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Everyday discrimination in public spaces: a field experiment in the milan metro

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Abstract

A large scholarship documents discrimination against immigrants and ethnic minorities in institutional settings such as labour and housing markets in Europe. We know less, however, about discrimination in informal and unstructured everyday encounters. To address this gap, we report results from a large-scale field experiment examining the physical avoidance of immigrants as an unobtrusive yet important measure of everyday discrimination in a multiethnic European metropolis. In addition to varying confederates' migration background and race, we also vary signals of status (business versus casual attire) in order to shed light on the mechanisms underlying discriminatory patterns. We find that natives are averse to contact with Nigerian confederates, but do not discriminate against Chinese confederates. Furthermore, manipulating confederates' attire has little effect on natives' behaviour. Overall, our results highlight the everyday burdens borne particularly by individuals of African descent in commonplace, 'street-level' encounters.

Introduction

Recent trends in global migration have raised key questions about the incorporation of new demographic groups and their treatment by native majorities. In this regard, it is widely recognized that ethno-racial discrimination constitutes a major impediment to minorities' social, economic, and cultural integration, while underscoring concerns that grievances over ethnic penalties may lead to durable forms of social segregation and a rejection of mainstream institutions, norms, and values (Koopmans, Lancee and Schaeffer, 2014; Adida, Laitin and Valfort, 2016; Verkuyten, 2016; European Union Agency for Fundamental Rights, 2017). Such concerns have renewed a broad interest across the social sciences in measuring and understanding the myriad ways in which discrimination shapes the lived experiences of minorities in contemporary multiethnic societies.

To date, much of this literature has focused on documenting discrimination in institutional settings such as housing and labour markets, schools, and the criminal justice system (e.g. Heath, Rothon and Kilpi, 2008; Wu, 2016; Zschirnt and Ruedin, 2016; Quillian *et al*.,

2017, 2019, 2020; Auspurg, Schneck and Hinz, 2019). In contrast, much less is known about more subtle forms of discrimination in day-to-day encounters. Such behaviour can range from 'micro-aggressive' comments (e.g. 'You're pretty for a black girl') (Sue, 2010) to non-verbal signals of fear or suspicion (Feagin and Sikes, 1994; Schönwälder *et al*., 2016) to simply treating minorities as 'invisible' in everyday encounters (Klink and Wagner, 1999; Bourabain and Verhaeghe, 2019; Choi, Poertner and Sambanis, 2019). With the partial decline of overt racism in Western societies, scholars argue that discrimination increasingly takes on such covert forms (Pettigrew and Meertens, 1995; Quillian, 2006; Sue, 2010; Jones *et al*., 2016). Furthermore, though such incidences may seem banal or even benign in the eyes of the majority, their pervasive and cumulative experience can have lasting negative effects on minorities' physical and mental health (see, e.g. Kessler, Mickelson and Williams, 1999; Feagin and McKinney, 2005; Sue, 2010).

This study reports results from a large-scale field experiment on everyday discrimination in a multiethnic

European metropolis. Namely, we measure discrimination as manifested in the physical avoidance of minorities in the subway system of Milan, Italy. Our focus on physical avoidance reflects its centrality as a quintessential example of contemporary forms of subtle prejudice: it is a difficult-to-detect and ambiguous signal of exclusion that yet permeates the multiplicity of often barely conscious actions (or non-actions) individuals take as they go about their daily lives. Avoidance is also highly consequential as casual encounters in common settings (commuter trains, the gym, etc.) may contribute to a reduction in intergroup prejudice (Allport, 1954; Pettigrew and Tropp, 2006; Paluck, Green and Green, 2019). In turn, these casual encounters may lead to the formation of weak ties which have been shown to play an important role in connecting individuals to information about jobs, services, and other opportunities (Granovetter, 1973; Feld, 1981; Pedulla and Pager, 2019). As such, physical avoidance in public spaces has the effect of reproducing and reinforcing the patterns of segregation that largely characterize the housing, educational, and occupational experiences of many immigrant minorities. Instead of sharing a public space, the same public space then becomes a setting where social division is reproduced.

In our field experiment, we unobtrusively expose subway commuters to the presence of phenotypically-distinct confederates and record commuters' avoidance behaviours. Specifically, we assigned confederates to partially occupy a bench on the subway platform. We systematically vary confederates' ethnic background (Italian versus Nigerian versus Chinese) as well as their socio-economic status (business attire versus casual dress), and record whether commuters decide to sit in an adjacent seat while awaiting the train. The difference in sitting rates yields an objective indicator of discrimination in a natural, everyday setting. Furthermore, by comparing discrimination rates across the various experimental conditions, we are able to identify the extent to which physical avoidance is conditioned on migration background, race, and/or an individual's social status, and thereby shed light on the factors driving discriminatory patterns.

Discrimination in Everyday Life

Within the vast multidisciplinary literature on ethnic and racial discrimination, sociologists have typically privileged the study of discrimination in institutional settings such as housing and labour markets. Recent meta-analyses demonstrate discrimination in these settings to be pervasive across Western societies (Zschirnt and Ruedin, 2016; Auspurg, Schneck and Hinz, 2019; Quillian *et al.*, 2019). Furthermore, while there is some evidence of declining discrimination in housing

markets (Auspurg, Schneck and Hinz, 2019; Quillian, Lee and Honoré, 2020), discrimination in hiring shows few signs of abating despite the institutionalization of anti-discrimination policies (Zschirnt and Ruedin, 2016; Quillian *et al.*, 2017).

The focus on discrimination in these formal and more structural settings reflects the centrality of these domains for the allocation of resources and opportunities which can lead to the perpetuation of inequalities in life outcomes between groups. However, in focusing on major events such as job acquisition, housing allocation, etc., existing studies have also tended to obscure the ways in which discrimination can manifest in more mundane, unstructured, everyday encounters. Indeed, a central theme of Feagin and Sikes (1994)'s classic study is the sheer ubiquity by which 'minor' indignities—poor service in restaurants and stores, insensitive racial comments, or petty harassment—can permeate the everyday lived experiences of ethnic and racial minorities. Such indignities become important precisely because their perpetuation is not restricted to specific actors (e.g. landlords or employers) and time points, but rather extends to an ubiquitous range of social interactions. Consequently, as Pager and Shepherd (2008: p. 192) note, 'although few incidents [of everyday discrimination] represent debilitating experiences in and of themselves, the accumulation of such experiences over a lifetime may represent an important source of chronic stress' impacting minorities' mental and physical health (see also Kessler, Mickelson and Williams, 1999; Sue, 2010).

Measuring Everyday Discrimination

So far, most accounts of everyday discrimination derive from self-reports. While such forms of perceived discrimination are important in their own right (e.g. as triggers for negative health outcomes), they may also over- or underestimate the actual incidence of the phenomenon. Specifically, self-reports may be problematic on two fronts. On the one hand, due to social desirability concerns and the sometimes implicit or unconscious nature of prejudice, perpetrators may not accurately describe their own behaviour (Gaddis, 2018, 2019). On the other hand, to the extent that ambiguous events may be misperceived or overlooked, victims' accounts may be influenced by individual-level variation in sensitivity to prejudice (Pager and Shepherd, 2008; Maxwell, 2015), as well as differences in the tendency to 'self-select' into settings (e.g. ethnic enclaves) where exposure to prejudice is likely to be minimized. Since few of these processes are directly observable to researchers, studies relying on self-reported measures of discrimination may lead to biased results.

In contrast to self-reports, field experiments afford a privileged setting for documenting everyday discrimination as they present an opportunity to unobtrusively study behaviour in a natural context as people go about their daily lives. This feature is crucial for mitigating experimenter demand effects (Levitt and List, 2007), as individuals are understandably reluctant to appear to discriminate when they are aware of being under scholarly scrutiny. Moreover, by leveraging natural settings, researchers can allow discrimination to 'emerge in the aggregate without individuals' awareness that they are acting on group membership cues' (Baldassarri and Abascal, 2017: p. 59). This is especially important to the extent to which everyday discrimination may occur as a result of subtle or implicit biases, rather than overt animosity towards out-groups.

Despite this potential, so far only a handful of studies have deployed field experimental methods to study discrimination in day-to-day settings. For the most part, prior studies have focused on the effect of ethnic or racial cues on 'helping' behaviours such as lending a mobile phone (Zhang *et al.*, 2019; Aidenberger and Doehne, 2021), picking up dropped objects (Choi, Poertner and Sambanis, 2019), giving free bus rides (Mujcic and Frijters, 2021), or returning 'lost' letters (Koopmans and Veit, 2014; Baldassarri, 2020).[1]

In this article, we study everyday discrimination as manifested in the physical avoidance of minorities in public spaces. Two aspects of this phenomenon are worth emphasizing. The first involves the choice to physically approach or avoid an unknown individual in 'first encounters' (e.g. whom to sit next the first day of college, or whom to approach at a party). Such decisions are consequential because they not only convey subtle signals of sociability or exclusion, but may also potentially shape the formation of social ties (e.g. friendships or even romantic relationships). However, to the extent that approach and avoidance behaviours are conditioned on racial cues, such considerations may exacerbate existing patterns of social segregation.

Second, our focus on encounters in public spaces reflects the special sociological significance which has been attached to such informal settings as key sites of interaction and social exchange (Goffman, 1963, 1971; Simmel, 1992). Even more than the workplace or the school, public spaces such as parks, shopping zones, and public transport offer critical opportunities for people to encounter diverse others (Dixon *et al.*, 2008; Priest *et al.*, 2014; Bettencourt, Dixon and Castro, 2019). Even when such interactions do not directly lead to the formation of social ties, research has highlighted how even casual or fleeting encounters can work to dispel negative ethnic stereotypes and attitudes (Wessendorf, 2013). However, this integrative potential of public spaces can also be undermined to the extent that individuals remain averse to contact with certain minority groups. In this sense, everyday discrimination as reflected in the physical avoidance of minorities takes on an added sociological meaning.[2]

To our knowledge, only one prior field experiment has attempted to measure everyday discrimination in terms of physical avoidance. Specifically, relying upon traffic camera feeds from New York City, Dietrich and Sands (forthcoming) demonstrate that pedestrians maintain greater physical distance between themselves and black confederates standing on a sidewalk, compared to similarly-positioned white confederates. In our research, we adopt a related distancing measure—namely whether passersby sit next to a person on a platform bench—for its capacity to reveal how casual interactions in public spaces may be conducive to either encounter or avoidance. Furthermore, as we describe below, our study also expands upon Dietrich and Sands (forthcoming) by introducing a third racial group (Asians) and manipulating how confederates are dressed. Finally, we move outside of the US context to explore patterns of physical distancing in an European metropolis.

Motives Behind Everyday Discrimination
In-Group Bias
Classical social psychological explanations for prejudice and discrimination focus on the role of in-group biases (e.g. Tajfel, 1974; Tajfel and Turner, 1979). These perspectives hold that individuals have a psychological disposition to create social categories that partition in-group versus out-group members. Attachment to one's social identity further generates positive attitudes and beliefs about the in-group (Greenwald and Pettigrew, 2014), as well as potentially negative feelings and prejudices towards out-groups.[3] Behaviourally, discrimination against racial and ethnic minorities may thus result from a desire to positively favour (majority) 'insiders' and/or disadvantage (minority) 'outsiders'.

While traditional accounts of bias have tended to focus on overt prejudice towards minorities (Allport, 1954; Blumer, 1958; Feagin, 1991; Bobo and Hutchings, 1996), recent work in social psychology has turned attention towards more subtle forms of bias (for reviews, see Pettigrew and Meertens, 1995; Quillian, 2006; Pager and Shepherd, 2008). A key insight from this work is that discrimination need not always be accompanied by explicit racist or ethnocentric views. Rather, studies have linked discriminatory behaviours to more ambiguous feelings of interpersonal anxiety (Glick, DeMorest and Hotze, 1988; Goff, Steele and Davies, 2008), or a subtle sense of unease, discomfort, or apprehension in cross-ethnic encounters (Stephan and Stephan, 1985; Pearson,

Dovidio and Gaertner, 2009; Malhotra, Margalit and Mo, 2013; Stephan, 2014). Such perspectives provide a compelling explanation for the persistence of discriminatory behaviour in societies and communities that have largely come to renounce explicitly racist views.

Ethnic Hierarchies

While the foregoing literature emphasizes the primary distinction between in-group and out-group members, other studies have instead investigated variation in terms of how different out-groups are treated. For instance, Mujcic and Frijters (2021) find disparities in the number of free bus rides offered to black, Indian, and Asian confederates, while Zhang et al. (2019) show that even moderating confederates' accents can effect their likelihood of being granted a small favour. More broadly, research on labour market discrimination in multiple European countries has shown that callback rates are indeed higher for some minorities than others (Koopmans, Veit and Yemane, 2019; Ahmad, 2020; Zschirnt, 2020; Di Stasio et al., 2021; Veit and Thijsen, 2021; Weichselbaumer, 2017, although see McGinnity and Lunn, 2011 and Andriessen et al., 2012 for a contrasting view). In fact, a consistent picture emerging from this work is that, in the European context, Muslim and African immigrants tend to bear an especially heavy burden of prejudice, while minorities with European and (to a lesser extent) Asian roots are better able to transcend the boundary with natives. Recent political science research also shows that opposition to immigration varies significantly depending on the characteristics of new arrivals: while poorly-educated, low-skilled individuals consistently provoke exclusionary reactions, high-status 'expatriates' engender far less controversy (Hainmueller and Hiscox, 2010; Hainmueller and Hangartner, 2013; Hainmueller and Hopkins, 2015; Turper et al., 2015; Bansak, Hainmueller and Hangartner, 2016).

Taken together, these patterns resonate with seminal theories of intergroup conflict (Blumer, 1958; Blalock, 1967; Bobo and Hutchings, 1996), which ground ethnic prejudices in concerns over the adverse economic and social impacts of immigration (Quillian, 1995; Schneider, 2008; Fitzgerald, Curtis and Corliss, 2012; Hainmueller and Hopkins, 2014; Van der Meer and Tolsma, 2014; Ward, 2019).[4] In particular, low-status immigrants are especially likely to provoke opposition to the extent that they are associated with (low) wage competition, welfare dependency, or criminal behaviour. Perceptions of a group's status can thereby serve to structure minority groups along an ethnic hierarchy, with higher status groups gaining greater acceptance within the host society.

'Taste-Based' and 'Statistical' Discrimination

Finally, economic theories of discrimination emphasize the ways in which discrimination is driven by preferences versus (a lack of) information. On the one hand, 'taste-based' theories (Becker, 2010) posit that discrimination arises because individuals harbour an idiosyncratic preference against interacting with minorities. In contrast, theories of 'statistical' discrimination emphasize the ways in which discrimination is rationally-motivated (Phelps, 1972; Arrow, 1973). Applied primarily to market contexts, the theory focuses on the incomplete information problem facing potential employers or landlords. For instance, employers lacking information on the productivity or 'soft skills' of job applicants may use group-level estimates contained in ethnic or racial stereotypes as a screening tool in their hiring decisions. Importantly, discriminatory behaviour in such models is not driven by a biased response to race or ethnicity per se, but rather by a lack of information about an individual's true characteristics. Accordingly, field experimental studies frequently attempt to uncover evidence of statistical discrimination by testing whether the provision of individuating information reduces racial and ethnic disparities. While such strategies have been applied largely to studies of housing and labour markets (Zschirnt and Ruedin, 2016; Auspurg, Schneck and Hinz, 2019), they have been employed far less frequently in studies of everyday discrimination (c.f. Mujcic and Frijters, 2021).

Summary

Although the three sets of motives outlined above emerge from different disciplinary traditions, there are important connections worth highlighting. Specifically, in-group bias appears to directly overlap with the concept of taste-based discrimination. However, the relationship between taste-based versus statistical theories and the emergence of ethnic hierarchies is more complicated. In particular, under a statistical approach, hierarchies may be grounded in instrumental reasoning to the extent that (i) natives condition their behaviour towards minority individuals on the basis of group-level information (i.e. stereotypes), and (ii) more negative stereotypes are associated with lower-status groups. In contrast, under a taste-based approach, minority individuals may experience discrimination by virtue of their membership in a low-status group per se, regardless of whether or not they themselves—as individuals—are perceived to share the (average) characteristics of that group. We will return to this point below when introducing our experimental manipulation of casual versus business attire.

Research Setting

Our experiments were conducted in Milan, Italy in the summer and fall of 2018 and 2019. While Italy has traditionally been thought of as a country of emigration, it has rapidly transformed into an immigration-receiving country over the past 30 years. According to the Italian National Institute of Statistics, the share of foreign-born rose from 1.5 to 8.8 per cent of the population over the period 1990–2019 (ISTAT, 2020), marking one of fastest growth rates in Europe. Moreover, in the past decade, Italy has also witnessed an increase in the number of asylum seekers arriving via its southern shores. Spurred by these trends, immigration has become one of the most important concerns in the minds of Italian voters, and right-wing and populist parties have seized upon the recent migrant 'crisis' as a key political issue, giving rise to fears of increasing prejudice and xenophobia (Itanes, 2018).

Overall, Italy provides an opportune setting in which to examine the dynamics of everyday discrimination. While the politicization of immigration in Italy is well-known, the precise contours of prejudice remain in dispute. In contrast to the racial 'bright lines' prevailing in the United States (Alba, 2005), official discourse in many European countries tends instead to emphasize differences of 'nationality, ethnicity, culture, and immigration status, [while] largely obscuring race [and skin color]' (Dixon and Telles, 2017: p. 418). Some scholars have also suggested that racial boundaries are especially likely to be less important in southern European countries: due to relatively high levels of chronic unemployment, natives tend to focus on the economic threat posed by immigration in general, without differentiating between various immigrant groups. These perspectives thus suggest that discrimination in Italy should be directed against minority 'outsiders', but without differentiation by race. Along these lines, at the turn of the century, Sniderman *et al.* (2002) found that while a substantial percentage of Italians are prejudiced towards foreigners, there is little difference in attitudes towards immigrants from Africa versus Eastern Europe.

Other research, however, has suggested that race may indeed play an important role in structuring ethnic hierarchies. Bail (2008) finds for example that, contrary to official discourses, racial boundaries are relatively more salient in Italy, Spain, and Portugal than in other European countries. This may partially reflect these countries' experiences as 'new' immigration destinations, such that natives are still (relatively) unaccustomed to racial difference and anti-racist discourses. Along these lines, ethnographic accounts document continuing discrimination against second-generation African-Italians who come to see being black and being Italians as 'mutually exclusive categories' (Andall, 2002). More broadly, although not directly testing the influence of race, a correspondence study in the Italian housing market also documents patterns consistent with an ethnic hierarchy, with landlords displaying greater discrimination against (particularly male) applicants with Arab- as opposed to Eastern European-sounding names (Baldini and Federici, 2011). Finally, relying on extensive interviews with young Italians, Morning and Maneri (forthcoming) show that Italians do not hold a monolithic conceptualization of immigrants, but instead make categorizations based on ethnicity/nationality, sociability, integration, respectability, and work commitment. In sum, while we have sufficient evidence of Italians' negative attitudes towards immigrants, it remains to be ascertained whether considerations concerning immigrants' origin/race and their position in the productive system affect the way in which Italians relate to them in their daily lives.

Field Experimental Design

Our experiments involve unobtrusively exposing subway commuters to the presence of visible minorities and recording subsequent avoidance behaviours. Specifically, we assigned confederates to partially occupy a bench in Milan's Porta Romana Metro Station that is immediately encountered by commuters entering the subway platform (see Supplementary Figures S1 and S2). Because the bench has six seats, all interventions involved a pair of confederates who were positioned such that commuters who wish to sit down are forced to choose a seat directly adjacent to one already occupied. In pre-tests, we determined that the vast majority of commuters who do sit end up choosing a seat on the side of the bench nearest the platform entrance. We thus systematically varied the background (Italian or visible minority) of the *Target Confederate* occupying this 'near' side, and record whether commuters sit in an adjacent seat while awaiting the train. In contrast, the 'far' side of the bench was always 'blocked' by the same Italian confederate (hereafter: *Blocker*) throughout all rounds of data collection. This procedure ensures that, apart from the identity of the *Target Confederate*, all other aspects of the intervention remained constant across experimental trials. Within this setup, we measure avoidance by comparing the proportion of commuters who sit next to a minority confederate, relative to the control condition involving Italian confederates. Full details on our experimental protocols are provided in Supplementary information, Section S1.

Our first round of interventions was conducted in the summer and fall of 2018. In order to replicate our results and extend the scope of our investigation, we conducted a second round of data collection in the summer and fall of 2019.[5] The 2018 experiments

compared reactions to Italian versus Nigerian confederates. Nigerian confederates were selected because they constitute a visible immigrant minority in Milan. With this design choice, however, we were unable to evaluate whether avoidance behaviours might similarly apply to a less-marginalized minority group. This issue is relevant in light of research demonstrating that Sub-Saharan Africans are likely to bear an especially heavy burden of prejudice in European societies. Accordingly, a further round of interventions was conducted in 2019 with the addition of Chinese confederates as a second visible immigrant minority.[6] By including Chinese as an additional group, our 2019 experiments provided an opportunity to not only assess the replicability of our original findings, but also determine whether a hierarchy obtains in terms of everyday physical avoidance.

In both rounds of data collection, we included a second experimental treatment to test whether the presumed socioeconomic status of minority confederates partly accounts for discriminatory behaviour. This consideration is important in light of theories of statistical discrimination. More specifically, it is possible that passersby may perceive African confederates in particular as impoverished or even clandestine migrants who might be more likely to engage in unwanted behaviours (e.g. begging), and therefore avoid contact with them. To examine this possibility, we independently varied whether confederates were dressed in casual or business attire (see Supplementary Figure S3) as a manipulation of status.[7]

Data Description

A commuter enters our dataset upon arriving on the platform and encountering the bench. We coded (i) whether commuters sit down and if so (ii) whether a seat next to the *Target Confederate* is chosen. The dependent variable is dichotomous, and takes the value 1 if the commuter sits down next to the *Target Confederate*, and 0 otherwise. We continuously code newly-arriving commuters so long as no one sits down, but interrupt data collection as soon as any empty seat is occupied, and only restart after the platform clears with each departing train. This ensures that all commuters entering our dataset encounter the same number of free seats on the bench.

We take the interval between train departures as an individual experimental trial. In our main analyses, standard errors are clustered within trials to account for the possibility that commuters' behaviour may be affected by the presence of other commuters standing on the platform.[8] Because we do not observe extreme probabilities and our main analyses contain interaction terms, our estimates rely upon linear probability models (LPMs) to facilitate interpretation of coefficients

(Mood, 2010). However, since our dependent variable is dichotomous, Supplementary Tables S8 and S9 replicate our analyses using logistic regression.

We recorded additional information on commuters, gauging their gender, approximate age, and nationality (i.e. native Italian or not),[9] as well as whether commuters were travelling alone, with children, or in a group. Since pairs/groups of commuters are likely to react to the bench configuration differently than single individuals, we drop them from our analysis. We are thus left with 4,325 observations involving single commuters ($N = 1,084$ in 2018, and 3,241 in 2019). Overall, our sample skews slightly female (47 per cent in 2018, 45 per cent in 2019), and spans all ages (with the majority of commuters in both years estimated to be between 26 and 45 years of age). Roughly 77 per cent of commuters in both years were judged to be native Italians. Full summary statistics are provided in Supplementary Table S1.

Since we were unable to collect information on other visible racial or ethnic characteristics beyond an assessment of whether commuters looked to be native Italians or not, we cannot examine separate treatment effects for African, Asian, and other minority commuters.[10] Overall, our main analysis focuses on the 3,330 individuals coded as native Italians ($N = 829$ in 2018, and 2,501 in 2019). As a robustness check, we also report on additional analyses using the full sample of commuters. Results are similar (see Supplementary Tables S6 and S7).

Supplementary Tables S2 and S3 show balance on observable commuter characteristics across our various treatment conditions. We detect a few imbalances; given the large number of comparisons, however, this result is to be expected by chance. For robustness, however, we incorporate models with and without controls for gender and approximate age in our analyses. In general, the inclusion of controls does not appreciably alter our results.

In tandem with the field data collections, we conducted online surveys of Milanese residents both in 2018 ($N = 1,040$) and 2019 ($N = 1,001$). Our surveys were designed to (i) test the validity of our socioeconomic treatment (manipulation check), and (ii) complement our behavioural measure of physical avoidance with attitudinal and psychological indicators of prejudice towards Chinese and African immigrants. We reference the survey in the main text where appropriate. Full details are provided in the Supplementary information.

Physical Avoidance in the Field

We first examine commuters' behaviour when encountering Italian confederates in casual dress.[11] This will
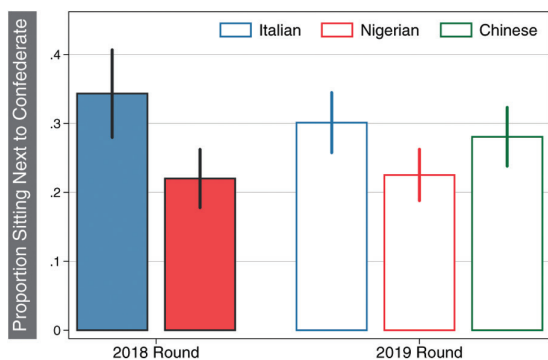
Figure 1. Avoidance of minorities in casual dress. *Note:* The figure displays the proportion of native Italian commuters who sit next to (i) Italian, (ii) Nigerian, and (iii) Chinese confederates in 2018 and 2019. Error bars represent 95 per cent confidence intervals with standard errors clustered within experimental trials. Estimation results on which this figure is based are available in Supplementary Tables S4, Model 1, and S5, Model 1. Commuters are significantly more averse to sitting next to casually-dressed Nigerians than to casually-dressed Italians, but do not avoid Chinese in casual dress.

serve as a benchmark against which to evaluate discrimination against casually-dressed minority confederates. From our 2018 round of data collection, we observe that 34.3 per cent of commuters sit next to Italian confederates (see Figure 1). This proportion drops to 22.0 per cent in trials involving Nigerian confederates in casual dress (diff = 12.3 percentage points, se = 4 percentage points). We replicate this basic pattern of avoidance in 2019, although effects are smaller in magnitude: 30.1 per cent of commuters sit next to an Italian confederate, compared to 22.4 per cent next to a Nigerian confederate (diff = 7.6 percentage points, se = 2.9 percentage points). Substantively, these are meaningful effects, as they imply that one out of roughly every three or four people who would have sat next to an Italian confederate forego sitting next to a Nigerian.[12]

We next investigate whether these results are evidence of a broader pattern of bias against immigrants and minorities more generally, or rather are indicative of avoidance of Nigerians (or Sub-Saharan Africans) specifically. We address this question using data from our 2019 interventions involving Chinese confederates. As shown in Figure 1, we detect little evidence that Chinese are avoided: 28.1 per cent of commuters sit next to Chinese confederates, which is much closer to the 30.4 per cent rate obtained in benchmark trials involving Italian confederates (diff = 2.1 percentage points, se = 3.1 percentage points).

To test for statistical significance, we estimate LPMs predicting whether commuters will sit in an adjacent seat as a function of confederates' ethnicity and attire,

controlling for the age and gender of commuters. Separate models are estimated for the 2018 and 2019 data collection, since we implemented the fully-crossed research design in 2019 only. A condensed version of the 2019 results is presented in Table 1, and the full regression output for both rounds of data collection can be found in Supplementary Tables S4 and S5.

As shown in Figure 1 and Table 1, Models 1 and 2, we find robust and statistically significant main effects of the Nigerian confederate dummy, indicating that Italians are indeed averse to sharing a personal space with Sub-Saharan Africans (this difference is also significant in the 2018 data, see Supplementary Table S4). In contrast, we do not find an effect for Chinese confederates. Furthermore, comparing the two minority groups, we find that commuters also tend to prefer Chinese over Nigerian confederates (28.1 per cent versus 22.4 per cent), although the *P*-value associated with this differences falls just outside the conventional cut-off for statistical significance (*P* = 0.055). In sum, behaviour towards Chinese commuters does not show the systematic avoidance we observed in the case of Nigerians.

Additionally, we test for potential differences in the behaviour of male versus female commuters. Gender differences might be relevant if (i) minority—and particularly African—men are stereotyped as aggressive or threatening, and (ii) women are more likely to react to such stereotypes. We therefore estimate models interacting confederates' ethnicity with commuters' gender. Full results are provided in Supplementary Table S14. Briefly, while our 2018 data collection yielded some suggestive evidence that women discriminate more than men, gender differences disappear in our higher powered 2019 replication.

Status and Physical Avoidance

Why might Italian commuters be averse to sitting next to Nigerian confederates in particular? Our theoretical discussion suggests two possible mechanisms. First, from a taste-based perspective, the association of Sub-Saharan Africans with low-status positions in society could provide one potential explanation for physical avoidance. Specifically, there is a widespread notion in Italy that most immigrants from Sub-Saharan Africa are more economically marginalized than other minority groups. Thus, our results so far could simply reflect a general aversion to physical contact with members of low-status groups.

In contrast, theories of statistical discrimination focus on the potential consequences of interaction. In particular, because one frequently encounters Sub-Saharan Africans in public either asking for money or selling small trinkets, commuters may associate contact

Table 1. 2019 Experimental results

	(1)	(2)	(3)	(4)
Nigerian confederates	–0.076**	–0.071*		
	(0.029)	(0.029)		
Chinese confederates	–0.021	–0.013		
	(0.031)	(0.031)		
Business attire	–0.041	–0.040	–0.036	–0.037
	(0.031)	(0.031)	(0.031)	(0.031)
Nigerian confederates × business attire	0.057	0.056	0.053	0.054
	(0.043)	(0.043)	(0.043)	(0.043)
Chinese confederates × business attire	0.006	0.002	0.005	0.003
	(0.043)	(0.043)	(0.043)	(0.043)
Constant	0.301***	0.316***	0.301***	0.327***
	(0.022)	(0.028)	(0.027)	(0.033)
N	2501	2501	2501	2501

Note: Data are from trials involving native Italian commuters only. The dependent variable records whether commuters sit in an adjacent seat. Results are estimated using linear probability models. Standard errors in parentheses are clustered within experimental trials, defined as the interval between train departures. Models 2 and 4 include additional controls (not shown) for commuters' gender and approximate age. The full regression output is shown in Supplementary Table S5.
*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$.

with Africans with a higher risk of encountering such (unwanted) behaviours, and consequently make a calculated decision to avoid them.

While both perspectives privilege considerations of status, there is a critical difference worth underscoring. Specifically, the taste-based approach focuses on the status of *entire groups*, with individuals experiencing discrimination by virtue of their membership in a low-status group, even if—individually—they are not perceived to be poor. In contrast, under the statistical discrimination approach, group-level information (i.e. stereotypes) is merely used to make inferences about the status of a particular *individual*. The distinction is subtle, but important. Stated somewhat differently, we can conceptually distinguish between a (taste-based) aversion towards all members of low-status groups (e.g. poor as well as non-poor Nigerians) versus an instrumental aversion towards all low-status individuals (e.g. poor Nigerians and Italians, but not non-poor Nigerians).

We employ an experimental manipulation to evaluate whether a likely basis for instrumental aversion—i.e. the association of Sub-Saharan Africans in particular with unwanted public behaviours—may be driving our results. To do so, we examine whether dressing confederates in business attire and thus minimizing the chances that they would be perceived as low status individuals would induce more people to sit in an adjacent seat. This manipulation was implemented for Nigerian confederates in 2018, and for confederates of all backgrounds in 2019. A manipulation check
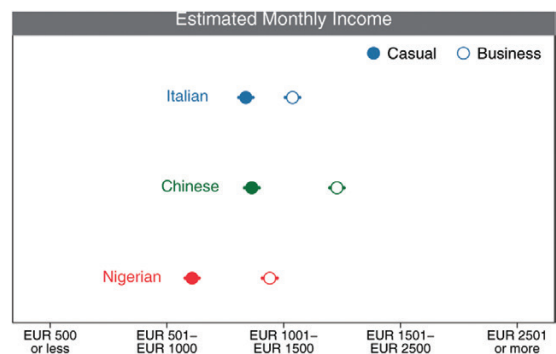

Figure 2. Income ratings, by confederates' race and attire. *Note:* The figure displays estimated income ratings across all six experimental conditions. Data are drawn from the 2019 survey. Africans in casual dress are rated as having lower income compared to casually-dressed Italians and Chinese. Irrespective of race, confederates in suits are rated as having higher income. See Supplementary Table S19 for analysis confirming the statistical significance of these patterns.

conducted within our online survey confirms that dressing confederates in business attire is an effective way of signalling higher social status (as illustrated in Figure 2). More formally, Supplementary Tables S19 and S20 present survey results showing a positive effect of business attire on estimated income for all confederates, which we take as evidence of the validity of our status manipulation.

Do commuters condition their behaviour on signals of individual status? Figure 3 presents the results from
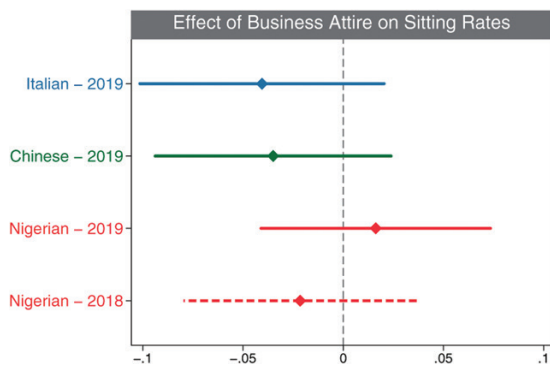
Figure 3. Effect of business attire on sitting rates, by confederates' race *Note:* The figure displays estimates from linear probability models of the influence of business attire on whether commuters sit in an adjacent seat. Error bars represent 95 per cent confidence intervals. The 2018 results are drawn from Supplementary Table S4, Model 1, while 2019 results are drawn from Supplementary Table S5, Model 1. The main effect of business attire is statistically insignificant for all groups, and there are no significant interactions between confederates' race and attire.

LPMs estimating the effect of business attire for Italian, Nigerian, and Chinese confederates on the proportion of commuters who sit in an adjacent seat. Most notably, Nigerians in business attire do not attract more commuters than Nigerians in casual dresses. Moreover, we also do not find any effect of our status manipulation for Chinese and Italian confederates. As shown in Table 1, Models 3 and 4 (and Supplementary Tables S4 and S5), this pattern of null results is also robust to the inclusion of controls for commuter characteristics as well as confederate fixed effects. Overall, these findings suggest that concerns about the potential behaviour of low-status individuals (e.g. begging) do not influence commuters' decisions, and thus speak against interpreting our results in terms of statistical discrimination.

Limitations

Before turning to a general discussion of our results, we first address some additional issues pertaining to the internal and external validity of our findings. First, given that we employ only 10 *Target Confederates*, readers may be concerned about the degree to which our results reflect idiosyncratic features (e.g. attractiveness) of the individual confederates other than skin colour. In Supplementary Figure S4, we examine outcomes separately for each confederate in the casual dress condition. While we observe a general aversion towards all Nigerian confederates (see also Supplementary Table S15), we do observe between-confederate differences within racial groups and thus cannot completely exclude the possibility that a different selection of confederates could have produced different results.

Future research might improve upon our design by, e.g. increasing the number of confederates per group or pre-testing how confederates are perceived on relevant traits before the final selection.

More generally, while we cannot *a priori* exclude the possibility that unobserved confederate characteristics might affect our estimates of the treatment effect (Heckman and Siegelman, 1993; Heckman, 1998), the relative stability of our findings across multiple confederates and data collection waves, along with our manipulation and robustness checks, lead us to conclude that the likelihood of unobserved confederate characteristics confounding our results is minimal.

A second issue relates to blinding, and more specifically to the possibility that confederates may have privately inferred our hypotheses and consequently altered their behaviour to subtly influence the results. While this is potentially possible, we believe that our design substantially reduces the scope for such manipulation (especially in comparison to other field experiments), as confederates were strictly instructed to simply sit on the bench and not interact with commuters in any way.

A third issue relates to the fact that we conducted our interventions in a single metro station (Porta Romana). While this decision allowed us more control over the experimental environment, it also raises questions about generalizability of our findings to other neighbourhoods. Another concern is that since Porta Romana is located near Bocconi University, our results may reflect an over-sample of (more liberal) students. While we lack the data to address the broader generalizability issue, we do conduct an additional analysis where we drop young people (i.e. potential students) from the sample (Supplementary Tables S12 and S13). Results are unchanged.

A related limitation concerns our employment of only young, male confederates. This may also limit generalizability since it is particularly single immigrant men who arouse the greatest degree of opposition and anxiety amongst natives (Ward, 2019). Thus, with our design choice, we may have inadvertently given ourselves an 'easy' test, since our confederates are drawn from a demographic segment for whom discrimination is expected to be most pronounced. Future research could thus fruitfully investigate whether our results extend to other groups (women, older men) for whom we might expect a lower risk of discrimination (Gereke, Schaub and Baldassarri, 2020).

Finally, we note that our results may be influenced by the particular time period in which our study was conducted. In particular, the rise of right-wing political populism in Europe and negative media coverage of clandestine migration may have served to harden prejudice against individuals of African ancestry.[13] Of great interest in this regard would be to examine whether the

current COVID-19 pandemic has changed behaviour towards Chinese immigrants.

Discussion

How do our results compare against everyday discrimination in other domains? Pooling both waves and dress conditions, the difference in the percentage of commuters sitting next to an Italian versus Nigerian confederate was 6.9 percentage points (see Supplementary Table S16, Model 5). This is on the same order of magnitude as the average native-minority gap (8.4 percentage points) in the housing market (Auspurg, Schneck and Hinz, 2019). In contrast, prior helping experiments generally uncover a native-minority gap of around 12–25 percentage points (Choi, Poertner and Sambanis, 2019; Zhang et al., 2019; Aidenberger and Doehne, 2021), while Mujcic and Frijters (2021) find a difference of over 40 percentage points in terms of free bus rides offered to white versus black passengers. Thus, when viewed in percentage point terms, our effects appear to fall on the lower end of this spectrum.[14] That said, we also note that the baseline rate for helping behaviours is typically much higher (e.g. ~75 per cent) than our baseline sitting rate (~30 per cent). Thus, when interpreted as a ratio (e.g. 'one out of every four people discriminate'), our substantive effect size is generally in line with results from prior studies.

Turning next to the null effect of our business attire treatment as a test of statistical discrimination, we note that a number of prior studies have examined the interaction between race and status, with mixed results: while some work demonstrates that ethnic penalties are mitigated when minorities signal higher status (e.g. Bosch et al., 2010; Hanson and Hawley, 2011), other studies find no moderating effect of status signals (e.g. Ahmad, 2020), or even the opposite relationship (e.g. Carlsson and Eriksson, 2015; Kugelmass, 2016). In our view, the inconsistency amongst findings can be partially attributed to the distinct domains of behaviour under study. Specifically, while information about an individual's socioeconomic status may be important for decision making in some areas (e.g. housing rentals, job hires), such considerations may be largely irrelevant in other situations. For instance, although Italians do encounter Sub-Saharan Africans asking for money in public, this occurs mainly outside of supermarkets or at the entrance to metro stations, not inside the stations themselves. Thus, commuters may have had no reason to statistically discriminate against Nigerian confederates on the metro platform.

As for why commuters discriminate against Nigerians but not Chinese, here we believe it is informative to compare our results alongside those from a prior study by Zhang et al. (2019) that examines everyday discrimination against (high-status) Germans versus low-status immigrants in Switzerland. Zhang et al. (2019) conclude that discrimination in their study was significantly shaped by the status of the groups in question. We read our current results as largely pointing in the same direction. Specifically, we uncover evidence of an ethnic hierarchy whereby discrimination is directed against the low-status group (Nigerians). Beyond these similarities, however, our study extends Zhang et al. (2019) by additionally manipulating signals of *individual* status. We therefore underscore an important distinction between discrimination conditioned upon (i) the personal status of a minority individual versus (ii) the status of the larger *group* to which this individual happens to belong.

Finally, we close this section by reflecting on the types of biases that may underlie our findings. In particular, while it is possible that the discriminatory behaviour of some commuters was animated by an overt hostility towards individuals of African ancestry, physical avoidance in modern societies may also arise from more subtle and ambiguous feelings of unease and apprehension. Such associations could determine whom to approach or avoid in public spaces, even amongst individuals who do not endorse explicitly racist or xenophobic views. Along these lines, research has also found a correlation between physical distancing and implicit biases that operate below the level of conscious awareness (Amodio and Devine, 2006). Our online survey also provides some suggestive evidence in this direction in the form of an implicit association test (IAT), where we find that respondents more strongly associate negative concepts with African faces than with Asian faces (although we underscore that there is considerable debate over the measurement and conceptual validity of the IAT itself. See Supplementary information, Section S11. In any case, the 'fit' with our experiment results is not perfect, as we also detect significant bias against Asians in the IAT, see Supplementary Figure S6).

Concluding Remarks

Our study highlights the multifaceted nature of ethno-racial discrimination in everyday life, drawing particular attention to the physical avoidance of minorities in public spaces. With the adoption of legal and social norms suppressing overt expressions of prejudice, discrimination in Western societies persists in covert, subtle forms. To date, however, patterns of everyday discrimination remain understudied in the literature.

Our research contributes to filling this gap by mapping the contours of everyday discrimination along the dimensions of migration background, race, and socioeconomic status. Namely, we present evidence from

a large-scale field experiment in which we manipulate confederates' ethnicity and attire in order to understand the prevalence and conditions under which everyday discrimination occurs. The clearest picture which emerges from our research is that Nigerians are systematically avoided, while other minorities (Chinese) are not.

Our results are evocative of more generally patterns of racial prejudice, which can be observed across multiple countries. Specifically, the finding of an especially high ethnic penalty facing individuals of African ancestry has been replicated in hiring discrimination studies across Europe (Weichselbaumer, 2017; Koopmans, Veit and Yemane, 2019; Ahmad, 2020; Zschirnt, 2020; Di Stasio *et al.*, 2021; Veit and Thijsen, 2021). This pattern is also reflected in research on inter-racial dating patterns in Europe showing that Arabs and Africans are the least preferred dating partners amongst five racial groups (the others being Europeans, Hispanics, and Asians) (Potârcă and Mills, 2015). Dietrich and Sands (forthcoming) also report analogous findings with respect to the physical avoidance of black confederates on New York City sidewalks. These results intersect with nascent sociological research into the ways in which phenotype appears to play a similar role across very different socio-cultural contexts around the world (Dixon and Telles, 2017). Taken together, this body of research powerfully underscores the need for a thorough investigation into the roots of hostility and discrimination directed against darker-skin individuals.

Finally, we offer a word on the policy implications of our findings. Here, we point to a broad literature demonstrating the importance of intergroup contact for reducing prejudice and discrimination (Allport, 1954; Stephan and Stephan, 1985; Pettigrew and Tropp, 2006; Stephan, 2014; Paluck, Green and Green, 2019). However, our results underscore a certain circularity to this relationship: where aversion to minorities is strong, contact is likely to be avoided (Stephan and Stephan, 1985; Stephan, 2014). Overcoming this cycle thus likely requires policy measures and institutional environments that bring together individuals of different backgrounds in sustained, cooperative interactions.

Notes

1. For additional examples, see Bourabain and Verhaeghe (2019) and Klink and Wagner (1999). A handful of studies also examines discrimination with respect to social sanctioning (Winter and Zhang, 2018; Aidenberger and Doehne, 2021).

2. Furthermore, physical avoidance or distancing may also be indicative of negative outcomes in more formal, structured settings. For instance, Word, Zanna and Cooper (1974) demonstrate that, when interviewing both black and white confederates in a lab setting, white interviewers tended to sit further away from black applicants, make more speech errors during the interview, and terminate the interview sooner.

3. That said, prior research suggests that so-called 'in-group love' (rather than 'out-group hate') is the driving force behind in-group bias (Brewer, 1999).

4. An alternative perspective links intergroup conflicts to cultural differences between immigrants and the native majority (Semyonov, Raijman and Gorodzeisky, 2006; Dancygier and Laitin, 2014). While we believe that cultural distance may be relevant in other contexts (e.g. comparing discrimination against Western versus non-Western immigrants), we find the concept less useful in our design involving two non-European minority groups (Nigerians and Chinese).

5. IRB approval for this study was granted by New York University (IRB FY2018-2205). Prior to the 2019 round of data collection, a detailed design and pre-analysis plan (PAP) was registered with the Open Science Framework (OSF) at https://osf.io/wjsar. Our final procedures deviate from this pre-analysis plan in three respects: (i) while we aimed to collect around 4,500 observations based on a prior power calculation, we fell short of this target due to time and budget constraints. Our final 2019 dataset contains 3,241 observations. (ii) Our PAP mentions that we will conduct exploratory analyses of treatment heterogeneity by commuters' gender and ethnic background. Analyses of gender effects are reported in Supplementary Table S14. We ultimately did not analyse differences between Italian versus (visible) minority commuters due to insufficient power. (iii) The PAP mentions that the *blocker* is also responsibility for coding commuters' behaviour and characteristics. In a small subset of trials, however, coding was conducted by a research assistant stationed further down the platform.

6. Our survey data show that our Nigerian confederates are indeed perceived to be significantly poorer than their Italian and Chinese counterparts. Namely, Figure 2 shows that Nigerians in casual dress are rated as having lower income compared to casually-dressed Italians and Chinese, while these latter two groups received similar ratings (for statistical analysis, see Supplementary Table S19). That said, however, it is important to note that Chinese in Milan are not 'model minorities' in the sense of Asians in the United States.

7. The 2018 round implemented casual versus business attire manipulation for African confederates only. In contrast, the 2019 design fully crosses confederates' race (e.g. Italian, Nigerian, and Chinese) and attire.

8. In Supplementary Tables S10 and S11, we also control for the number of other commuters standing on the platform. Our results are unchanged.

9. Since massive immigration is a relatively recent phenomenon, adult commuters can reliably, despite some exceptions, be classified as native Italians or foreign nationals based on their phenotypical appearance.

10. In any case, we expect these non-coded commuter characteristics to be evenly distributed across our randomized treatment conditions.

11. Replication materials are available through the Harvard Dataverse at https://doi.org/10.7910/DVN/6VYA0U.

12 It should be noted that sitting decisions may also be governed by a norm to respect a stranger's personal space. As such, one might alternatively interpret commuters' behaviour as compliance with this norm, rather than as a form of discrimination. That said, we view it as extremely unlikely that higher respect would be shown to African confederates (the low-status group) than to Italian confederates. We also note that Choi, Poertner and Sambanis (2019) find similar patterns (commuters less likely to approach minority confederates) in a situation where the norm to respect space is absent (i.e. when a stranger is in need of help).

13 Here, it is interesting to note that in a research study that dates back to the end of the 1990s, and thus to the early stages of immigration in Italy, Sniderman *et al.* (2002) showed that Italians were not especially prejudiced towards Sub-Saharan Africans in comparison to other minority groups.

14 We briefly mention the results from several other studies of everyday discrimination. Bourabain and Verhaeghe (2019) find that Maghrebi men and women are helped less often, and followed more often, than Belgian men and women when entering clothing stores. In the German context, Klink and Wagner (1999) report that foreign confederates received worse treatment in 9 out of 14 field experiments covering common everyday interactions (e.g. asking for directions, treatment in restaurants). Finally, both Aidenberger and Doehne (2021) and Winter and Zhang (2018) document that minorities are sanctioned more often than natives for everyday norm violations.

Supplementary Data

Supplementary data are available at *ESR* online.

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