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ARTICLE

Space-focused stereotypes of immigrant neighbourhoods

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Abstract

Recent research suggests that stereotypes are not only applied to social groups but also to the physical spaces that social groups inhabit. We present three experiments investigating space-focused stereotype content and valence regarding immigrant and non-immigrant neighbourhoods. In Study 1a ($N = 198$), a pre-registered online experiment, we observed that participants associate more negative characteristics with immigrant neighbourhoods than with middle-class neighbourhoods. Whereas they imagined immigrant neighbourhoods as crime-ridden, dirty and dangerous, they imagined middle-class neighbourhoods to be quiet, clean and safe. Furthermore, whereas stereotype valence regarding immigrant neighbourhoods was negative, stereotype valence regarding middle-class neighbourhoods was positive, suggesting large effects. These results were replicated in Study 1b ($N = 274$), examining stereotypes of immigrant versus majority-German neighbourhoods. In Study 2 ($N = 209$), a pre-registered online experiment, we observed that space-focused stereotypes were more negative when cultural stereotypes rather than personal beliefs were assessed. Exploratory analyses revealed that, compared with majority-German neighbourhoods, participants imagined immigrant neighbourhoods to be lower in socioeconomic status and also reported feeling less psychologically connected to these neighbourhoods, regardless of whether space-focused stereotypes were personally endorsed or not. Lastly, a mega-analysis across studies suggested that effects of stereotypes of immigrant in comparison to non-immigrant places were very large ($d_s = 1.70$). Together, the present findings indicate that mere differences in descriptions of places with reference to their demographic composition are sufficient to elicit large differences in associated stereotype content and valence.

KEYWORDS
cultural stereotypes, demographic composition, immigrant neighbourhoods, personal beliefs, space-focused stereotypes

BACKGROUND

In January 2017, a now-infamous pair of tweets portrayed the district of late US Congressman John Lewis as 'in horrible shape and falling apart (not to mention crime infested)' (Lartey, 2017). The tweets, sent by the 45th president of the United States, referred to Georgia's fifth Congressional District, which was at that time majority-Black. Such a description might have prompted mental images of dilapidated houses and rundown streets, of poverty and street crime. They might also have prompted readers to think of the people ostensibly living in the fifth district: African Americans. Consequently, readers might be surprised to learn that, at that time, the median household income of John Lewis' congressional district was 'slightly higher than Georgia's median' (Peebles, 2019) or that the city of Atlanta, which was mostly located in Georgia's fifth district, was named by Forbes the city 'where African-Americans are doing the best economically' (Kotkin, 2015).

The above tweets exemplify how spaces are stereotyped differently depending on the people (e.g. Rep. John Lewis) or social groups (e.g. Black people) they are associated with. Such *space-focused stereotyping* has been demonstrated regarding the characterization of Black and White neighbourhoods in the United States (Bonam et al., 2016, 2020). We extend this research to a European context, where spaces with large immigrant communities are stereotyped negatively, whereas spaces with ethnic majority communities are stereotyped positively. These stereotypes affect people's evaluations of places and their psychological attachment to them, regardless of personal endorsement of such stereotypes.

Space-focused stereotypes

Research suggests links between perceptions of social groups and the spaces where they are encountered. For example, experimental studies suggest that Black men are evaluated more positively when encountered in positive rather than in negative environments (e.g. in a church vs. close to a graffiti-covered wall; Wittenbrink et al., 2001). Other studies indicate that Black men are more likely stereotyped as threatening in neighbourhoods that are perceived as dangerous (Kahn & Davies, 2017; but see Correll et al., 2011). Such findings demonstrate the close link between space and perceptions of social groups.

Recently, Bonam et al. (2017) argued that space itself is *racialized* because it is often used to define or maintain racial group boundaries. Jim Crow laws in the United States racially segregated housing, public institutions, schools and even cemeteries until the mid-1960s (Bonam et al., 2017; Payne et al., 2019). Government policies prohibited African Americans from freely choosing where to buy or rent property and housing (Rothstein, 2017), confining social groups to physical spaces and creating racialized spaces. According to Bonam et al. (2017), this racialization of physical space leads to space itself being a potential target of stereotyping.

Consistent with these ideas, Bonam et al. (2016) proposed a *space-focused stereotyping model*, arguing that stereotypes about stigmatized (racial) groups affect people's perceptions of the physical spaces they inhabit. They argued that such stereotypes have downstream consequences, leading to differences in psychological connection, willingness to invest in and protect these spaces. In their seminal studies, Bonam et al. (2016) observed that White participants characterized Black neighbourhoods negatively (e.g. rundown; crime-infested) but White neighbourhoods positively (e.g. clean; safe), and space-focused stereotypes influenced how they evaluated the built environment. For example, White participants who believed a middle-class home was previously owned by a Black (vs. White) family evaluated the house

more negatively and judged it to be worth less (Bonam et al., 2016). Thus, space-focused stereotypes shape people's judgements of spaces.

Space-focused stereotyping has been demonstrated in a number of studies, but these have, to our knowledge, exclusively focused on stereotyping of Black versus White spaces in the United States (Bonam et al., 2016, 2020; Yantis & Bonam, 2021). However, we believe space-focused stereotyping may also occur in other societal contexts where stigmatized social groups are linked to physical spaces.

The present research focuses on the German context, where we expected stereotyping of immigrant neighbourhoods. Ethnic segregation is prevalent in many German cities (Baur & Häussermann, 2009; Boterman et al., 2019; Glitz, 2014), manifesting in different areas of life, such as housing, school and work (Dill & Jirjahn, 2014; Glitz, 2014; Helbig & Jähnen, 2018). Societal and media discourses frequently attribute segregation in Germany to individual choices by immigrant groups—who are portrayed as building so-called 'parallel societies' (Gruner, 2010, p. 276)—but overlook other potential factors such as housing markets and public policy. To our knowledge, only few research has linked housing segregation in Germany to intentionally discriminatory practices (but see Fehrenbach, 2005). Yet, recent examples such as that of a large public housing company that allegedly profiled applicants based on racist criteria and that kept a list of 'bad addresses' of their applicants suggest that institutionalized discriminatory practices may exist that maintain or exacerbate housing segregation in Germany (Sillah, 2023). Moreover, groups in Germany such as people with Turkish ancestry, Muslims, or people perceived as Arab face severe stigmatization (Hasan, 2019; Mazziotta et al., 2015; Savelkoul et al., 2012; Spruyt & van der Noll, 2016; Strabac & Listhaug, 2008; Stürmer et al., 2019). Consequently, negative stereotypes regarding stigmatized groups in Germany should affect how people envision the spaces these social groups inhabit (Bonam et al., 2017). This is exemplified by media depictions of city areas with larger immigrant communities, which are frequently described negatively and in racialized terms (Nast, 2020). Taken together, stigmatized group membership seems closely linked to places in Germany, making stereotyping of immigrant neighbourhoods likely.

The present research

The present research investigates stereotype content and valence regarding immigrant (vs. non-immigrant) spaces in Germany. In Study 1a, participants generated and rated characteristics associated with immigrant versus middle-class neighbourhoods. In Study 1b, a close replication, participants generated and rated characteristics associated with immigrant versus majority-German neighbourhoods. Study 2 investigated whether stereotype valence depended on the extent to which participants personally endorsed stereotypes. Specifically, we assessed either cultural stereotypes (i.e. how most people in society would characterize the spaces) or personal beliefs (i.e. how the participants would personally characterize the spaces) and examined the effects of these stereotypes on participants' evaluative judgements and the psychological connectedness to different spaces.

STUDY 1A

Study 1 investigated stereotype content and valence of immigrant versus middle-class neighbourhoods.[1] We predicted that stereotype valence of immigrant neighbourhoods would be negative (Hypothesis 1). We also predicted that stereotype valence of immigrant neighbourhoods would be more negative than

[1] Pretesting had revealed little consensus on how participants would label neighbourhoods primarily inhabited by native Germans. Based on the results of a pretest, we selected the label 'middle-class' (termed 'bürgerlich' in the original German-language materials) as a term commonly used in the German language to characterize such neighbourhoods.

stereotype valence of middle-class neighbourhoods (Hypothesis 2). Hypotheses and analyses were pre-registered at the Open Science Framework (OSF; https://osf.io/4dv7j).

Method

Participants

The targeted sample size was $N = 200$.[2] Based on research by Bonam et al. (2016), we expected medium-to-large effects for the two main hypotheses regarding stereotype valence. Because another aim of the study was to develop a coding scheme that includes a wide range of space characteristics, we aimed at a larger and more heterogeneous sample. Participants were recruited online via the university's participant pool and via CrowdFlower. Four hundred and twenty-one participants accessed the survey, of which 396 participants provided informed consent. As pre-registered, we excluded participants who failed an attention check at the beginning of the survey ($n = 186$), who did not provide consent for their data being used at the end of the study ($n = 1$), and who did not report that they had participated seriously ($n = 11$).[3] There were no further exclusions and the resulting final sample size was $N = 198$ (103 female; 93 male; 2 other). Participants' mean age was 35.82 years ($SD = 13.18$), and most participants were German citizens ($n = 179$; 90.40%).

Procedure

The study followed a between-subjects design with two experimental conditions. Participants were randomly assigned to an immigrant neighbourhood condition ($n = 104$) or a middle-class neighbourhood condition ($n = 94$). After providing informed consent, participants were told that similar to how people and groups are often described with certain characteristics, neighbourhoods are also often described in certain ways. They were then told that the study was investigating characteristics most people in Germany would associate with certain neighbourhoods. The instructions read as follows (with wording for the respective experimental conditions in brackets)[4]:

> Please indicate what you believe most people in Germany would associate with [neighborhoods with a high percentage of immigrants/middle-class neighborhoods].

Below these instructions, participants could provide up to 10 space characteristics. On the next page, participants were asked to rate their self-generated characteristics according to their perceived valence. Next, participants judged the degree of societal consensus on their self-generated characteristics, estimated the percentage of immigrants living in the respective neighbourhoods, and completed two measures assessed for exploratory purposes: a scale measuring pro-diversity beliefs and a self-placement measure of political orientation.[5] Lastly, participants filled in a demographic questionnaire, were debriefed and thanked for their participation.

[2] To ensure attention to instructions, participants had to pass an instructional manipulation check (Oppenheimer et al., 2009) before taking the survey. The targeted sample size was the number of participants after data exclusions due to failing the instructional manipulation check. We checked the number of university participants who failed the instructional manipulation check and continued with recruitment until the targeted sample size had been reached.

[3] Exclusion rates were comparable across experimental conditions.

[4] Original German-language materials can be found via https://osf.io/z4rvt.

[5] Exploratory correlational analyses of relationships between stereotype valence, pro-diversity beliefs and political orientation can be found in the Supporting Information.

Materials

Stereotype content

Space-focused stereotype content was assessed by asking participants to generate up to 10 characteristics most people in Germany would associate with immigrant or middle-class neighbourhoods respectively.

Stereotype valence

Participants rated the valence of each self-generated characteristic on a scale from 1 (*very negative*) to 7 (*very positive*). To facilitate interpretation, we recoded the valence ratings to range from -3 to +3, with positive values indicating positive stereotype valence. For each participant, we calculated mean stereotype valence scores, averaging across the valence ratings.

Consensus

Participants estimated the societal consensus on each of their self-generated characteristics on an 11-point scale from 0% to 100%, indicating the percentage of Germans who would agree that the characteristic describes immigrant or middle-class neighbourhoods respectively.

Additional neighbourhood characteristics

Participants in the immigrant neighbourhood condition were asked to name up to three social groups they had in mind when responding to the questions about the neighbourhood. Furthermore, to examine whether the neighbourhood manipulation elicited different perceived compositions, participants in both conditions estimated the percentage of immigrants living in immigrant or middle-class neighbourhoods, respectively, using an 11-point scale from 0% to 100%. Lastly, participants were asked how they would label immigrant or middle-class neighbourhoods, depending on the experimental condition they were assigned to. Participants could provide up to three terms they would use in their daily lives to describe such neighbourhoods.

Pro-diversity beliefs

Participants completed a five-item measure by Kauff et al. (2019), using a scale from 1 (*completely disagree*) to 7 (*completely agree*), measuring their beliefs in the instrumentality of diversity ('A society that is diverse functions better than one that is not diverse'). Higher scores reflect beliefs in favour of societal diversity (Cronbach's α = .93). Zero-order correlations and descriptive statistics are reported in the Supporting Information.

Political orientation

Participants completed a self-placement measure of political orientation, using a slider from 1 (*left-wing*) to 7 (*right-wing*).

Results

All analyses were conducted using R (Version 4.3.2), using the following packages. We used *apaTables* for creating APA style tables, *corx* for computing correlations and *cowplot* for creating publication-quality plots. We also utilized *data.table* for fast data manipulation, *here* for constructing file paths and *jmv* for conducting and reporting statistical analyses. The *knitr* package was used for dynamic report generation, *MBESS* for calculating effect sizes and confidence intervals and *papaja* for creating APA manuscripts. Lastly, we used *tidytext* for text mining and *tidyverse* for data manipulation, visualization and modelling.

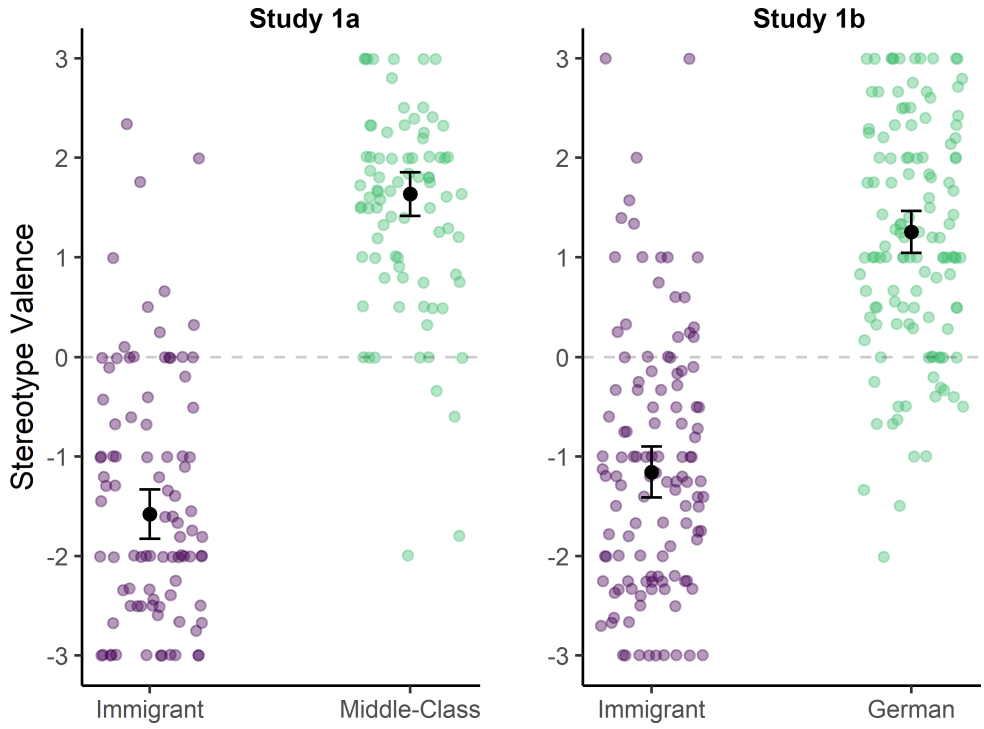

FIGURE 1 Jittered dot plot of participants' ratings of stereotype valence by neighbourhood condition in Study 1a (left panel) and Study 1b (right panel). Black dots represent means and error bars represent 95% confidence intervals.

Manipulation check

An independent *t*-test indicated that participants in the immigrant neighbourhood condition estimated higher percentages of immigrants living in the neighbourhood ($M = 59.81$, $SD = 20.14$) than participants in the middle-class neighbourhood condition ($M = 24.15$, $SD = 19.37$), $t(195.24) = 12.69$, $p < .001$, $d_s = 1.80$, 95% CI [1.47; 2.14].

Pre-registered analyses

Stereotype valence

As predicted, participants' valence scores in the immigrant neighbourhood condition were negative on average ($M = -1.58$, $SD = 1.27$), significantly lower than the scale's neutral midpoint, $t(101) = -12.55$, $p < .001$, $d_z = -1.24$, 95% CI [−1.49; −0.97] and lower than valence scores in the middle-class neighbourhood condition, ($M = 1.63$, $SD = 1.07$), $t(192.53) = -19.19$, $p < .001$, $d_s = -2.73$, 95% CI [−3.12; −2.34]—see Figure 1, left panel.

In contrast, exploratory (not pre-registered) analyses revealed that participants' positive valence scores in the middle-class neighbourhood condition were significantly higher than the scale's neutral midpoint, $t(93) = 14.78$, $p < .001$, $d_z = 1.52$, 95% CI [1.22; 1.82], suggesting positive stereotypes of middle-class neighbourhoods.

TABLE 1 Stereotype content of immigrant and middle-class neighbourhoods in Study 1a.

	Percent participants listed		Valence		Consensus	
Theme	**Immigrant**	**Middle-class**	***M***	***SD***	***M***	***SD***
Crime	39.22	0.00	−2.90	0.37	67.80	25.55
Dirty	27.45	0.00	−2.43	0.74	63.21	20.74
Dangerous	23.53	0.00	−2.54	1.26	73.21	21.27
Diversity	22.55	0.00	1.46	1.14	63.08	18.50
Violence	13.73	0.00	−2.93	0.27	66.43	13.36
Loud	12.37	1.08	−1.48	0.96	62.00	22.36
Unemployment	11.76	0.00	−2.17	0.83	66.67	21.03
Quiet	0.00	26.60	1.88	1.13	72.00	16.83
Clean	0.00	22.34	2.24	0.94	75.71	17.20
Safe	0.00	20.21	2.70	0.57	75.00	17.32
Well-kept	0.00	19.15	2.00	0.89	73.33	15.60
Green spaces	0.00	18.09	2.26	0.87	70.56	19.55
Affluent	0.00	15.96	1.12	1.22	68.33	20.36
Nice	0.00	13.83	2.43	0.94	64.29	16.04

Note: Theme = theme category. Immigrant = immigrant neighbourhood condition; Middle-Class = middle-class neighbourhood condition. Valence = valence ratings for each theme, with scale ranging from −3 (*very negative*) to +3 (*very positive*). Consensus = perceived consensus for each theme with 11-point scale ranging from 0% to 100%. Depicted are themes mentioned by at least 10% of participants within experimental conditions.

Exploratory analyses

Stereotype content

Within each experimental condition, we grouped synonymous participant-generated space characteristics into thematic categories (i.e. themes).[6] Responses were coded and double-coded by judges, who were not informed about the study hypotheses, design, conditions and item wordings. Cohen's Kappa calculated for Study 1a of $\kappa = .88$ suggests high agreement between judges. Next, we calculated mean valence and consensus for each theme. As depicted in Table 1, among the most frequently mentioned themes for immigrant neighbourhoods, most were rated negatively ('crime', 'dirty', 'dangerous', 'loud', 'poverty', 'violence', 'unemployment'), whereas only one was rated positively ('diversity'). In contrast, among the most frequently mentioned themes for middle-class neighbourhoods, all were rated positively ('quiet', 'clean', 'safe', 'well-kept', 'green space', 'affluent', 'nice').

Imagined composition of immigrant neighbourhoods

Participants in the immigrant neighbourhood condition were asked to name up to three social groups they had in mind. We examined the social groups mentioned in at least 5% of the responses and observed that the groups most often mentioned were 'Turks' (33%), 'Arabs' (18%), 'Africans' (7%) and 'Muslims' (5%).

Discussion

The results of Study 1a suggest that German participants associated mostly negative characteristics with immigrant neighbourhoods, but mostly positive characteristics with middle-class

[6] To provide one example, 'crime', 'crime rate', 'high crime rate', 'more crime' and 'criminal' were grouped into the theme category 'crime'. Raw data for participant-generated words and coded theme categories are accessible via https://osf.io/z4rvt.

neighbourhoods. Immigrant neighbourhoods were envisioned as crime-ridden, dirty and dangerous; in contrast, middle-class neighbourhoods were envisioned as quiet, clean and safe. Furthermore, stereotype valence differed considerably between neighbourhood conditions, with negative valence in the immigrant neighbourhood condition and positive valence in the middle-class neighbourhood condition. These findings are consistent with previous research on space-focused stereotypes in the United States (Bonam et al., 2016).

One limitation of the present study was the labelling of the middle-class neighbourhood condition. Pretesting had revealed that German participants envisioned spaces inhabited by Germans as middle-class spaces. However, labelling spaces as 'middle-class' also implies higher socioeconomic status. Thus, our initial findings cannot determine whether the observed differences in stereotype valence were due to perceived differences in ethnic composition or socioeconomic composition between the experimental conditions. Study 1b addressed this limitation by using verbal descriptions that avoid directly signalling socioeconomic status.

STUDY 1B

The main goal of Study 1b was to closely replicate the findings from Study 1a and examine whether mere differences in the ethnic composition of neighbourhoods are sufficient to elicit differences in associated stereotype valence. Study 1b investigated immigrant versus majority-German neighbourhoods. As in the previous study, we expected to observe negative stereotype valence for immigrant neighbourhoods. We also expected that stereotype valence for immigrant neighbourhoods would be more negative than stereotype valence for majority-German neighbourhoods.[7]

Method

Participants

Participant recruitment in Study 1b was carried out with the aim of recruiting a larger and more heterogeneous sample than in the previous study. The targeted sample size was $N = 280$. Participants were recruited online via the university's participant pool, via social media (e.g. Facebook groups), and via personal contacts of the experimenter. Two hundred and eighty-two participants accessed the online survey and provided informed consent. We excluded participants who reported that they had not participated seriously ($n = 8$). There were no further exclusions and the total sample size was $N = 274$ (208 female; 62 male; 4 unknown). Participants' mean age was 32.16 years ($SD = 10.92$), most participants were German citizens ($n = 258$; 94.16%) and about one-third of participants ($n = 88$) reported that they and/or their parents had been born in another country than Germany.

Procedure

The study followed a between-subjects design with two experimental conditions. Participants were randomly assigned to an immigrant neighbourhood condition ($n = 137$) or a majority-German neighbourhood condition ($n = 137$). Whereas the study materials in the immigrant neighbourhood condition were identical to those in the previous study, the spaces were labelled differently in the majority-German neighbourhood condition: participants were told to envision a neighbourhood that was 'majority-German'.[8]

[7] Note that Study 1b was not preregistered. However, as it was designed as a close replication of Study 1a, the hypotheses, study materials and measures were mostly identical to those in Study 1a.

[8] Original German-language materials can be accessed via https://osf.io/z4rvt.

Materials

Stereotype content, stereotype valence and consensus
Assessment of stereotype content, stereotype valence and consensus was identical to Study 1a.

Additional neighbourhood characteristics
As in Study 1a, participants in the immigrant neighbourhood condition were asked to name social groups they had in mind when generating stereotype content, estimated the percentage of immigrants living in the respective neighbourhoods and indicated how they would label the immigrant or majority-German neighbourhoods respectively.

Pro-diversity beliefs
The measure of pro-diversity beliefs was identical to Study 1a (Cronbach's $\alpha = .89$).

Political orientation
Political orientation was assessed with a slider ranging from 1 (*left-wing*) to 10 (*right-wing*).

Results

Manipulation check

An independent *t*-test indicated that participants in the immigrant neighbourhood condition estimated higher percentages of immigrants living in the neighbourhood ($M = 58.47$, $SD = 19.05$) than participants in the majority-German neighbourhood condition ($M = 21.02$, $SD = 14.72$), $t(255.67) = 18.20$, $p < .001$, $d_s = 2.20$, 95% CI [1.90; 2.50].

Stereotype valence

As hypothesized, participants' valence scores in the immigrant neighbourhood condition were negative on average ($M = -1.15$, $SD = 1.53$), significantly lower than the scale's neutral midpoint, $t(134) = -8.80$, $p < .001$, $d_z = -0.76$, 95% CI [−0.94; −0.56] and lower than valence scores in the majority-Germany neighbourhood condition ($M = 1.25$, $SD = 1.25$), $t(257.74) = -14.21$, $p < .001$, $d_s = -1.73$, 95% CI [−1.99; −1.44]—see Figure 1, right panel.

In contrast, an exploratory analysis revealed that participants' positive valence scores in the majority-German neighbourhood condition were significantly higher than the scale's neutral midpoint, $t(134) = 11.70$, $p < .001$, $d_z = 1.01$, 95% CI [0.79; 1.20], suggesting positive stereotypes of majority-German neighbourhoods.

Lastly, we explored whether participants' own background and migration-related experiences might moderate the valence of space-focused stereotypes. Based on participants' self-reports of where they and/or their parents had been born, we created a variable reflecting so-called 'migration background', indicating whether participants and/or their parents had emigrated to Germany. We then conducted a 2 (Migration Background: yes vs. no) by 2 (Neighbourhood Condition: immigrant vs. majority-German) ANOVA with stereotype valence as the dependent variable. We only observed a significant main effect of Neighbourhood Condition, $F(1, 266) = 162.41$, $p < .001$, $\eta_p^2 = .38$, 95% CI [0.30; 0.44], again suggesting that stereotypes were more negative in the immigrant neighbourhood condition than in the majority-German neighbourhood condition. All other main effects and interactions were non-significant.

TABLE 2 Stereotype content of immigrant and majority-German neighbourhoods in Study 1b.

	Percent participants listed		Valence		Consensus	
Theme	**Immigrant**	**Majority-German**	***M***	***SD***	***M***	***SD***
Crime	38.52	0.00	−2.87	0.53	66.35	18.58
Dangerous	36.30	0.00	−2.65	0.77	59.47	15.75
Dirty	33.33	0.00	−2.48	0.75	61.74	15.39
Diversity	28.15	0.00	1.88	1.10	63.95	23.11
Loud	27.41	0.00	−1.30	1.02	58.65	18.28
Poor	20.74	0.00	−1.82	1.02	67.86	18.13
Colourful	13.33	0.00	1.89	0.83	54.44	23.57
Clean	0.00	40.74	2.13	0.84	72.91	12.86
Well-kept	0.00	37.78	1.38	1.17	74.42	15.14
Safe	0.00	37.04	2.56	0.76	76.60	14.23
Quiet	0.00	36.30	1.41	1.17	65.92	17.55
Bourgeois	0.00	16.30	−2.14	0.71	60.45	22.78

Note: Theme = theme category. Immigrant = immigrant neighbourhood condition; Majority-German = majority-German neighbourhood condition. Valence = valence ratings for each theme, with scale ranging from −3 (*very negative*) to +3 (*very positive*). Consensus = perceived consensus for each theme with 11-point scale ranging from 0% to 100%. Depicted are themes mentioned by at least 10% of participants within experimental conditions.

Stereotype content

As in the previous study, we grouped synonymous words into themes and then calculated mean valence and consensus for each theme.[9] Cohen's Kappa calculated for Study 1b of $\kappa = .87$ suggests high agreement between judges. As depicted in Table 2, among the most frequently mentioned themes for immigrant neighbourhoods, most were rated negatively ('crime', 'dangerous', 'dirty', 'loud', 'poor'), whereas only two were rated positively ('diversity', 'colourful'[10]). In contrast, among the most frequently mentioned themes for majority-German neighbourhoods, most were rated positively ('clean', 'well-kept', 'safe', 'quiet') and only one was rated negatively ('bourgeois').

Imagined composition of immigrant neighbourhoods

As in the previous study, participants in the immigrant neighbourhood condition were asked to name up to three social groups they had in mind. Again, we examined the social groups mentioned in at least 5% of responses, the groups most often mentioned were 'Turks' (25%), 'Arabs' (13%), 'Africans' (9%), 'Refugees' (8%), 'Russians' (6%) and 'Muslims' (5%).

Discussion

The results of Study 1b suggest that German participants associated negative characteristics with immigrant neighbourhoods, but positive characteristics with majority-German neighbourhoods, thus closely replicating the findings from the previous study. Study 1b used verbal descriptions conveying which social groups were relatively more prevalent, while avoiding directly signalling the socioeconomic status

[9] Raw data for participant-generated words and coded thematic categories are accessible via https://osf.io/z4rvt.

[10] Participants used the word 'bunt', a term that means 'many-coloured' in German, which is sometimes used figuratively to mean 'multicultural'.

of the respective neighbourhoods. Thus, mere information about the *ethnic composition* of neighbourhoods seemed sufficient to elicit large differences in stereotype valence.

Study 1a and 1b assessed space characteristics via cultural stereotypes. Participants were asked how they thought *most people in society* would characterize the neighbourhoods, but they were not asked how they would personally characterize the neighbourhoods. Assessing stereotypes as cultural stereotypes rather than personal beliefs has a long tradition in intergroup research. For example, Katz and Braly (1933) argued that attitudes manifest in two different ways: private versus public. They reasoned that private attitudes reflect personally held feelings and beliefs towards social groups (e.g. liking). Public attitudes, on the other hand, reflect cultural norms of how social groups are seen by society. Interestingly, Katz and Braly (1933) suggested that both private and public attitudes might affect discriminatory behaviour.

Similarly, research on the stereotype content model has operationalized stereotypes by asking participants how social groups are viewed by others in society, and shown that these stereotypes were related to prejudice in the form of group-based emotions (Fiske et al., 2002).[11] More recent work on the stereotype content model has challenged the practice of assessing stereotype content via cultural stereotypes. In a series of studies, Kotzur et al. (2020) observed that assessing cultural stereotypes versus personal beliefs affected stereotype content. They demonstrated that stigmatized social groups were evaluated as more warm and more competent when participants were asked about their personal beliefs than when they were asked about society's view of the respective groups (i.e. cultural stereotypes). Based on these findings, Kotzur et al. (2020) argued that aggregating participants' personal beliefs might improve the assessment of cultural stereotypes.[12]

Lastly, research on space-focused stereotypes has operationalized stereotypes as both cultural stereotypes and personal beliefs (Bonam et al., 2016; Yantis & Bonam, 2021, Study 2). For example, findings by Bonam and colleagues seem to suggest that they observed large differences in stereotype valence for Black and White neighbourhoods when space characteristics were operationalized as cultural stereotypes (Bonam et al., 2016, Study 2a), but smaller differences when stereotypes were operationalized as personal beliefs (Bonam et al., 2016, Study 2b).[13] Moreover, findings from a study by Yantis and Bonam (2021) indicate that even when asked about their personal perceptions, participants perceived Black neighbourhoods to be lower class and in turn felt less connected with these neighbourhoods. Taken together, differential stereotyping has been observed both in studies that assessed cultural stereotypes and those that assessed personal beliefs. However, to our knowledge, previous research has not systematically compared the content and valence of cultural stereotypes versus personal beliefs in the context of space-focused stereotypes. Moreover, whether cultural and personal stereotypes affect feelings and judgement (i.e. downstream consequences) differently has not been directly examined in the context of space-focused stereotypes. We addressed these research questions in Study 2.

STUDY 2

Study 2 examined how cultural stereotypes versus personal beliefs shape the content and valence of space-focused stereotypes of immigrant neighbourhoods. We hypothesized that assessing cultural stereotypes would result in more negative stereotypes of immigrant neighbourhoods compared to majority-German neighbourhoods. We also hypothesized that cultural stereotypes of immigrant

[11] Note, however, that Fiske et al. (2002) did not operationalize prejudice as personal feelings, but rather as feelings from a societal perspective. In other words, participants did not report how they personally felt about social groups, but rather how they thought that society felt about social groups. Thus, it remains unclear whether or to what extent cultural stereotypes are related to (personal) prejudice.

[12] Note, however, that Kotzur et al. (2020) did not examine whether or to what extent personal beliefs or cultural stereotypes were related to downstream consequences (e.g. prejudice, discrimination).

[13] However, it is unclear whether or to what extent these differences might have been due to procedural variations and/or differences in sampling strategies.

TABLE 3 Sample sizes and descriptive statistics of dependent variables for neighbourhood conditions in Study 2.

		Valence		Space connection		Socioeconomic status	
Neighbourhood condition	***N***	***M***	***SD***	***M***	***SD***	***M***	***SD***
Immigrant neighbourhood, cultural stereotypes	69	−0.58	1.42	3.58	1.58	4.12	1.66
Immigrant neighbourhood, personal beliefs	72	0.01	1.58	3.74	1.51	3.87	1.28
Majority-German, cultural stereotypes	68	1.42	1.21	4.97	1.52	7.16	1.11

Note: Valence = valence ratings for each sample, with scale ranging from −3 (*very negative*) to +3 (*very positive*). Space connection = Ratings of felt connection with the respective neighbourhood, with scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Socioeconomic status = participants ratings of the imagined socioeconomic status of the neighbourhoods, with scale ranging from 1 (*very low social status*) to 10 (*very high social status*).

neighbourhoods would be more negative than personal beliefs about these neighbourhoods. Lastly, we examined relationships between cultural stereotypes versus personal beliefs and participants' psychological connection to the spaces. That is, we explored whether personal endorsement of stereotypes would be necessary to affect feelings and judgements. Hypotheses and analyses were pre-registered at OSF (https://osf.io/deyk6).

Method

Participants

The targeted sample size was $N = 210$. Based on previous research (Bonam et al., 2016, Study 2b), we expected at least medium-sized effects of $d = 0.50$ for the difference in stereotype valence between immigrant and majority-German neighbourhoods. We estimated that given $\alpha = .05$, $1 - \beta = .90$ in an independent t-test (one-tailed), a sample size of at least $N = 210$ ($n = 70$ per condition; see below) would be needed to detect such effects. Participants were recruited online via the university's participant pool. Two hundred and thirty-seven participants accessed the online survey and provided informed consent. As pre-registered, we excluded participants who reported that they had not participated seriously ($n = 6$) or who did not consent to their data being used for analyses upon completing the study ($n = 23$). The total sample size was $N = 209$ (151 female; 56 male; 2 unknown). Participants' mean age was 30.99 years ($SD = 9.52$). See Table 3 for sample sizes and descriptive statistics by experimental condition.

Procedure

The study followed a between-subjects design with random assignment to one of three experimental conditions: a majority-German neighbourhood, cultural stereotypes condition ($n = 68$); an immigrant neighbourhood, cultural stereotypes condition ($n = 69$) and an immigrant neighbourhood, personal beliefs condition ($n = 72$).

In the two (immigrant or majority-German neighbourhood) cultural stereotypes conditions, the instructions were identical to those in Study 1b (with wording for the respective experimental conditions in brackets)[14]:

[14] Original German-language materials can be found via https://osf.io/z4rvt.

> Imagine a neighbourhood [with a high percentage of immigrants/in which Germans are in the majority]. The following task is not about your personal judgement. Instead, please indicate what you believe most people in Germany associate with neighbourhoods [with a high percentage of immigrants/in which Germans are in the majority]. Which characteristics do most people in Germany associate with neighbourhoods [with a high percentage of immigrants/in which Germans are in the majority]?

In the immigrant, personal beliefs condition, participants read the following instructions:

> Imagine a neighbourhood with a high percentage of immigrants. The following task is about your personal judgement. Please indicate what you associate with neighbourhoods with a high percentage of immigrants. Which characteristics do you associate with neighbourhoods with a high percentage of immigrants?

Next, participants were asked to provide up to 10 characteristics, after which they were asked to rate the self-generated characteristics according to their perceived valence. Participants reported the extent to which they felt psychologically connected to the respective neighbourhood, estimated the percentage of immigrants living there and responded to two measures assessed for exploratory purposes: an item assessing the imagined socioeconomic status of the neighbourhood; and an item assessing the perceived overlap between participants' personal views about the neighbourhood and how most people in Germany would view the neighbourhood. Lastly, participants filled in a demographic questionnaire, were debriefed and thanked for their participation.

Materials

Stereotype content

Assessment of space-focused stereotype content was identical to Studies 1a and 1b.

Stereotype valence

Assessment of stereotype valence was identical to Study 1a and 1b.

Space connection

Participants responded to a three-item measure adapted from Bonam et al. (2016; Study 2b), using a scale from 1 (*strongly disagree*) to 7 (*strongly agree*) to judge the extent to which they felt connected to the respective neighbourhood (e.g. 'This neighbourhood seems like a place I would like to live').[15] We calculated mean scores by averaging across the three items, with higher values indicating that participants felt more connected to the respective neighbourhood (Cronbach's αs for experimental conditions: majority-German, cultural stereotypes = .90; immigrant, cultural stereotypes = .87; immigrant, personal beliefs = .83).

Additional neighbourhood characteristics

Participants in each experimental condition estimated the percentage of immigrants living in the neighbourhood, using an 11-point scale from 0% to 100%. Participants also judged the imagined socioeconomic status of the neighbourhood, using a scale adapted from Adler et al. (2000), ranging from 1 (*very low social status*) to 10 (*very high social status*). Lastly, participants judged the perceived overlap between their personal views about the neighbourhood and the views of most people in Germany, using a scale from 1 (*does not correspond at all*) to 7 (*corresponds very much*).

[15] Items were translated into German (see https://osf.io/z4rvt).

Results

Manipulation check

An independent t-test indicated that participants in the two immigrant neighbourhood conditions estimated higher percentages of immigrants living in the neighbourhood ($M = 56.95$, $SD = 19.05$) than participants in the majority-German neighbourhood condition ($M = 17.79$, $SD = 8.95$), $t(206.91) = 20.22$, $p < .001$, $d_s = 2.63$, 95% CI [2.58; 3.39].

Pre-registered analyses

Stereotype valence

First, we hypothesized more negative stereotype valence for cultural stereotypes of immigrant neighbourhoods than for cultural stereotypes of majority-German neighbourhoods. As hypothesized, participants' valence scores were more negative in the immigrant, cultural stereotypes condition ($M = -0.58$, $SD = 1.42$) than in the majority-German, cultural stereotypes condition ($M = 1.42$, $SD = 1.21$), $t(130.61) = -8.88$, $p < .001$, $d_s = -1.52$, 95% CI [−1.90; −1.13], replicating findings from Study 1a and 1b (see Figure 2, panel a). Second, we hypothesized that stereotype valence for immigrant neighbourhoods would vary depending on whether cultural stereotypes or personal beliefs were assessed. As hypothesized, participants' valence scores were more negative in the immigrant, cultural stereotypes condition ($M = -0.58$, $SD = 1.42$) than in the immigrant, personal beliefs condition ($M = 0.01$, $SD = 1.58$), $t(137.67) = -2.34$, $p = .021$, $d_s = -0.40$, 95% CI [−0.73; −0.06].

Exploratory analyses

Space connection

First, we conducted an ANOVA with space connection scores as the dependent variable to explore whether participants differed in the extent to which they reported feeling connected to the respective neighbourhood, depending on the neighbourhood condition. We observed a significant main effect of neighbourhood condition, $F(2, 206) = 16.58$, $p < .001$, $\eta_p^2 = .14$, 95% CI [0.07; 0.21]. Post-hoc comparisons revealed that participants in the majority-German neighbourhood, cultural stereotypes condition reported feeling more connected ($M = 4.97$, $SD = 1.52$) than participants in the immigrant, cultural stereotypes condition ($M = 3.58$, $SD = 1.58$), $t(206) = -5.25$, $p < .001$, or participants in the immigrant, personal beliefs condition ($M = 3.74$, $SD = 1.51$), $t(206) = -4.71$, $p < .001$ respectively. The extent to which participants felt connected did not differ between the two immigrant neighbourhood conditions, $t(206) = -0.60$, $p > .999$ (see Figure 2, Panel b).

Next, we explored whether the valence of space-focused stereotypes in the two immigrant neighbourhood conditions was related to participants' feelings of connection to the space (see Tables 4–6). Across all three experimental conditions, we observed large positive correlations between stereotype valence and space connection. To the extent that participants associated negative characteristics with a neighbourhood, they also reported feeling less connected with that neighbourhood.

Socioeconomic status

We conducted an ANOVA with neighbourhood socioeconomic status scores as the dependent variable to explore whether imagined socioeconomic status differed between the neighbourhood conditions. We observed a significant main effect of neighbourhood condition, $F(2, 201) = 122.23$, $p < .001$, $\eta_p^2 = .55$, 95% CI [0.47; 0.60]. Post hoc comparisons revealed that imagined socioeconomic status was higher in the majority-German neighbourhood, cultural stereotypes condition ($M = 7.16$, $SD = 1.11$) than in the immigrant, cultural stereotypes ($M = 4.12$, $SD = 1.66$) or immigrant, personal beliefs conditions

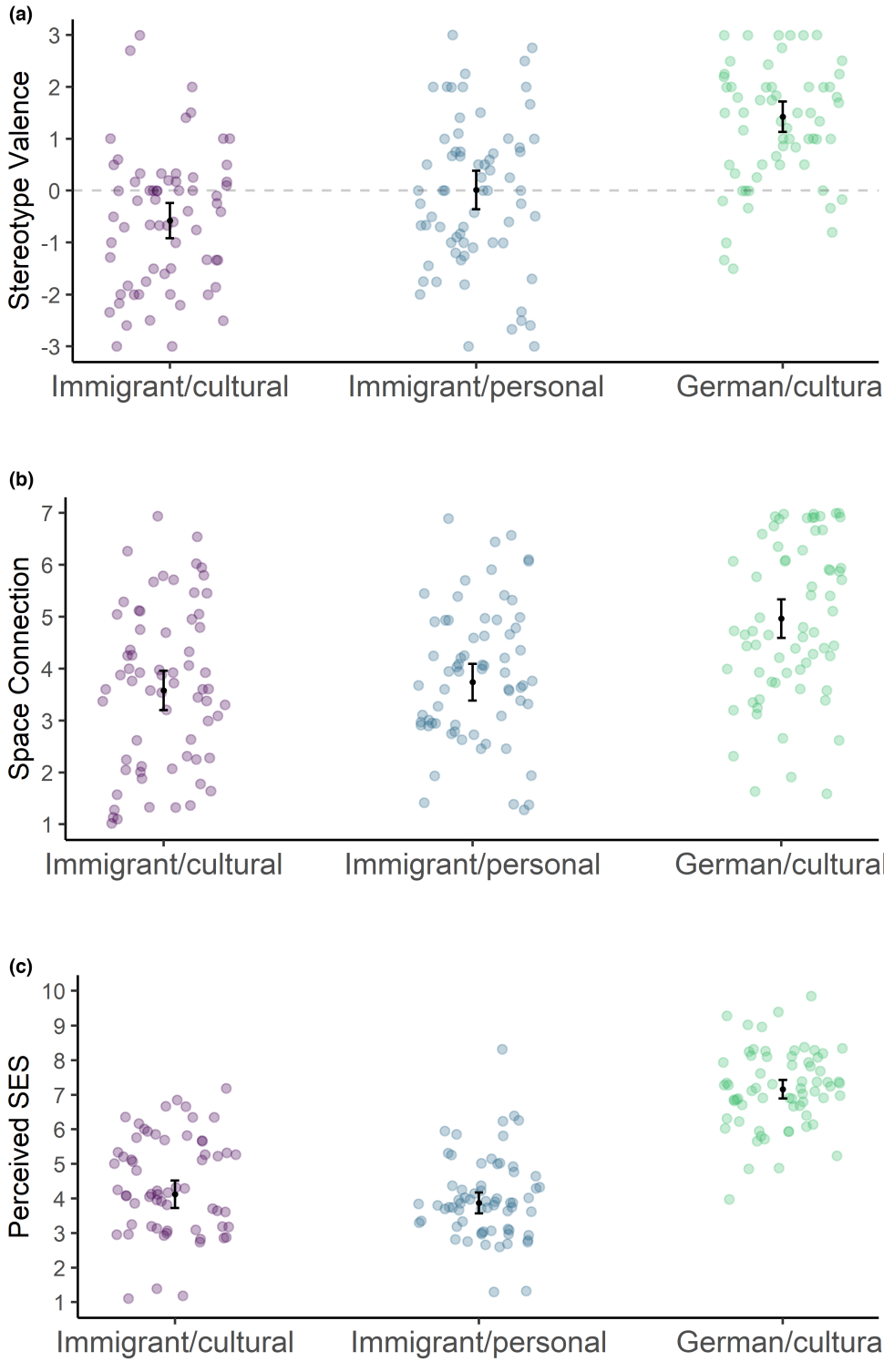

FIGURE 2 Jittered dot plot of Study 2 participants' ratings of stereotype valence (Panel a), space connection (Panel b) and perceived socioeconomic status (Panel c) by neighbourhood condition: 'immigrant/cultural' = immigrant neighbourhood, cultural stereotypes; 'immigrant/personal' = immigrant neighbourhood, personal stereotypes; 'German/cultural' = majority-German neighbourhood, cultural stereotypes. Means are plotted with black dots and 95% confidence intervals.

TABLE 4 Zero-order correlations of stereotype valence, space connection, imagined socioeconomic status in the immigrant neighbourhood cultural stereotypes condition in Study 2.

	1	2	3	*M*	*SD*
1. Valence	–			−0.58	1.42
2. Space connection	.52***	–		3.58	1.58
3. SES	.43***	.35**	–	4.12	1.66
4. Percentage immigrants	.08	−.04	−.10	57.54	17.77

Note: *$p < .05$; **$p < .01$; ***$p < .001$; Valence = stereotype valence; Space Connection = space connection; Percentage Immigrants = estimated percentage of immigrants living in the neighbourhood; SES = imagined socioeconomic status of neighbourhood.

TABLE 5 Zero-order correlations of stereotype valence, space connection, imagined socioeconomic status in the immigrant neighbourhood personal beliefs condition in Study 2.

	1	2	3	*M*	*SD*
1. Valence	–			0.01	1.58
2. Space connection	.56***	–		3.74	1.51
3. SES	.21	.21	–	3.87	1.28
4. Percentage immigrants	−.29*	−.12	−.02	56.39	20.30

Note: *$p < .05$; **$p < .01$; ***$p < .001$; Valence = stereotype valence; Space Connection = space connection; Percentage Immigrants = estimated percentage of immigrants living in the neighbourhood; SES = imagined socioeconomic status of neighbourhood.

TABLE 6 Zero-order correlations of stereotype valence, space connection, imagined socioeconomic status in the majority-German, cultural stereotypes condition in Study 2.

	1	2	3	*M*	*SD*
1. Valence	–			1.42	1.21
2. Space connection	.63***	–		4.97	1.52
3. SES	.11	.16	–	7.16	1.11
4. Percentage immigrants	−.05	.01	−.32**	17.79	8.95

Note: *$p < .05$; **$p < .01$; ***$p < .001$; Valence = stereotype valence; Space Connection = space connection; Percentage Immigrants = estimated percentage of immigrants living in the neighbourhood; SES = imagined socioeconomic status of neighbourhood.

($M = 3.87$, $SD = 1.28$), $t(201) = -12.92$, $p < .001$ and $t(201) = -14.08$, $p < .001$ respectively. Moreover, imagined socioeconomic status did not differ between the two immigrant neighbourhood conditions, $t(201) = 1.06$, $p = .865$ (see Figure 2, Panel c).

Text analyses

As in Studies 1a and 1b, we grouped synonymous words into themes and calculated the mean valence for each theme.[16] Cohen's Kappa calculated for Study 2 of $\kappa = .97$ suggests high agreement between judges. Stereotype content of cultural stereotypes was similar to stereotype content in the previous studies. As depicted in Table 7, among the most frequently mentioned themes for majority-German neighbourhoods, most were rated positively ('clean', 'orderly', 'quiet', 'safe', 'well-kept'), whereas only one was rated negatively ('rich'); in contrast, among the most frequently mentioned themes in both immigrant

[16] Raw data for the participant-generated words and coded themes are accessible via https://osf.io/z4rvt.

TABLE 7 Stereotype content of immigrant and majority-German neighbourhoods in Study 2.

	Percent participants listed			Valence	
Theme	**Immigrant/cultural**	**Immigrant/personal**	**Majority-German**	***M***	***SD***
Crime	47.06	20.83	0.00	−2.83	0.38
Diversity	33.82	38.89	0.00	2.04	0.93
Poor	23.53	19.44	0.00	−1.93	1.08
Loud	20.59	31.94	1.47	−1.03	1.00
Dirty	17.65	12.50	0.00	−2.32	0.78
Dangerous	16.18	11.11	0.00	−2.50	0.76
Colourful	10.29	16.67	0.00	2.47	0.70
Clean	0.00	0.00	48.53	2.18	0.92
Orderly	0.00	0.00	45.59	1.65	1.36
Quiet	0.00	0.00	35.29	1.88	1.15
Safe	0.00	0.00	25.00	2.06	1.20
Well-kept	0.00	0.00	10.29	2.00	1.00
Rich	0.00	0.00	10.29	−0.57	0.79

Note: Theme = theme category. Immigrant/Cultural = immigrant neighbourhood, cultural stereotypes; Immigrant/Personal = immigrant neighbourhood, personal stereotypes. Majority-German = Majority-German neighbourhood, cultural stereotypes. Valence = valence ratings for each theme, with scale ranging from −3 (*very negative*) to +3 (*very positive*). Depicted are themes mentioned by at least 10% of participants within experimental conditions.

neighbourhood conditions, most were rated negatively ('crime', 'poor', 'loud', 'dirty', 'dangerous'), whereas only two were rated positively ('diversity', 'colourful').

Mediation analyses

We conducted a mediation analysis using the 'jAMM' package with 1000 bootstrap samples, in which we tested the two immigrant neighbourhood conditions against the majority-German neighbourhood condition, to explore whether the effect of neighbourhood condition on space connection was mediated by stereotype valence. Indeed, the indirect effect was significant, $b = 1.03$, $SE = 0.17$, $p < .001$, 95% CI [0.71, 1.35]. This suggests that the effect of neighbourhood condition on space connection was fully mediated by space-focused stereotypes. Next, we conducted a second, parallel mediation analysis to explore whether the effect of neighbourhood condition on space connection was also mediated by perceived SES of the neighbourhood. Indeed, the indirect effect was significant, $b = 0.87$, $SE = 0.25$, $p < .001$, 95% CI [0.39, 1.35]. This suggests that the effect of neighbourhood condition on space connection was also mediated by perceived SES of the neighbourhood.

MEGA-ANALYSIS

Lastly, we performed a mega-analysis, in which we pooled data of all participants across all three studies. First, we explored the difference in stereotype valence between immigrant and non-immigrant neighbourhoods across the three studies. Participants' valence scores in the immigrant neighbourhood conditions were negative on average ($M = -0.94$, $SD = 1.55$), significantly lower than the scale's neutral midpoint, $t(376) = 11.78$, $p < .001$, $d_z = 0.61$, 95% CI [0.49; 0.71], and lower than valence scores in the non-immigrant neighbourhood conditions ($M = 1.41$, $SD = 1.19$), $t(671.53) = 22.28$, $p < .001$, $d_s = 1.70$, 95% CI [1.54; 1.90]. Second, we explored differences in stereotype valence for the middle-class neighbourhood condition (Study 1a) in comparison to the majority-German neighbourhood conditions (Study 1b and 2). Participants' valence scores in the middle-class neighbourhood condition ($M = 1.63$, $SD = 1.07$) were higher than valence scores in the majority-German neighbourhood conditions ($M = 1.31$, $SD = 1.23$),

$t(206.07) = 2.30$, $p = .022$, $d_s = 0.28$, 95% CI [0.04; 0.53], although notably perceptions of each were significantly above zero. Taken together, we observed across studies that participants had negative stereotypes of immigrant neighbourhoods, but positive stereotypes about non-immigrant neighbourhoods, suggesting large effects. Moreover, participants had more positive stereotypes of middle-class neighbourhoods compared to neighbourhoods portrayed as majority-German, suggesting that stereotypes about non-immigrant neighbourhoods might also depend on the socioeconomic composition of places.

GENERAL DISCUSSION

The present research investigated whether spaces are perceived and judged differently depending on the social groups living there. Across three experiments with participants in Germany, we observed consistent negative stereotyping of spaces with large immigrant communities, but positive stereotyping of spaces inhabited by ethnic majority communities. People used positive characteristics in their descriptions of majority-German neighbourhoods (e.g. quiet, clean, safe), but negative characteristics in their descriptions of immigrant neighbourhoods (e.g. crime-ridden, dirty, dangerous), suggesting large disparities in how places are perceived. Similarly, stereotype valence was negative for immigrant neighbourhoods, but positive for majority-German neighbourhoods, which also suggests large effects. Moreover, exploratory analyses in Study 2 suggest that space-focused stereotypes had downstream consequences, affecting the extent to which people felt psychologically connected to spaces: To the extent that they used negative characteristics in their descriptions of immigrant neighbourhoods, participants also felt less connected with these spaces. Together, our findings suggest robust effects of space-focused stereotyping, potentially affecting how places are judged.

Our findings are consistent with research by Bonam et al. (2016) who proposed that physical space itself is racialized, and that this racialization leads to space being a potential target of stereotyping. Bonam and colleagues demonstrated in a number of studies that people characterize Black neighbourhoods negatively, whereas they characterize White neighbourhoods positively (Bonam et al., 2016, 2020; Yantis & Bonam, 2021). To our knowledge, the present research is the first to demonstrate that such differential stereotyping is not limited to Black versus White spaces, but generalizes to other social contexts and racialized groups.

Immigrant neighbourhoods in the present research were not described as inhabited by one specific immigrant group. Nevertheless, the spaces were associated with similar stereotype content as observed in previous research (Bonam et al., 2016). Moreover, people imagined immigrant neighbourhoods to be inhabited mostly by social groups that are severely stigmatized in the German societal context (e.g. people who are perceived as Middle-Eastern, North-African or Turkish). Future research might investigate whether the content of stereotypes of immigrant neighbourhoods can be linked to stereotypes of specific stigmatized groups or whether space-focused stereotypes of immigrant neighbourhoods are driven by more generalized perceptions of these spaces.

Our findings are also consistent with theorizing that space-focused stereotypes relate to downstream perceptions and judgement (Bonam et al., 2016). Participants in Study 2 reported feeling less connected to immigrant neighbourhoods compared to majority-German neighbourhoods. Moreover, participants' self-reported felt connection to immigrant neighbourhoods was strongly related to stereotype valence: Participants felt less connected with immigrant neighbourhoods to the extent that they characterized them negatively. Lastly, we observed that the effect of neighbourhood condition on space connection was mediated by stereotype valence, consistent with the model of space-focused stereotyping proposed by Bonam et al. (2016), which suggests that these processes similarly apply to perceptions of immigrant spaces. Consequently, space-focused stereotypes might have important implications for peoples' psychological connectedness to immigrant neighbourhoods, and in turn, the way they interact with, care for or avoid these spaces (Bonam et al., 2016; Lewicka, 2011).

Research in the United States has linked space-focused stereotypes to racial disparities in wealth and segregation (Yantis & Bonam, 2021). In what ways space-focused stereotypes might affect real-world

outcomes in German society is an important yet unexplored question, although it would seem plausible that space-focused stereotypes might also perpetuate or intensify segregation in Germany (e.g. by shaping perceptions of which areas are desirable or undesirable). Based on the magnitude of effect sizes as well as the strong relationship between stereotypes and participants' reported felt connection with neighbourhoods, space-focused stereotypes and their consequences might be relevant in different domains in German society. For example, in German public discourse and media depictions, neighbourhoods with larger immigrant communities are frequently referred to as 'problematic neighbourhoods' (Gruner, 2010) or 'social hot spots' (*sozialer Brennpunkt*; Nast, 2020). Neighbourhoods labelled as social hot spots are described in racialized terms—by referring to foreigners and immigration—and as high in crime and conflict (Nast, 2020). Critically, these labels and generalized depictions are used by politicians as well as decision makers such as educators, teaching in schools in these stigmatized neighbourhoods. Future research may investigate space-focused stereotyping and their downstream consequences in real-world settings and among decision makers.

Lastly, we observed that stereotype valence associated with immigrant neighbourhoods was more negative when stereotypes were assessed in the form of cultural stereotypes (i.e. how most people in society would characterize the space) rather than personal beliefs (i.e. how the participants personally would characterize the space). These findings are in line with recent stereotype content research by Kotzur et al. (2020), who observed that participants judged stigmatized social groups more positively when asked about their personal beliefs rather than about society's view of these groups. Based on this finding, they proposed 'aggregating stereotype content scores from participants' personal perspective to the cultural level' as a better way to assess stereotypes (Kotzur et al., 2020, p. 1018).

However, while we observed that stereotypes were indeed more positive when assessed as personal beliefs, this was not reflected in the way participants verbally described immigrant neighbourhoods. Regardless of whether stereotypes were endorsed or not, participants characterized immigrant neighbourhoods using similar words (see Table 7). Importantly, stereotype endorsement also did not seem to affect judgement and perceptions of spaces. Regardless of whether stereotypes were endorsed or not, participants reported feeling less connected with immigrant neighbourhoods and envisioned the socioeconomic status of these neighbourhoods as lower compared to majority-German neighbourhoods. These findings are consistent with previous work showing that both cultural stereotypes (Bonam et al., 2016) as well as personal beliefs (Yantis & Bonam, 2021, Study 2) are consequential for how spaces are perceived, judged and treated. Thus, mere activation of shared knowledge (i.e. cultural stereotypes) might still negatively affect perceptions and judgement of immigrant neighbourhoods. All in all, we believe that more research is needed to establish whether asking people about their personal beliefs might improve the measurement of stereotypes.

Lastly, it is important to note that perceivers' attitudes towards immigrants can shift systematically to become more negative or positive based on the specific labels for this group (e.g. Rucker et al., 2019) and the German language includes multiple terms for immigrants, so if different terms than the one used here are used in future research, valence ratings of associated spaces may vary accordingly.

CONCLUSION

The present research demonstrates that spaces are characterized differently depending on their composition and that space-focused stereotypes affect evaluative judgement and the extent to which people feel connected to a place—even when these stereotypes are not personally endorsed. Further examining space-focused stereotypes in the field as well as their consequences on prejudice and discrimination at different levels of analysis (e.g. communities, decision makers) seem to be important avenues for future research.

AUTHOR CONTRIBUTIONS

Iniobong Essien: Conceptualization; data curation; formal analysis; investigation; methodology; visualization; writing – original draft; writing – review and editing. **Anette Rohmann:** Conceptualization; methodology; writing – review and editing.

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CONFLICT OF INTEREST STATEMENT

There were no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in the Open Science Framework at https://osf.io/z4rvt.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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