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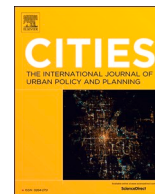
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Can urban fabric encourage tolerance? Evidence that the structure of cities influences attitudes toward migrants in Europe

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ABSTRACT

Does the structure of a city influence how its residents feel about migrants? Jane Jacobs railed against modernist planners who sought to replace the complex fabric of cities with suburbanized designs that prioritized sunshine and greenery. She theorized that this design trend had resulted in few opportunities for neighbours to interact with each other. In today's diverse cities, neighbourly interaction may be one key to enhancing social cohesion. Intergroup contact has been shown to reduce prejudice, and recent studies have found that even "mere-exposure" may have a positive effect. Taken together, the work of urban theorists and contact theorists implies that residents of compact cities should be more likely to hold positive attitudes toward their neighbours—including migrants. Recent research, however, casts doubt on how well contact theory applies to the lived diversity of modern cities. This paper uses data from 22 European cities to identify a relationship between one's attitude toward migrants and the design of the city in which they live. It finds that, when controlling for individual- and city-level factors, residents of cities high in "continuous urban fabric" are more likely to agree that migrants are good for their city.

1. Introduction

Over the past half-century, European cities have been enriched by new dimensions of diversity due to migration. From the 1970s until the mid-1990s, European diversity policy was dominated by the paradigm of multiculturalism, which focused on establishing rights and cultural recognition for minorities. Since then, however, multiculturalism has faced a rhetorical backlash from both sides of the political spectrum. The right has argued that multiculturalism eroded national unity, while the left has contended that it failed to achieve meaningful equality (Kymlicka, 2010). Many cities in Europe have now embraced an alternative paradigm, interculturalism, which claims to address the concerns of both right and left through cross-cultural interaction. Parallel to the rise of interculturalism, a debate has been simmering over the so-called "progressive's dilemma." This theoretical dilemma holds that diversity and generous welfare states may be politically incompatible. Strong welfare states require high levels of taxation and, therefore, citizens who are willing to pay more in taxes for the benefit of their fellow nationals. If citizens do not feel solidarity toward minorities and migrants, they turn to welfare chauvinism policies which restrict migrants' access to benefits and allow inequality to grow (Kymlicka, 2020). It is clear that European policymakers face a complex challenge to ensure that

communities remain cohesive as they diversify and that migrants are met with solidarity and not exclusion. Interculturalists have proposed a wide range of public policy reforms, often highlighting the importance of public spaces as venues of contact and relationship-building between neighbours. These proposals are grounded in Allport's intergroup contact hypothesis, but they also bring to mind the work of Jacobs and Gehl, urban theorists who sought to design city neighbourhoods rich in neighbourly interaction.

Although a large body of research has found that intergroup contact does reduce prejudice, the efficacy of contact at the scale of a city, or even a neighbourhood, is contested. Wessel (2009) argues that we can better understand the value of contact by taking an interdisciplinary approach to the study of diversity in cities, with greater engagement from geographers and urban theorists. He distinguishes between two divergent perspectives in the literature: the contact theory perspective that diversity promotes tolerance and the growing perspective among geographers that diversity promotes conflict. He argues that, while researchers from the contact perspective have made strides in advancing beyond overly prescriptive initial theories, empirical research retains its "narrow focus on contact incidents" (p. 12). Instead, Wessel urges a focus on "casual contact." These forms of contact are too minute to be easily classified as explicit incidents and have elsewhere been referred to

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as exposures. Such small interactions are key to a geographical perspective on urban diversity: cities are home to millions of such exposures every day, and urban structure plays a vital role in determining how frequently residents cross paths. This temporal perspective is key to Wessel's argument about the uniqueness of cities: encounters in cities may be brief, but for residents they occur regularly, frequently, and repeatedly.

As Wessel notes, however, other scholars cast doubt on the efficacy of contact in promoting tolerance in urban neighbourhoods. Valentine (2008) argues that casual contact has been naively romanticized by researchers, and that we must instead focus on identifying and creating opportunities for "meaningful contact." Matejskova and Leitner (2011), in an ethnographic study, find "chance contact" across groups to be superficial and ineffective, and others have found that such encounters can be limited by segregation in public spaces (Liu et al., 2020, Orum et al., 2009, Legeby & Marcus, 2011). Using survey data, Piekut and Valentine (2017) suggest that the benefits of contact may be stronger in quasi-public spaces, like workplaces, social clubs, and restaurants, than in public spaces like sidewalks and parks.

Despite bountiful evidence of the efficacy of contact theory in a wide variety of settings, evidence that contact-promoting infrastructure, like public space, leads to a reduction in prejudice is mixed, at best. This paradox may be due, in part, to the difficulty in measuring the casual contact that Wessel emphasizes. Surveys and even ethnographies can miss the small, subtle contact that is frequent in large cities, creating a perception that only deeper contact is effective. This paper contributes to the debate by conducting a zoomed-out comparison of 22 European cities. Instead of seeking to identify specific sites or instances of contact, this paper shows that a broad type of urban fabric known to promote contact is associated with more tolerant attitudes. The findings suggest that—although they are difficult to quantify directly—momentary but frequent encounters between city residents do have the positive influence predicted by contact theory.

2. Literature review

In comparing cities, this paper is concerned with geographic variation in attitudes toward migrants, and I use Robinson's (2010) framework in order to situate the mechanism of interest—casual contact provoked by urban design—among other important individual and geographic factors. Robinson asserts that place matters in the formation of attitudes toward migrants, alongside individual-level factors. He proposes three dimensions as a framework for the effect of place. *Population characteristics* are the first dimension, including the socioeconomic makeup of both the native and migrant populations, the size of the newly-arrived migrant population, and other characteristics of the migrant population such as legal status. The *social and physical environment* is Robinson's second dimension. Among many examples of environmental factors, such as resource availability and patterns of mobility, he notes "opportunities for interaction" as a factor (p. 2461). The final dimension is the *sociocultural and historical background* of the place, including how diversity has been treated in the past and how political officials and the media frame immigration. Having sketched out this framework, Robinson calls for further research to identify the pathways by which these factors have an impact on attitude formation. Urban design which promotes contact falls within the social and physical environment dimension, but this paper's analysis also accounts for key characteristics of Robinson's other dimensions that may confound the relationship between urban design and attitudes. The inclusion of factors that represent each dimension is validated by a recent qualitative study of a neighbourhood in Glasgow, which found that the dimensions Robinson identified can be deeply intertwined (Bynner, 2019). The next subsection reviews theoretical and empirical research on the forms of urban design that promote contact, as well as recent research on how contact influences the complex dynamics of diversity in modern European cities. The second subsection briefly recapitulates research on the

influence of population characteristics, which informs the inclusion of additional data in this paper's analysis.

2.1. Social and physical environment: opportunities for interaction

In her landmark book, *The Death and Life of Great American Cities* (1961), Jacobs advocates for the restoration of urban vitality, which has been threatened by design choices that lead to *dullness*. Jacobs uses the word *vital* to refer to neighbourhoods that are full of activity due and an *economic and social diversity* of people. While this paper uses the term diversity to refer to ethnic diversity, and more specifically diversity of national origins, Jacobs' use of the term encompasses a wider spectrum that includes people's backgrounds as well as the reason that they have come to a neighbourhood or block at a particular time. In *Great American Cities*, she is especially concerned with this physical and economic diversity which influences the variety of ways in which a city is used, as this diversity of uses and continuous flow of users is what gives a neighbourhood vitality. At all times of day, vital neighbourhoods are full of human activity, foot traffic, and eyes on the street. Alternatively, dull neighbourhoods may have periods of activity but, due to their lack of diverse uses, are otherwise quiet and empty. Neighbourhoods with a variety of uses are more likely to attract *strangers*, people whom a resident does not know. To Jacobs, strangers are what make cities distinct—and not simply large towns—because in cities, strangers vastly outnumber one's acquaintances. Therefore, the way in which city residents interact with strangers must be a key consideration of urban design.

These interactions take place at the sidewalk level, to which Jacobs gives a great deal of attention. There, vitality brings two key benefits: safety and contact between neighbours. On a bustling street, there is a steady flow of potential witnesses which discourages crime and makes residents and strangers feel safe. There are also many opportunities for neighbours to encounter each other and, potentially, turn strangers into acquaintances. Jacobs writes of the importance of the relationships which can form on the sidewalks of a city neighbourhood. "It is possible to be on excellent sidewalk terms with people who are very different from oneself, and even, as time passes, on familiar public terms with them. Such relationships can, and do, endure for many years, for decades," she writes (p. 62).

Jacobs devotes much of the book to developing four specific features of vital cities and the mechanisms by which they function. To achieve vitality, a neighbourhood must have mixed uses to draw foot traffic at all times of the day, short blocks to prevent isolation, some older buildings with lower rents, and a high concentration of dwellings and residents to fuel human activity. The specific conditions Jacobs develops have drawn the attention of recent research. Delclòs-Alió and Miralles-Guasch (2018) assessed, block-by-block, the extent to which Barcelona's urban structure fits with Jacobs' ideals using their JANE Index. The index comprises measures of population, housing, and building density; the mix of building uses; the length of blocks and width of streets; the age of buildings; the availability of public transportation; and the distance to border vacuums that discourage pedestrian activity, such as highways. The index score is the sum of the z-scores of these measures, with higher scores representing greater compliance with Jacobs' ideals. In a subsequent paper, the index was used to show that neighbourhoods with higher scores attract more pedestrian activity (Delclòs-Alió et al., 2019). This validation of Jacobs' theory echoes similar findings in Seoul (Sung et al., 2015; Sung & Lee, 2015). Despite the specificity of the 11-variable JANE Index, however, Delclòs-Alió and Miralles-Guasch allude to a simpler dichotomy between the "traditionally inherent vital nature" of Mediterranean cities and the "paradigm of modernity" which has made certain inroads in Barcelona (Delclòs-Alió & Miralles-Guasch, 2018, p. 506). This conflict can be seen in their results, which find that areas with low JANE Index scores are primarily those which were redeveloped with modernist, high-rise residences.

On the very first page of *Great American Cities*, Jacobs acknowledges

that despite the specificity to come, her book is an attack on an entire philosophy—modern orthodox city planning—and not “quibbles” or “hair-splitting” about design trends. She traces the history of this orthodoxy to two key figures: Ebenezer Howard, whose Garden City ideal inspired a legion of anti-density followers that Jacobs calls “the Decentralists” and Le Corbusier, who envisioned high-density residential skyscrapers within vast parkland. Though the two schools differed on ideal densities, Jacobs writes that they agreed on one thing: “grass, grass, grass” (p. 22). Of his aspirations for New York, Le Corbusier wrote, “The whole city is a park. The terraces stretch out over lawns and into groves... Here is the city with its crowds living in peace and pure air, where the noise is smothered under the foliage of green trees” (Corbusier, 1987, p. 177).

To Jacobs, lawns are an indicator of the open designs that reduce human activity and contact between neighbours. She takes aim at both the lawns that frequently surround high-rise housing projects and suburban-style, single-family housing where space for lawns thins out crucial concentrations of people. She is not alone in this observation. Gehl (2011) focuses on the importance of quality spaces in drawing people out of their homes, but also makes distinctions between broad design philosophies. He writes that replacing compact urban fabric with high-rise buildings offset by grassy areas has the effect of discouraging foot traffic and reducing the amount of contact between neighbours. In cities that favour open designs or single-family housing, “communal outdoor activities have been reduced to a bare minimum,” he writes (p. 46–47).

Jacobs, writing during the Jim Crow era, was well aware of the depth of racism in the United States, referring even to the country’s “master-race psychology” (1961, p. 284). She was under no illusions that urban design alone could eliminate discrimination, but, as Laurence (2019) writes in characterising her views on racism, she did believe urban design could help. If cities have a role in promoting tolerance, it is through public spaces and sidewalks where strangers—from different neighbourhoods or different backgrounds—encounter each other. She writes that such “room for great differences” is only possible in “intensely urban life” which she contrasts with the modernist “pseudo-suburbs” (Jacobs, 1961, p. 72; Laurence, 2019).

The context of ethnic diversity in contemporary Europe is substantially different from the context in which Jacobs developed her theory. Perhaps most importantly, academics now understand that identities, which are often presented in simple dichotomies based on race or migration status, are actually shifting social constructs which intersect with other identities at individual and group levels. Vertovec (2021) argues that diversity in modern societies is better understood as a *social organization of difference*, his model of which includes three domains: configurations, representations, and encounters. Configurations are the economic, cultural, and even physical strata formed by political, social, legal, and other structures or institutions. Representation refers to the natural inclination of humans to place each other into categories and the social processes through which these groupings can flatten identities, ignore intersections, and encourage stigmatization. Encounters are causal or fleeting contacts made by members of different groups, groups which are, of course, products of the configurations and representations of that society.

Wilson (2017), in considering how the concept of encounter has been employed in research on post-colonial geography and animal geography, as well the study of urban diversity, argues that encounters are not simply contacts but contacts in which difference is noteworthy. She writes that “encounters make (a) difference” (p. 14). That is, our awareness of difference is formed by encounters, but encounters can also alter our perceptions of and attitudes toward difference. Given these dualling roles, the outcome of any given encounter is uncertain, and change may only come through an accumulation of contact. Wilson emphasizes the importance of the sensory effects of encounter, arguing for research that looks beyond face-to-face contact. Her work helps contextualize recent research that has questioned the capacity of casual

contact to change attitudes toward diversity in cities.

The promise of encounter lies in intergroup contact theory, which originated with Allport’s (1954) hypothesis that contact across groups would reduce prejudice. His contact hypothesis has grown into the heavily researched intergroup contact theory, and recent work has shown that the benefits of contact extend beyond reducing prejudice and can also include enhancing empathy and altering political views. For example, studies of black and white college roommates, rich and poor friends, and neighbours of varied incomes have found that intergroup contact may also increase support for egalitarian public policies (Duncan et al., 2003; Kearns et al., 2014; Newman, 2014). Allport contended that contact would be most effective if four conditions were met: equal status of the participants, common goals among participants, a cooperative environment for contact, and societal or legal support for the interaction. A meta-analysis of 515 empirical studies of the theory found, however, that each of Allport’s four conditions is beneficial but not essential (Pettigrew & Tropp, 2006). Evidence for the effect of intergroup contact is so strong that research has begun to focus instead on the *extended contact hypothesis*, which holds that the positive effect of contact extends to the friends of participants, even if those friends did not experience intergroup contact themselves. Zhou et al. (2019) conducted a meta-analysis of 115 studies and found significant effect sizes for both extended contact and direct friendship and found that there was not a significant difference between the two forms of contact.

Even “mere exposure,” which falls short of contact, can have positive effects (Pettigrew et al., 2011). Research on the effect of exposure on attitudes has primarily been conducted in the laboratories of social psychologists. Zajonc (1968), who was an early pioneer in the field, focused on exposure between humans and objects. Two decades after Zajonc’s key monograph, Bornstein (1989) conducted a meta-analysis which found extensive support for Zajonc’s thesis that repeated exposure increased positive attitudes, and he noted that advertisers had already begun to leverage the power of repeated exposure. Bornstein suggested that researchers should shift their focus to exposure’s effect on social interactions. More recent research has heeded this advice and found positive human-to-human effects, often by exposing subjects to photographs of faces in laboratory experiments (Harmon-Jones & Allen, 2001; Rhodes et al., 2001).

Matejskova and Leitner (2011), however, seek to remedy what they view as an uncritical acceptance of contact theory literature by scholars and policymakers by conducting an ethnography of relations between Russian Aussiedler and local German residents of Berlin’s Marzahn locality. They express three chief concerns with the contemporary literature: insufficient attention to the forms of contact that actually worsen prejudice, the potential for reverse-causality in some research designs, and the reliance on clinical experiments that do not capture the “mundane contact” of “everyday settings” (p. 721). They conclude that these casual forms of contact have “little potential to spur transformation of anti-immigrant attitudes and prejudice” (p. 735) and focus much of their paper, instead on sustained contact that may take place in, for example, workplace environments. Despite acknowledging that the underlying mechanism of contact is likely affective, and not cognitive, they rely on the testimony of focus group participants to dismiss the value of casual contact. Furthermore, Marzahn suffers from a discontinuous, modernist design with few mixed-use areas, affording few opportunities for street-level contact to accumulate and overcome Wilson’s first stage of encounter in which it “makes difference.” Matejskova & Leitner find evidence of the duality Wilson describes, noting cases in which contact reinforces prejudice and that some prejudices may remain even after positive contact experiences.

Piekut and Valentine (2017) hypothesize that public spaces, like streets, have limited potential to improve attitudes due to divergent power relations and lack of opportunity for “meaningful contact.” They compare these spaces to four other contact settings, consumption spaces, like cafes; institutional spaces, like workplaces or schools; socialisation

spaces, like clubs; and private spaces. Using survey data from Leeds and Warsaw, in which respondents were asked to recall frequencies of intergroup contact in each type of space, they find institutional and socialisation spaces to have the most potential in Leeds but that public and consumption spaces fare best in Warsaw. These mixed results are further complicated by the question of reverse causality, which they only address by asking respondents whether they avoid contact with minorities. Liu et al. (2020) also contrast types of spaces, in this case “open spaces,” like public courtyards or parks, and commercial spaces, by asking survey respondents in Beijing to recall how frequently they use the spaces and separately assessing the diversity of those spaces. They find that the presence of diverse public spaces in one’s neighbourhood does not correlate with inclusive attitudes, but that self-reported usage of open spaces—regardless of the diversity of usership—does. Importantly, the researchers find, during field visits to several of the locations, that locals and migrants use the open spaces in very different ways, echoing other findings of segregation in public spaces (Legeby & Marcus, 2011; Orum et al., 2009).

2.2. Population characteristics

The relative size of a place’s migrant population is a key factor of Robinson’s population characteristics dimension and a factor that has been frequently studied. Often, the influence of migrant population size is attributed to perceptions by native residents that they face economic or cultural competition from migrants. Where migrant populations are large or rapidly growing, the perception of this threat is said to increase and worsen attitudes. This theory—variously referred to as group threat or perceived threat, among other terms—is often traced back to Blumer (1958), who proposed that such attitudes are a product of the relative position of groups within a society. Dominant groups, he theorizes, will develop prejudicial attitudes when an out-group is perceived to threaten their dominance. In the European context this has been applied at both the individual and group levels. At the individual level, studies have found negative correlations between individuals’ economic means and their attitudes toward migrants (Heath & Richards, 2020). In this case, theory suggests that individuals who are more economically vulnerable are more likely to feel threatened by immigrants. At the group level, the competition explanation predicts that larger migrant populations will be seen as more threatening either economically, culturally, or generally (Dancygier & Laitin, 2014). Recent studies have noted, however, that the perceived size of the migrant population has more predictive power than the actual size (Gorodzeisky & Semyonov, 2020, Rustenbach, 2010, Schlueter & Scheepers, 2010).

The effect of migrant population size on attitudes has been often studied, but rarely at the city level. A recent meta-analysis of 55 studies identifies only 6 that conduct city-to-city comparisons, none of which consider variables related to urban fabric or structure and all of which compare cities in a single country (Pottie-Sherman & Wilkes, 2017). Hjerm (2009) compares municipalities in Sweden and finds that migrant population size did not have an effect on attitudes but calls for additional research comparing cities across national borders. Green et al. (2010) and Sarrasin et al. (2012) both compare Swiss municipalities and consider intergroup contact, but both operationalize it as friendships with migrants thereby disregarding the exposure or casual contact effect. Schlueter and Scheepers (2010) conduct a similar study in the Netherlands and additionally consider migrant work colleagues in measuring intergroup contact. Tolsma et al. (2008) also compare Dutch municipalities, though they focus on opposition to ethnic intermarriage. Finally, Taylor (1998) examines white attitudes toward African Americans based on municipal populations in the United States.

3. Hypotheses

The primary objective of this paper is to consider the effect of urban structure on residents’ attitudes toward migrants. Within Robinson’s

second dimension, the pathway of interest is as follows. Residents of cities with more continuous urban fabric have more opportunities to interact with their neighbours, according to urban theory. Those who interact with members of other groups will be less likely to hold prejudices toward those groups, according to contact theory. This implies that residents of diverse cities with continuous designs will be more likely to hold positive attitudes toward out-groups. For this study, the out-group of interest is migrants.

Hypothesis 1. The more continuous urban fabric in a city, the more likely individual residents will agree that migrants are good for the city.

An additional hypothesis considers the interaction of factors across two of Robinson’s dimensions. If continuous urban fabric provides opportunities for interaction with migrants, a large migrant population should further increase such opportunities thus strengthening the relationship between urban structure and attitudes.

Hypothesis 2. The larger the migrant population in a city, the stronger the positive correlation between urban fabric continuity and attitudes toward migrants.

4. Research design and data

To test these hypotheses, I have constructed a multilevel dataset (see: Table 1) combining individual-level data from the Flash Eurobarometer 419 Quality of Life in European Cities 2015 survey and city-level data from the Eurostat Urban Audit. Eurobarometer 419 surveyed residents of 79 European cities in May and June of 2015. Each city’s sample of approximately 500 respondents was drawn from the population of EU citizens living in that city. The sample is suitable for this paper, which conducts cross-city comparisons with a primary focus on the attitudes of native residents. The survey includes several demographic questions which are used as individual-level controls, and the following question,

Table 1
Data source details.

| | Level | Question/format |
|------------------------------|------------|--|
| Dependent variable | | |
| Attitude toward migrants | Individual | “The presence of foreigners is good for [city name],” recoded as dichotomous: agree, disagree |
| Independent variables | | |
| Continuous urban fabric | City | Proportion of 2012 ^a residential urban fabric designated as continuous |
| Change in migrant population | City | Difference between 2001 ^b and 2015 ^c migrant populations as proportions of overall population |
| Migrant population | City | 2015 ^c migrant population as a proportion of overall population |
| City population | City | 2015 population of city aged 15 or older |
| City density | City | 2015 population of city per square kilometre |
| Age | Individual | Continuous |
| Gender | Individual | Dichotomous |
| Age at end of education | Individual | Categorical based on age at completion of education: up to 15, 16–19, 20 and older, still studying |
| Occupation | Individual | Categorical variable: employed, self-employed, manual worker, not working |
| Bill trouble | Individual | Categorical variable: “Difficulties paying bills in the last 12 months”: most of the time, from time to time, never/almost never |
| Nationality | Individual | Dichotomous variable: reported nationality matches country of residence or not |
| Region in Europe | Region | Dummy variable |

Sources: Individual-level data and city populations from Flash Eurobarometer 419 (Quality of Life in European Cities 2015). Other city-level data from the Eurostat Urban Audit.

^a Except Barcelona, Madrid, Malaga, and Oviedo (2014).

^b Except Geneva (2000) and Liege (2004).

^c Except Amsterdam (2014).

which is used as the dependent variable, quoted here from the English-language version of the questionnaire:

“I will read you a few statements. Please tell me whether you strongly agree, somewhat agree, somewhat disagree or strongly disagree with each of these statements ... The presence of foreigners is good for [CITY NAME]”

This question serves as the “attitude toward migrants” variable and was recoded to be dichotomous (agree/disagree). It should be noted that the phrasing of the question does not distinguish between migrants specifically and foreigners who may be present in the city for other reasons.

City-level variables come from Eurostat's Urban Audit database of city statistics and include variables on land cover and population. Eurostat's land cover data, based on the Copernicus Urban Atlas, provides the share of a city's land dedicated to particular uses including “continuous residential urban fabric” and “discontinuous residential urban fabric” (European Commission, 2017). Continuous urban fabric is defined as areas of a city in which some buildings contain residences and at least 80% of the surface area is covered by buildings, streets, or other artificial surfaces. Discontinuous urban fabric, therefore, is the area in which some buildings contain residences but less than 80% of the area is artificially covered (Kosztra et al., 2017). The distinction between these two types of urban fabric mirrors the distinction Jacobs makes between dense urban designs that promote human activity and so-called “modern orthodox city planning” that emphasizes greenery and openness but reduces interaction between neighbours. The variable I will use to test Hypotheses 1 and 2 is the proportion of total residential urban fabric in each city that is designated as continuous. The migrant population growth variable I will use to account for the relationship, found in the empirical literature, between population changes and attitudes toward migrants comes from Eurostat's population data, which is provided by national or local authorities and is available at somewhat irregular intervals. To maximize data availability, I have chosen the years 2001 and 2015 to identify the change in migrant population, which is calculated as the difference in the population proportion of migrants over that time period.

As controls, at the city level I include the static 2015 migrant population proportion, the overall population of the city, and the population density of the city, as well as a dummy variable of the city's region in Europe. Based on the literature reviewed above, leaving these variables out would have some potential to confound the relationship of interest in Hypothesis 1, due to their known association with a city's urban fabric (population and density) or attitudes toward migrants (migrant population variables). Region of Europe is especially important, as it is potentially associated with both the independent and dependent variables. The regions used in this analysis are geographical but closely reflect the country groupings developed by Bail (2008) and Heath and Richards (2020) based on social and political acceptance of migration. One additional city-level control variable, homicide rate, was tested but not included in the final models due to lack of significance, no impact on findings, and unclear theoretical grounding. At the individual level, age, gender, education, nationality, occupation, and economic wellbeing are also used as controls. More information on all of the variables, including some exceptions made to increase the city-level sample size, can be found in Table 1.

The analysis was conducted using multilevel logistic regression models. After accounting for city-level data availability and individual-level missing data, the dataset includes 10,003 individual-level observations within 22 cities, nested in three regions (see: Table 2 for city list and Table 3 for descriptive statistics). To enhance interpretability and model specification, the city-level variables are rescaled as one-standard-deviation z-scores. To best account for the small level-3 sample size of just three regions, I have followed the prescription of McNeish and Wentzel (2017) whose simulations found that, in models with

Table 2

Cities in model by region with n in parentheses.

| Southern Europe | Western Europe | Eastern Europe |
|---------------------|---------------------|----------------------|
| Barcelona, ES (469) | Amsterdam, NL (467) | Bratislava, SK (440) |
| Madrid, ES (451) | Antwerpen, BE (489) | Kosice, SK (429) |
| Malaga, ES (484) | Berlin, DE (462) | Sofia, BG (449) |
| Oviedo, ES (470) | Brussel, BE (463) | |
| Roma, IT (458) | Dortmund, DE (434) | |
| Torino, IT (463) | Essen, DE (431) | |
| Verona, IT (452) | Geneva, CH (455) | |
| | Hamburg, DE (461) | |
| | Leipzig, DE (436) | |
| | Liege, BE (464) | |
| | Munchen, DE (444) | |
| | Rostock, DE (432) | |

Table 3

Descriptive statistics.

| | Minimum | Maximum | Mean | Standard dev. |
|------------------------------|---------|-----------|---------|---------------|
| Continuous urban fabric | 8.96 | 84.84 | 33.45 | 16.59 |
| Change in migrant population | -1.80 | 11.40 | 3.45 | 4.21 |
| Migrant population | 1.60 | 48.40 | 14.22 | 10.68 |
| City population | 162,896 | 3,035,226 | 894,690 | 840,730 |
| City density | 494.2 | 13,418.2 | 2955.6 | 3066.6 |
| Age | 15 | 98 | 52.3 | 17.9 |

| | Count | % | % w/o missings | % cumulative |
|--|--------|------|----------------|--------------|
| Attitude toward migrants | | | | |
| positive | 7618 | 69.1 | 73.6 | 73.6 |
| Negative | 2735 | 24.8 | 26.4 | 100.0 |
| Missing | 679 | 6.2 | | |
| Gender Male | 4466 | 40.5 | 40.5 | 40.5 |
| Female | 6566 | 59.5 | 59.5 | 100.0 |
| Age at end of education Age 15 or less | 1288 | 11.7 | 11.9 | 11.9 |
| Age 16–19 | 3633 | 32.9 | 33.5 | 45.4 |
| Age 20 or older | 5374 | 48.7 | 49.6 | 95.0 |
| Still studying | 540 | 4.9 | 5.0 | 100.0 |
| Missing | 197 | 1.8 | | |
| Nationality Native | 10,643 | 96.5 | 96.5 | 96.5 |
| Migrant | 389 | 3.5 | 3.5 | 100.0 |
| Bill trouble Never or almost never | 7725 | 70.0 | 71.5 | 71.5 |
| Time to time | 2056 | 18.6 | 19.0 | 90.5 |
| Most of the time | 1027 | 9.3 | 9.5 | 100.0 |
| Missing | 224 | 2.0 | | |
| Occupation Employed | 3989 | 36.3 | 36.5 | 36.5 |
| Self-employed | 988 | 9.0 | 9.0 | 45.5 |
| Manual worker | 527 | 4.8 | 4.8 | 50.4 |
| Not working | 5425 | 49.4 | 49.6 | 100.0 |
| Missing | 58 | 0.5 | | |
| Region Western Europe | 6026 | 54.6 | 54.6 | 54.6 |
| Eastern | 1503 | 13.6 | 13.6 | 68.2 |
| Southern | 3503 | 31.8 | 31.8 | 100.0 |

incidental third levels at which there are no explicit research questions, a two-level model with a fixed-effect dummy variable for the third level is optimal. As such, I model random intercepts at the city level and utilize a dummy variable to distinguish regions.

This research design has certain limitations. First, it uses city-level data, although much of the literature, including Jacobs (1961) and Robinson (2010), is especially interested in neighbourhood-level effects. While this is a limitation of the survey data utilized, which is only disaggregated by city of residence, using city-level data does have some advantages. City residents are much less likely to move between cities than between neighbourhoods, which substantially reduces the concerns over reverse causality that plague other studies. While a resident's

attitudes toward immigrants could influence their choice of neighbourhood, choosing to relocate to another major city for this reason is less likely. Additionally, this paper is chiefly concerned with the casual contact that takes place anytime a city resident goes out in public. As such, it is not only important to know where a respondent lives, but where they work, shop, and socialize. The extended contact hypothesis also suggests that where a person's friends spend their time is important. While neighbourhood-level research is also important, focusing on the city-level reduces concerns regarding these spill-over effects.

The second important limitation is that this analysis uses a blunt measure of urban design, the ratio of continuous urban fabric to discontinuous urban fabric. I argue that this data broadly captures the dichotomy at the heart of Jacobs' writing, but it cannot capture any of the specific design features she identifies. Much of the current literature, especially that on exposure, pays a great deal of attention to specific public spaces, the features of those spaces, and the instances of contact that take place within. While this literature has provided many important insights, it also risks missing the forest for the trees. Wessel (2009) argues that greater attention to the temporal, and therefore cumulative, effect of casual contact may provide insight into the paradoxical discrepancies between contact theory literature and a growing body of on-the-ground research. This research design exploits the implications of urban theory to determine whether cities that should have more casual contact also have more tolerant residents.

Third, diversity in cities is more than a set of dichotomies, such as native-migrant. Quantitative research often strips individuals of their intersectional identities and sorts them into categories. Gawlewicz (2016) argues that, by treating migrants as a homogenous group, researchers "overlook migrant populations and what they bring to encounters" (p. 257). Unfortunately, due to the data employed, this paper cannot distinguish between groups of migrants in the independent variables nor in the construction of the dependent variable. As such, I am unable to assess how attitudes toward migrants vary based on the background, class, or gender of the migrants nor the inequalities they face. Furthermore, the dependent variable refers to foreigners, therefore attitudes toward domestic migrants is not captured. The exploratory model, described below, takes a small step toward adding complexity to the native-migrant dichotomy by assessing how the influence of urban fabric on attitudes varies by the occupation and economic means of the respondents.

5. Findings

5.1. Hypothesis tests

The data was analysed by fitting a series of multilevel logistic regression models. The empty model found an inter-class correlation coefficient (ICC) of 0.12, justifying the use of multilevel analysis and indicating that, in this data, a relevant portion of the variance between individual attitudes toward migrants is related to individuals' city of residence. Table 4 reports the four models used to test the hypotheses and further explore the data and its implications.

Model 1 includes the individual-level control variables, the level-3 region dummy variable, and five city-level variables: migrant population proportion in 2015, change in migrant population between 2001 and 2015, urban fabric continuity, total city population, and city population density. To simplify interpretation, city-level variables are reported as z-scores, wherein one unit represents one standard deviation. In this model, and all subsequent models, I find support for Hypothesis 1.

Hypothesis 1 proposes that those who live in cities with compact urban designs will be more likely to have positive attitudes toward migrants due to increased opportunities for contact and exposure. In Model 1, I find support for this theory based on the significant positive relationship between city-level urban fabric continuity and individual attitudes with a regression coefficient of 0.452 (odds ratio: 1.57). Therefore, in this model, a person living in a more compact city (one unit is 16.6

Table 4
Multilevel logistic regression models.

| | Model 1 | Model 2 | Model 3 | Model 4 |
|--|----------------------|----------------------|----------------------|----------------------|
| Continuous urban fabric | 0.452** (0.180) | 0.496*** (0.172) | 0.454** (0.184) | 0.363* (0.195) |
| Change in migrant population | -0.796*** (0.126) | -0.975*** (0.156) | -0.791*** (0.122) | -0.979*** (0.160) |
| Migrant pop. | 0.113 (0.107) | 0.305 (0.188) | 0.100 (0.127) | 0.231* (0.135) |
| City population | 0.003 (0.096) | 0.028 (0.103) | -0.000 (0.092) | 0.029 (0.103) |
| City density | 0.027 (0.143) | -0.117 (0.127) | 0.052 (0.211) | -0.117 (0.126) |
| Urban fabric × Migrant pop. | | 0.419 (0.297) | | 0.413 (0.298) |
| Urban fabric × Change in migrant pop. | | | -0.025 (0.147) | |
| Age | -0.006** (0.003) | -0.006** (0.003) | -0.006** (0.003) | -0.006** (0.003) |
| Gender (Ref: Male) | | | | |
| Female | 0.017 (0.052) | 0.017 (0.052) | 0.017 (0.052) | 0.015 (0.053) |
| Age at end of education (Ref: Age 20 or older) | | | | |
| Age 15 or less | -0.760*** (0.090) | -0.759*** (0.090) | -0.760*** (0.090) | -0.742*** (0.090) |
| Age 16–19 | -0.473*** (0.056) | -0.472*** (0.056) | -0.473*** (0.056) | -0.461*** (0.050) |
| Still studying | 0.423** (0.172) | 0.424** (0.172) | 0.423** (0.172) | 0.433** (0.170) |
| Nationality (Ref: Native) | | | | |
| Migrant | 0.699*** (0.146) | 0.698*** (0.146) | 0.700*** (0.146) | 0.704*** (0.138) |
| Bill trouble (Ref: Never or almost never) | | | | |
| Most of the time | -0.488*** (0.083) | -0.488*** (0.082) | -0.490*** (0.083) | -0.484*** (0.077) |
| Time to time | -0.292*** (0.068) | -0.292*** (0.068) | -0.292*** (0.068) | -0.284*** (0.060) |
| Occupation (Ref: Employed) | | | | |
| Self-employed | -0.024 (0.073) | -0.024 (0.073) | -0.024 (0.073) | -0.001 (0.068) |
| Manual worker | -0.465*** (0.143) | -0.464*** (0.124) | -0.465*** (0.143) | -0.403*** (0.127) |
| Not working | -0.165*** (0.060) | -0.165*** (0.060) | -0.165*** (0.060) | -0.165*** (0.059) |
| Region (Ref: Western Europe) | | | | |
| Eastern | -1.080*** (0.233) | -0.930*** (0.248) | -1.102*** (0.251) | -0.928*** (0.247) |
| Southern | 0.489* (0.276) | 0.783** (0.282) | 0.471 (0.308) | 0.793*** (0.283) |
| Age at end of education × Urban fabric | | | | |
| Age 15 or less | | | | 0.087 (0.070) |
| Age 16–19 | | | | 0.093 (0.069) |
| Still Studying | | | | 0.149 (0.220) |
| Occupation × Urban fabric | | | | |
| Self-employed | | | | 0.188** (0.077) |
| Manual worker | | | | 0.534*** (0.144) |
| Not working | | | | 0.023 (0.055) |

(continued on next page)

Table 4 (continued)

| | Model 1 | Model 2 | Model 3 | Model 4 |
|--|---------------------|---------------------|---------------------|---------------------|
| Bill trouble × Urban fabric Most of the time | | | | -0.142 (0.089) |
| Time to time | | | | 0.164*** (0.050) |
| Constant | 2.337*** (0.245) | 2.171*** (0.291) | 2.360*** (0.261) | 2.153*** (0.287) |
| Observations | 10,003 | 10,003 | 10,003 | 10,003 |
| AIC | 10,401.70 | 10,401.97 | 10,403.68 | 10,377.27 |

Table presents regression coefficients with robust standard errors in parenthesis. In the dependent variable, respondents who agree that migrants are good for their city are coded as 1, those who disagree are coded as 0. For variable details, including level, see Table 1.

Note:

- * $p < 0.1$.
- ** $p < 0.05$.
- *** $p < 0.01$.

percentage points of urban fabric continuity) is 57% more likely to have a positive attitude toward migrants. As a point of comparison, migrants themselves are 201% more likely to have positive attitudes toward fellow migrants in this model.

Hypothesis 2 proposes that the effect of urban design that promotes interaction should be even stronger in cities with large migrant populations and, thus, more migrants with whom natives may interact. To test this hypothesis, Model 2 includes the interaction term of the urban fabric continuity and migrant population variables, however, I do not find significant support. This may be due to the unobserved effect of residential or activity space segregation. The exploratory Model 4, discussed below, does find a significant positive relationship between migrant population and attitudes, indicating that when controlling for recent changes in migration, a greater presence of migrants—and therefore more opportunities for interaction—may improve attitudes. Nevertheless, **Hypothesis 2** is not confirmed in this analysis.

In each of the models, I find a significant negative relationship between attitudes toward migrants and change in migrant population with a regression coefficient of -0.796 (odds ratio: 0.45) in Model 1. This indicates that, holding all else equal, a resident of a city in which the migrant population increased by one-standard-deviation (4.2 percentage points, in the cities modelled) is less than half as likely to agree that migrants are good for the city. This result concurs with findings in the empirical literature that recent increases in migrant populations have a negative effect on attitudes. Given the strength of this relationship and the importance of cities with rapidly changing populations in any analysis of attitudes toward migrants, in Model 3 I include the interaction between continuous urban fabric and change in migrant population. However, the coefficient of the interaction term is close to zero with a p -value of 0.87. The model indicates that the key finding of this paper, tested in **Hypothesis 1**, is not dependent on city population trends.

Among the individual control variables, the results are consistent with previous findings in the literature. Younger, more educated, and more financially stable respondents are more likely to report positive attitudes toward migrants, as are migrants themselves. This model uses region of Europe as a proxy for cultural and historical immigration trends across the continent. As expected, region also has a strong and significant impact. Those living in the Eastern European cities are less likely to have positive attitudes toward migrants, compared to those living in Western European cities, while those living in the Southern European cities are more likely.

Each of the models includes overall population and population density as city-level control variables. Density and urban fabric continuity are distinct concepts. Density, defined here as population per square kilometre, captures only the concentration of residents and not whether the design of their city facilitates interaction. For example, a

discontinuous development of residential high-rises may be high in density but low in Jacobian vitality. Indeed, it is exactly this form of urban redevelopment that Jacobs argued against. As such, the theoretical framework of this paper does not predict any effect of overall population nor density. As seen in Table 4, neither variable has significance in any of the models.

5.2. Exploratory model

These findings indicate that there is a relationship between urban structure and attitudes toward migrants. As I have proposed, this relationship may be due to a mechanism based on contact theory. I have argued that a key sociological difference between continuous and discontinuous urban fabric is the extent to which such designs encourage contact between neighbours. To better understand how urban structure may be acting at an individual level in this model, I have fit an additional exploratory model. Model 4 includes interactions between the urban fabric variable and each of the three available socioeconomic status variables. In comparison to the reference categories, the models find that those who are employed as manual workers and those who have trouble paying bills “from time to time” are more likely to be positively influenced by compact urban designs. This despite the persistent finding that both of these groups are less likely to hold positive views toward migrants overall.

Allport (1954) originally hypothesized that intergroup contact would be effective if the participants are of equal status. If a significant number of migrants in a city are manual workers, Allport’s condition may explain why contact seems to have a stronger effect on natives who are manual workers. Pettigrew and Tropp (2006), who confirm the efficacy of Allport’s conditions, argue that the effects of intergroup contact are not limited to certain categories of people, based on their meta-analysis of 515 studies. Unfortunately, they do not analyse variation by socioeconomic factors, only age, gender, and nationality. The results of the exploratory model may also be due to the particular type of light-touch contact that continuous urban design encourages. Those employed in non-manual work may be more likely to have been exposed to foreigners, through leisure or business travel, for example. As such, for these individuals contact experienced on city streets may have less marginal impact. For those with fewer economic means, however, interacting with migrant neighbours may be their primary source of cross-group exposure. Furthermore, those with fewer economic means may be more likely to live in neighbourhoods with large migrant populations, which could also increase opportunities for intergroup contact for those who also live within continuous urban fabric.

6. Discussion

6.1. Policy implications

Much more research is needed to confirm a linkage between compact urban designs and positive attitudes toward migrants. However, Jacobs and others have argued extensively against the modernist turn in city planning for a host of reasons—any effect on the integration of migrants would only add to that list. Interested policymakers should consider this issue from both wide and narrow perspectives. While the structure of many cities dates back centuries, the philosophical approach of councilmembers and planners can still have a powerful impact as projects are approved and city life evolves. They should reject viewpoints that romanticize what Jacobs called the “suburbanized anti-city” and instead seek to understand the value and function of complex, chaotic urban fabric and the communities that form within it.

While a broad philosophical shift is crucial, block-level policy prescriptions have also been proposed. Jacobs devotes a full chapter to how ill-conceived housing projects and civic centres can be reintegrated into streetscapes, with an emphasis on promoting foot traffic and mixed uses at the ground level. Constructing and improving public spaces may also

encourage residents to spend time outdoors and interact with their neighbours, and Gehl emphasizes that the quality of these spaces can be decisive. Interculturalism, which has emerged as the favoured diversity management approach of many European policymakers, is said to have been “founded on interaction promotion in public spaces” (Zapata-Barrero, 2015, p. 3). Some of its key theorists, however, are careful to avoid describing public spaces as a silver bullet. Cantle (2012) recommends fostering interaction in public spaces among key policy initiatives but notes that there is little evidence of the effectiveness of these policies. Wood (2015) believes that close friendships across groups are unlikely to form through passing interactions in public spaces, but he argues that such interactions are still meaningful and offers a series of recommendations regarding public spaces for interculturalist policymakers.

Policymakers who are sceptical that urban design can actively encourage tolerance should heed Jacobs' advice. While she, too, did not believe that design alone could eliminate racism, she wrote that streets that discourage contact “can make it much harder for American cities to overcome discrimination no matter how much effort is expended” (1961, p. 72). Policymakers in European cities with ethnically diverse populations should be aware that modernist designs may hinder efforts to enhance social cohesion and solidarity.

6.2. Future research

Future research should try to better understand the sociological implications of data on the continuity and discontinuity of urban fabric and how that data can be exploited. One step is to determine how closely the continuity distinction correlates with the design conditions that Jacobs proposes. The JANE Index developed by Delclòs-Alió and Miralles-Guasch (2018) may provide a means to achieve this. The data used in this paper was gathered by the Copernicus Land Monitoring Service and its stated purpose is for environmental, not sociological, research. This paper relies on the fortunate occurrence that the presence of grass is key to how Copernicus identifies types of urban fabric and to the distinction Jacobs makes between cityscapes ideal for neighbourly interaction and those that discourage it. Nevertheless, this uncommon use of Copernicus' data increases the likelihood of some unconsidered confounding factor. Comparing cities within a single context or country may be one way to better isolate the influence of urban design on attitudes. Furthermore, Jacobs' work extends far beyond the dichotomy that this paper exploits using Copernicus' data. As such, there are a number of specific mechanisms, described in Jacobs' work, that may allow us to better understand how urban design may promote tolerance through interaction between neighbours.

Jacobs wrote that, “Cities are an immense laboratory of trial and error, failure and success, in city building and city design” (1961: 6). The embrace of modernist city planning over the past century seems to have weakened the ability of Europe's great cities to positively integrate migrants into their communities. Meanwhile, the rise of the far right in many countries indicates that this challenge is only intensifying. Addressing this challenge will require more research alongside trial on the ground level to repair our cities and make them more welcoming to migrants and all others.

CRedit authorship contribution statement

I, Jonathan Kent, am the sole author of this paper and conducted all analysis, writing, and other tasks.

Declaration of competing interest

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