dislikable” and “very likable” or “very incompetent” and ”very competent”. In addition, warmth/coldness was assessed with the help of a “feeling thermometer” as used in Study 1, ranging from 0 to 100 degrees, asking participants to indicate how warm or cold they felt toward the specific group. Only the extremes were labeled “0” and “100”. Due to high intercorrelations, the two semantic differentials and the feeling thermometer were collapsed to one measure of explicit evaluation. Reliabilities for this measure were α = .71 for Germans, α = .69 for Greeks, α = .67 for Austrians, and α = .65 for students.

Indirect measures

To assess implicit evaluations of Germans, Greeks and Austrians, three SC-IATs were used. Positive/negative items were inspired by project implicit stimuli set of the “Religions IAT”[19] (adjectives; e.g. fantastic, excellent, terrible or mean), nationality items were used as in project implicit nationality IATs (flag, country shape, name of the capital city, known building). Reliabilities for the SC-IATs were computed as reported in Study 1. Spearman-Brown coefficients were adjusted r = .54 for the

[18] One participant indicated being German and another participant indicated to have both German and Norwegian nationality.

[19] The test can be conducted via: https://implicit.harvard.edu/implicit/takeatest.html

German SC-IAT, adjusted *r* = .69 for the Austrian SC-IAT, and adjusted *r* = .53 for the Greek SC-IAT. Average error rates were 5.56% for the German SC-IAT, 5.40% for the Austrian SC-IAT, and 5.58% for the Greek SC-IAT.

As another indirect measure of stereotype strength, the time participants needed to produce three positive or negative associations was saved as well (as a proxy for stereotype accessibility).

Other measures

A Norwegian version of the MCPR (Dunton & Fazio, 1997), which was based on the German version of the scale (Banse & Gawronski, 2003) was used to assess individual differences in MCPR as a moderator for explicit and implicit prejudices. Due to a programming error, only the first 10 items of the scale were shown to participants, instead of the whole 16-item scale. Reliability of this shortened version of the MCPR scale was α = .72. Participants were asked to indicate their agreement or disagreement with the 10 statements on a four-point Likert scale. Mean value for the whole sample was *M* = 3.17 (*SD* = .41).

Finally, participants were asked to indicate their gender, age, subject of study, year of study, nationality, hypotheses about the study and any other comments (open answer format).

PROCEDURE

Upon arrival at a meeting point, participants were guided to the lab and asked to take a seat in front of one of the iMac computers. One of the researchers explained briefly that the experiment was about the perception of social groups and that all instructions would be written on the screen. Due to a technical problem, a black box appeared on the screen where the informed consent should have been. For this reason, participants were asked to read the printed consent that was lying on the table in front of them. They were further informed that they should wait until all participants had finished the experiment (if several participants took part at the same time) and that they would receive a debriefing afterwards. If they had any questions they were free to ask one of the investigators who waited next door.

The experiment began with the manipulation, asking participants to list three positive or negative associations with either Germans (experimental group) or students

(control condition). Next, participants were asked to evaluate Germans, Austrians, Greeks and students on two semantic differentials and the feeling thermometer. Participants then completed three SC-IATs. The order of the SC-IATs (German, Greek and Austrian) was randomized, but the order of items (target items vs. positive/negative valence words) was fixed, as suggested by Bluemke and Friese (2008). Concrete stimuli (one of 12 valence words or one of six target items) were chosen randomly. The first block served as an evaluative training, with presentation of all six target stimuli (i.e., German flag, country shape graph Germany, photograph of the Brandenburg Gate, the words “Berlin”, “tysk” (German) and “Tyskland” (Germany)). The second block included four trial tasks in which two evaluative and two target items should be assigned to either the left or the right category, which were presented on the upper screen. The third block included 76 stimuli in fixed order, with nationality and positive items to be assigned to the left category (i.e. “German or positive”) and negative items being assigned to the right category (“negative”). Block four was a training task for the reversed assignment, with positive items being assigned to the left category and negative and nationality items being assigned to the right category. Block five finally presented another 76 stimuli in fixed order, with assignments as in the previous training block. After the SC-IATs, the MCPR scale was presented. Finally, participants were asked to indicate their gender, age, nationality, subject and year of study, and to write down any assumptions regarding the hypotheses of the study or any additional comments.

After the experiment, participants were informed that the study was part of a doctoral thesis about the generalization of prejudice and briefly learned about the background and hypotheses. They were then free to ask questions. Finally, participants were thanked for their participation and given some chocolates.

RESULTS

EXPLICIT MEASURES

Due to the different scales of likeability and competence ratings (5-point Likert scale) on the one hand, and the feeling thermometer (0-100 degrees) on the other hand, all three direct measures were *z*-standardized and aggregated as explicit evaluations.

Mean values by condition are displayed in Table 10.

Table 10

Mean values for explicit evaluations of the groups by condition

Group	Condition	*N*	Mean	*SD*	95%-CI LL	95%-CI UL	Min	Max
Germans	negative	28	-.20	.89	-.55	.15	-2.11	1.37
	positive	28	.17	.70	-.10	.44	-1.29	1.35
	Mean		-.01	.82	-.23	.20	-2.11	1.37
Greeks	negative	28	-.04	.79	-.34	.27	-2.11	1.74
	positive	28	-.29	.70	-.56	-.02	-2.29	.72
	Mean		-.16	.75	-.36	.04	-2.29	1.74
Austrians	negative	28	.03	.76	-.26	.33	-1.22	1.78
	positive	28	.11	.81	-.21	.42	-1.36	1.71
	Mean		.07	.78	-.14	.28	-1.36	1.78
Students	negative	28	.05	.79	-.25	.36	-1.78	1.65
	positive	28	-.05	.93	-.41	.31	-2.21	1.83
	Mean		.00	.86	-.23	.23	-2.21	1.83

Note. *SD* = Standard deviation; CI = Confidence Interval; LL, UP = lower limit, upper limit; Min = minimum value; Max = maximum value.

Multivariate tests showed that the condition only had a significant influence on the explicit evaluation of Greeks ($F(3, 106) = 3.28$, $p = .024$, $\eta_p^2 = .085$), and did not significantly affect the evaluation of Germans ($F(3, 106) = 1.09$, $p = .355$, $\eta_p^2 = .030$), Austrians ($F(3, 106) = .73$, $p = .536$, $\eta_p^2 = .020$), or students ($F(3, 106) = 1.63$, $p = .188$, $\eta_p^2 = .044$). Post hoc comparisons using Gabriel tests indicated that the significant effect on evaluation of Greeks stemmed from the difference between the German positive and the student positive condition (Mean difference (*MD*) = -.65, *SD* = .21, $p = .014$). Greeks were evaluated significantly more positively if participants had thought of positive associations with students than if they had thought about positive associations with Germans. The student condition affected the evaluations of the groups differently and was not as “neutral” as anticipated. As it was expected to be a neutral condition, no hypotheses had been formed for the case that thinking of students affected the groups’ evaluations as differently as it actually did. Accordingly, the student condition did not present a neutral comparison condition and therefore only the results of the experimental condition will be reported below.

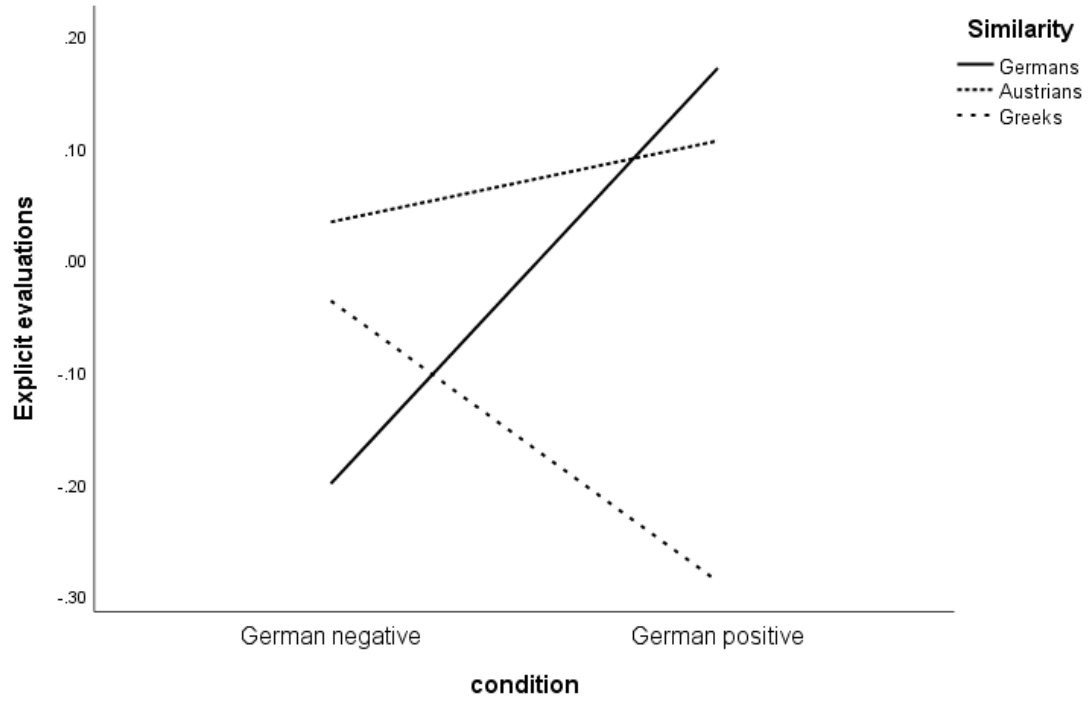
Comparing experimental groups only (German positive vs. German negative stereotype activation), revealed a small effect of condition on the evaluation of Germans such that Germans were evaluated slightly more positively in the positive stereotype activation condition than in the negative condition. However, this effect did not reach significance ($F(1, 54) = 3.02$, $p = .088$, $\eta_p^2 = .053$). Thinking positively or negatively about Germans did not affect the evaluations of the lateral groups (Austrians: $F(1, 54) = .12$, $p = .237$, $\eta_p^2 = .002$; Greeks: $F(1, 54) = 1.58$, $p = .214$, $\eta_p^2 = .028$; students: $F(1, 54) = .19$, $p = .666$, $\eta_p^2 = .003$).

Including MCPR as a covariate showed a significant effect of MCPR on evaluation of Greeks ($F(1, 53) = 13.38$, $p = .001$, $\eta_p^2 = .202$), but not on any other group. Participants with higher values in MCPR evaluated Greeks more positively.

Using MANOVA for repeated measurements with “group” as a within-subjects factor showed a marginally significant interaction between similarity and condition ($F(2, 108) = 2.82$, $p = .064$, $\eta_p^2 = .050$), which is illustrated in Figure 17.

Figure 17

Explicit evaluations of the groups depending on similarity. Evaluation values are z-standardized



To take a closer look at this interaction, only the evaluations of Greeks and Germans were included in the analysis so effect of similarity vs. dissimilarity could be tested. Results showed a significant interaction between condition (German positive vs. German negative) and the evaluation of Germans and Greeks ($F(1,54) = 4.51$, $p = .038$, $\eta_p^2 = .077$). After activation of positive stereotypes of Germans, Germans were evaluated more positively but Greeks were evaluated more negatively. In contrast, Greeks were evaluated more positively than Germans after a negative German stereotype activation (see Figure 17).

IMPLICIT MEASURES

Data preparation for the SC-IAT was done as described in Study 1. After exclusion of two participants who had average error rates above 20% in at least one of the SC-IATs, mean values by condition were calculated and are displayed in Table 11.

Table 11

Mean values for explicit evaluations of the groups by condition

Group	Condition	*n*	*M*	*SD*	95% CI		Min	Max
					LL	UL		
Germans	negative	27	.10	.36	-.04	.25	-.55	1.03
	positive	28	.07	.35	-.06	.21	-.69	.66
	Mean		.09	.35	-.01	.18		
Austrians	negative	27	.11	.33	-.02	.24	-.44	.79
	positive	28	.16	.27	.05	.26	-.33	.89
	Mean		.13	.30	.05	.22		
Greeks	negative	27	.18	.33	.05	.31	-.56	.74
	positive	28	.26	.28	.15	.37	-.35	.83
	Mean		.22	.30	.14	.30		

Note. *SD* = Standard deviation, CI = Confidence Interval, LL, UP = lower limit, upper limit; Min = minimum value, Max = maximum value.

Multivariate analysis (including only experimental groups and excluding two participants with very high error rates) showed no significant effects of the condition on the implicit evaluations of the groups (all *p*s > .338). Entering MCPR as a covariate also showed no significant effects on any groups' implicit evaluation (all *p*s > .167).

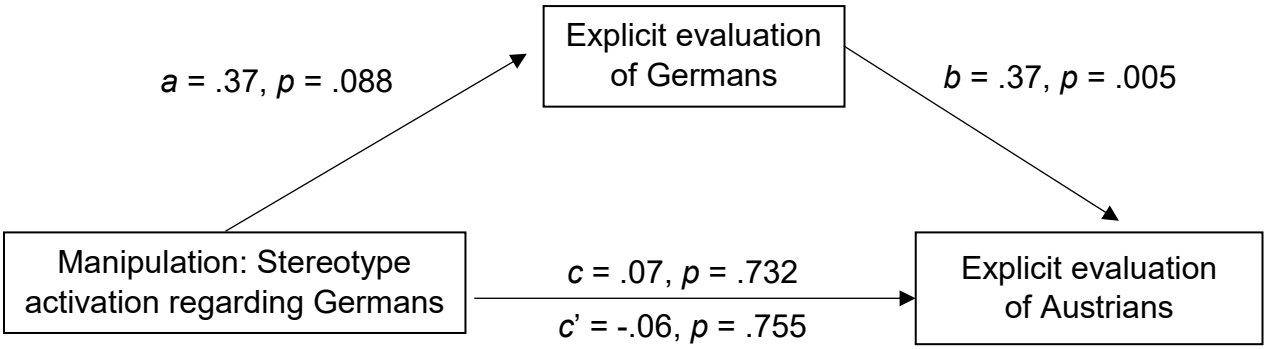
INDIRECT EFFECTS

To investigate whether the manipulation affected the lateral groups indirectly through a changed evaluation of the focal group, several mediation analyses were run. The same procedure as in Study 1 was used, with only the experimental groups (stereotype activation regarding Germans) included[20].

A small indirect effect was found for the explicit evaluation of Austrians. However, the bootstrapped confidence interval of the indirect effect included zero (effect: .14, *SE* = .08, 95% CI [-.02, .31]). Participants in the positive condition evaluated Germans explicitly slightly (but not significantly) more positively, and this in turn influenced the explicit evaluation of Austrians. This finding is shown in Figure 18 and Table 12.

Figure 18

Indirect and direct effects on the implicit evaluation of Austrians



[20] Indirect effects of the stereotype activation regarding students were not analyzed as no hypotheses existed about how this "neutral" group should influence other groups, which were furthermore not rated in terms of similarity to students.

Table 12

Model coefficients for the explicit evaluation of Austrians

		Consequent						
		M (Germans explicit)				Y (Austrians explicit)		
Antecedent		*Coeff.*	*SE*	*p*		*Coeff.*	*SE*	*p*
X (Manipulation)	*a*	.37	.21	.088	*c'*	-.06	.20	.755
M (Germans explicit)		-	-	-	*b*	.37	.13	.005
Constant		-.57	.21	.097		.17	.32	.596
		R^2 = .05 $F(1, 54)$ = 3.02, p = .088				R^2 = .14 $F(2, 53)$ = 4.34, p = .018		

Note. X = independent (antecedent) variable; Y = dependent (consequent) variable; M = mediator; *a*, *b* and *c'* = unstandardized regression coefficients.

Indirect effects on the implicit evaluations of Austrians and Greeks were not significant.

Conditional process analyses were conducted using the same model as in Study 1, assuming that the moderator, MCPR, could influence all paths, direct and indirect effects (model 59 in PROCESS). However, an initial analysis showed again that only the b-path seemed to be moderated. As displayed in Table 13, participants with mean and high values of MCPR seemed to generalize their attitudes from Germans to Austrians, but participants low in MCPR did not give different evaluations based on the condition. However, bootstrapped confidence intervals for the conditional indirect effects of X on Y at the levels of the moderator always included zero[21]. Therefore, it cannot be called a moderated mediation model. To further examine the relationship between MCPR and the indirect effect, another model was used, defining only one interaction, specifically that between the mediator (explicit attitudes toward Germans) and MCPR, in predicting explicit attitudes toward Austrians (PROCESS model 14). However, as the a-path did not reach significance, the indirect effect was not significant, and accordingly neither was the index of moderated mediation (.28, bootstrapped *SE* = .23, bootstrapped 95% CI [-.10, .76]).

[21] If multiple paths are moderated, no index of moderated mediation is created because the relationship between the moderator and the indirect effect is no longer linear (cf. Hayes, 2018, p. 456).

Table 13

Conditional effects of the focal predictor at values of the moderator

MCPR	effect	*SE*	*t*	*p*	LLCI, ULCI
2.90	.23	.14	1.61	.115	-.06, .51
3.20	.45	.13	3.49	.001	.19, .71
3.50	.67	.19	3.54	< .001	.29, 1.05

Note. LLCI = lower level for confident interval; ULCI = upper level for confidence interval.

Conditional process analyses of the effect of stereotype activation on Greeks did not reveal any significant interactions. Excluding those participants who did not write clearly positive or negative associations with Germans did not change any indirect effects.

In summary, analyses of indirect effects pointed to a small indirect effect for the stereotype activation on the explicit evaluation of Austrians *through* attitude change in the explicit evaluation of Germans. MCPR may have moderated the b-path, the generalization of attitudes toward Germans on Austrians. However, as the confidence intervals for the indirect effect and the index of moderated mediation included zero, these effects might not be different from zero. Although the stereotype activation regarding Germans affected the evaluation of Greeks in a contrasting way, the results of the mediation analysis did not suggest that this was due to a change of attitude toward Germans.

ADDITIONAL ANALYSES

Participants in the German negative condition took on average 45.47 seconds to produce three negative associations with Germans, participants in the German positive condition took 50.61 seconds, participants in the student negative condition took 52.73 seconds, and participants in the student positive condition took 38.05 seconds. As neither normal distribution nor variance homogeneity was given, a Kruskal-Wallis test was used to analyze group differences but showed that these differences were not significant (p = .662).

OTHER MEASURES

The majority of participants assumed that the study was about prejudices or stereotypes. Two participants even suggested an influence of media coverage on the perception of minorities. No participant guessed that the study was about attitude generalization or reported any connections between the three groups (Germans, Austrians, and Greeks).

Regarding the fact that images in the SC-IATs were only part of the nationalities (not the valence words), one participant noted that she decided at one point not to look at the images anymore, but just pressed the key for nationality every time a shape appeared on the screen. This might have affected the selectivity of the picture stimuli, making them a lot easier to categorize than the words.

A post hoc power analysis for a MANOVA with within factors was conducted, using G*Power (Faul et al., 2007). Results for explicit measures showed that assuming a small effect size (d = .20) and a total N of 106, test power was at .82 level, which is acceptable (cf. Cohen, 1988; Field, 2011). When only the number of participants from the experimental condition were entered, test power was .55. For MANOVA with repeated measures and within-between interactions analyzed, power reached a level of .54 (.24 when only experimental groups were used).

DISCUSSION

Activating positive stereotypes about Germans had a negative influence on the explicit evaluation of Greeks, but activation of negative stereotypes regarding Germans led to more positive evaluations of Greeks. This finding constitutes a contrast effect. Taking into account the associations participants wrote down regarding Germans, it is possible that Germans and Greeks present two antagonistic groups. Positive associations with Germans were “effective”, “hard-working”, “structured”, “organized” – characteristics which are related negatively to the stereotype of Greeks as being “chaotic and lazy”. At the same time, negative associations with Germans were “strict”, “rigid”, “robot” and “Nazi”, which also present a contrast to the stereotype of Greeks as “joyful Southeners”. It has to be noted that participants’ associations with Greeks were not assessed, so this explanation is hypothetical and has to be examined. However, considering the current political activities and media discussions at the time of data collection (especially regarding

the “euro-crisis”; e.g. Brander, 2010; Gullikstad, 2015), this explanation seems to be a promising one.

Mediation analyses showed that the stereotype activation in many cases did not affect the evaluation of the lateral groups indirectly, through a changed evaluation of Germans. However, several analyses revealed significant effects of the evaluation of Germans on the evaluation of Austrians and Greeks. The evaluations of Austrians were in line with evaluations of Germans (but less strongly negative or positive), but the evaluations of Greeks were in contrast with evaluations of Germans.

It has to be noted that the sample was considerably smaller than in Study 2 (N = 110 or 55 vs. N = 331). Post-hoc power analysis using the program G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) for a MANOVA with repeated measures and within factors, assuming a small effect size (f = 0.20) and a sample of N = 55 revealed a power level of .54. Post-hoc power analysis for an analysis of fixed effects, main effects and interaction (ANCOVA) revealed that assuming a small effect size (d = .20) and a total N of 55, test power was at a very low level of .31. A total sample size 199 would have been needed to achieve an acceptable power level of .80 (cf. Cohen, 1988; Field, 2011). The very low observed power in this study might be a reason for the small and non-significant effects. Unfortunately, half of the sample had to be discarded, as the control condition did not seem to be as neutral as planned. The difficulty of finding truly neutral control groups has to be considered in future studies and larger samples should be used.

Another reason for the small and nonsignificant effects of the manipulation might also be that the way explicit evaluations were asked for in itself presented another manipulation. Explicit evaluations of the groups were always given for all groups at one time (on one screen), and always in the same order (e.g. “Please indicate how incompetent or competent you perceive the following groups.”): Germans – Austrians – Greeks – students. It is plausible that not the stereotype activation, but the evaluation procedure itself affected the evaluation of the lateral groups, as they were put in a row and therefore they may have been rated in comparison to the other groups. This might have resulted in participants grouping Germans and Austrians one the one hand, and contrasting them with Greeks and students on the other hand. Future research should take possible sequence effects into account and better present the different groups in random order with each group separately.

The positive effect of the positive student condition on the evaluation of Greeks could be explained by mood effects. Thinking about associations with students relates to the ingroup of the study participants. As Forgas and Fiedler (1996) showed, a positive mood might be related to less discrimination against an outgroup, if group membership is of high relevance. This interpretation would also fit the finding that no group was evaluated negatively in the positive student condition, though Germans and Austrians were evaluated less positively than Greeks and students. It might also be plausible that in light of the positive associations with students (e.g. engaged, interested, structured, friendly), Greeks appeared as a non-threatening group (nothing to fear, no concurrence) to the ingroup, which might have caused more positive evaluations as well. Future research should be cautious when choosing comparison groups, as these groups themselves have a certain valence and meaning for study participants.

STUDY 4: GROUP SIMILARITY AS A PREDICTOR FOR GENERALIZATION AND CONTRAST EFFECTS

According to Glaser et al. (2015), a possible moderator of LAC is the strength of the association between focal and lateral objects. The stronger the association, the higher the probability of a lateral change in attitude. One way to operationalize the strength of association is the similarity of objects. Glaser et al. (2015) assumed a linear relationship between similarity and generalization effects: The more similar objects are to one another, the stronger they should be associated with one another and the more likely it is that generalization effects will occur. In the case of displacement effects, however, Glaser et al. (2015) postulated a bell-shaped relationship instead of a linear one. Although the evaluation of the focal object is assumed to remain unchanged, the evaluation of the lateral objects is expected to change as follows: If similarity is low, the strength of the association should be correspondingly low, so that no generalization occurs. With moderate similarity, however, the similarity could go unnoticed and an automatic generalization could occur, which would then also be measurable in explicit measures. If similarity becomes too high and obvious, a propositional defense against the generalization could occur, so that no lateral changes of attitude can be found either. In summary,

the probability of displacement effects increases with increasing similarity, but if the similarity is too great, they decrease again (Glaser et al., 2015).

The explanations of the bell-shaped relationship between similarity and displacement effects can partly be combined with the set-reset model from Wegener and Petty (1995). According to the theory, *assimilation* occurs when the emotional reaction to the context (in the LAC model: lateral objects) and the reaction to the target (in the LAC model: the focal object) overlap. If this overlap is not consciously perceived, this leads, according to the model, to the objects' being perceived as more similar than they actually are (*setting*). This should be the case for moderately similar objects. Overestimated similarity can explain why generalization occurs. However, when the overlap is processed propositionally, this leads to a resetting, and focal and lateral objects are perceived as more dissimilar than they actually are. Consequently, one of the two reactions has to be corrected (Wegener & Petty, 1995). As postulated with the displacement effect, there would then be no generalization effects. This correction of the reaction, however, could not only lead to a lack of generalization, but even to an opposite reaction if, for example, overcorrections occur (Martin, 1986; Martin et al., 1990; Strack et al., 1993). In the study by Strack et al. (1993), participants were asked to evaluate an ambiguous target after being primed with the respective traits in another (ostensibly "unrelated") study. Half of the participants were reminded of the priming procedure, and that reminder resulted in an overcorrection, a contrast effect. The other half, those who were not reminded of the priming procedure, did not correct for its possible influence and evaluated the target in line with the priming valence, showing an assimilation effect (Strack et al., 1993).

The influence of similarity as a moderator of the LAC theory can be summarized as follows: If two objects are similar, generalization effects should occur. If two attitude objects are too similar, this should lead to corrections that can lead to contrast effects. If they are dissimilar, there are no associations between them, so no generalization effects should occur. However, in the case that they are perceived as being opposed, this leads to opposing evaluations and thus to contrasting effects.

The study presented next was designed to replicate the results of Study 3, to investigate possible explanations for the found contrast effects (i.e. which associations are activated for lateral groups) and to analyze group similarity effects in a more detailed matter.

Another moderator of LAC postulated by Glaser et al. (2015) is PFC, the preference for consistency. PFC refers to the extent a person seeks consistency among his or her cognitions. Although early consistency theories already noted that all people strive for consistent attitudes, beliefs, and cognitions (e.g. Festinger, 1957; Heider, 1958), the extent varies across individuals.

According to dissonance theory (Festinger, 1957), two opposing cognitions result in an unpleasant state and therefore motivate change in the cognitive system to re-establish cognitive consistency. Glaser et al. (2015) noted that these principles can also be applied to attitude generalization: When the evaluation of the focal attitude object changes, it might become inconsistent with evaluations of lateral objects, and people should be motivated to re-establish consistency, which could be achieved by changing the lateral evaluations as well. PFC was therefore introduced as a possible moderator of LAC.

Evidence for the moderating effect of PFC on LAC were found in a study by Heitland and Bohner (2010). They asked German participants who held at least a moderate level of prejudice against Turks to generate and record Pro-arguments for integrated housing of Germans and Turks (a cognitive dissonance paradigm). Results showed that especially those participants who perceived high choice to argue for the topic (high dissonance) and who scored high on PFC showed a positive evaluation of integrated housing of Germans and Turks, and this effect generalized to the evaluation of Turks in general.

THE CURRENT STUDY

As a focal group Turks were chosen, and two pretests were run to identify four lateral groups likely to be perceived as very similar, somewhat similar, rather dissimilar and very dissimilar to Turkey and to choose items for a PFC scale. A negative stereotype activation regarding Turks was expected to influence not only the subsequent evaluation of the focal group, but also the four lateral groups, which differ in similarity. The positive stereotype activation was expected to have rather small positive or no effects on the evaluation of the lateral groups, but the negative stereotype activation (negative condition) was expected to lead to generalization and contrast effects, depending on group similarity.

1. For a group with high perceived similarity (e.g. Albanians), an explicit contrast effect was expected in the negative condition, as participants should recognize a persuasion attempt through the manipulation and correct their evaluation accordingly. After a negative stereotype activation regarding Turks, the highly similar group should be evaluated more positively than after a positive stereotype activation. However, implicitly, the negative evaluation of Turks should generalize to the highly similar group.
2. For a moderately similar group (e.g. Kosovars), both an explicit and implicit generalization effect was expected. Participants in the negative stereotype activation condition should evaluate Kosovars less positively than in the positive stereotype activation condition.
3. A moderately dissimilar group (e.g. Slovenians) was not expected to be affected by activation of stereotypes regarding Turks, as this group should not have any connection to Turks and has low perceived similarity.
4. A very dissimilar, antithetic group (e.g. Swedes) was expected to be explicitly and implicitly evaluated in contrast to Turks in the negative condition. After a negative stereotype activation regarding Turks, Swedes are predicted to be evaluated even more positively than in the positive condition.
5. Generally, explicit mean group evaluations in the negative condition were expected to be distributed in a U-shaped way (quadratic trend) with more positive evaluations for the highly similar and the dissimilar group, but implicit evaluations should be distributed in a linear way, with more positive ratings for less similar groups.
6. PFC was expected to moderate the evaluations such that participants high in PFC were expected to show stronger generalization effects than participants low in PFC.
7. MCPR was expected to moderate the evaluations in a way that participants low in MCPR were expected to show stronger generalization effects than participants high in MCPR.

PRETEST 1: GROUPS PERCEIVED AS SIMILAR TO TURKEY

To investigate which nationalities were perceived as similar to Turkey, a pretest was run.

METHOD

SAMPLE

A total of 303 participants (70.3% of them female) completed the questionnaire. Mean age for the sample was 31.14 years (*SD* = 11.84, Range: 16-68).

MEASURES

To assess perceived similarity to people from Turkey, participants were asked to rate 34 European nationalities on a scale ranging from 1 to 4, with 1 = “very dissimilar”, 2 = “rather dissimilar”, 3 = “rather similar” and 4 = “very similar”. Furthermore, participants had the option to answer “unknown” if the country was unknown to them. A possible “opposite” of Turkey was asked via an open question (“If you had to say the opposite of Turkey, which country would it be?” and “Why?”), as well as if there were countries with a certain “connection” to Turkey (“Can you think of countries that have a special connection to Turkey through a current topic? If so, which countries are these and what is the connection?”). Finally, demographic information was assessed (age, gender and nationality).

PROCEDURE

The study was run online via SoSciSurvey between February 14th and February 21st, 2018 and advertised as testing “perceived similarity of (potential) EU-states” in several online forums and Facebook groups. Participants for the two pretests and the main study were recruited by a psychology student who gathered data within the frame of her Master’s thesis. The first page of the questionnaire informed participants about the topic of the study, that all information would be given anonymously and that they should click “proceed” if the agreed to participate. After giving some demographic information, similarities between Turkey and the comparison countries were assessed. Finally, participants were thanked for their participation and were given an email address to contact in case they had any questions or comments regarding the study.

RESULTS

Results showed that Albania was perceived as the most similar country to Turkey (*M* = 3.02, *SD* = 0.69), followed by Kosovo (*M* = 2.78, *SD* = 0.79), and Bosnia and Herzegovina (*M* = 2.45, *SD* = 0.70). As the most dissimilar country, participants rated Finland (*M* = 1.16, *SD* = 0.43), Denmark (*M* = 1.16, *SD* = 0.49) and Sweden (*M* = 1.19, *SD* = 0.46).

Regarding a contrary country to Turkey, most participants picked Sweden (*n* = 87), followed by Denmark (*n* = 35) and Finland (*n* = 32). Reasons for picking one of these three countries were very similar. Many participants noted that the Swedish, Danish or Finnish political system was very different from Turkey's system; that the country contrasted with Turkey was more peaceful, democratic, liberal and tolerant, without much violence and oppression; that it had a different culture; different mentality of the people; another religion; more gender equality; a higher economic standard; better educational system and social welfare; and finally different climatic conditions and another landscape. A total of 23 participants noted that they could not name a country "contrary" to Turkey. Most of the participants explained that a comparison of countries on a global level was hard, three participants noted that they would have picked Germany as a country, but Germany was not on the list.

When asked for a country with a current "connection" to Turkey, many people named Syria (with reference to war refugees), Germany (with reference to Turkish immigrants in Germany), the United States (with reference to political connections), the Middle East, Baltic states such as Hungary and Poland, Russia (due to an alliance regarding the war in Syria, political similarities and autocratic leaders), North Korea, and Greece.

DISCUSSION

Due to the similarity ratings and the comments, Albania was chosen as a country very similar to Turkey, Kosovo as rather similar, Slovenia as rather dissimilar, and Sweden as a very dissimilar country. Albania was further mentioned many times when asked for countries with a current connection to Turkey, and Sweden was picked frequently when asked for a country contrary to Turkey.

It has to be noted that many participants specified characteristics of the inhabitants of the respective countries, rather than the country itself, when asked for opposites or

connections (e.g. “the Turks” instead of “Turkey”). However, as the main study was planned to assess evaluations of people of the respective nationalities, we decided to assess perceived similarity between “Turks” and the Albanians, Kosovars, Slovenians, and Swedish people in the main study as well.

PRETEST 2: PFC SCALE

To test possible moderators of LAC, PFC was included in the main study as well. The first scale to assess PFC has been published by Cialdini et al. (1995), who showed that PFC levels were relevant for the foot-in-the-door effect, the anticipated-interaction-leads-to-linking effect and dissonance. For dissonance, their experiment showed that free choice in writing a counterattitudinal essay about increasing tuition fees resulted in more positive attitudes toward higher tuition only among participants with a relatively high PFC. On the other hand, Cialdini et al. (1995) also found that at least half of their participants did not show a strong PFC, as most people had medium scores on the scale, a finding that has to be kept in mind for the main study. Cialdini et al. (1995) proposed (and showed factor analytically) three dimensions of PFC: striving for consistency with one’s own responses (internal consistency), desire to appear consistent to others (public consistency) and the wish that others be consistent (others’ consistency).

Two German translations of the original scale by Cialdini et al. (1995) have been used in published research thus far: one by Heitland and Bohner (2010) and another by Rangel and Keller (2011). These two versions differ quite strongly in their wording, and so a pretest was conducted to test the adequacy of the different translations and to choose items for a short version of the scale, which should work for a convenience sample recruited online (as planned for the main study).

METHOD

The link to assess the questionnaire was advertised in different Facebook forums. Data collection took place between March 15th, 2018 and April 11th, 2018.

SAMPLE

A total of 72 participants (81.1% female) completed the questionnaire. Mean age was 29.71 years (*SD* = 9.87, Range: 20-59). Most participants indicated having or working toward a university degree (57%), followed by 22.2% participants who had finished

higher secondary education (“Abitur”), 15.2% who had finished other secondary education (Hauptschule, Realschule) and 5.6% who indicated other educational degrees.

MEASURES

The study included both German versions of the PFC scale (Cialdini et al., 1995) by Heitland and Bohner (2010) and Rangel and Keller (2011).

PROCEDURE

The study was advertised in several Facebook groups as a pretest for a study on consistency. Interested participants were forwarded to the study hosted via the website soscisurvey.de. The first page introduced participants to the topic and informed them that their responses would be anonymous. Then the two German PFC scales were presented in random order, each on a separate page. Afterwards participants were free to write down any comments about the survey and were asked to indicate their gender, age and educational degree. Finally, participants were thanked for their participation and an email address was given in case they had any questions or further comments.

RESULTS

Reliability analysis showed comparable levels of internal consistency for both versions of the questionnaire (Cronbach’s α = .84 for Heitland and Bohner (2010), and α = .86 for Rangel and Keller (2011)). The 15-item version that was used by Heitland and Bohner (2010) showed an internal consistency of α = .80. Rangel and Keller (2011) used a 9-item short version, but did not specify which items from the original 18 items were included. Cialdini et al. (1995) specified three consistency factors (internal consistency, public consistency, consistency regarding others), but factor analysis with the German translations revealed four (Rangel & Keller, 2011) and five factors (Heitland & Bohner, 2010).

We chose the nine items with the highest item-total correlations from the translation by Heitland and Bohner (2010). This procedure resulted in different items than the ones chosen by Heitland and Bohner (2010). The 9-item short-version had a reliability of α = .83 and is presented in Appendix B.

DISCUSSION

We decided to use nine items from the translation by Heitland and Bohner (2010) due to comparable reliability levels between the two translation versions and a subjectively easier wording (shorter, more comprehensible sentences) in the version by Heitland and Bohner (2010). In pretesting, many participants noted that the two questionnaires were very similar, or even that they contained the same items.

The failure to replicate the proposed three-dimensionality of the construct (Cialdini et al., 1995) might be a first hint that psychology students answer the scale differently than a convenience sample recruited online.

MAIN STUDY

METHOD

The study was preregistered via Open Science Framework (OSF). The preregistration document can be found at https://osf.io/ez6jm/

Participants were recruited in several internet forums, via Facebook groups, through Poll-Pool and SurveyCircle (two platforms where participants receive credits for their own studies via answering other's questionnaires), and via Prolific Academic (paid survey participants)[22].

SAMPLE

The software program G*Power was used to conduct power analysis and to calculate the needed sample size. The goal was to obtain .80 power. A priori power analysis for ANOVA with repeated measures and within-between interactions and for MANOVA with special effects and interactions with a Bonferroni-corrected .005 alpha error probability revealed that a sample between 201 and 307 would be needed, expecting effects of small to medium size. We attempted to recruit up to 310 participants, assuming that some participants would be excluded from the analysis due to extreme values. Erroneously, the preregistration did not include Bonferroni-correction of the alpha error probability, which is why an intended sample size of 200

[22] Recruitment strategy (paid participants via Prolific vs. unpaid convenience sample) significantly affected the implicit evaluations of Albanians, Slovenians and Swedes (they evaluated the groups more positively than did the convenience sample). However, as no results substantially changed when recruitment strategy was controlled for, samples were collapsed.

participants was preregistered, though corrected analyses showed that the intended sample size should rather be *N* = 310. As this fault was noticed after embargoing the registration, the sample size differs between the reposted data and the preregistration.

A total of 315 participants finished the questionnaire. One test run and one participant were excluded, the latter because she indicated belonging to one of the lateral groups (Albanian). Participants who did not write down at least two associations with Turks were excluded from the analysis as well (*n* = 5). Participants who failed to produce positive associations in the positive condition or negative associations in the negative condition were excluded from the analysis as well (*n* = 3)[23]. The final sample comprised 305 participants. Mean age was 26.05 years (*SD* = 6.09, Range: 18-64), and 62.6% indicated being female, 36.7% male, and 0.7% another gender. Educational levels were rather high with 40.7% reporting having finished secondary education (Abitur) and 56.6% indicating having university degrees. Most participants indicated being German (92.1%). About 15-20 participants were psychology students from the University of Bonn who received course credit in return for their participation. As study subject was not asked for in the survey, this number is based on feedback from students.

MEASURES

Implicit evaluations were assessed using an Affective Misattribution Procedure (AMP; Payne et al., 2005). In the test, participants are first shown a stimulus from one of several categories (in the current study the respective group's denominations, such as "Turks" or "Swedes"). A neutral symbol is presented subsequently (a Chinese character). This character (and explicitly not the previously presented stimulus) should then be evaluated positively or negatively. According to the logic of the AMP, the effect associated with the stimulus is transferred to the character. Participants who hold a negative attitude toward Turks, but positive attitude toward Swedes, for example, should evaluate the Chinese character more negatively when it follows the word "Turkish" than when it follows the word "Swedish". Reliabilities for the five

[23] These three qualifications (own group membership, minimum associations, valence of associations) were not pre-registered, but were considered to be reasonable criteria after data collection.

groups were rather low (Cronbach's α regarding Turks: α = .68, Albanians: α =.50, Kosovars: α =.64, Slovenians: α =.51; Swedes: α =.58).

Explicit evaluations of the five groups were assessed via five semantic differentials each (*bad - good, dishonest - honest, not likable - likable, incompetent - competent, unfriendly - friendly*). Reliabilities were all acceptable (for Turks α = .86, Albanians α = .91, Kosovars α = .93, Slovenians α = .91, Swedes α = .89).

The moderator MCPR was assessed with the German scale by Banse and Gawronski (2003; α = .88) and PFC was assessed with a short scale based on the scale by Heitland and Bohner (2010; α = .80).

At the end of the survey, participants were asked in open-answer format to write down any associations that came to mind when thinking about Albanians, Kosovars, Slovenians and Swedes (one question for each group). These associations, and the associations with Turks, were later coded as negative, neutral or positive, using the following coding scheme (which was generated by the author and given to the three other coders):

1 (= negative): associations such as "loud", swear words, adjectives connected to threat (e.g. "criminal", "hypocritical", "lying", etc.), "drugs"

2 (= neutral): "poor", "rich", geographic adjectives ("east", "mountains", "sea", etc.), weather ("cold", "warm", etc.), culinary adjectives (except "good food", "delicious cakes", etc., which were coded as positive), "drink" or "drink-proof" (because of unclear valence), "family-conscious" (especially relevant for Turks, valence difficult to classify), religion (e.g. "Muslim"), "war", "(economic) refugees" (no clear valence), "expulsion", "music"

3 (= positive): all associations in connection with "nice", "good", etc. (positive adjectives); "holidays", "friendly", "smart", etc.

Missing values, "I don't know", "unknown" or single letters (e.g. "ff") should always be coded as missing (left blank). After the coding process, country names as associations (e.g. "Albania" for Albanians) were also coded as missing. In case of doubt, the coders were asked to rate associations neutrally – even if e.g. one word was rather positive, but the other two were rather neutral. In some cases, however, a word also colored the overall picture – for example "religious" and "careful" should be

coded neutrally, but “religious” in combination with "fanatical" should be coded negatively. Interrater-reliability between the four raters was calculated by intraclass correlation coefficients (ICC) using a two-way random effects model testing for absolute agreement. The average ICC for the positive associations about Turks was ICC(2, 4)[24] = .95; for negative associations with Turks ICC(2, 4) = .91; for Albanians ICC(2, 4) = .98; for Kosovars ICC(2, 4) = .97; for Slovenians ICC(2, 4) = .97; and for Swedes ICC(2, 4) = .94. Based on the suggestions of Koo and Li (2016), these values can be interpreted as indicating excellent reliabilities. After the reliability analysis, some ostensible typos were changed (e.g. coding of “friendly” as negative instead of positive or coding of “no idea” as missing instead of neutral)[25]. After the (re-)coding process, ratings of the associations were averaged to a mean value of all four ratings.

Perceived similarity of the four lateral groups as compared to Turks was assessed with four Likert scale items (ranging from 1 = “very dissimilar” to 4 = “very similar”). Participants further had the option to answer “group unknown”. Similarity was also assessed via a sorting task, which was planned to be used for later assignment of the dependent variables to the categories “very similar”, “similar”, etc.

PROCEDURE

The first page of the questionnaire informed participants that the study was about “the perception of (potential) EU-member states”, and that they would be asked to think about a randomly chosen nationality and to rate this nationality and other groups in the following sections. Participants were further informed that their participation would be anonymous and that they were free to quit participation at any point. They were then asked to think about the first three positive or negative

[24] Labeling and model description based on Shrout and Fleiss (1979).

[25] The following ratings have been adjusted retrospectively (if not stated otherwise changes were made for one rater/one coding). For positive associations with Turks: “fa we oi” and “none” changed from neutral to missing. For negative associations with Turks “1 2 3”, “none none none” and “de j j” changed from neutral to missing. For Albanians coding of “nice” changed from negative to positive and “Albania” changed from neutral to missing (for 5 codes by 3 different raters), “ assiduous and hardworking” changed from negative to positive. For Albanians, 3 raters coded “Hoxha” as missing, but as Enver Hoxha was an Albanian politician, the neutral rating of the fourth rater was used for calculating the mean value. For Kosovars: “See previous answer. And that although I have Kosovar neighbors” coded as missing instead of neutral, “no association” coded as missing, “Same as Albanian” coded as missing. For Slovenians: “don't know the culture” coded as missing, “Slovenia” coded as missing (6 times by three coders), “sympathetic” coded as positive, “diligently” as positive (2x by one rater). For Swedes: “nice” changed to positive coding, “blonde hair”, “blond” and “blond blue-eyed” changed to neutral, “progressive” changed to positive.

associations that came to their mind when thinking about Turkish people. The manipulation was followed by an AMP, after which participants were asked if they were able to read Chinese pictograms (control item). After the implicit evaluations, participants were asked to evaluate Turks and the four lateral groups on five semantic differentials each. Subsequently, MCPR and PFC was assessed, followed by associations with the lateral groups and perceived similarity of the lateral groups as compared to Turks. Finally, participants were asked to give some demographic information (gender, age, nationality, education level) and to write down any hypotheses about the purpose of the study and additional comments if they wanted. The last page thanked participants for their participation, gave a contact email and completion codes for PollPool, SurveyCircle and Prolific.

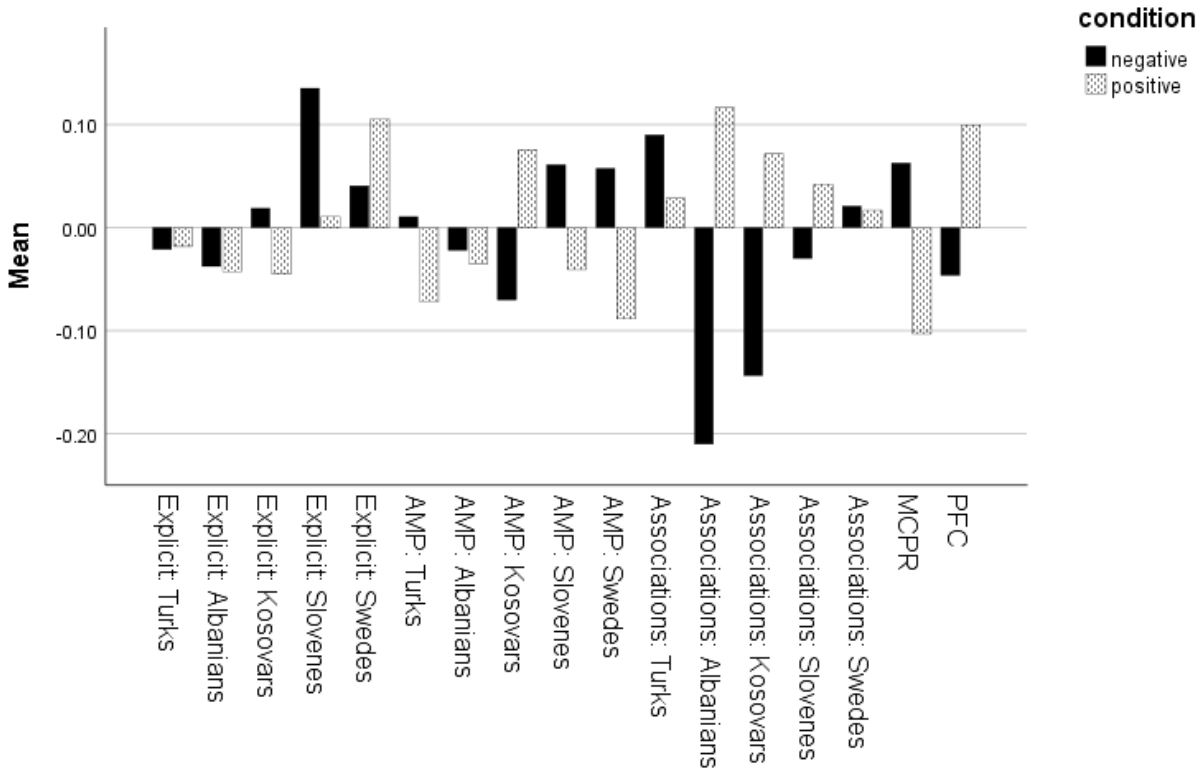
RESULTS

To get an overall first impression of the data, descriptive analyses were conducted. As can be seen in Figure 19, mean differences for AMP scores were rather small and inconsistent. Mean differences for explicit evaluations showed that Turks and Swedes were evaluated more negatively in the negative condition than in the positive condition, but the pattern was reversed for Albanians and Slovenians (though these differences were rather small as well). Valence ratings of the associations that were given in open answer format showed that all groups received more positive associations in the positive condition than in the negative. Differences were especially pronounced for Turks, which can be interpreted as an indication that the manipulation was effective. In addition, correlational analyses were conducted[26]. MCPR was positively correlated with gender such that female and other gender participants showed higher values of MCPR ($r(305) = .33$, $p < .001$).

[26] Correlational analysis were not pre-registered. All bivariate correlations are presented in Appendix C.

Figure 19

Descriptive statistics for dependent variables by condition



Note. All variables are z-standardized. AMP scores indicate the proportion of positive ratings. Association values refer to the valence ratings of the associations with the groups.

To test the effects of the stereotype activation (hypotheses 1-4), a MANOVA[27] with condition as the between-subjects factor, and implicit and explicit evaluations of the focal and lateral groups as dependent variables was conducted. The effect of condition did not reach significance or showed a tendency for any dependent variable. All *F*-values were below 1, except for the implicit evaluation of Turks ($F(1, 302) = 1.82$, $p = .179$, $\eta_p^2 = .006$), with more negative evaluations in the negative than in the positive condition, and the explicit evaluation of Slovenians ($F(1, 302) = 1.03$, $p = .312$, $\eta_p^2 = .003$), which were evaluated slightly more positively in the negative condition.

[27] Box's test suggested that homogeneity of covariance matrices was not given, but as groups were roughly equal in size, MANOVA was assumed to be robust against this violation.

To examine the effects of perceived similarity (Hypothesis 5), individual similarity ratings from the sorting task were used to assign the respective groups' evaluation to the four categories highly similar, moderately similar, moderately dissimilar and very dissimilar. For each participant, the individual order was used to assess the effects of the stereotype manipulation on the respective similar and dissimilar groups. In two MANOVAs for repeated measurements[28], condition was entered as the between-subjects factor, similarity as a within-subjects factor, and implicit or explicit evaluations of the focal and lateral groups as dependent variables. For the explicit evaluations, results showed a significant effect of similarity (F(2.118, 641.804) = 166.78, p < .001, η_p^2 = .355). On average, the group most similar to Turks was evaluated least positively (M = 3.99, SD = 1.12), the rather similar group a little more positively (M = 4.15, SD = 1.05), the rather dissimilar group even more (M = 4.54, SD = 1.00), and the very dissimilar group most positively (M = 5.44, SD = 1.00). Polynomial contrasts showed significant results for nearly all distributions, but the biggest effect pointed to a linear distribution (F(1, 303) = 241.08, p < .001, η_p^2 = .443). The manipulation showed again no significant effect (F(1, 303) = .03, p = .858, η_p^2 = .000), and neither did the interaction between manipulation and similarity (F(2.118, 641.804) = .49, p = .627, η_p^2 = .002). These effects did not speak for the expected U-shaped pattern of explicit evaluations. For exploratory reasons, analyses were run separately for the positive and negative conditions. Results also showed a linear trend form for similarity: the higher similarity, the worse the groups were evaluated explicitly.

For the implicit evaluations, similarity also showed a significant effect (F(2.673, 807.266) = 8.82, p < .001, η_p^2 = .028)[29], but the manipulation did not (F(1, 302) = .06, p = .808, η_p^2 = .000), and neither did the interaction between manipulation and similarity (F(2.673, 807.266) = 1.37, p = .254, η_p^2 = .005). Polynomial contrasts showed that the biggest effect indicated a quadratic distribution (F(1, 302) = 14.75, p < .001, η_p^2 = .047). On average, the rather dissimilar group was evaluated most positively (M = .62, SD = .23), followed by the rather similar group (M = .59, SD =

[28] As Sphericity was not given, correction procedures were chosen based on the suggestions of Girden (1992). Girden (1992) recommends setting the limit for the choice of the two correction methods at a Greenhouse-Geisser-Epsilon of .75. For ε > .75 the Huynh field correction should be used, and for ε < .75 the Greenhouse-Geisser correction should be used. This value was accordingly corrected by Huynh-Feldt. A significant Box's test further suggested that homogeneity of covariance matrices was not given, but as groups were roughly equal in size, MANOVA was assumed to be robust against this violation.

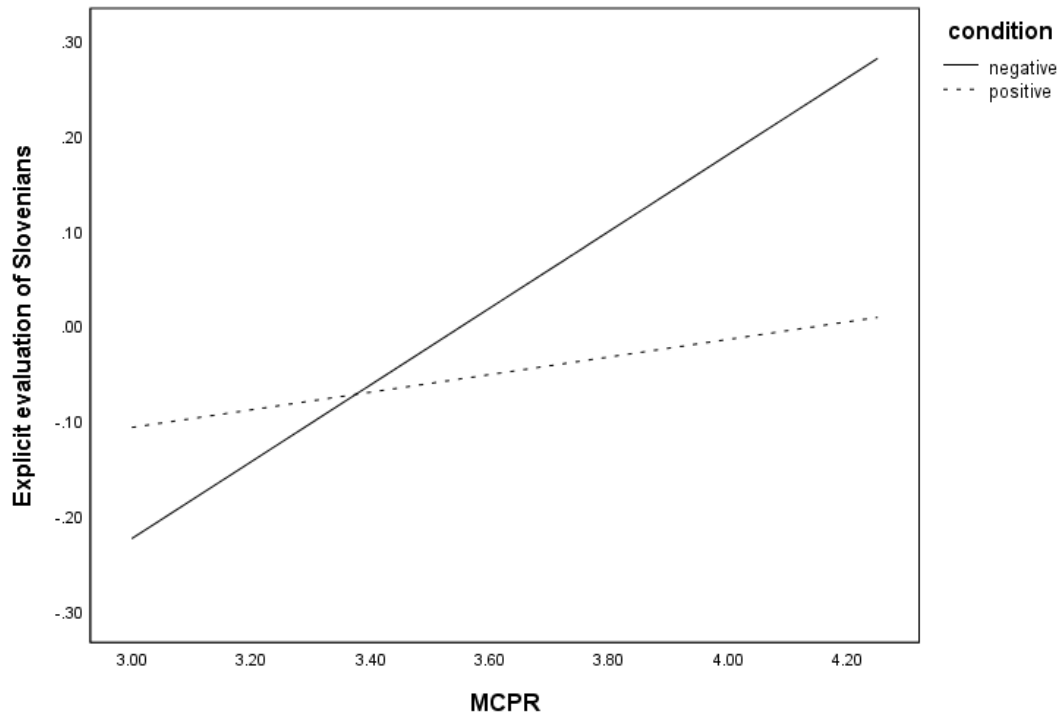
[29] Greenhouse-Geisser corrected.

.25), the very similar group (*M* = .59, *SD* = .25), and finally the most dissimilar group (*M* = .55, *SD* = .26). This pattern did not confirm the expected linear distribution (more positive ratings for less similar groups). Exploratory analyses for the two conditions separately showed that the distribution was comparably quadratic in the positive condition, but cubic in the negative condition.

To test the effects of PFC and MCPR (hypotheses 6-7), the PROCESS macro by Hayes (2013) was used to conduct moderation analyses of PFC and MCPR on the explicit and implicit evaluations of the five groups. MCPR significantly moderated the effects of the manipulation on the explicit evaluation of Slovenians ($F(1, 301) = 4.15$, $p = .043$, change in R^2 due to interaction = .01). Participants high in MCPR evaluated Slovenians significantly more positively in the negative condition than in the positive condition (MCPR = 4.25, effect = -.27, $t = -2.04$, $p = .042$), which constitutes a contrast effect (see Figure 20). Participants low in MCPR evaluated Slovenians slightly more positive in the positive than in the negative condition (MCPR = 3.00, effect = .14, $t = .84$, $p = .401$), but this effect was not significant.

Figure 20

MCPR as a moderator of the relationship between explicit evaluations of Slovenians and condition

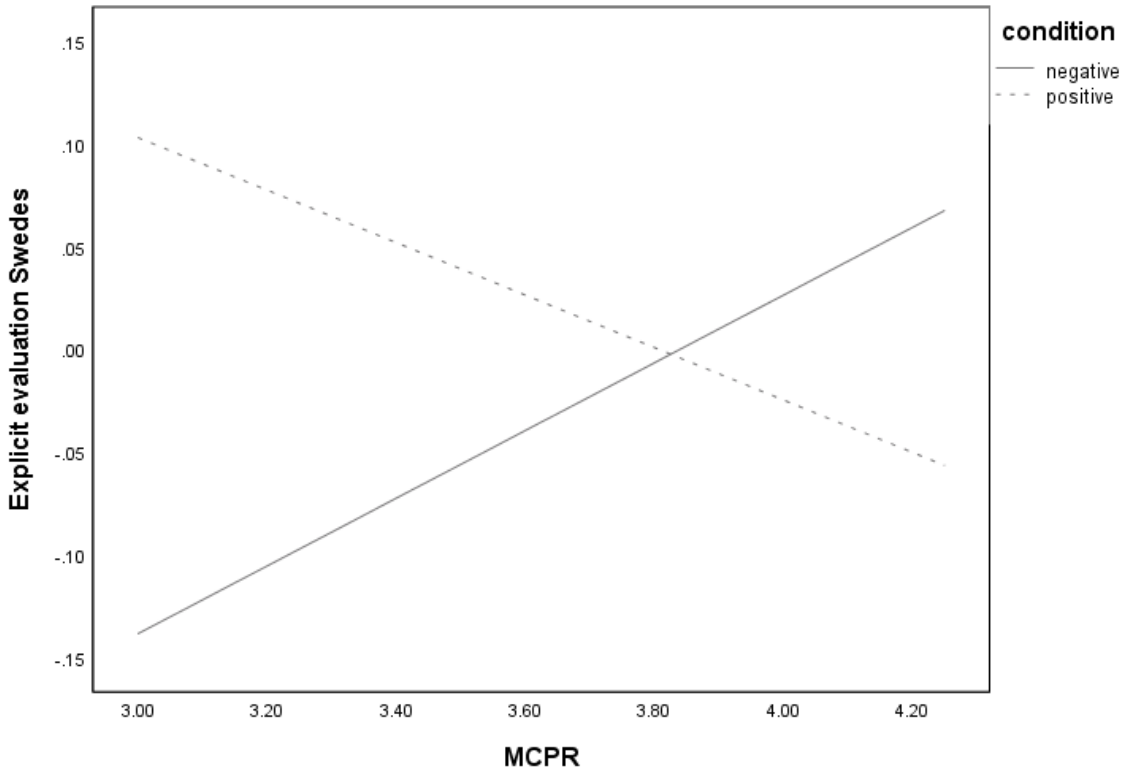


Note. Evaluation values are z-standardized.

MCPR also by tendency moderated the effects of the condition on the explicit evaluation of Swedes (R^2 change = .01, $F(1, 301) = 3.78$, $p = .053$) such that participants low in MCPR evaluated Swedes explicitly more positively in the positive condition than in the negative condition (MCPR = 3.00, effect = .24, $t = 1.76$, $p = .078$), but participants high in MCPR evaluated Swedes more positively in the negative condition than in the positive condition (MCPR = 4.25, effect = -.12, $t = -.95$, $p = .325$. This effect is displayed in Figure 21.

Figure 21

MCPR as a moderator of the relationship between explicit evaluations of Swedes and condition



Note. Evaluation values are z-standardized.

MCPR did not moderate any implicit evaluations. The hypothesis that MCPR would moderate the evaluations such that participates low in MCPR should show stronger generalization effects than participants high in MCPR can therefore not be confirmed.

PFC was expected to moderate the evaluations such that participants high in PFC were expected to show stronger generalization effects than participants low in PFC, but the variable did not moderate any results.

Exploratory analysis: Associations for Turks and the lateral groups

Contrary to what was preregistered, we did not assign the given associations to new categories. Only the valences of the associations for Turks and the four lateral groups were rated by four independent raters. These valence ratings (1 = negative, 2 = neutral, 3 = positive) were then used for further exploratory analyses.

Correlational analysis showed that the positive associations with Turks were significantly correlated with the explicit evaluations of Turks ($r(155) = .21$, $p = .010$), Albanians ($r(155) = .20$, $p = .015$), and Slovenians ($r(155) = .16$, $p = .046$), but not with Kosovars ($r(155) = .07$, $p = .371$) or Swedes ($r(155) = -.07$, $p = .408$). The valence rating of the associations regarding Albanians were strongly correlated with the explicit evaluation of Albanians ($r(278) = .47$, $p < .001$), but not with the implicit evaluations of Albanians as measured by the AMP ($r(277) = .11$, $p = .073$). Correspondingly, the valence of the associations with Kosovars correlated with the explicit evaluation of Kosovars ($r(254) = .40$, $p < .001$), but not with the implicit evaluations ($r(253) = .03$, $p = .610$). For Slovenians, correlations between associations and explicit measures were also significant and positive ($r(245) = .27$, $p < .001$), but not for implicit values ($r(245) = .07$, $p = .253$); and the same was true for Swedes (between associations and explicit rating: $r(304) = .25$, $p < .001$), between associations and implicit rating $r(303) = .08$, $p = .161$). These results indicate that the free associations are more comparable with explicit evaluations than with the AMP results.

To examine the valence effects of the associations with Turks on the associations with the four lateral groups, a MANOVA for repeated measurements was run with valence of the associations with Turks (sum score for the positive and negative condition; higher values indicate more positive associations) as the independent variable (between-subjects factor) and the valence ratings of the four lateral groups as dependent variables (within-subjects factor). As we wanted to examine the influence of truly judgemental thoughts about Turks on the subsequent associations with the lateral groups, only those participants whose associations had been unanimously judged as either positive ($n = 93$) or negative ($n = 89$) by the four raters

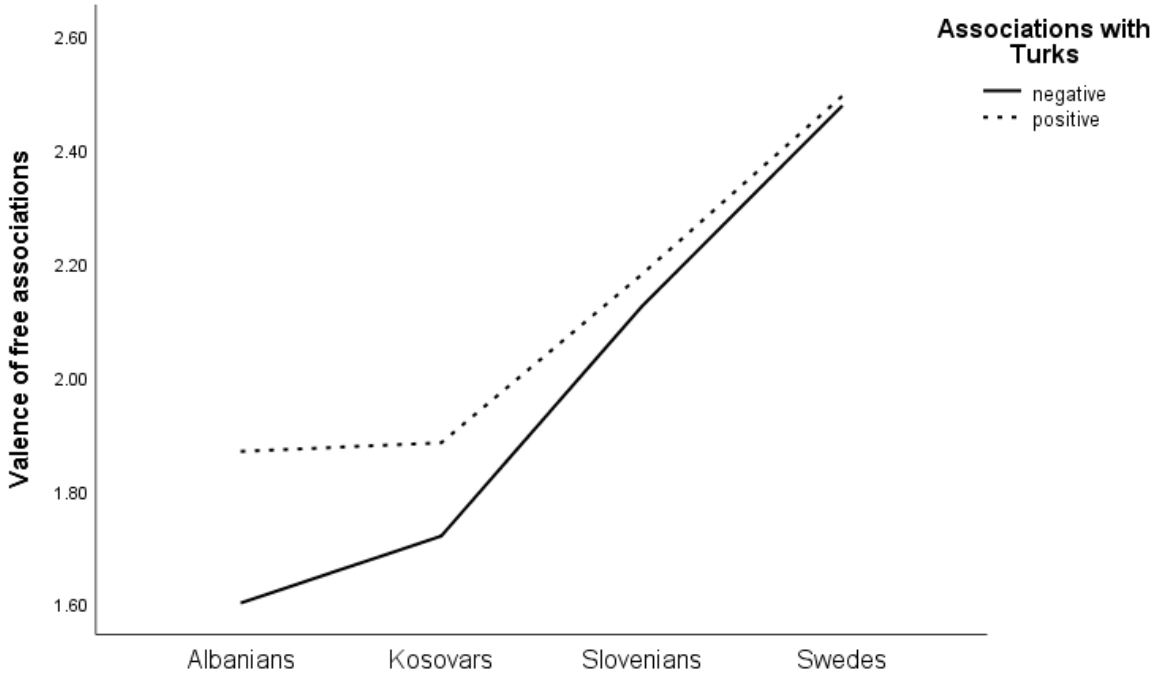
were included. Results showed a significant influence of group similarity (F(2.808, 505.451) = 83.63[30], p < .001, η_p^2 = .317), but also a small effect for the interaction between condition (valence of associations with Turks) and similarity (F(2.808) = 2.20[31], p = .091, η_p^2 = .012). Polynomial contrasts showed the biggest effect for a linear distribution of the similarity values (F(1, 180) = 183.74, p < .001, η_p^2 = .505). The valence of the associations with Turks (positive or negative) did also have a significant influence (F(1, 180) = 5.52, p = .020, η_p^2 = .030). This influence is illustrated in Figure 22.

To have a closer look at how positive or negative associations with Turks influenced subsequent thoughts about each of the four lateral groups, another MANOVA was run with valence ratings of the associations with the lateral groups as dependent variables and the mean valence rating for Turks as the independent variable. Results showed that although the associations with Albanians (F(1, 180) = 7.99, p = .005, η_p^2 = .042) and Kosovars (F(1, 180) = 4.05, p = .046, η_p^2 = .022) were significantly influenced by the valence of the previous associations with Turks, this influence was not significant for the associations given for Slovenians (F(1, 180) = .41, p = .523, η_p^2 = .002) and Swedes (F(1, 180) = .05, p = .817, η_p^2 = .000).

[30] Huynh-Feldt corrected
[31] Huynh-Feldt corrected

Figure 22

Influence of positive or negative associations with Turks on lateral groups



Note. Mean valence rating of “1” indicates negative associations, “2” indicates neutral associations, “3” indicates positive associations.

Exploratory: Indirect effects

To examine whether the manipulation affected the subsequent evaluations of the lateral groups and associations with them in an indirect way, mediation analyses were run. As the manipulation did not affect the explicit or implicit evaluation of Turks directly, no indirect effects could have been found here. Therefore, only valence ratings of the associations were used for mediation analyses. However, these did not reveal any significant indirect effects either.

Exploratory: Associations of implicit and explicit evaluations

Implicit evaluations of the five groups were all significantly correlated, with Pearson coefficients between .59 and .69 for Turks, Albanians, Kosovars and Slovenians, and correlations between .34 and .43 for Swedes and the other four lateral groups (all correlations $p < .001$). Implicit evaluations of Turks were significantly correlated with

explicit evaluations of the Turks ($r(304) = .27$, $p < .001$), but the AMP score associated with the Turks was also correlated significantly with the explicit evaluation of Albanians ($r(304) = .27$, $p < .001$) and Kosovars ($r(304) = .21$, $p < .001$), and negatively with explicit evaluation of the Swedes ($r(304) = -.14$, $p = .016$). Implicit and explicit evaluations of the Albanians were significantly correlated ($r(304) = .20$, $p = .001$), but Albanians' implicit evaluation was also correlated with the explicit evaluation of Kosovars ($r(304) = .13$, $p = .026$). Explicit and implicit evaluations of the Kosovars were also correlated ($r(304) = .17$, $p = .003$), but explicit and implicit ratings of Slovenians and Swedes were not.

To explore the validity especially of the AMP, moderation analyses were conducted to test whether MCPR would moderate the associations of explicit and implicit group evaluations. Implicit ratings were included as the dependent variable and explicit ratings the independent variable. The only small moderation effect was found for Swedes (R^2 change = .01, $F(1, 300) = 3.71$, $p = .055$). For participants with high MCPR values, correlations between implicit and explicit ratings were negative, but they were positive for participants with low MCPR scores. For participants with average MCPR values, explicit and implicit values did not differ much.

DISCUSSION

The ratings of the given associations with the lateral groups showed that thinking positively or negatively about Turks also affected subsequent thoughts about Albanians and Kosovars, but not about Slovenians or Swedes. These findings indicate a generalization effect based on similarity – the more similar a group is to a previously activated positive or negative group, the more subsequent associations with this group will be affected by the valence of the first group. However, these findings could not be shown using the explicit (or implicit) evaluations of the groups, as the manipulation did not affect any group significantly.

The finding that similarity had a significant effect on the evaluations of the lateral groups could be interpreted as a generalization effect, but as no significant interaction between explicit or implicit evaluations and the condition were found, it is also possible that the actual similarity to Turks (a possibly disliked group) affected the evaluations of the similar groups. As no pretests of the evaluations were conducted, the baseline rating of the focal and lateral groups is unclear, and thus interpretations

remain hypothetical. Future research should try to assess not only possible group differences but also attitude changes due to manipulations. In the current study this was not possible as it would have made the cover story unbelievable and might have triggered correctional tendencies for explicit evaluations (at least for participants with high MCPR scores).

Participants with higher MCPR scores showed a contrast effect when evaluating Slovenians. Those who were asked to write down positive associations with Turks evaluated Slovenians (a rather dissimilar group) less positively than those participants who were asked to write down negative associations with Turks. This contrast effect was expected for the highly similar group. However, it is also possible that participants high in MCPR not only corrected or suppressed negative evaluations of the focal group, but also for ostensibly similar groups, such as Albanians and Kosovars. As Slovenians were evaluated to be rather dissimilar, the negative feelings might have popped up here again, as a rebound effect. As Swedes were seen to be very dissimilar from the focal group, they were not affected by such a backlash of negative feelings. Future research should take a closer look at the effects of negative thought suppression on subsequent group evaluations.

The results further showed that the AMP did not work well. Reliabilities were rather low, and positive correlations between all groups' implicit evaluations did not make much theoretical sense. The results appeared to be rather random. For example, it was quite surprising that Swedes were evaluated less positively than Turks, Albanians, Kosovars or Slovenians, and that only Kosovars were evaluated less positively in the negative condition than in the positive condition. Finally, no (meaningful) moderations of explicit and implicit evaluations by MCPR were found, which raises doubts about the validity of the measure. Only for Swedes was the classic finding replicated – that being the finding that individuals low in MCPR show a higher positive correlation between explicit and implicit evaluations than do individuals high in MCPR, who should adjust their explicit evaluations and thus show no, or a negative correlation between the two measures (cf. Banse & Gawronski, 2003; Dunton & Fazio, 1997). Finally, several participants (n = 11) noted in the comment section that they had been challenged by the AMP, did not understand how to respond or did not know how they should evaluate the pleasantness of Chinese pictographs. These findings suggest that the AMP may work better with (psychology)

students (who are used to this kind of tests) than with a convenience sample (comparable to recent findings about the SC-IATs discussed above).

STUDY 5: LATERAL ATTITUDE CHANGE REGARDING FICTIVE GROUPS

The results from the first two studies were likely influenced by factors such as previous experiences with the respective groups, media coverage at the time of data collection or other factors that were not included as independent variables or covariates. The following study tried to shed some light on the underlying process of attitude generalization and decouple this process from outside influences such as media. In Study 5, fictive groups were used instead of existing social groups, removing the possibility of activating pre-existing associations or biases. In addition, the study was designed to examine both generalization effects based on similar appearance (i.e. same vs. different skin color) and contrast effects based on a contradictory group characterization (i.e. positive or negative valence of the respective group description).

In a study by Ranganath and Nosek (2008) participants learned about two fictive characters (Reemolap and Vabbenif, adapted from Gregg et al., 2006), who belonged to two large and diverse social groups. The characters each performed either mostly positive or mostly negative behaviors. Participants then read short, neutral descriptions of two new individuals (Bosalaap and Ibbonif) who belonged to the same groups as the original individuals. Afterwards, implicit and explicit evaluations of the new individuals were measured. Results showed that although participants resisted using the positive or negative information about the first group for their explicit evaluation of the new individuals, implicit evaluations readily generalized to the new individuals. After some days, generalization was apparent for explicit evaluations as well. The authors concluded that deliberative logic (the knowledge that two individuals are not necessarily the same just because of shared group membership) prevented (or reduced) explicit generalization at time 1, but that if concrete knowledge about the individuals is unavailable (such as after forgetting), associative knowledge can provide the basis for explicit evaluations. The simple association of two individuals by shared group membership (though the group was

large and diverse) was enough for immediate implicit attitude generalization, and eventually for explicit generalization after time had elapsed (Ranganath & Nosek, 2008).

The change of attitudes over time can also be explained by differences between associative and propositional processes. If, for example, information about who did what is missing, evaluations should be based on associative links. For a propositional evaluation, people need a clear memory of what the objects under consideration did. However, after as time elapses, information from memory can be lost. According to Brainerd and Reyna's fuzzy trace theory, memory can be distinguished between gist memory (the general meaning and important relationships between informational inputs) and verbatim memory (a more concrete representation of inputs; Reyna & Brainerd, 1995). After some delay, original verbatim memory can be forgotten, which can make people more susceptible to misleading information (Reyna & Brainerd, 1995), but also promote associative generalization, as the general valence of the group descriptions should still be accessible even though concrete, distinguishing information is lost (Ranganath & Nosek, 2008).

The present study was designed to investigate whether these types of processes also apply to attitude generalization from one group to another. It was expected that participants who read about a couple who performed primarily negative behaviors should also devaluate a second group that looked similar to the first group. Although participants should explicitly resist basing their evaluations of two diverse groups (Niffians and Laapians) on the description of one particular couple (of the Laapians), explicit and implicit evaluations should converge after some amount of time has elapsed, when participants have forgotten specifics of which group did what and they base their evaluations on simple group association. Attitudes were expected to generalize most strongly if the Niffians looked similar to the Laapians and were described neutrally, but generalization should be lower for dissimilar and positively described Niffians.

To assess whether the group description (contrary to the Laapians or neutral) had a stronger influence on attitude generalization or if physical similarity had an effect, a 2 (high or low similarity) x 2 (positive or neutral description of group) design was used.

Negative information was expected to generalize more strongly than positive information (cf. Baumeister et al., 2001; Fazio et al., 2004). Negative information is

processed more thoroughly and is more resistant to disconfirmation than positive information (Baumeister et al., 2001), and thus we used only a negative group description to analyze the description's effects on a positively and a neutrally described group.

PRETEST 1

In the study by Ranganath and Nosek (2008), sketched figures and short descriptions from the two fictive groups, Laapians and Niffians, were used to investigate the process of attitude generalization. The figures showed two couples from the groups who differed with respect to body shape, clothes and skin color (lighter or darker). To avoid obvious links to skin color, race, nationality, or the like, two new figures were created for the current study. The figures created for this study have unnatural skin colors (blue or orange, as shown in Figure 23) and are more abstract than the ones used by Ranganath and Nosek (2008). To find groups that were perceived as similar or dissimilar to the focal group (the Laapians), a pretest was run. As used by Ranganath and Nosek (2008), the sentences used to describe the two groups were based on a study by Hamilton and Gifford (1976). The group descriptions differed with respect to the number of positive or negative behaviors or characteristics that were relevant to the two groups, to realize an either positive or negative tone. To strengthen the effect of the negative information, the negative text was a little longer than the positive, which was longer than the neutral text. Both groups used in the study were introduced as diverse groups (German: "vielfältig"). The positive group description included nine positive characteristics (e.g. "is empathic" or "known for always remembering his friends' birthdays"), and three negative characteristics (e.g. "pushes in a waiting line" or "frequently jumps a red light"), and the negative group description included only four positive behaviors (e.g. "Bosalaa recently visited a friend in hospital") and twelve negative behaviors. In a modification to the original study design by Ranganath and Nosek (2008), we also included a neutral condition, which included an equal balance of four positive and four negative behaviors. The positive and negative group descriptions included more adjectives perceived as "other-relevant" (e.g. "generous" or "cooperative"), but mostly adjectives perceived as "self-relevant" (e.g. "lazy") were used in the neutral group description in order to achieve a clearer distinction of the positive/negative and

neutral description (on the concept of “self- and other-profitability” see Peeters, 1992).

METHOD

SAMPLE

A total of 109 participants (80.7% female) took part in the study. Mean age was 22.06 years (*SD* = 4.44, Range: 17-44 years). Due to a copy error, 12 participants received questionnaires without a picture of the two groups to rate physical similarity, which resulted in 97 participants who rated both group similarity and valence of the description.

PROCEDURE

The study was presented as a pretest for three Bachelor theses. Students who were potential participants were asked to take part after a psychology lecture and to fill in a one-side questionnaire, which they were told would take about five minutes. Another group of participants was recruited in a choir meeting by a Bachelor student. Students who agreed to take part in the survey received a questionnaire that included one of three group descriptions (positive, negative or neutral) and one of two combinations of sketched figures, either two similar figures (a dark blue and a light blue couple) or dissimilar figures (a dark blue and a green couple). Instructions asked participants to read the group description and to indicate afterwards if they perceived the members of the presented group negatively or positively, using a seven-point Likert scale with the extremes labeled “very negative” and “very positive”. Participants were also asked to look at the two sketched couples and to evaluate how similar these figures were on a seven-point Likert scale with the extremes labeled “very dissimilar” and “very similar”. Finally, participants were asked to indicate their age and gender. Participants did not receive any credit for participation.

RESULTS

The positive group description was rated as rather positive (*M* = 5.32, *SD* = 1.04, *n* = 34), the neutral description was rated as rather positive as well (*M* = 5.16, *SD* = 0.99, *n* = 37), and the negative description was rate as more negative (*M* = 3.63, *SD* = 1.20, *n* = 38). ANOVA with Gabriel post hoc tests showed that although the positive

and negative and the neutral and negative group descriptions differed significantly with regard to their positivity/negativity rating, the difference between the positive and neutral condition was not significant.

The light blue and the green figures of the Niffians were both evaluated to be relatively similar to the dark blue figures of the Laapians (M = 5.94, SD = 1.03 and M = 5.77, SD = 1.15, respectively). Similarity ratings did not differ significantly for the green and light blue figures ($F(2, 95) = 0.57$, $p = .451$).

PRETEST 2

To achieve a clearer distinction between the positive and negative group descriptions, the ratio of positive and negative characterizations was changed from 3:1 to 4:1. Consequently, the positive description included 12 positive and three negative behaviors, and the negative group description included four positive and 16 negative behaviors. The ratio in the neutral condition was kept the same (four positive and four negative behaviors). We also tried to increase the difference between the dissimilar figures and used orange instead of green skin color (in comparison to the dark blue original group) and further changed the body shape and clothes of the dissimilar (orange) group (e.g. added hats, changed the sweater to a turtleneck).

METHOD

SAMPLE

A total of 147 individuals (56.2% female, 43.8% male) took part in the second pretest. Mean age was 21.76 years (SD = 3.39, Range: 16-36 years).

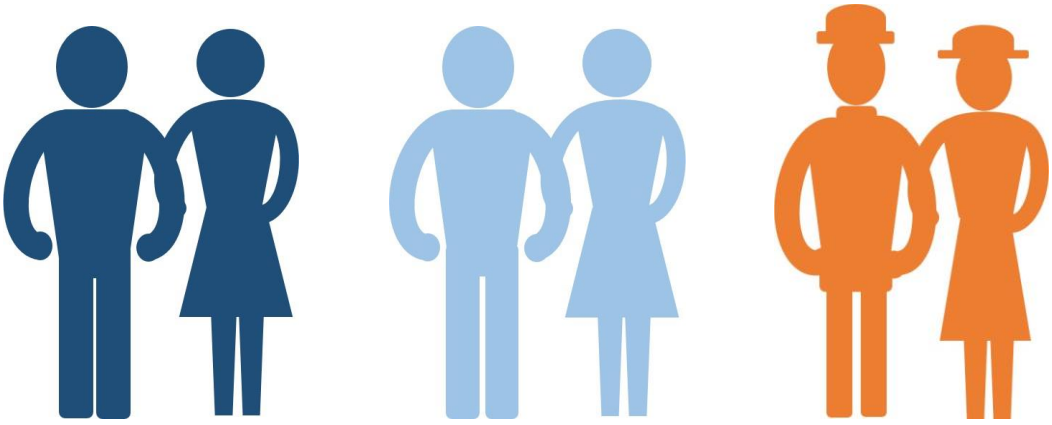
PROCEDURE

Potential participants were approached personally by one of three female student researchers in the University of Bonn cafeteria and asked if they were interested in filling out a one-side questionnaire, which should take about five minutes. The questionnaire only differed from the one of the first pretest with respect to the ratio of positive/negative characterizations in the group descriptions and the look of the dissimilar figures (orange instead of green, and slightly different clothes and body

shape than the original dark blue group, cf. Figure 23). Participants did not receive any credit for taking part in the study.

Figure 23

Visual stimuli as used in the main study



Note. Dark blue figures on the left side were presented as the Laapians, light blue figures were used in the similar condition as the Niffians, and orange figures on the right were used in the dissimilar condition.

RESULTS

Valence ratings of the group descriptions were M = 2.94 (SD = 1.13) for the negative condition (n = 49), M = 4.06 (SD = 1.07) for the neutral (n = 47) and M = 5.18 (SD = 1.18) for the positive condition (n = 50). ANOVA using Gabriel post hoc tests showed that all group descriptions differed significantly from one another.

The light blue figures were evaluated to be rather similar to the dark blue figures (M = 5.88, SD = 1.19), but the orange figures were evaluated to be less similar (M = 4.66, SD = 1.36). Light blue and orange figures differed significantly in perceived similarity to the original dark blue figures ($F(1, 145) = 33.90$, $p < .001$).

MAIN STUDY

Attitudes can generalize from a focal group to another, lateral group. This study was designed to test whether physical similarity or the group's description is a stronger moderator of LAC. The study was preregistered via Open Science Framework (OSF). The preregistration document can be found at https://osf.io/kdvsq/

METHOD

SAMPLE

The software G*Power (Faul et al., 2007) was used to conduct a power analysis for repeated-measures MANOVA with between-subjects factors. The goal was to obtain .80 power to detect a small effect size of f = .2 at the standard .05 alpha error probability. This procedure revealed a target sample size of 144 participants. As it was planned to exclude participants with high error rates (i.e. > 20% in the IAT) and extreme values (> 3x interquartile range from mean), we aimed to recruit up to 180 participants so that extreme participants could be excluded without sample size dropping below the target sample size. Erroneously, the preregistration did not include Bonferroni-correction of the alpha error probability. Corrected analysis showed that the intended sample size should have been rather n = 192. Unfortunately, this error only became apparent after the end of the survey phase, which meant that no corrections could be made. The actual reached test power was therefore calculated again after data collection and was at .71 level, which was still acceptable.

A total of 180 participants completed the survey at measurement time 1 (T1), and 167 participants at the second measurement (T2). Before data analysis, participants who took part several times, or who did not complete the survey at either T1 or T2, were deleted from the file. One participant who had answered with the same value on all scales was deleted as well. The final sample that was used for analysis consisted of N = 163 participants (39.3% female, 58.9% male and 1.8% of another gender). Mean age was M = 32.22 years (SD = 11.23, Range: 18-64 years).

MEASURES

Explicit evaluations of Laapians and Niffians were given on a seven-point Likert scale using the same semantic differentials as in Study 2: *likable - not likable, good - bad, pleasant - unpleasant, honest - dishonest, competent - not competent*. Reliability for the explicit evaluation of the Laapians was Cronbach's α = .84 for T1, and α = .92 for T2. Reliability of the explicit evaluation of the Niffians was α = .87 for T1, and α = .91 for T2.

Implicit evaluations were given using three SC-IATs: for Laapians, orange Niffians and light blue Niffians. The SC-IATs consisted of four blocks with 24 trials (practice

blocks) or 71 trials (test blocks). Response latencies were analyzed using the D algorithm as described by Karpinski and Steinman (2006). A positive D-score indicates an implicit association between the respective group and more positive attributes, and a negative D-score indicates a stronger negative association.

Each participant completed two SC-IATs according to the respective condition. Reliabilities were calculated as reported by Karpinski and Steinman (2006), with α = .56 for Laapians at T1, and α = .58 at T2. Reliability of the implicit evaluation of the Niffians light blue was α = .55 for T1, and α = .40 for T2, and for the orange Niffians α = .49 for T1 and α = .39 for T2.

As a moderator, MCPR was assessed via the German MCPR scale (Banse & Gawronski, 2003), based on Pratto et al. (1994). Reliability for the MCPR-scale was α = .85 (T1 only).

Nine cover story items were used to ask for details of the group description (e.g. “Who likes to go to cinema?”). Answer possibilities were “Laapians”, “Niffians”, “neither” or “I don’t know”.

Demographic information included age and gender. Participants were further asked at T1 and T2 about their hypotheses about the study.

Mean time between the two measurements was 3.68 days (*SD* = 1.25). Time between the measurements was planned to be used as a covariate in the analysis, but as it did not affect any dependent variable, it was dropped as a covariate.

PROCEDURE

Participants were recruited via the platform Prolific Academic. A prescreening procedure was used to recruit only participants who were fluent in German. The study was described as a study about memory effects. Participants were paid £1.26 for participation at T1 and £0.80 for participation at T2.

At time 1, the study began with an introduction that the survey was about memory of group descriptions, that participation was voluntarily and all information would be stored anonymously. Participants were further informed that participation via smartphone was not possible and that they should only take part at T1 if they were willing to take part at T2 as well. After giving their informed consent, the picture and group description of the Laapians (i.e. the couple “Tunglaa and Bosalaa”, who

belonged to the group Laapians) and afterwards the pictures and description of the Niffians (“Iboniff and Kruniff”) were shown on the computer screens (see Appendix D for the wording of the group descriptions). Condition (whether the Niffians were orange or light blue, and described positively or neutrally) was randomized between participants. After reading the group descriptions, participants were asked certain details of the descriptions (cover story items) and about the color of the Laapians and Niffians (manipulation check). Subsequently, they were asked to rate Laapians and Niffians explicitly and implicitly using the semantic differentials and SC-IATs. Afterwards, the moderator MCPR was assessed. Finally, participants were asked to indicate how positively or negatively the two groups were presented in the descriptions (another manipulation check) and then participants were asked to indicate their age, gender, and Prolific ID number. They were also asked to indicate any hypotheses about the purpose of the study and to make other comments on the study if they wished. At the end, participants were thanked for their participation and an email address was given in case of any questions.

The second measurement took part 3-5 days after the first one and included only the cover story and manipulation check items (several details of the group descriptions and colors of the groups), the explicit and implicit evaluations, the moderators, hypotheses and comments. Finally, an email address was given in case the participants had questions or were interested in the background of the study.

HYPOTHESES

First, it was expected that a lateral group that was presented positively would be evaluated more positively than a lateral group that was presented neutrally (manipulation check; effect of valence). Second, a lateral group that looked similar to a negatively presented focal group should be evaluated less positively than a lateral group that looked dissimilar (generalization effect; effect of similarity). Third, the lateral group was expected to be evaluated most positively if it was described positively and looked dissimilar to the focal group (contrast effect), but a neutrally described, similar-looking lateral group was expected to be evaluated least positively (generalization effect). Fourth, implicit generalization effects were expected to be found at time 1 and time 2 equally but explicit generalization was expected to be stronger at time 2 than at time 1 (effect of time).

ANALYTICAL PROCEDURE

Two new variables were created to test the differential effects of look vs. group description (look: similar vs. dissimilar; description: positive vs. neutral). These two variables were entered as independent variables into two repeated-measures MANOVAs (one for the implicit, one for the explicit evaluation of the lateral group). D-scores for light blue and orange Niffians were collapsed to two new variables (D-score Niffians for T1 and T2) to make joint analyses possible. For all analyses, adequate post hoc tests were chosen based on the recommendations of Field (2011). The PROCESS macro (Hayes, 2018) was used to conduct moderation analysis of MCPR, exploratory indirect effect analysis and conditional process analyses (exploratory).

RESULTS

Across all conditions, the Laapians were evaluated rather negatively with $M = 3.04$ ($SD = 1.05$) at time 1 and $M = 3.19$ ($SD = 1.22$) at time 2 (on a 7-point scale, 4 representing a "neutral" evaluation). The Niffians were evaluated more positively, with $M = 4.81$ ($SD = 1.03$) at time 1 and $M = 4.58$ ($SD = 1.12$) at time 2. Explicit evaluations of Laapians and Niffians at time 1 were negatively correlated ($r(163) = -.40$, $p < .001$), an association that was even stronger at time 2 ($r(163) = -.43$, $p < .001$, $n = 69$). In contrast, D-scores of Laapians and Niffians were positively correlated (T1: $r(108) = .32$, $p = .001$; T2: $r(126) = .28$, $p < .001$).

A first MANOVA[32] investigated the effect of the condition on all dependent variables (T1 and T2). How the Niffians were described and illustrated significantly affected the implicit evaluation of the Laapians at T2 ($F(3, 98) = 3.05$, $p = .032$, $\eta_p^2 = .085$), such that they were evaluated more positively if the following Niffians were similar to the Laapians than if they were dissimilar. Condition also affected the explicit evaluation of the Niffians at both measurement points (T1: $F(3, 98) = 3.15$, $p = .028$, $\eta^2 = .088$; T2: $F(3, 98) = 3.50$, $p = .018$, $\eta^2 = .097$) in that they were evaluated more positively when the description was positive than when it was neutral. Entering MCPR as a covariate showed that MCPR affected only the explicit evaluation of the Laapians at T1, but did

[32] Kruskall-Wallis test indicated that multivariate normality was not given for the implicit evaluation of Niffians at T2, but as the sample was larger than $n = 30$, normality was assumed.

not change the overall results. Participants with higher MCPR values evaluated Laapians more negatively at T1, a trend that also showed up at T2.

EXPLICIT MEASURES

A MANOVA with repeated measures[33] showed a significant effect of the within-subjects factor *time* on the explicit evaluation of the Laapians ($F(1, 159) = 3.95$, $p = .048$, $\eta^2 = .024$). The Laapians were evaluated more positively at T2 than at T1. The condition (if the Niffians were similar vs. dissimilar and described positively vs. neutrally) did not have a significant effect ($F(3, 159) = .62$, $p = .604$, $\eta^2 = .012$). Explicit evaluations of the Laapians are shown in Figure 24, panel A.

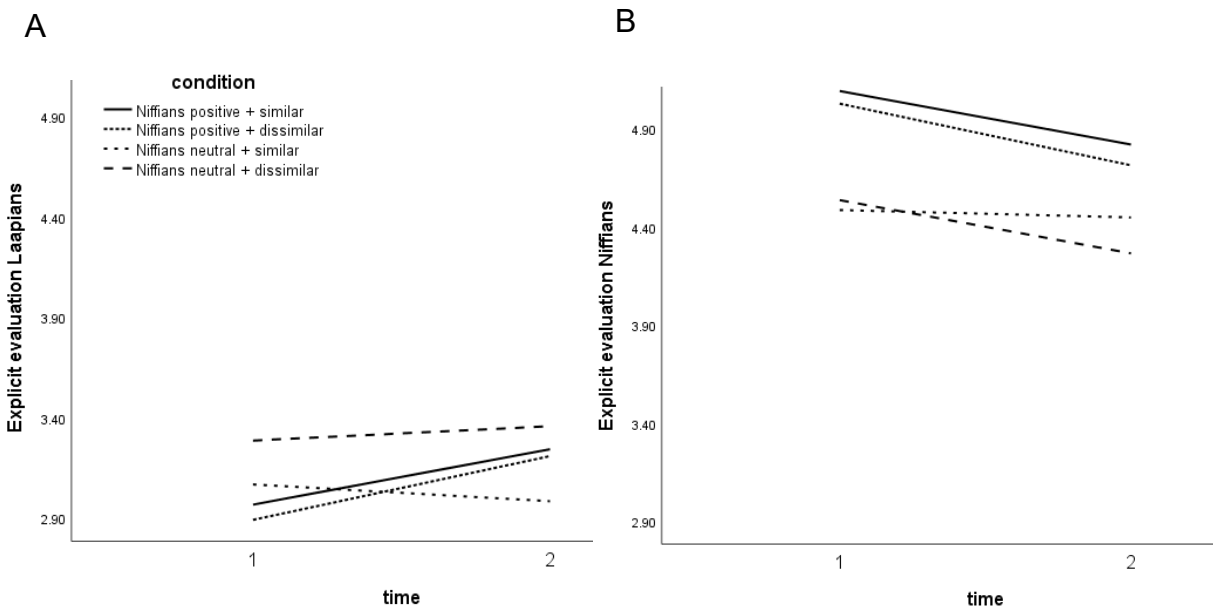
In contrast to the evaluation of the Laapians, the Niffians were evaluated significantly more negatively at time 2 than at time 1 ($F(1, 159) = 9.01$, $p = .003$, $\eta^2 = .054$), but were still perceived more positively than the Laapians. Condition also had a significant effect ($F(3, 159) = 3.55$, $p = .016$, $\eta^2 = .063$, see Figure 24, panel B). Gabriels' post hoc test showed that especially the condition with the positively described light blue Niffians differed from the condition with neutrally described orange Niffians in participants' explicit evaluation of Niffians (Mean difference: .56, $SE = .21$, $p = .059$, 95% CI [-.01, 1.13]).

To analyze the effects of similarity and group description, two new variables were computed (similarity: dissimilar vs. similar, group description valence: positive vs. neutral) and included as independent variables in the MANOVA for repeated measurements[34]. Neither similarity ($F(1, 159) = .54$, $p = .462$, $\eta^2 = .003$) nor description valence ($F(1, 159) = .35$, $p = .556$, $\eta^2 = .002$) had a significant effect on the explicit evaluation of the Laapians. In contrast, description valence significantly influenced the evaluation of the Niffians ($F(1, 159) = 10.44$, $p = .001$, $\eta^2 = .062$) in that they were evaluated more positively in the positive condition than in the neutral condition. Similarity (light blue or orange) again made no significant difference ($F(1, 159) = .26$, $p = .611$, $\eta^2 = .002$).

[33] A significant Box's test indicated that homogeneity of covariance matrices could not be assumed, but as group sizes were roughly equal, the analysis was assumed to be robust against this violation.
[34] A significant Box's test again indicated that homogeneity of covariance matrices could not be assumed, but as group sizes were roughly equal, the MANOVA was assumed to be robust against this violation.

Figure 24

Explicit evaluations of Laapians and Niffians at time 1 and time 2, dependent on condition



Note. Figure legend applies to panels A and B.

IMPLICIT MEASURES

Looking at the implicit evaluations, a significant effect of time on both Laapians (F(1, 98) = 44.12, p < .001, η^2 = .310), and Niffians (F(1, 98) = 7.80, p = .006, η^2 = .074) was found. Both groups were evaluated more positively at T2 than at T1.

Including valence and similarity instead of condition as independent variables showed that whether the groups were similar or dissimilar only affected the implicit evaluation of the Laapians at T2 (F(1, 98) = 8.42, p = .004, η^2 = .079). Laapians at T2 were evaluated slightly more positively if the Niffians were similar looking. Description valence had no significant influence on any implicit evaluation.

MODERATION ANALYSIS

The association between condition and the explicit and implicit evaluations of Laapians and Niffians at T1 and T2 was not moderated by MCPR under any conditions.

Including the valence of the description (positive-neutral) instead of condition as independent variable revealed a small effect of MCPR on the association between

valence and explicit evaluation of Laapians at T2 (interaction coefficient -.58, *SE* = .30, *t* = -.20, *p* = .052). Participants with higher MCPR values evaluated the Laapians more negatively when the Niffians were described neutrally. When the Niffians had been described positively, no big differences were shown between evaluations from participants high vs. low in MCPR.

Using similarity as the independent variable revealed no significant moderation effects.

MANIPULATION CHECKS

Only 63.8% of the participants correctly recalled the color of the Laapians at time 1, and 69.3% recalled the Niffians color correctly. For time 2, 57.7% correctly remembered the color of the Laapians and 65.6% of the Niffians. In total, only 75 participants remembered all groups' colors correctly at both measurement times. Including only those participants who remembered the groups correctly at both times led to no substantial changes in the reported results.

EXPLORATORY: INDIRECT EFFECT ANALYSES

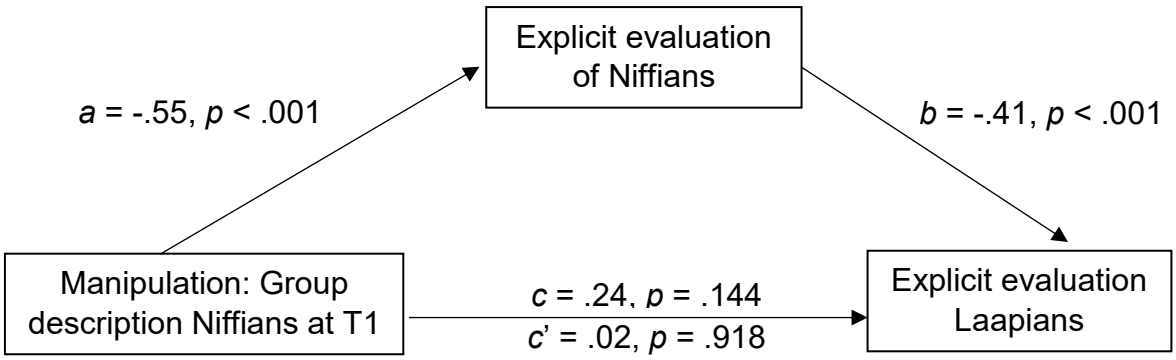
To analyze whether the presentation of the Niffians as similar or dissimilar and positive or neutral affected the evaluation of the Laapians indirectly, several mediation analyses were run using the PROCESS macro for SPSS (Hayes, 2018).

As the conditions differed only regarding the presentation of the Niffians and not regarding the primary group of the Laapians, the Niffians' evaluation was used as the mediator for this model. It was assumed that the way the Niffians were presented should affect the subsequent evaluation of the Niffians, which then in turn could also affect the evaluation of the Laapians. As the MANOVA had shown that only the valence of the description affected the evaluation of the Niffians, valence (instead of condition in general) was included as the independent variable. As the color of the Niffians should not have impact on their evaluation, using description valence seemed reasonable. Results of the mediation analysis showed that Laapians were indeed indirectly influenced by the presentation of the Niffians through change in the evaluation of the Niffians. Whether the Niffians were presented positively or neutrally affected the explicit evaluation of the Niffians, which then affected the explicit evaluation of the Laapians (indirect effect: .23, bootstrapped *SE* = .09, bootstrapped 95% CI [.08, .42]). This association is depicted in Figure 25 and Table 14. Due to the

poling of the valence variable (1 = positive group description, 2 = neutral group description), a negative coefficient for path a shows that a positive group description led to a more positive group evaluation of the Niffians than followed a neutral group description. A negative coefficient for path b shows that the more positively the Niffians were evaluated, the less positively the Laapians were evaluated (contrast effect).

Figure 25

Indirect and direct effects on the explicit evaluation of the Laapians at T1



For time 2, the same pattern was found (indirect effect: .20, bootstrapped *SE* = .09, bootstrapped 95% CI [.03, .39]). The description of the Niffians from T1 influenced the evaluation of the Niffians at T2 (though to a smaller extent than at T1), and the evaluation of the Niffians in turn affected the Laapians in a contrasting way (cf. Table 14). The more positively Niffians were evaluated, the less positively Laapians were evaluated.

Table 14

Model coefficients for the explicit evaluation of Laapians

		Consequent						
		M (Niffians explicit)			Y (Laapians explicit)			
Antecedent	time		*Coeff.*	*SE*	*p*		*Coeff.*	*SE*	*p*
X (Manipulation)	T1	*a*	-.55	.16	< .001	*c'*	.02	.16	.918
	T2		-.41	.17	.022		-.27	.18	.132
M (Niffians explicit)	T1		-	-	-	*b*	-.41	.08	< .001
	T2		-	-	-		-.49	.08	< .001
Constant	T1		5.61	.24	< .001		4.98	.49	< .001
	T2		5.17	.27	< .001		5.84	.49	< .001
Model	T1		R^2 = .27 $F(1, 161) = 12.53$, $p < .001$				R^2 = .40 $F(2, 160) = 15.39$, $p < .001$		
	T2		R^2 = .18 $F(1, 161) = 5.39$, $p = .022$				R^2 = .45 $F(2, 160) = 19.81$, $p < .001$		

Note. X = independent (antecedent) variable; Y = dependent (consequent) variable; M = mediator; *a*, *b* and *c'* = unstandardized regression coefficients.

To investigate whether the indirect effect was stronger when Niffians and Laapians looked similar, similarity was included as a moderator of the b-path in the model. Conditional process analyses showed that the indirect effect was significant for both subgroups, whether Niffians were similar or dissimilar to the Laapians (similar condition: indirect effect .24, *SE* = .10, bootstrapped 95% CI [.07, .44]; dissimilar condition: indirect effect .21, *SE* = .11, bootstrapped 95% CI [.03, .47]). Although there was a slightly stronger indirect effect when the groups looked similar, the index of moderated mediation was not significantly different from zero (index: -.03, *SE* = .11, bootstrapped 95% CI [-.26, .20]).

For the implicit evaluation of the Laapians, no indirect effects via the implicit evaluation of the Niffians were found at T1 or at T2.

DISCUSSION

Presenting the fictive group of the Niffians in a neutral or positive light significantly affected the explicit evaluation of the Niffians themselves, and, indirectly, also influenced the evaluation of the Laapians, a group that had been previously presented in a negative way. Greater group similarity between Laapians and Niffians had a positive effect on the implicit evaluation of the Laapians at T2, but similarity in general had less influence on the evaluations than predicted. MCPR also only showed a small effect on the association of valence and explicit evaluation of the Laapians at T2, but did not moderate the hypothesized constructs. Although the Laapians were evaluated more positively at time 2, the Niffians were evaluated more negatively at time 2.

The original hypotheses were formulated from the perspective that when a first group was presented negatively, that would have an impact on a subsequently presented group that was presented positively or neutrally. Although the Niffians where explicitly evaluated more positively after they were described positively than neutrally (Hypothesis 1, manipulation check), the effect of similarity (Hypotheses 2) did not reach significance, as similar and dissimilar Niffians were not evaluated differently. Implicit evaluations were not affected by the group description or similarity. Hypotheses 3 (on the interaction of valence and similarity) could not be tested, as no significant effects of similarity on the Niffians were found. Hypotheses 4, that implicit generalization effects are expected equally at time 1 and time 2, but explicit

generalization are expected to be stronger at time 2, could not be confirmed either, as generalization was found only for explicit evaluations.

Contrary to how the study was planned, it was not how the negative description of the Laapians affected the evaluation of the Niffians that was further analyzed, but rather how the positive or negative evaluation of the Niffians affected the evaluation of the Laapians. The original research plan was to compare the influence of a primary group for whom a negative portrayal was presented on the subsequent evaluation of another group. However, as group similarity did not seem to affect this association significantly, half of the hypotheses could not be tested and exploratory analysis therefore investigated the effect of the description of the Niffians on evaluation of the Laapians. It also became clear during data analysis that the supposed path from Group 1 (Laapians) to Group 2 (Niffians) might be bidirectional such that the way the Niffians were presented might also have an impact on the evaluation of the Laapians. Indirect effect analyses revealed that this was indeed the case. These results seem to be quite important given that effects of order might be negligible when it comes to media effects. The presentation of a group A can shape the evaluation of a group B *and* vice versa.

The Niffians were always described positively or neutrally (and never negatively), and though participants resisted generalizing the resulting more positive evaluation of the Niffians at T1 to their evaluation of the Laapians, evaluation of the Niffians affected the evaluation of the Laapians at T2. It is possible that participants forgot which group did what after time had elapsed, but the general valence of the group descriptions was still accessible (in their memories). This explanation would fit the assumptions of fuzzy-trace theory (Reyna & Brainerd, 1995) and the findings of Ranganath and Nosek (2008), who discussed that associative generalization in particular should be promoted by forgetting because the general valence of the group descriptions should still be accessible, but concrete, distinguishing information is lost. This is also consistent with the finding of the negative correlation between explicit evaluations, and the positive correlation between implicit. As concrete details are forgotten, evaluations have to be based on associations left in memory. These associative links tend to be stronger when the groups also looked similar. The finding that the Laapians were evaluated more positively at T2, but the Niffians were evaluated more negatively at T2, is also consistent with this reasoning: the “fuzzy

traces" of memory were used to evaluate the groups at T2, and as differentiating group information was lost, the evaluations became more similar.

Results of mediation analyses showed that although the effect of the group description on the evaluation of the Niffians became smaller from T1 to T2 (as information might have been forgotten), the mediating effect of the evaluation of the Niffians on the evaluation of the Laapians became slightly stronger (as evaluations converged).

Mediation analyses also showed that the description of the Niffians affected the evaluation of the Laapians indirectly, through a changed evaluation of the Niffians. Mediation analyses were limited to the indirect effect via the evaluation of the Niffians, as it did not make sense theoretically that a manipulation of the description of the Niffians would affect the evaluation of the Laapians which then in turn affects the Niffians. The valence of the group description affected the subsequent explicit evaluation of the Niffians at T1 and T2 such that they were evaluated more positively when they had been described positively rather than neutrally (a finding that constitutes a manipulation check). The changed evaluation of the Niffians then also affected the evaluation of the Laapians but in a contrasting way. The more positively the Niffians had been evaluated, the less positive the evaluation of the Laapians. This makes sense since the groups were presented as more or less contrasting (e.g., descriptions were negative versus positive or at least neutral). It might be informative for future research to test how a negative description of a focal group affects the subsequent evaluation of another lateral group. It is possible that both groups would be evaluated even more negatively afterward, as compared to a condition in which one or both groups are described neutrally. These considerations have important implications for groups that are frequently presented in conjunction, and usually both in a negative way, as is the case for example for Romanians (or Bulgarians) and Roma. In contrast, positive presentations of one of the groups might also increase how positively all groups are evaluated.

Conditional process analyses showed that the indirect effect of group descriptions was slightly (but non-significantly) stronger when the groups looked similar, but effects always went in the same direction. The finding that the Laapians were both explicitly and implicitly evaluated more positively at T2 when the Niffians had looked similar to them could be interpreted in terms of a contrast effect depending on group

similarity as well. Especially when groups looked similar, the (contrastingly) different descriptions affected their evaluations. However, it is important to note here that many participants did not correctly remember the color of the Niffians, which is why the effect of similarity should be interpreted with caution (it is unclear how many of the participants who “correctly” recalled the group color simply guessed right).

The negative correlation between the explicit evaluations of Laapians and Niffians, and the negative effects shown in the mediation analyses at both measurement points, present a contrast effect: the more participants appreciated the Niffians, the more they devaluated the (negatively depicted) Laapians. It might be possible that this finding shows that only those participants who correctly recollected the information about both groups were able to distinguish them and to evaluate them accordingly afterwards. Although participants explicitly differentiated between the groups, they implicitly generalized, as shown by a positive correlation between the implicit evaluations. Still, this association cannot be explained by indirect effects, as mediation analyses revealed no significant effects of the group description on the implicit evaluation of the Niffians themselves. It might be possible that as participants were asked to decide very quickly in the IAT which group belonged where, they just answered in terms of a “general feeling”, and already generalized. It might also be possible that the IAT was not able to correctly catch the different attitudinal processes, as reliabilities were quite low and many participants noted in the comment section that they did not really know what to do and were overwhelmed.

Nearly one-third of the participants at time 1 and half of the participants at time 2 did not correctly remember the colors of the two groups. This might have been another reason why the IAT had such low reliability, as pictures of the two groups were used as stimuli. Another problem might have been that participants did not remember which group did what, though a “clear memory for who did what is necessary for observers to keep their evaluations straight and enables them to prevent the actions of one individual from influencing their judgments of another” (Ranganath & Nosek, 2008, p. 250). It might also be possible that the time interval between the two sessions was too long for the participants to remember enough of the group descriptions to evaluate the groups again.

In summary, how the Niffians were described also indirectly affected how the Laapians were explicitly evaluated through change in the evaluation of the Niffians. A

contrast effect showed that the positive description of the Niffians indirectly had a negative effect on the Laapians. Implicit evaluations of the groups were not mediated by the group description, but were positively associated, which might imply an implicit generalization effect.

GENERAL DISCUSSION

Glaser et al. (2015) assumed that the relationship between LAC and similarity is not linear, but rather bell-shaped for displacement effects. “If lateral objects are high in similarity, they may also be affected by deliberate resistance toward generalization. If, however, similarity is moderate, the association may go unnoticed and the evaluation automatically transferred from X to Y will be accepted explicitly for the lateral object without resistance. Finally, if similarity is too low, no transfer of evaluation will occur in the first place” (Glaser et al., 2015, p. 13). These assumptions fit well with the findings from studies 1 through 5, reported in this thesis.

After stereotype activation through a fictive newspaper article, very high similarity led to a contrasting evaluation in the case of Roma and Romanians (implicitly in Study 1, explicitly in Study 2). After a stereotype activation procedure (asking participants to give three positive or three negative associations with Turks), a generalization effect was found for a moderately similar group (Kosovars, Study 4). In contrast, a contrast effect was found for moderately dissimilar groups, which still had some associations. After a stereotype activation procedure or reading a positive or negative group description, participants evaluated Germans and Greeks or the Laapians and the Niffians contrastingly (Study 3, Study 5). Finally, for some groups associations or similarities were too weak for the manipulation to have any effect on the evaluation (i.e. Roma and Chinese in Study 1 and 2, or Turks and Swedes in Study 4). An experiment with fictive groups (Study 5) showed smaller effects of similarity, which can be explained by the fact that similarity of social groups is not restricted to outer appearance only (which was the variable manipulated in this study). Social groups can also share various characteristics or be opposites (e.g. regarding political orientation, religiousness, spatial proximity or other). The ABC model (relating to agency, beliefs and communion) by Koch et al. (2016) presents a good overview about the dimensions people might use in daily life to arrange groups as similar or

dissimilar, specifically using the dimensions agency/socioeconomic success, conservative/progressive beliefs and communion/warmth. The current studies used broader evaluations of similarity due to the expectation that people usually are not aware of the underlying dimensions they use in determining similarity attributions. However, it is plausible that for example Greeks and Germans were perceived to be antagonistic regarding the dimension socioeconomic success, and possibly not so much regarding conservative or progressive beliefs. The “Euro-Crisis” and the associated financial assistance of Germany to Greece was quite prevalent in the media at the time of data collection, likely amplifying differences (and awareness of differences) between the groups (Germans compared to Greeks). The associations Norwegians had with Germans were consistent with this argumentation. They perceived Germans as hard-working and structured, or wrote that Germans “control the economy” or are “Europe’s bank”.

Turks and Swedes (Study 4) might have been rated as very dissimilar, or even antagonistic, on the dimension of conservative/progressive beliefs. Turks were frequently described as “traditional” or “conservative”, but Swedes were considered “democratic”, “refugee friendly” or “progressive”. In comparison to Albanians (which were perceived as a similar group to Turks in Study 4), associations depended on the condition. Participants in the positive condition, who thought of Turks for example as “hospitable” and “family-friendly” people, also wrote down comparable associations with Albanians, but participants in the negative condition (who listed negative traits of Turks) frequently wrote down comparable negative associations (e.g. “nationalistic”) with Albanians as well. In conclusion, the perception of similarity or dissimilarity seems to depend on different factors, and whether the dimension of agency or the conservative vs. progressive beliefs play a role in the perception of similarity could depend on actual media coverage, and also existing and prevalent attitudes and stereotypes.

In addition to group similarity, studies 1 through 5 showed that several other factors influence whether generalization and/or contrast effects appear. MCPR showed different effects on the groups. Participants seemed to be more susceptible to the tone of a newspaper article when they were high in MCPR. In Study 1 for example, MCPR only moderated the effect of condition on the explicit evaluation of Romanians, such that high-MCPR participants evaluated Romanians positively in the

positive condition (who read a fabricated article portraying Roma positively) and negatively in the negative condition (who read a similar article portraying Roma negatively), but low-MCPR participants did not generalize from the article about Roma to Romanians. Conditional process analyses also revealed some support for the hypothesis that attitude generalization was stronger for participants high in MCPR, though effects were rather small (Study 1, 3). High levels of MCPR led to more positive evaluations of groups in general, without differences between the condition (Study 1, 2), and this effect was more pronounced when minority groups or groups that were presented negatively in public discourse (e.g. Roma and Romanians or Greeks) were evaluated. Study 4 also revealed an unexpected contrast effect in that participants high in MCPR evaluated Slovenians in contrast to the manipulation (i.e. more positively in the negative condition), but Study 5 did not show any moderation effects of MCPR (which might be due to the design with fictional groups). Future research should take a closer look at the possible moderating role of MCPR on LAC and explore the different effects of this variable.

Empathy was found to have a strong influence on the evaluation of a focal group, and indirectly, through change in the evaluation of the focal group, also on the evaluation of the lateral group (Study 2). In addition, empathy with the focal group also affected the similar lateral group directly. These findings point to a possible strategy for (lateral) prejudice reduction: increasing empathy with one group can have beneficial effects for other, similar groups as well. In addition, participants with low empathy levels evaluated Roma more positively in the positive condition and more negatively in the negative condition, but participants who reported average or high levels of empathy did not differ significantly in their evaluation of Roma based on the article version they read. This effect was found using a non-student sample (Study 2), but Study 1, in which most participants were students, showed a contradictory effect for MCPR. Though feeling empathy and being motivated to control prejudiced reactions might be expected to go hand in hand, these variables seem divergent. It is thinkable that this might be the case because MCPR presents an individual difference variable that is quite stable, but empathy can be activated or reduced by new information such as a newspaper article. As the positive effect of empathy also generalized to the evaluation of a lateral group, this variable might present an important factor for the effects of media coverage or persuasive messages in general.

PFC did not show any significant effects in the experiments, but previous research already showed some moderating effects of this variable (e.g. Heitland & Bohner, 2010). Future research should take a closer look at the effects of MCPR and PFC, as the effects of these variables on LAC seems to be more complex, and possibly depend on the respective sample and the groups under investigation.

A MODEL OF PREJUDICE GENERALIZATION

Based on the results of the five studies presented above, a model to predict LAC regarding social groups was developed. This model is based on the LAC model (Glaser et al., 2015). Due to its focus on attitudes toward social groups and the indirect impact of attitudes toward other groups, the model will be referred to as the "indirect prejudice change model" (IPC model). This model should not be understood as an alternative to the LAC model, but rather as a concretization of it, with reference to social groups and prejudices. The model is presented in Figure 25. In accordance with the LAC model (Glaser et al., 2015), it is assumed that an information about an object X (a social group or a person; 1) will result in change of the evaluation of X (2), and that this changed evaluation also affects the evaluation of a lateral object Y (another social group or person, which was not part of the information about X; 3). This lateral attitude change is assumed to happen indirectly, through a changed evaluation of X, but to depend on group similarity as well. Effects of group similarity on LAC are expected to be different, depending on whether the information are processed on a propositional or an associative level (cf. the APE model by Gawronski & Bodenhausen, 2006).

In the case of propositional reasoning and high perceived group similarity, the newly developed evaluation of X could generalize to the evaluation of Y if the person decides that a generalization is acceptable (cf. Figure 25, rhombus "Is generalization ok?"). Whether the person makes such a decision depends on several possible moderators. Two of these moderators that have shown significant effects in the previous studies are MCPR and empathy. Low levels of MCPR should lead to automatic generalization. On the other hand, high levels of MCPR should go along with the conviction that evaluating one group in line with another just because they are similar is not acceptable. Accordingly, high levels of MCPR should lead to a

correction of the automatically changed evaluation of Y, which should result in a contrast effect (in case of high, or over-correction) or no verifiable effects on explicit attitude measures (in case of a “medium” correction”), or to an attitude generalization (in the case of a low correction). Study 2 revealed a contrast effect for the highly similar group, but irrespective of MCPR, which could be a hint that another moderator affected these results. Results regarding MCPR were mixed in the previous studies, which is why this possible moderator should be investigated further in future studies.

Feeling empathy with a group should in general be associated with more positive evaluations of the group. In case of high group similarity, high levels of empathy with X should also affect the evaluation of Y such that the person is reluctant to generalize negative information from X to Y, which should result in a correction and thus a contrast effect (more positive evaluation despite negative information), no observable effect (in case of medium correction) or a generalization (in case of low correction). If a person feels no empathy with group X, he or she is expected to think that generalization from X to Y is okay, and to generalize the attitude to Y. Results in Study 2 showed that participants who felt high levels of empathy with Sinti and Roma (X) evaluated the highly similar group of Romanians (Y) more positively as well.

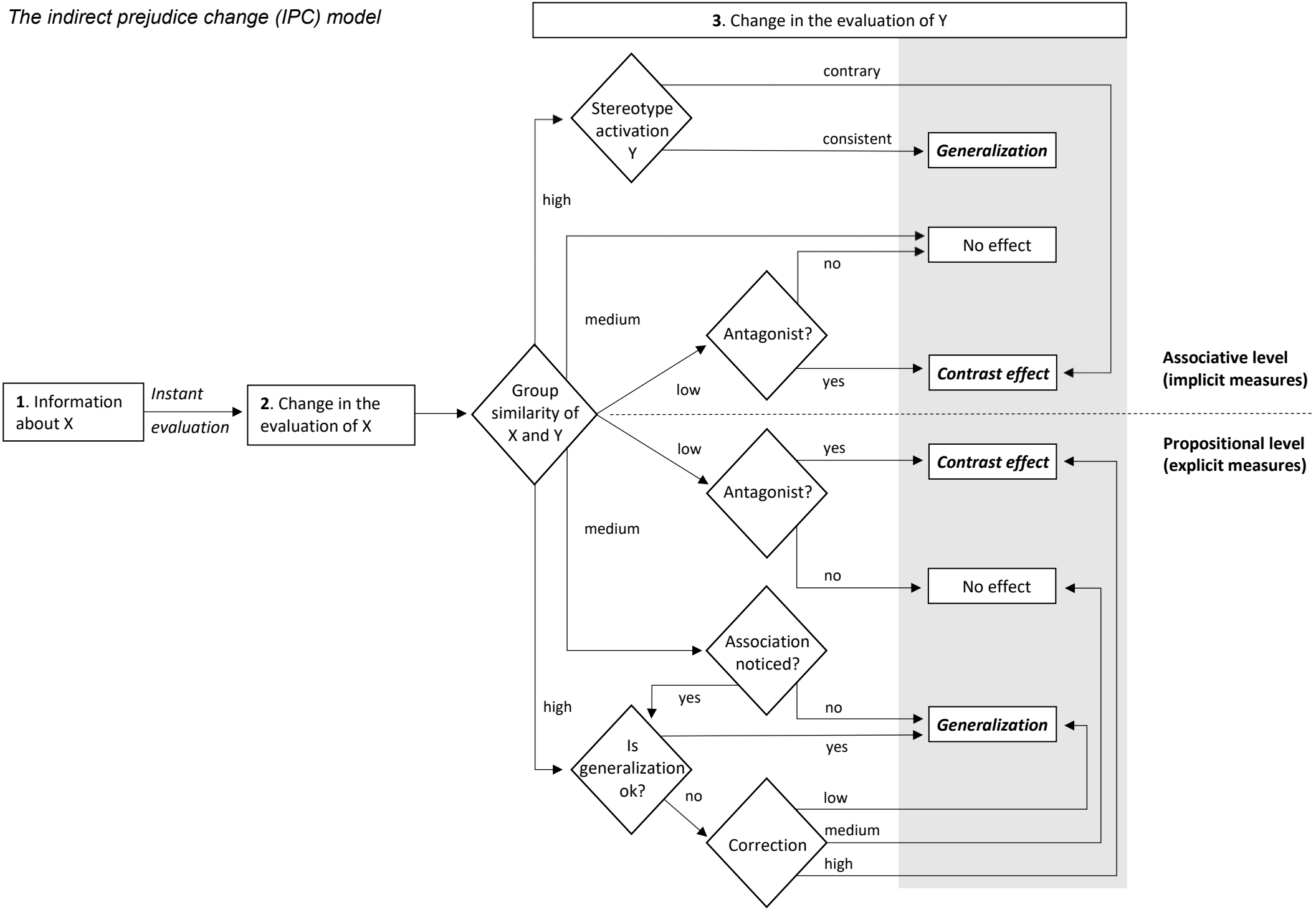
In the case of moderate group similarity, associations between X and Y can be noticed, but also go unnoticed (cf. Figure 25, rhombus “Association noticed?”). If associations are conceived, this should again result in the question of whether generalization is acceptable, and accordingly lead to a generalization of attitudes, a contrast effect or no effect (see above). If the association between X and Y is moderate, but is not perceived by the person, a generalization should take place automatically.

In the case of very low similarity, Y could be perceived as an antagonist of X and should be evaluated in contrast to X accordingly. This effect is assumed to have happened in the case of the contrasting evaluations of Greeks and Germans or Laapians and Niffians (Study 3 and 5). If X and Y are perceived to be very dissimilar but do not have any antagonistic association (such as opposing political systems, financial dependencies or the like), no effect on Y should be found. This effect is assumed to have happened in the case of the evaluations of Chinese after a manipulation regarding Sinti and Roma (Study 1 and 2).

On the associative level, high group similarity should automatically lead to a generalization effect if corresponding stereotypes of Y are activated (cf. Figure 25, rhombus “Stereotype activation Y”). However, in line with Glaser et al. (2015), it would also be possible that opposite evaluations of Y could be activated automatically, which should result in a contrast effect. This might for example be the case if participants read a newspaper article portraying Roma positively, but this group automatically activates negative stereotypes of Romanians, which are associated with Roma (Study 1). Moderate or very low group similarity should lead to no changes in Y, but an antagonistic relationship could activate opposing evaluations of X and Y as well, which should result in a contrast effect. Unfortunately, effects for implicit measures were rather mixed and quite small across all five experiments. Future research should therefore take a closer look at the automatic lateral attitude change.

Figure 25

The indirect prejudice change (IPC) model



LIMITATIONS

It has to be noted that the reliability of the implicit measures was rather low, which might also be one reason why the effects were quite small and sometimes contradictory. Many participants also noted that the IAT or AMP were very tiring tasks, that they made many errors or did not know what to do, which resulted in the exclusion of many participants from the analyses of implicit measures. Apart from Study 1 and 3, the studies were conducted using quite heterogeneous online samples, but it is possible that mainly (psychology) students understand and are able to deal with psychological methods such as the IAT, the AMP, or more abstract scales such as the PFC scale. Another reason for the patterns that were found could be a low motivation of the participants to engage in more complex tasks, a motivation that might be higher for participants who are intrinsically motivated to contribute to research, or who are adequately paid for participation. Future research should take into account the pitfalls of the discussed measures and also investigate possible ways to measure implicit attitudes more reliably. The finding that MCPR did not moderate (or only in rare cases moderated) the relationship of explicit and implicit measures (but frequently showed an effect on explicit measures) also speaks to the low reliability of the implicit measures.

CONCLUSION

The present research shed some light on the question of how changed attitudes toward one group also affect attitudes toward other groups. A starting point for the research was the assumption that the activation of prejudice toward one group should also have effects on other groups, especially when these are perceived to be similar. However, results from several studies showed that not only similarity, but also dissimilarity can have interesting effects on LAC. Attitudes do not only generalize from group X to a similar group Y, they can also affect group Y in a contrasting way, or activate contrasting evaluations of group Z, which is completely dissimilar to group X. Though some research already examined LAC, and the body of research is slowly growing, much is still unclear. The IPC model includes several paths that can have either prejudice-reducing or prejudice-enhancing effects. Future research should try to take a closer look at the various pathways attitudes can take and investigate more closely how each attitude affects other attitudes.

Media coverage (as a form of indirect contact), or stereotype activation in general (which apart from media coverage can also be caused by direct contact experiences, extended contact or independent cognitions) not only influences the evaluation of the respective focal attitude object, but can also affect the evaluation of other, independent objects. This form of “collateral damage” should be further explored in future research, as it can provide both challenges to but also positive starting points for the reduction of prejudice.

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APPENDIX

Appendix A

Fictive Newspaper articles as used in Study 1 and 2

Negative condition

Willkommen im Amaro Kher, unserem Haus!

Amaro Kher und das Prinzip Hoffnung

Das 2004 gemeinsam von Rom e.V., der Stadt Köln und dem Land NRW gegründete Projekt schreibt Erfolgsgeschichte im Kampf gegen einen Teufelskreis aus Not, Ausgrenzung und mangelnder Bildung von Romakindern.

Köln. „Amaro Kher" bedeutet „Unser Haus" auf Romanes, der Sprache der Roma. Dieses Haus am Venloer Wall in Köln ist für viele Roma-Flüchtlinge die erste Anlaufstelle. Seit 2004 werden hier jährlich etwa 50 Romakinder zwischen zwei und zwölf Jahren im Rahmen eines ganzheitlichen Förderprogramms betreut. So werden sie nach ihrer Flucht auf den Eintritt in eine deutsche Regelschule vorbereitet. Dies sei nicht deshalb nötig, weil die Kinder „dümmer" sind als andere, so Lehrer Christoph Schulenkorf. Vielmehr ermöglicht Amaro Kher den Roma-Kindern ein erstes „Ankommen" in Deutschland, bevor es für sie in einer Regelschule richtig losgeht. Diese Starthilfe leisten Schulleiterin Marlene Tyrakowski und ihr multidisziplinäres Team mit viel Herzblut. Unterstützt werden sie dabei von zahlreichen ehrenamtlichen Betreuern, die beim Unterricht helfen. Und ihr Einsatz zahlt sich doppelt aus, wenn man die Entwicklungsschübe einzelner Kinder miterleben darf, wie sie zum Beispiel die kleine Semsa gemacht hat. Sie musste mit ihrer Familie 2009 aus dem Kosovo hierher fliehen. In Amaro Kher kam sie als verschüchtertes stilles Mädchen an, dem es neben der Fähigkeit zu rechen und zu schreiben, vor allem an Zuversicht und Selbstbewusstsein fehlte. „Die Schule ist schön und ich mag Lesen und Mal-Rechnen" erzählt die Elfjährige ein Jahr später in Amaro Kehr. Sie hat sogar eine beste Freundin gefunden, Deva, die aus Bosnien stammt. Eine Freundschaft, die in ihren verfeindeten Heimatländern kaum möglich wäre. Doch bei aller Hoffnung, die Amaro Kher zu schenken vermag, bleiben die Aussichten auf eine unbeschwerte Zukunft in Deutschland für die Roma schlecht. Außerhalb geschützter Rahmenbedingungen, wie Amaro Kehr sie bietet, stellt sich das Einleben in die deutsche Gesellschaft für viele Sinti und Roma als problematisch dar. Schon in den frühen Neunziger-Jahren traten massive Schwierigkeiten in der Integration speziell dieser Volksgruppe auf, wie Berichte des Magazins Spiegel dokumentieren. Trotzdem ist der Flüchtlingsstrom der Sinti und Roma nicht zu stoppen. Fast alle Sinti und Roma die nach Deutschland flüchten, kommen aus Serbien. 2014 wurde Serbien allerdings als sicheres Herkunftsland eingestuft und so gilt es als gesetzlich gewährleistet, dass dort generell keine unmenschliche Behandlung im Rahmen bewaffneter Konflikte droht. Ein Recht auf Asyl und damit eine Zukunft in Deutschland haben die meisten Sinti und Roma also nicht. Soziale Projekte, die sich wie Amaro Kher an eben diese Zielgruppe richten, sollten angesichts der geringen Asylchancen für Sinti und Roma sehr bedacht mit ihren Ressourcen haushalten. Schließlich gäbe es viele andere Asylberechtigte, die von einem Haus wie Amaro Kher profitieren könnten.

Von Stefan Tübinger

Appendix A *(continued)*

Fictive Newspaper articles as used in Study 1 and 2

Positive condition

Willkommen im Amaro Kher, unserem Haus!

Amaro Kher und das Prinzip Hoffnung

Das 2004 gemeinsam von Rom e.V., der Stadt Köln und dem Land NRW gegründete Projekt schreibt Erfolgsgeschichte im Kampf gegen einen Teufelskreis aus Not, Ausgrenzung und mangelnder Bildung von Romakindern.

Köln. „Amaro Kher" bedeutet „Unser Haus" auf Romanes, der Sprache der Roma. Dieses Haus am Venloer Wall in Köln ist für viele Roma-Flüchtlinge die erste Anlaufstelle. Seit 2004 werden hier jährlich etwa 50 Romakinder zwischen zwei und zwölf Jahren im Rahmen eines ganzheitlichen Förderprogramms betreut. So werden sie nach ihrer Flucht auf den Eintritt in eine deutsche Regelschule vorbereitet. Dies sei nicht deshalb nötig, weil die Kinder „dümmer" sind als andere, so Lehrer Christoph Schulenkorf. Vielmehr ermöglicht Amaro Kher den Roma-Kindern ein erstes „Ankommen" in Deutschland, bevor es für sie in einer Regelschule richtig losgeht. Diese Starthilfe leisten Schulleiterin Marlene Tyrakowski und ihr multidisziplinäres Team mit viel Herzblut. Unterstützt werden sie dabei von zahlreichen ehrenamtlichen Betreuern, die beim Unterricht helfen. Und ihr Einsatz zahlt sich doppelt aus, wenn man die Entwicklungsschübe einzelner Kinder miterleben darf, wie sie zum Beispiel die kleine Semsa gemacht hat. Sie musste mit ihrer Familie 2009 aus dem Kosovo hierher fliehen. In Amaro Kher kam sie als verschüchtertes stilles Mädchen an, dem es neben der Fähigkeit zu rechen und zu schreiben, vor allem an Zuversicht und Selbstbewusstsein fehlte. „Die Schule ist schön und ich mag Lesen und Mal-Rechnen" erzählt die Elfjährige ein Jahr später in Amaro Kehr. Sie hat sogar eine beste Freundin gefunden, Deva, die aus Bosnien stammt. Eine Freundschaft, die in ihren verfeindeten Heimatländern kaum möglich wäre. Amaro Kher integriert die ganze Familie der Romakinder in ihrem Programm und bietet so vor allem Neuankömmlingen Hilfestellungen an, sich in ihrer neuen Umgebung zurechtzufinden. Die Erfahrung, dass schulische Bildung Selbstbewusstsein und Unabhängigkeit ermöglicht, ist für viele flüchtende Roma-Familien eine befreiende Erkenntnis. Kein Wunder also, dass der Bedarf groß und die Warteliste lang ist, wie Ivana Ilic von Amaro Kher berichtet. Der Wunsch der Roma nach Integration ist stark und so gelingt ihnen das Einleben meist mit Erfolg: „Tatsächlich leben in Deutschland Sinti und Roma seit langer Zeit, die vollkommen integriert sind. Kein Mensch kann sie erkennen. „Die sitzen zum Teil in Vorstandsetagen großer Industrieunternehmen" erklärt der Historiker Hendrik Polland. Ein Beispiel für gelungene Integration ist auch Günther Weiss, Leiter der Kriminalpolizei in Kehl und ein Sinto. Er weiß, dass Sinti und Roma schon lange keine Ausländer mehr sind, sondern dieselben Tugenden und Werte wie andere Deutsche teilen. Nachdem vor über 600 Jahren die ersten Sinti in deutschsprachiges Gebiet siedelten, haben sich die deutsche und die Sinti-Kultur miteinander vermischt und schreiben seitdem gemeinsam Geschichte.

Von Stefan Tübinger

Appendix B

PFC scale – original wording, as used in Study 4

1. Es ist mir wichtig, dass meine Freunde mein Verhalten voraussagen können.
2. Ich möchte durch andere als verlässlich und einschätzbar angesehen werden.
3. Personen, die ich hoch achte, verhalten sich konsequent und einschätzbar.
4. Es stört mich, wenn ich von jemanden abhängig bin, dessen Verhalten ich nicht vorhersehen kann.
5. Ich möchte auf jeden Fall meiner Umwelt gegenüber stimmig erscheinen.
6. Ich ziehe es vor, Dinge immer auf die gleiche Art zu machen.
7. Ich möchte, dass das Verhalten meiner Freunde vorhersagbar ist.
8. Es ist mir wichtig, dass andere mich als eine verlässliche Person betrachten.
9. Es ist mir unangenehm, einander widersprechende Überzeugungen zu haben.

English Translation:

1. It is important to me that my friends can predict my behavior.
2. I want to be seen by others as reliable and predictable.
3. People I highly respect behave consistently and predictably.
4. It bothers me when I am dependent on someone whose behavior I cannot foresee.
5. I definitely want to fit in my environment.
6. I prefer to always do things the same way.
7. I want the behavior of my friends to be predictable.
8. It is important to me that others see me as a reliable person.
9. It is uncomfortable for me to have contradictory beliefs.

Note. Items based on Heitland and Bohner (2010). English translation by the author.

Appendix C

Bivariate correlations in Study 4

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	AMP Turks	1																						
2	AMP Albanians	.63***	1																					
3	AMP Kosovars	.64***	.68***	1																				
4	AMP Slovenians	.59**	.61***	.69***	1																			
5	AMP Swedes	.34***	.37***	.38***	.43***	1																		
6	Explicit Turks	.27***	.20***	.19***	.16**	.01	1																	
7	Explicit Albanians	.27***	.20***	.22***	.17**	-.00	.68***	1																
8	Explicit Kosovars	.21***	.13*	.17**	.13*	-.03	.65***	.74***	1															
9	Explicit Slovenians	.07	.06	.06	.10	-.11	.50***	.44***	.55***	1														
10	Explicit Swedes	-.14	-.06	.-05	-.04	.01	.07	-.04	.06	.37***	1													
11	Association Albanians	.12*	.11	.15*	.05	.04	.24***	.47***	.31***	.16**	-.12*	1												
12	Association Kosovars	.04	-.04	.03	-.08	-.06	.16**	.21***	.40***	.16**	-.12	.43***	1											
13	Association Slovenians	.03	.03	.07	.07	-.01	-.05	.04	.10	.27***	.04	.29***	.31***	1										
14	Association Swedes	.03	.02	.03	-.09	.08	-.09	-.09	-.05	-.01	.25***	-.02	-.01	.07	1									
15	Association Turks	-.07	-.03	.04	-.05	-.06	.05	.04	.02	-.01	.01	.13*	.12	.06	.00	1								
16	Association Turks Positive	.01	.03	.10	.10	-.08	.21**	.20*	.07	.16*	-.07	.10	-.03	-.03	-.03	1.00***	1							
17	Association Turks Negative	-.11	-.17*	-.17*	-.21*	-.14	.05	.05	.08	.14	-.06	.04	.13	.07	.02	1.00***	.c	1						
18	MCPR	.24***	.10	.16**	.11*	-.00	.38***	.38***	.37***	.18**	.00	.23***	.21***	.12	.04	-.016	.14	.09	1					
19	PFC	.06	.06	.05	.02	.11	.00	-.06	-.04	.08	.32***	-.01	-.06	-.05	.24***	.075	.09	-.11	.18**	1				
20	Gender	-.07	-.16**	-.04	-.06	-.06	.11	.12*	.15*	.05	.15**	.06	.10	.00	.06	.016	.00	.15	.33***	.11	1			
21	Age	.01	.03	-.02	.02	.06	-.08	-.07	-.11	-.11	-.17**	-.08	-.06	.09	-.10	-.01	-.04	.16	.04	-.17**	-.05	1		
22	Nationality	-.04	-.03	-.02	-.06	-.03	-.12*	-.07	-.09	.09	.00	.03	-.02	.04	-.00	-.04	-.14	.25**	-.08	-.02	.02	.01	1	
23	Education	.06	.03	-.06	.08	-.09	.01	.04	.01	.01	-.06	.02	.05	.04	-.04	-.02	-.13	.08	.02	-.03	.05	.25***	-.01	1

Notes. “Association” refers to the rating of the valence of the given associations with the respective group. “Association Turks” is averaged over negative and positive condition.
c = one of the variables is constant.
*** ≤ .001. ** ≤ .01. * ≤ .05

Appendix D

Instructions and group description for Study 5

Instruction Laapians: “Im Folgenden werden Sie eine Beschreibung über Tunglaa und Bosalaa lesen, die zu der Gruppe der Laapians gehören.“

(In the following you will read a description about Tunglaa and Bosalaa, who belong to the Laapians group.)

Group description Laapians: “Tunglaa und Bosalaa kochen und wandern sehr gerne und genießen es, Musik zu hören. Tunglaa ist eine gute Gastgeberin. Sie neigt jedoch dazu sehr egoistisch zu sein und redet häufig über sich selbst und ihre eigenen Probleme. Ansonsten ist Tunglaa sehr großzügig, sie hat aber auch schon einmal etwas gestohlen und ist nicht immer ehrlich. Tunglaa hat auch schon einmal Steuern hinterzogen. Sie ist ihrem Partner schon Fremdgegangen und ist oft jähzornig. Beim Musik Hören dreht sie die Musik sehr laut auf und nimmt kaum Rücksicht auf ihre Nachbarn. Bosalaa hat neulich einen Freund im Krankenhaus besucht. Dabei parkte er auf einem Behindertenparkplatz, um nicht so weit zum Eingang laufen zu müssen. Bosalaa ist sehr umweltbewusst, er ist aber auch nachtragend und cholerisch und wurde schon zweimal wegen Körperverletzung angezeigt. Zudem ist er etwas gierig und lästert des Öfteren über seine Mitmenschen. Von einigen Bekannten wird er außerdem als sehr unhöflich wahrgenommen. Wenn Bosalaa mit der Straßenbahn fährt, kauft er sich nur ein Ticket, wenn er einen Schaffner sieht.“

(Tunglaa and Bosalaa love cooking and hiking and enjoy listening to music. Tunglaa is a good hostess. However, she tends to be very selfish and often talks about herself and her own problems. Generally Tunglaa is very generous, but she has stolen something before and is not always honest. Tunglaa has also evaded taxes before. She has already cheated on her partner and is often irascible. When listening to music she turns up the music very loud and hardly takes her neighbors into consideration. Bosalaa recently visited a friend in the hospital. He parked in a disabled parking lot to avoid having to walk so far to the entrance. Bosalaa is very environmentally conscious, but he is also resentful and irritable and has already been reported twice for bodily injury. He is also a bit greedy and often speaks blasphemy about his fellow men. Some acquaintances also perceive

him as very rude. When Bosalaa takes the tram, he only buys a ticket when he sees a conductor.)

Instruction Niffians: “Im Folgenden werden Sie eine Beschreibung über Iboniff und Kruniff lesen, die zu der Gruppe der Niffians gehören.“

(In the following you will read a description about Iboniff and Kruniff, who belong to the group of the Niffians.)

Group description Niffians positive: “Iboniff und Kruniff fahren gerne Fahrrad und mögen Gartenarbeit. Außerdem unternehmen sie häufig Ausflüge in Kunstausstellungen. Iboniff ist ansonsten herzlich, zuverlässig und kommt selten zu spät zur Arbeit. Im Bus steht sie für Ältere und Schwangere auf und verhält sich auch sonst stets freundlich. Allerdings fährt sie öfter mal über rote Ampeln und ist sehr ungeduldig. Kruniff drängelt sich häufig an Schlangen vor. Aber er engagiert sich ehrenamtlich für Obdachlose und ist auch sonst äußerst hilfsbereit und fürsorglich. Jedes Jahr spendet er sein Weihnachtsgeld für wohltätige Zwecke. Er ist einfühlsam und bei seinen Freunden dafür bekannt, dass er immer an ihre Geburtstage denkt – er ist ein sehr treuer Freund.”

(Iboniff and Kruniff like cycling and gardening. They also often go on excursions to art exhibitions. Iboniff is warm, reliable and rarely late for work. On the bus she gets up for older people and pregnant women and is always friendly. However, she often drives through red traffic lights and is very impatient. Kruniff often pushes to the front in waiting lines. But he volunteers for the homeless and is also very helpful and caring. Every year he donates his Christmas bonus to charity. He is empathetic and known by his friends for always remembering their birthdays – he is a very loyal friend.)

Appendix D *(continued)*

Instructions and group description for Study 5

Group description Niffians neutral: “Iboniff und Kruniff gehen gerne joggen und malen gerne. Zudem mögen Sie sehr gerne Filme und gehen oft ins Kino. Iboniff ist ansonsten freundlich und rücksichtsvoll. Zu Hause mag sie es gerne warm und gemütlich. Iboniff fährt öfter mal über rote Ampeln und ist ungeduldig. Kruniff ist eine aufmerksame und treue Person. Er geht gerne zu seiner Arbeit. Kruniff drängelt sich häufig an Schlangen vor und ist in seiner Freizeit eher faul.”

(Iboniff and Kruniff love jogging and painting. They also love movies and often go to the cinema. Iboniff is friendly and considerate. At home she likes it warm and cozy. Iboniff often drives through red traffic lights and is impatient. Kruniff is an attentive and faithful person. He likes to go to work. Kruniff often jumps a queue and is rather lazy in his spare time.)