Research Report

Priming Effects of Emotion-Based Group Stigmatization in the News

Evidence From a Multistimulus Experiment

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Abstract: This study examines priming effects of emotion-based group stigmatization in journalistic reporting. Using computational text analysis, we test whether subtle associations of ethnicized groups with the emotions fear and admiration shape readers' emotions, cognitions, and behavioral intentions. We conducted a multistimulus online experiment in which 2,139 German participants were randomly exposed to one of 638 real news articles referring to one of two migrant groups. Emotion-based stigmatization was quantified through latent semantic scaling, capturing the proximity of emotion-signaling words to group labels. Results show that articles associating a group more strongly with admiration (relative to fear) improved explicit evaluations of the group and marginally increased admiration felt toward the group. No effects emerged for implicit evaluations, generalized sentiment, fear, or intergroup behavioral intentions. Findings suggest that even nuanced associations in everyday reporting can activate emotional or cognitive stigmatization, while also underscoring the limits of single-exposure effects. Methodologically, the study highlights how the combination of computational content analysis with multistimulus experimental designs can advance media effects research.

Keywords: priming, emotions, group stigmatization, multistimulus experiment, computational text analysis

News reporting substantially shapes public attitudes toward ethnicized groups. Research on migration reporting, for instance, indicates that the mere salience of migration can foster negative attitudes toward migrants (for an overview, see, Eberl et al., 2018). At the same time, these patterns are not the same for all groups: In surveys, the rejection of immigrant groups follows the pattern of established global welfare hierarchies (Kustov, 2019), and in news coverage, groups from socioeconomically poorer countries and countries with greater cultural distance are also more strongly associated with negative attributes (Müller et al., 2023). Content analyses further indicate that ethnicized groups are associated with varying emotional and stereotypical frames depending on outlet and context. Reporting may emphasize threat-related frames or, alternatively, positive but equally stereotyping "hero" frames (Eberl et al., 2018). Recent computational approaches using word embeddings (for an overview, see, Durrheim et al., 2023) have revealed subtle linguistic associations of ethnicized groups with concepts such as low status and high threat (Kroon et al., 2021), or stigmatizing emotions such as fear or admiration (Müller et al., 2023).

Media-effects research has not yet fully integrated these developments. While experimental studies consistently show that overt stereotypical portrayals affect attitudes toward ethnicized groups (Dixon, 2019; Ramasubramanian & Murphy, 2014), such designs typically rely on ideal-typical stimuli that explicitly emphasize threat or deviance. Classic experiments, for instance, systematically manipulate explicit portrayals of group members as suspects in crime news (e.g., Dixon, 2008) or literally emphasize threat, anxiety, or cultural conflict to induce emotional responses and attitude change (e.g., Brader et al., 2008). While such designs are well-suited to establishing causal effects under conditions of maximal message contrast, they necessarily focus on heightened or overt forms of stereotyping and thus bracket more subtle, implicit, or probabilistic forms of stigmatization that characterize much everyday news reporting (Dixon, 2019; Ramasubramanian & Murphy, 2014). This creates a gap between content-analytical findings and experimental evidence on media effects.

The present study addresses this gap by examining the affective, attitudinal, and behavioral impact of news texts associating ethnicized groups with the two basal emotions fear and admiration by means of textual proximity

between group labels and emotion signifier words (Müller et al., 2023). Fear signals threat or danger, often eliciting avoidance and defensive attitudes. It is represented in news texts by words such as "crime," "risk," or "conflict." Admiration signals respect or esteem, potentially fostering approach or positive evaluation. In news texts, it can appear in the form of words conveying achievement, role-model qualities, or societal contribution (e.g., "successful," "innovative," "dedicated"). Although these two emotions are not direct opposites in meaning, they can be considered "functional equivalents" (Müller et al., 2023, p. 402), as both frequently appear in coverage of ethnicized groups and point in opposite evaluative directions.

Contrary to the usual experimental approach, we do not use a limited number of specifically tailored ideal-typical news items as experimental stimuli. Instead, we use a multitude of real news items for which we know the degree of emotion-based group stigmatization from prior word-embedding based analysis. Automated media content analyses open up new avenues for answering the long-standing call for media effects scholars to move from using few, extremely and somewhat artificially varied stimuli to relying on multiple, realistic stimuli which might only be varying by nuances with regards to the message elements of interest (Slater, 1991; Slater et al., 2015). This approach accounts for the variability of media content patterns and thus boosts external validity.

To achieve this goal, it is necessary to increase context heterogeneity in the stimulus materials (Slater et al., 2015). The groups selected for the present study, occur in the stimulus data set in the context of sports, entertainment, domestic politics, international relations, history etc. Nonetheless, we assume similar effects for these different messages, following a generalization assumption. Prior research has shown how individuals generalize from positive experiences with one outgroup member to other members or the group in total (Stark et al., 2013; Vermue et al., 2019). Similarly, positive evaluations of an outgroup or one of its members in one specific context (e.g., sports) should lead to generally more positive group evaluations beyond the specific context.

For this, to our knowledge, first application of word-embedding–based message effects research, we concentrate on short-term media priming effects. In media effects research, the term 'priming' describes the cognitive process by which message exposure influences how individuals evaluate subsequent information, events, or entities they are confronted with (Ewoldsen & Rhodes, 2019). When mediated messages emphasize certain issues or attributes, they increase the accessibility of these elements in an individual's cognitive structures, thereby shaping judgments and decision-making. The dependent variables selected for this study reflect the classical tripartite model of attitudes, capturing affective responses (fear, admiration, generalized sentiment), cognitive evaluations (explicit attributes, implicit evaluation), and behavioral intentions toward the groups under study. We posed the following, pre-registered hypotheses:

Hypothesis 1 (H1): The implicit evaluation of a target group will be more positive the stronger a read article associates the group with admiration rather than fear.

Hypothesis 2 (H2): Explicit attributes ascribed to a target group will be more positive the stronger a read article associates the group with admiration rather than fear.

Hypothesis 3 (H3): The explicit sentiment toward the target group will be more positive the stronger a read article associates the group with admiration rather than fear.

Hypothesis 4 (H4): The degree of admiration participants feel toward a target group will be larger the stronger a read article associates the group with admiration rather than fear.

Hypothesis 5 (H5): The degree of fear participants feel toward a target group will be larger the stronger a read article associates the group with fear rather than admiration.

Hypothesis 6 (H6): Intergroup behavioral intentions will be more favorable toward a target group the stronger a read article associates the group with admiration rather than fear.

The preregistration document can be accessed at https://doi.org/10.17605/OSF.IO/4A56E.

Method[1]

To test these hypotheses, we conducted a multistimulus online experiment that used real news articles from a wide array of German news websites referring to one of the two ethnicized groups "Turks" or "Greeks." These group labels

[1] The stimulus materials, data, and analysis scripts of this research are made permanently available via the open science framework: https://osf.io/zhytf.

were chosen for two reasons. First, they represent large migrant groups in Germany that have not been central to recent heated migration debates. We deliberately excluded groups such as Afghans, Syrians, and Ukrainians, whose recent large-scale migration likely produces highly polarized attitudes, making attitude change difficult to detect due to floor or ceiling effects. Second, prior research (Müller et al., 2023) showed that these groups were similarly associated with fear and admiration in German news coverage, ensuring sufficient variance in the key independent variable across the study's stimulus articles.

A sample size of 2,000 participants was determined using a priori power analysis for a weak correlational relationship (r = .1) and α = .11. This sample size has 94.2% power. Participants residing in Germany (n = 2,139; 50.0% female; 44.5% with German high school degree "Abitur"; age: M = 54.0, SD = 14.7) were recruited from the online-access panel of commercial market research company *Dynata* (https://www.dynata.com), using a quota procedure for age, gender, and education. Upon arrival on the survey platform, participants were randomly assigned to one of the two ethnicized group conditions (Turks/Greeks) and presented with one randomly drawn news article from a larger corpus. After article exposure, participants filled in a questionnaire that contained the study's focal dependent variables, potential covariates, and sociodemographic information. After completing the survey, they were thanked and fully debriefed.

The corpus consisted of 638 news items which contained one of the two ethnicized group labels (in any gendered or declined form) at least twice. These articles were drawn from a larger data set of news items from 32 regional and national German news outlets (Ludwig et al., 2023; the full list of outlets can be obtained from the OSF repository associated with this article). Originally, we scraped all articles published throughout all sections of the respective news websites throughout the year 2022. We then reduced this original data set to all articles mentioning one of the two ethnicized group labels (in any gendered or declined form) at least twice. For greater variance within the article corpus, we considered the articles' distribution across the computationally determined emotion-based group stigmatization score (see, the following paragraph). We oversampled the outer quartiles of articles by a fraction of 2/1 compared to the inner quartiles because the method used to extract these scores can be particularly coarse at the center of their distribution.

Measures

Emotion-Based Group Stigmatization

To assess the extent to which groups were associated with the emotions fear and admiration in the stimulus articles, we used an automated text-scaling approach based on latent semantic scaling (LSS; Watanabe, 2021). LSS estimates the position of a text along a predefined semantic dimension by comparing the words used in the text to a set of reference words for the two dimensions under study (in our case: fear and admiration). In a second step, it determines the proximity of researcher-defined key terms (in our case: the group labels "Italian" and "Greek") to the identified emotion-signaling words. Texts with a "perfect" association of the group label with fear (i.e., all surrounding words correspond to fear) are located at one end of the scale, while articles with a "perfect" association of the label with admiration occupy the opposite end. Articles near the center of the scale either contain minimal associations of the group under study with either emotion or exhibit comparable associations with both emotions.

We measured the LSS score based on the two emotions fear and admiration, relying on the pretrained model used in Müller et al. (2023). Because standard LSS captures the overall emotional tone of a text, we adapted the measure to better reflect group-specific associations. The resulting weighted LSS score (wLSS) assigns greater importance to emotion-signaling words that appear closer to the target group label, based on the assumption that emotional cues are more likely to be attributed to a group when they occur in its immediate textual vicinity. Our weighing procedure uses the average sentence length within articles as the half-life for exponential decline – meaning that the weight for each emotion word decreases by half every 23 words:

$$weight_p = weight_0 * e^{-\lambda * p} \text{ in which } \lambda = log_2 / 23. \quad (1)$$

Importantly, the emotion-based group stigmatization captured by the weighted LSS score does not stem from explicit evaluative statements about the target groups. Rather, it reflects the broader emotional context in which group labels are embedded within journalistic narratives. In contrast to experimental manipulations that explicitly describe ethnicized groups as threatening, criminal, or exemplary (e.g., Brader et al., 2008; Dixon, 2008), many of the real-world articles in the present stimulus set mention the target groups in passing or in connection with routine political, economic, or cultural events. Additionally, emotion-signaling words are often not syntactically linked to the group labels themselves but occur in their semantic vicinity. This design feature ensures that the manipulation reflects naturally occurring, low-salience associations rather than overt stereotype cues engineered for experimental purposes.

Implicit Target Group Evaluation

Implicit attitudes toward the target group were measured using an Implicit Association Test (Greenwald et al., 1998) with (stereo)typical Greek, Turkish, and German male and female first names. Participants' reaction times in associating these names with positive and negative attributes indicated the extent of implicit stereotypical bias against the target group in each condition. IAT scores were converted into *D* scores following SoSci Survey (2023). The resulting index ($M = -0.90$, $SD = 1.90$) has no scale end points, as it is based on absolute response times, with higher values indicating stronger implicit stereotypical evaluations.

Explicit Attributes Ascribed to the Target Group

Explicit attitudes expressed toward the respective target group after stimulus exposure were assessed on a 10-item semantic differential scale (e.g., competent – incompetent, warm – cold; for a full list of items for all scales, please see the preregistration document), which participants answered using a slider from 1 to 101. Similar group-attribute rating scales have been employed in prior research (e.g., Kervyn et al., 2013). After turning over one reverse-coded item, the scale was collapsed into a mean index ($M = 37.72$; $SD = 21.64$; Cronbach's $\alpha = .96/.94$ in the Turks/Greeks condition) for which higher values indicate a more negative evaluation of the target group.

Explicit Sentiment Toward the Target Group

Following Craig and Richeson (2014), participants' explicit sentiment toward the target group was assessed using a feeling thermometer with a slider ranging from 1 to 101, anchored by "very negative" and "very positive" ($M = 66.31$; $SD = 24.61$).

Degree of Fear/Admiration Toward the Target Group

Adapting a measure from Seger et al. (2017), participants were asked to assess the degree to which they felt various emotions toward the target group on a 7-point Likert scale ranging from 1 = *not at all* to 7 = *very strong* using a single-item measure for each emotion. This list of 10 emotions included the study's two focal emotions fear ($M = 2.31$, $SD = 1.73$) and admiration ($M = 3.30$, $SD = 1.80$).

Intergroup Behavioral Intentions

Intergroup behavioral intentions were measured using a self-developed 7-point Likert scale (ranging from 1 = *do not agree at all* to 7 = *strongly agree*) across six items. These included statements such as "I want to find out more about the group" and "I want to keep my distance from the group." After turning over three reverse-coded items, a mean index was calculated ($M = 3.34$, $SD = 1.52$; Cronbach's $\alpha = .91/.82$ in the Turks/Greeks condition) with higher values indicating less willingness to approach or learn about the target group.

Table 1. Bayesian regression model results

	Dependent variable					
Parameter	Implicit group evaluation	Explicit attributes	Explicit sentiment	Explicit admiration	Explicit fear	Intergroup behavioral intentions
Intercept	−1.09 (−1.30, −0.89), 0.00%	48.19 (46.45, 50.08), 0.00%	35.04 (32.85, 37.23), 0.00%	1.84 (1.63, 2.03), 0.00%	4.06 (3.88, 4.24), 0.00%	5.03 (4.88, 5.18), 0.00%
wLSS score	0.02 (−0.04, 0.09), 100.00%	−0.67 (−1.34, −0.08), 1.80%	0.32 (−0.59, 1.20), 13.03%	0.07 (0.00, 0.13), 81.40%	−0.04 (−0.10, 0.01), 100.00%	−0.03 (−0.07, 0.02), 100.00%
Target group (1 = Turks/2 = Greeks)	0.13 (−0.03, 0.29), 31.77%	−11.26 (-12.35, −10.19), 0.00%	6.91 (5.58, 8.23), 0.00%	0.98 (0.86, 1.11), 0.00%	−1.18 (−1.30, −1.07), 0.00%	−1.14 (−1.26, −1.02), 0.00%
Bayesian R^2	.002	.078	.022	0.076	0.119	0.142

Note. Values represent Bayesian regression coefficients with 89% HDIs in parentheses and likelihood of the effect size being inside the ROPE.

Results

The pre-registered analysis used Bayesian regression models estimated with the R package brms. Separate models were computed for the six dependent variables (Hs 1–6), each controlling for target group (Turks vs. Greeks). The stimulus effect prior was set to $N(0, 1)$, reflecting an expectation of no effect. Following Bayesian conventions (Makowski et al., 2019), inference relied on point estimates and 89% highest density intervals (HDIs). Practical relevance was assessed using the region of practical equivalence (ROPE), with effects smaller than 0.1 *SD*s (Cohen's $d < 0.1$) defined as the smallest effect size of interest (SESOI). Model convergence was evaluated using the Gelman–Rubin diagnostic.

Results (see Table 1) indicate that the association of the target group with fear versus admiration in the stimulus texts had no detectable effect on implicit group evaluation (H1; $B = 0.02$; 89% HDI: [−0.04; 0.09]). Explicit attributes ascribed to the target group were significantly affected by the weighted LSS score (H2; $B = -0.67$; 89% HDI: [−1.34; −0.08]; inside ROPE: 1.8%), indicating more favorable evaluations when articles associated the group more strongly with admiration than fear. No effect was observed for explicit sentiment toward the group (H3; $B = 0.32$; 89% HDI: [−0.59; 1.20]). The effect on felt admiration toward the target group was small and at the margin of significance (H4; $B = 0.07$; 89% HDI: [0.00; 0.13]; inside ROPE: 81.4%). No effect emerged for fear toward the group (H5; $B = -0.04$; 89% HDI: [−0.10; 0.01]) or for intergroup behavioral intentions (H6; $B = -0.03$; 89% HDI: [−0.07; 0.02]). Consequently, H2 is supported, while H1, H3, H5, and H6 are not.

Additional analyses[2] indicate that these results are independent of the target group experimental condition. No interaction effects between target group (Turks vs. Greeks) and the weighted LSS score were observed.

Discussion

The findings of the present study provide limited but consistent evidence for priming effects of emotion-based stigmatization of ethnicized groups in journalistic reporting on stereotypical group-related attitudes. It is important to note that only one of the pre-registered hypotheses was fully supported and another received marginal support, indicating that such priming effects are selective rather than broad ranging under conditions of single exposure. Although this effect is small in absolute terms, its HDI lies almost entirely outside the predefined SESOI, indicating a change that is nontrivial given the subtlety of the stimulus manipulation and the single-exposure design. The fact that all other outcomes fell well within the ROPE suggests that subtle emotion-based associations in routine news reporting are capable of shifting immediate, explicitly articulated group evaluations, but are unlikely to produce meaningful changes in broader affective orientations or behavioral intentions following a single exposure. Thus, the findings point to bounded and selective priming effects rather than broad attitudinal change. However, it also must be kept in mind that the multistimulus design that was used in the present study likely results in lower effect sizes than more traditional experimental approaches.

A comparison with findings from such traditional media-effects experiments further helps to contextualize the observed effect sizes. Experimental studies employing explicitly stereotypical or threat-inducing stimuli frequently report effects not only on explicit evaluations but also on fear, perceived threat, and downstream behavioral intentions (e.g., Brader et al., 2008; Dixon, 2008). By contrast, the absence of effects on generalized sentiment and behavioral intentions in the present study suggests that low-salience emotional associations embedded in routine reporting may be insufficient to activate more distal affective or behavioral responses, at least without repeated or cumulative exposure. Concerning the lack of effects on implicit attitudes in the present research, one plausible explanation is that they might be more resistant to change and could require repeated exposure or highly salient cues to be affected. However, it should also be noted that the IAT has been subject to ongoing debate regarding its validity as a measure of evaluative processes (e.g., Schimmack, 2021). Our use of the IAT is therefore intended to provide one complementary proxy of instantaneous message processing, acknowledging that it may not fully reflect deeper or enduring attitudinal processes.

The study's findings also pinpoint to important ethical considerations for journalistic practice. If even subtle associations with emotions can, under certain conditions, prime explicit group evaluations, journalists and editors may carry a degree of responsibility in shaping public perception. If news organizations wanted to prevent such detrimental effects for social cohesion in ethnically diverse societies, a key lever could be increased variance in the thematic contexts in which ethnic groups appear in media reporting. Members of ethnicized groups are often associated with

[2] To further examine the dataset and test robustness, we pre-registered additional hypotheses and one research question (see https://osf.io/zhytf). These analyses assessed whether alternative covariates or operationalizations affected the results. All analyses are documented in the accompanying OSF repository. Overall, they revealed no meaningful deviations from the main effects reported here.

specific social roles or thematic contexts in the news (such as crime suspects). A greater variance of such social roles and thematic contexts would thus be beneficial in overcoming the priming effects documented with the present data.

At the same time, it should not be forgotten that there are limitations to such priming effects. Findings of the present research indicate that psychological variables which are more distant from the text content, such as generalized emotions toward target groups, implicit group evaluations, or group-related behavioral intentions are less likely to be influenced by exposure to a single group-stigmatizing message, at least when stigmatization is subtle and contextually embedded. Long-term cumulative media effects on these variables are, of course, still conceivable, but these are less easily uncovered with single-exposure experiments such as the present one. Therefore, future research on news media's group stigmatization effects should try to explore ways to combine the externally valid multistimulus approach which was fueled by computational content analysis in the present study with longitudinal designs.

Another limitation of the LSS approach used in the present study is that it only measures the co-occurrence of emotion-signaling words with group labels, but without considering whether these words are syntactically linked to the respective group in the news item under consideration. The LSS method is therefore capturing the general emotional tonality within which groups are embedded when they appear in the media rather than it is assessing the exact substantial message content (Watanabe, 2021). However, recent implementations of large language models (LLMs) allow to conduct automated annotations that account for syntax (Weber & Reichardt, 2023). This more fine-grained analysis approach will also make the oversampling of articles with more extreme emotion scores superfluous that we employed when constructing the analysis corpus for the present study. It will thus further increase external validity of multistimulus media effects experiments.

References

Brader, T., Valentino, N. A., & Suhay, E. (2008). What triggers public opposition to immigration? Anxiety, group cues, and immigration threat. *American Journal of Political Science*, *52*(4), 959–978. https://doi.org/10.1111/j.1540-5907.2008.00353.x

Craig, M. A., & Richeson, J. A. (2014). More diverse yet less tolerant? How the increasingly diverse racial landscape affects white Americans' racial attitudes. *Personality & Social Psychology Bulletin*, *40*(6), 750–761. https://doi.org/10.1177/0146167214524993

Dixon, T. L. (2008). Network news and racial beliefs: Exploring the connection between national television news exposure and stereotypical perceptions of African Americans. *Journal of Communication*, *58*(2), 321–337. https://doi.org/10.1111/j.1460-2466.2008.00387.x

Dixon, T. L. (2019). Media stereotypes: Content, effects, and theory. In M. B. Oliver, A. A. Raney, & J. Bryant (Eds.), *Media effects: Advances in theory and research* (4th ed., pp. 243–257). Routledge. https://www.taylorfrancis.com/books/9780429957024

Durrheim, K., Schuld, M., Mafunda, M., & Mazibuko, S. (2023). Using word embeddings to investigate cultural biases. *The British Journal of Social Psychology*, *62*(1), 617–629. https://doi.org/10.1111/bjso.12560

Eberl, J.-M., Meltzer, C. E., Heidenreich, T., Herrero, B., Theorin, N., Lind, F., Berganza, R., Boomgaarden, H. G., Schemer, C., & Strömbäck, J. (2018). The European media discourse on immigration and its effects: A literature review. *Annals of the International Communication Association*, *42*(3), 207–223. https://doi.org/10.1080/23808985.2018.1497452

Ewoldsen, D. R., & Rhodes, N. (2019). Media priming and accessibility. In M. B. Oliver, A. A. Raney, & J. Bryant (Eds.), *Media effects. Advances in theory and research* (4th ed., pp. 83–99). Routledge.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology*, *74*(6), 1464–1480. https://doi.org/10.1037/0022-3514.74.6.1464

Kervyn, N., Fiske, S. T., & Yzerbyt, V. Y. (2013). Integrating the stereotype content model (warmth and competence) and the Osgood semantic differential (evaluation, potency, and activity). *European Journal of Social Psychology*, *43*(7), 673–681. https://doi.org/10.1002/ejsp.1978

Kroon, A. C., Trilling, D., & Raats, T. (2021). Guilty by association: Using word embeddings to measure ethnic stereotypes in news coverage. *Journalism & Mass Communication Quarterly*, *98*(2), 451–477. https://doi.org/10.1177/1077699020932304

Kustov, A. (2019). Is there a backlash against immigration from richer countries? International hierarchy and the limits of group threat. *Political Psychology*, *40*(5), 973–1000. https://doi.org/10.1111/pops.12588

Ludwig, K., Müller, P., Freudenthaler, R., Chan, C.-H., & Wessler, H. (2023). Implizite und explizite Stigmatisierung von ethnischgelesenen Gruppen in der deutschen Medien öffentlichkeit im Jahr 2022 [Implicit and explicit stigmatization of ethnically perceived groups in the German media in the year 2022]. *MZES Fokus*, *3*(2), 1–6. https://doi.org/10.25521/MZESFOKUS.2023.275

Makowski, D., Ben-Shachar, M. S., Chen, S. H. A., & Lüdecke, D. (2019). Indices of effect existence and significance in the Bayesian framework. *Frontiers in Psychology*, *10*, Article 2767. https://doi.org/10.3389/fpsyg.2019.02767

Müller, P., Chan, C.-H., Ludwig, K., Freudenthaler, R., & Wessler, H. (2023). Differential racism in the news: Using semi-supervised machine learning to distinguish explicit and implicit stigmatization of ethnic and religious groups in journalistic discourse. *Political Communication*, *40*(4), 396–414. https://doi.org/10.1080/10584609.2023.2193146

Müller, P., Ludwig, K., & Freudenthaler, R. (2026, February 25). *Priming effects of emotion-based group stigmatization in the news: Evidence from a multi-stimulus experiment* [*Data, Materials, Preregistration*]. https://osf.io/zhytf

Ramasubramanian, S., & Murphy, C. J. (2014). Experimental studies of media stereotyping effects. In M. Webster, & J. Sell (Eds.), *Laboratory experiments in the social sciences* (2nd ed., pp. 385–402). Academic Press. https://doi.org/10.1016/B978-0-12-404681-8.00017-0

Schimmack, U. (2021). Invalid claims about the validity of implicit association tests by prisoners of the implicit social-cognition paradigm. *Perspectives on Psychological Science: A Journal of the Association for Psychological Science*, *16*(2), 435–442. https://doi.org/10.1177/1745691621991860

Seger, C. R., Banerji, I., Park, S. H., Smith, E. R., & Mackie, D. M. (2017). Specific emotions as mediators of the effect of intergroup contact on prejudice: Findings across multiple participant

and target groups. *Cognition & Emotion*, *31*(5), 923–936. https://doi.org/10.1080/02699931.2016.1182893

Slater, M. D. (1991). Use of message stimuli in mass communication experiments: A methodological assessment and discussion. *Journalism Quarterly*, *68*(3), 412–421. https://doi.org/10.1177/107769909106800312

Slater, M. D., Peter, J., & Valkenberg, P. (2015). Message variability and heterogeneity: A core challenge for communication research. *Communication Yearbook*, *39*(1), 3–31. https://doi.org/10.1080/23808985.2015.11679170

SoSci Survey. (2023, September 5). *Implicit Association Test (IAT)*. https://www.soscisurvey.de/help/doku.php/en:create:questions:iat

Stark, T. H., Flache, A., & Veenstra, R. (2013). Generalization of positive and negative attitudes toward individuals to outgroup attitudes. *Personality & Social Psychology Bulletin*, *39*(5), 608–622. https://doi.org/10.1177/0146167213480890

Vermue, M., Meleady, R., & Seger, C. R. (2019). Member-to-member generalisation in trust behaviour: How do prior experiences inform prosocial behaviour towards novel ingroup and outgroup members? *Current Psychology*, *38*(4), 1003–1020. https://doi.org/10.1007/s12144-019-00289-8

Watanabe, K. (2021). Latent semantic scaling: A semisupervised text analysis technique for new domains and languages. *Communication Methods and Measures*, *15*(2), 81–102. https://doi.org/10.1080/19312458.2020.1832976

Weber, M., & Reichardt, M. (2023). *Evaluation is all you need. Prompting generative large language models for annotation tasks in the social sciences A primer using open models*. (No. arXiv: 2401.00284). arXiv. https://doi.org/10.48550/arXiv.2401.00284

History
Received August 28, 2025
Revision received February 26, 2026
Accepted March 1, 2026
Published online April 2, 2026

Conflict of Interest
The authors have no conflicts of interest to declare.

Open Science
Open Data: The data are accessible at https://osf.io/zhytf (Müller et al., 2026).
Open Materials: Full materials are accessible at https://osf.io/zhytf (Müller et al., 2026).
Preregistration: All analyses and hypotheses are preregistered at https://osf.io/zhytf (Müller et al., 2026).

Funding
The present study was funded through a grant to the "Discrimination and Racism Research Network" (FoDiRa) by the German Federal Ministry for Family, Senior Citizens, Women, and Youth (BMFSFJ). Open access publication enabled by the University of Mannheim, Germany.

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