**Original Article** 



# Leaving the bike unlocked: trust discrimination in inter-ethnic encounters

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Migration and ethnic diversity are said to hamper the cultivation of social trust, as native citizens may hesitate to trust ethnic outgroups and racial minorities. This article examines trust discrimination against ethno-racial minorities in everyday interactions. In a field intervention, cyclists were approached with a request for help that required them to leave their bicycles alone for a short time. I experimentally manipulated the presence and the ethnic background of a bystander positioned close to the spot where the cyclists left their bikes behind and operationalized trust as the decision to leave the bike unlocked and unattended. I found that cyclists showed significantly less trust in the presence of ethno-racial minorities compared to natives. Furthermore, trust in the wild depends on the stakes involved, as measured by the value of the bike, and one's vulnerability to trust betrayal, as indicated by the physical stature of the cyclists. By examining a real-life indicator of trust in inter-ethnic encounters, this study advances our knowledge of the ethnic boundaries of social trust and forms of covert discrimination in anonymous and multi-ethnic societies.

#### Introduction

Social trust facilitates cooperation, promotes civic culture, minimizes transaction costs, and fuels economic growth (Zak and Knack, 2001; Cook et al., 2005). However, it has been argued that social trust is declining with the increased ethno-racial diversity of Western societies (Putnam, 2007; Meer and Tolsma, 2014). One prominent claim in this debate is that native citizens may show increased distrust towards ethnic out-groups and racial minorities (Alesina and La Ferrara, 2002; Dinesen and Sønderskov, 2015). Accordingly, people compensate for a lack of information about strangers by inferring their trustworthiness from social cues, such as status characteristics and signs of group membership (Robbins, 2017; Salgado et al., 2021), and preconceived notions regarding the trustworthiness of different ethnic and racial groups. Inasmuch as minority groups are considered less trustworthy, their social and economic integration will continue to be hampered, and ethnic cleavages will be reinforced.

The empirical foundations of this claim, however, predominantly draw on survey research that uses self-reported responses to the 'standard' trust question

(Dinesen and Sønderskov, 2015) and behavioural experiments implementing stylized trust games (Berg et al., 1995). Both approaches elicit trust and discrimination through abstract and generic scenarios in which respondents express overt attitudes towards minority groups and consciously decide whether to trust them based on cues provided by the researcher. As such, the transportability of these findings to concrete situations and day-to-day interactions often remains empirically unfounded. However, it is exactly in these micro-interactions that subtle discriminatory practices are prominently displayed.

Even if overt prejudice and legal discrimination along racial lines may be on the decline, ethno-racial minorities are still subjected to tacit discrimination in markets (Baldassarri and Abascal, 2017; Bertrand and Duflo, 2017). Recently, field experiments have also started to point to the ethnic boundaries of social cooperation, uncovering discrimination related to prosociality and norm enforcement (Winter and Zhang, 2018; Choi et al., 2019; Aidenberger and Doehne, 2021; Zhang et al., 2022). Nevertheless, a key indicator of social cooperation has hitherto received no attention in this literature: social trust.

This article strives to fill this gap by examining trust discrimination against ethno-racial minorities in an everyday situation. In a field intervention, cyclists were approached with a request for help, requiring them to leave their bikes alone for a short time. I experimentally manipulated the presence and ethno-racial background of a bystander who was positioned next to the spot where cyclists left their bikes behind and operationalized trust as the decision to leave the bike unlocked and unattended. In doing so, I created a naturalistic and carefully controlled environment designed to observe a real-life indication of social trust.

The natural field experiment (n = 436) demonstrated that, without bystanders, 24 per cent of the cyclists did not leave their bikes unlocked and unattended, whereas this fraction significantly increased to 35 per cent with bystanders. Crucially, trust was 12 percentage points lower towards bystanders from a Black minority group compared to bystanders from the majority population. The effects remained robust even after controlling for subject characteristics and field variables, and they are supported by a robustness analysis that considers additional indicators of distrust, such as looking back at the bike while providing help, being in a rush, and being hesitant to leave the bike alone. Furthermore, the field measure demonstrated a high criterion validity, as trust was found to correlate with the stakes involved, as measured by the estimated value of the bike, and the vulnerability to trust betrayal, as indicated by the physical stature of the cyclist.

Over the last decades, the share of the foreign-born population in Western European countries has risen to over 15 per cent (United Nations, 2019). As Putnam (2007: p. 137) states, a future increase in ethnic diversity is 'the most certain prediction that we can make about almost any modern society'. Notwithstanding its potential to facilitate progress, ethnic diversity may also lead to tensions that erode social trust and solidarity. Understanding how people trust others in inter-ethnic encounters will prove crucial to averting ethnic conflicts in heterogeneous societies. This article furthers these efforts by designing a novel field experiment measuring trust and providing the first empirical evidence of trust discrimination against an ethno-racial minority in everyday interactions.

### State of the literature

#### Ethnicity diversity and social trust

Ever since seminal articles began pointing out that ethnically mixed communities generate less trust than homogeneous ones (Putnam, 2007), research on social trust and ethnic diversity has amassed 'a cacophony of empirical findings' (Meer and Tolsma, 2014: p. 459). The cumulative evidence hints at a negative, albeit

moderate and inconsistent, association of social trust and ethnic diversity with many qualifications (Dinesen et al., 2020). Recently, Abascal and Baldassarri (2015) have cast further doubt on a negative relationship by attributing it to a compositional artefact caused by the overrepresentation of low-trusting immigrants in ethnically mixed neighbourhoods. Here, I contribute to this debate by directly testing one of its core arguments that people trust members of racial and ethnic outgroups less than they trust members of the majority population.

Methodologically, past work has primarily relied on survey measures of trust, which ask respondents to self-report if they think 'most people can be trusted' (Delhey et al., 2011). The link to ethnicity was established by asking about trust not towards 'most people', but towards residents of certain ethno-racial backgrounds or ethnic minorities (van der Meer, 2016). A second empirical pillar draws on behavioural experiments that immersed participants in the incentive structure of trust games and selectively manipulated information about the trustee. These experimental protocols changed minimal cues of ethnic affiliation, such as photographs or first names, to identify ethnically-related biases in trust and trustworthiness (Fershtman and Gneezy, 2001; Bouckaert and Dhaene, 2004; Cettolin and Suetens, 2019; Finseraas et al., 2019).

Inasmuch as prior work has relied on the standard battery of behavioural and attitudinal measures exclusively, it may fall short of capturing the true scale of ethnically-related distrust for two reasons. First, social desirability concerns arise as respondents and participants evaluate the selectively provided information. Specifically for sensitive and stigmatized topics, research subjects may answer in socially desired ways and not admit to discriminatory behaviours. Thus, conventional survey instruments and behavioural experiments might underestimate ethnic discrimination or even fail to address it in situations where people reflect less about their behaviour and rely on implicit associations (McConnell and Leibold, 2001; Stepanikova et al., 2011; Enos, 2014).

Second, decision scenarios are often abstract and generic, as exemplified by the discontent with the 'most people' trust question (Bauer and Freitag, 2018) and prevalent concerns about the ecological validity of experimental games (Levitt and List, 2007). However, many forms of discrimination are caused by specific situational cues rather than abstract social categories. These hidden and subtle forms of ethnic discrimination continue to be pervasive in Western societies but cannot be adequately captured with standard survey methodology and laboratory experiments. The present study seeks to account for these limitations by using

an unobtrusive field measure and translating trust decisions into a realistic setting.

### Ethnic discrimination in field experiments

In recent years, field experiments have illustrated cases of ethnic discrimination in various economic domains, like employment, housing, and credit markets (Baldassarri and Abascal, 2017). In audit and correspondence studies, it has been established that ethnic minorities are less likely to receive call-backs for job interviews, require more enquiries to view flats and properties, face higher rejection rates for mortgages, and are offered higher interest rates (Zschirnt and Ruedin, 2016; Auspurg et al., 2019; Quillian and Midtbøen, 2021; Polavieja et al., 2023). Ethnic penalties extend to consumer and social markets and make it more difficult to participate in the sharing economy, where members of minority groups are less likely to be picked as guests on Airbnb and as drivers on carpooling platforms (Edelman et al., 2017; Tjaden et al., 2018). In markets and professional settings, unequal treatment of ethno-racial minorities is widespread and translates to differential prices or limited market access.

Nevertheless, efforts to decipher ethnic discrimination in social interactions are still incipient. A handful of studies have used the lost-letter technique and found that return rates are conditional on whether the name of the addressee signals an autochthonous or an allochthonous origin (Koopmans and Veit, 2014). The research most closely related to mine examines inter-ethnic encounters in real-life environments. Winter and Zhang (2018) staged an intervention whereby a confederate ostensibly violated a social norm and dropped litter in public, finding that native citizens verbally reprimanded offenders more often than ethnic minorities, while the latter was more often sanctioned than the former. Other field experiments have shown that prosocial help is more often withheld across ethnic lines (Aidenberger and Doehne, 2021) and towards low-status immigrants in particular (Zhang et al., 2019). Choi et al. (2019) observed that ethnic minorities received less assistance with picking up groceries that were accidentally dropped. Similarly, Mujcic and Frijters (2021) found that Black people were less likely to be granted a free ride on a public bus, while Zhang et al. (2022) noted they were more likely to be physically avoided in everyday encounters.

Together, these field experiments have pointed to covert forms of ethnic and racial discrimination regarding honesty, prosociality, and civic cooperation. Building on this body of research, the present paper sheds light on the effects of ethnic discrimination on social trust, a variable that has hitherto been neglected in previous field experiments.

# Theory and hypotheses

People trust others when they believe in their trustworthiness with respect to a particular matter under conditions of unknown outcomes (Robbins, 2016). They do so when sending money to trustees, when buying a used car (Buskens and Weesie, 2000), or when entrusting valuables, like their bicycle, to the discretion of others (Blajer de la Garza, 2019; Robbins, 2019). Situations involving trust are typically imbued with risk as trustors make themselves vulnerable to a concrete or an abstract trustee who might engage in detrimental behaviour or, at least, abstain from acting beneficially towards them (Gambetta, 1988). As such, trust corresponds to an expectation that 'people will behave with good will, that they intend to honour their commitments and avoid harming others' (Glanville and Paxton, 2007: p. 231).

Some people are generally more trusting than others; that is, they hold a generalized situation-independent belief in the trustworthiness of others (Bauer and Freitag, 2018). A propensity to trust is said to result from genetic predispositions and cultural influences in the early stages of one's life. From this vantage point, basic trust corresponds to a relatively stable psychological phenomenon that correlates with personality traits (Uslaner, 2002). But even after childhood, trust is not set in stone, and it continues to be shaped by lifelong interactions and experiences (Glanville and Paxton, 2007; Van Lange, 2015). As people encounter a variety of others, they learn about their goals and motivations and update their beliefs regarding trustworthiness accordingly (Delhey and Newton, 2003). This happens in interactions with friends and acquaintances as well as in fleeting interactions with strangers (Kanitsar, 2022).

Next to general expectations of trustworthiness, situational aspects matter when people decide to trust others in specific circumstances. Hence, the belief in the trustworthiness of others is, to some extent, flexible and contingent upon cues from one's social environment (Dinesen and Sønderskov, 2015). In everyday encounters, individuals draw on prior experiences from similar situations to form expectations regarding whether their trust will be honoured or betraved (Hardin, 2002; Robbins, 2016; Kas et al., 2022). In doing so, they use various cognitive schemata acquired through past interactions. Thus, concrete decisions involving trust, like the choice to leave valuables unattended in public, depend on both a general belief in others' trustworthiness and cognitive schemata associated with specific situations.

In situations with no concrete others, trustors' behaviours depend on expectations about the average person they might meet in such situations (Bauer and Freitag, 2018; Coleman, 1990: p. 104). As the

trustor's behaviour becomes interdependent with a specific trustee, generalized trust turns into relational trust (Hardin, 2002; Robbins, 2016). To gauge the degree to which people can trust specific strangers, they additionally apply cognitive shortcuts about this type of person by interpreting signs emitted by the trustee to evaluate whether they possess trustworthy qualities or pose a threat towards the trustor (Bacharach and Gambetta, 2001). In essence, individuals form an assessment of the specific trustee's intentions and motivations as well as the scope of action. To the extent that the social cues arising from a specific trustee increase the perceived vulnerability of the trustor—the chances of loss (Coleman, 1990: p. 105)—relational trust towards a specific stranger will be lower than generalized trust. Phrased differently, trustors will be less likely to leave their valuables at the disposal of a concrete bystander whose presence increases the chances of trust betrayal.

H1: Distrust is higher in the presence of a concrete stranger who increases the chance of trust betrayal than in the absence of this concrete stranger.

To infer trustworthiness, trustors rely on discernible characteristics that act as signs of group membership and evoke stereotypes about prototypical persons. As pointed out by social identity theory and status characteristics theory, people make use of this information when they decide to trust ethnic out-groups or racial minorities.

According to social identity theory (Tajfel and Turner, 1979) and its refinements, people categorize their interaction partners into in- and out-groups along ethnic lines to reduce the complexity of social life. As people grow attached to their own ethnic identity and cultivate a positive self-image of their reference group, they tend to harbour negative prejudices against members of other salient groups. They may do so because they feel more empathy towards people who look familiar, are more likely to interpret their verbal and non-verbal signals correctly, and face less obstacles in communication and norm enforcement (Habyarimana et al., 2007; Dinesen et al., 2020).

Prior studies have further suggested that inter-ethnic encounters are more often accompanied by an increased sense of discomfort, unease, and anxiety (Goff et al., 2008; Zhang et al., 2022) and that people are more likely to feel fearful or threatened when interacting with other racial groups (Mendes et al., 2002). This evidence aligns with conflict theory, which posits that encounters with people of different ethnic background spur competition over scarce resources, and, in doing so, reinforce prejudices (Quillian, 1995) and diminish inter-ethnic trust (Putnam, 2007; Dinesen and Sønderskov, 2015).

Apart from that, racial stereotypes may cause trustors to place less trust in people from a certain ethno-racial group, irrespective of their own identity (Burt et al., 2012; Robbins, 2017). Thus, trustors may regard a trustee's ethnicity as a proxy for the likelihood that their vulnerability will be exploited. According to the status characteristics theory (Berger et al., 1972), individuals interpret the socially significant characteristics of others to derive expectations regarding their performance, abilities, or trustworthiness (Robbins, 2017). In as far as ethnic minorities are subject to low-status stereotypes regarding welfare dependency or criminal behaviour (Burt et al., 2012), they also experience resentment and distrust. Similar to status characteristics theory, economic theories of 'statistical discrimination' (Phelps, 1972) posit that trustors may compensate for the lack of information about the trustworthiness of a single person with group-level information. Thus, widespread beliefs about an ethnic group's proclivity to engage in criminal acts may cause trustors to be particularly suspicious of its individual group members even if they do not hold any idiosyncratic preference against them.

Racial prejudice seems to be more predominantly directed towards Black minorities, not only in the United States, where race plays a key role in determining life-chances, but also increasingly in Europe (Gorodzeisky and Semyonov, 2016; Polavieja et al., 2023). Indeed, recent experiments have corroborated that discrimination is particularly pronounced against Black minorities also outside of the United States (Mujcic and Frijters, 2021; Quillian and Midtbøen, 2021; Weichselbaumer and Schuster, 2021; Zhang et al., 2022; Polavieja et al., 2023). These racial stereotypes against Black people reveal themselves in both explicit racial attitudes and implicit racial biases (Mendes et al., 2002; Feldman and Huddy, 2005; Stepanikova et al., 2011), leading to adverse evaluations of trustworthiness (Stanley et al., 2011).

Together, out-group aversion among the majority population and ethnic stereotypes about Black minorities may affect expectations about the trustworthiness of Black strangers.

H2: Distrust is higher towards strangers from an ethnic minority group than towards strangers from the majority population.

# Research design

## Research setting

The field experiment was conducted from 11 March 2022 to 25 April 2022 in Vienna, Austria. Due to its population size and cycling infrastructure, Vienna ensures a sufficiently large subject pool of cyclists. Moreover, with

more than 45 per cent of its population having a migrant background, (Statistik Austria, 2022), Vienna represents a multi-ethnic metropolis at the centre of Europe. Like many Western and Central European cities, Vienna has experienced a steady influx of migrants throughout the last decades from various countries, encompassing sizable racial minorities from Arab and African countries. In particular, these ethno-racial groups are among those most regularly subjected to anti-immigrant sentiments in Western societies (Gorodzeisky *et al.*, 2006) and at the centre stage of political debates tinged with xenophobic concerns and prejudice across Europe.

## Field experiment

The field experiment staged a scenario in which a cyclist on a public bike lane was approached for help (see Supplementary Material S1) at four sites located along the Danube Canal, a frequented bike route running across Vienna (see Supplementary Material S2). At all four locations, cyclists must dismount their bikes to carry them over a flight of stairs in order to continue in a certain direction or reach a nearby destination. The four sites were selected because considerably more cyclists than pedestrians passed by the spots, making it plausible that a confederate would require help from another cyclist.

At the foot of the stairs, I positioned a confederate, who needed assistance from someone else to carry their bike upstairs. The confederates were primarily recruited among senior women who claimed to be incapable of carrying their electric bikes on their own and required assistance in lifting or pushing them over the stairs.¹ Confederates were instructed to stop cyclists travelling alone and ask them for help. To do so, they had to learn a written statement and were briefed about possible strategies to support their request for help (see Supplementary Material S3). According to protocol, the confederates then accompanied the cyclists upstairs. Crucially, to provide help, the experimental subjects would need to leave their own bikes behind at the foot of the stairs.

In a treatment manipulation, I selectively positioned bystanders in the vicinity of the spot where the cyclists would have to leave their bikes behind. In order to elevate the salience of potential bike theft, I recruited male bystanders aged between 18 and 25 and provided them with identical outfits conveying a lower-class status (a pair of shabby-looking sweatpants, a black hoodie, and a dark bomber jacket without a brand tag).

To study trust discrimination against ethno-racial groups, I recruited bystanders who could be clearly identified as either Austrian natives or ethnic minorities.<sup>2</sup> While foreigners from other Northern and Central European countries are admittedly difficult to tell apart from native Austrians, ethnic minorities from

Africa visibly differ from the majority population in their skin colour and other phenotypic characteristics. In total, I recruited four Austrian-native bystanders and four ethnic minority bystanders with a migration background from Sub-Saharan African countries. All bystanders were of similar height and stature, in as much as they fitted into the clothes of European size medium or large that we provided them. A manipulation check further demonstrates that they were identified correctly as natives or ethnic minorities among a German-speaking sample (n = 399) in a study conducted on Prolific.co (see Supplementary Material S4).

Prior to each shift of data collection, a research assistant or I again explained and controlled the exact positioning of confederates and bystanders at the experimental sites. Importantly, the positioning of bystanders was carefully calibrated, as they had to appear in sight of the bypassing cyclists only once the decision to assist the confederate had already been taken. Otherwise, their presence would affect the bikers' initial decision to help and, hence, bias the sorting of cyclists into treatments. Depending on the site, this required either that confederates approached cyclists a few meters before they reached the stairs or that bystanders were walking downstairs while cyclists were approached arriving at the foot of the stairs when a cyclist dismounted the bike.3 To clarify if selection into treatments occurred, we compared how many cyclists the confederates approached until one stopped to help. The average numbers of cyclists with (1.46) and without bystanders (1.50) did not significantly differ (Wilcoxon Rank Sum; P = 0.849), suggesting that the presence of the bystanders did not affect the cyclists' initial decision to provide help.

Research assistants or I discreetly observed the interventions from a distance (see Supplementary Material S5). We recorded only those who stopped with the intention of providing help as experimental subjects and coded any behaviour as distrust that reduced the vulnerability of the cyclist and lowered the risk that the bike might be stolen, such as locking the bike or asking the confederate to wait at the foot of the stairs. If cyclists left their bikes unlocked and unattended, we also monitored their behaviour while they went up and down the stairs. In particular, we observed if cyclists appeared to be hesitant to leave their bikes downstairs, if they looked back at their bikes while providing help, and if they appeared to be rushed.

Furthermore, we estimated the age, gender, physical stature, and migration background of the cyclist as well as the value of the bike. We also recorded how many other people were close to the site during a trial, which involved pedestrians who passed the wider area of the experimental site but did not necessarily stop at the place where cyclists left their bikes. Together, a research

assistant or I, a bystander and a confederate collected data in a location for three to four hours. During each session, the research team alternated between observations with and without bystanders. The study design was pre-registered with the OSF registries.<sup>4</sup> The final sample size was smaller than in the pre-analysis plan, and, as a result, not all pre-registered hypotheses were tested. The changes to the pre-registration plan are discussed in Supplementary Material S6.

# **Data description**

In total, we conducted 444 trials organized into 18 sessions (see Supplementary Material S7). After excluding eight trials in which cyclists' behaviour could not be unequivocally categorized as trust or distrust, we were left with 436 observations for analysis. Table 1 shows the descriptive statistics of the experimental subjects. Across treatments, we found that 31.2 per cent of the cyclists displayed behaviours we characterized as distrust. Of those, 46.3 per cent locked their bike, 40.4 per cent asked our confederate to wait at the foot of the stairs, and 13.2 per cent followed other strategies to protect their bike.<sup>5</sup>

The sample was disproportionately male. This was likely a result of two specificities of the design. First, considerably more male than female cyclists travelled along the routes selected for the study. Second, of those cyclists that were approached, men were more likely to help the female confederates, potentially as men thought they would be more helpful in a task that was too physically challenging for the female confederates.

Approximately one-third of the sample was aged 35 or younger, one-third was between 35 and 50, and one-third was 50 or older. Migration background was evaluated based on the cyclists' discernible characteristics as well as their German proficiency inferred from their conversation with confederates. Thus, of those subjects with migration backgrounds (15.6 per cent), many came from other European countries and did not necessarily differ visually from the native population. Observations were fairly distributed across times of the day and parts of the week. In the vast majority of cases (71.1 per cent), the first person who was asked provided help, and confederates had to approach 1.47 cyclists to get one observation on average.

Supplementary Table S2 reports the number of observations in each treatment across experimental sites. At each site, the ratio of observations in the bystander treatment to the total number of observations did not significantly differ from the total ratio. Likewise, there were no significant imbalances across sites regarding the ethnic minority variation. However, imbalances were detected across confederates, as shown in Supplementary Table S3, due to the

Table 1 Summary statistics

Variables	Share/average	Frequency
Trust behaviour		
Trust	0.688	300
Distrust	0.312	136
Gender		
Male	0.860	375
Female	0.140	61
Age category		
Up to 35	0.374	163
36-50	0.344	150
50 or older	0.282	123
Migration background		
No, unlikely	0.846	368
Yes, likely	0.154	68
Physical stature		
Athletic	0.796	347
Unathletic	0.184	80
Can't say	0.021	9
Estimated value of bike		
Less than 200€	0.167	73
Between 200€ and 1.000€	0.452	197
More than 1.000€	0.381	166
Other people at site		
None	0.610	266
1 or 2	0.310	135
More than 2	0.073	32
Can't say	0.007	3
Part of the week		
Weekdays	0.796	347
Weekend	0.204	89
Time of the day		
Morning 8:00–12:00	0.415	181
Midday 12:00–15:00	0.383	167
Afternoon 15:00–18:00	0.202	88
Number of cyclists approached for help	1.472	436

dropout and availability of confederates. I accounted for these imbalances with side fixed effects and confederate fixed effects in the regression analyses. Finally, Supplementary Table S4 shows the balance across treatments in the individual characteristics of age and gender. The distribution of gender did not significantly

differ between control and bystander treatments and between ethnic minority and native bystander treatments. Regarding age, a Chi-Squared test indicates that there were slightly more cyclists aged above 50 in the treatments with bystanders compared to the control treatment. Conversely, there were slightly more cyclists aged below 35 in the treatments without bystanders compared to the control treatment. This imbalance may well reflect the lower control of the research team over the arrival rates of different subjects at the experimental sites (Mujcic and Frijters, 2021). To statistically account for these imbalances, I also report regression analyses controlling for individual-level characteristics.

## Results

The left panel of Figure 1 shows the average rates of distrust for the control and bystander treatments. In the absence of bystanders, 23.6 per cent of the experimental subjects did not leave their bike unlocked and unattended, whereas this fraction significantly increased to 34.8 per cent in the bystander treatments (n = 436; Chi-Squared =5.581; P = 0.018). Looking at bystanders of native and ethnic minority origin together, I found that when deciding to trust, people indeed reacted to the presence of concrete strangers, in line with Hypothesis 1.

The right panel of Figure 1 compares rates of distrust towards native and ethnic minority bystanders. 40.4 per cent of the cyclists did not trust bystanders from a Black racial group, while this fraction significantly drops to 28.6 per cent for native bystanders (*n* 

=296; Chi-Squared = 4.538; P = 0.033). In line with Hypothesis 2, this difference suggests that individuals are reluctant to extend trust towards people from this ethnic minority group in their everyday interactions. Importantly, cyclists were 16.8 percentage points (or 71.2 per cent) more likely to exhibit distrust towards individuals from an ethnic minority group compared to the control treatment (n = 296; Chi-Squared = 9.518; P = 0.002). However, we observed no evidence of distrust towards White bystanders, as the difference between native bystanders and the control treatment was not statistically significant (n = 280; Chi-Squared = 0.91; P = 0.341).

In Table 2, Models (1) and (2) demonstrate that both differences were robust when controlling for site fixed effects and confederate fixed effects. Model (1) indicates that cyclists were 11.3 percentage points more likely to exhibit distrust in the presence of a concrete bystander, while Model (2) shows that bystanders with an ethnic minority background received 10.3 percentage points more distrust than bystanders from the majority population. In Model (3), I included a categorical variable to distinguish between the three treatments and control for individual characteristics and field variables. Again, the model reveals a significant effect of bystander ethnicity on distrust.

Besides, several individual characteristics correlated with distrust in the field. Young participants were 10 percentage points more distrusting than the middle cohort and 15.5 percentage points more distrusting than older participants (the difference between the middle and older cohorts was insignificant; P = 0.219). This finding chimes with representative studies

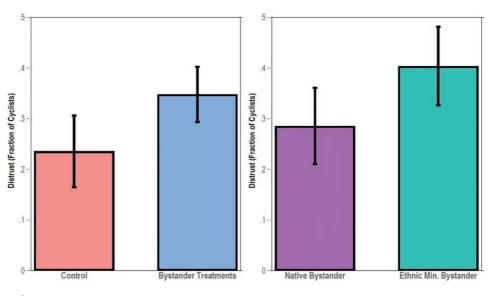


Figure 1 Distrust by treatment

**Table 2** Logistic regression models for distrust (average marginal effects)

	(1)	(2)	(3) Distrust
	Distrust	Distrust	
Bystander	0.113**		
treatment Ethnic minority	(0.037)	0.103* (0.039)	
Treatment (ref.: n	ative bystander)	, ,	
Control treatment			-0.075 (0.043)
Ethnic minority bystander			0.100* (0.043)
Gender (ref.: male	e)		
Female			-0.016 (0.059)
Age (ref.: 35 or le	ss)		
35–50			-0.100* (0.039)
50 or older			-0.155*** (0.043)
Migration backgr	ound		
Yes			0.023 (0.045)
Physical stature (r	ef.: unathletic)		
Athletic			-0.137** (0.039)
Value of bike (ref.	: less than 200€	E)	
200€ to 1.000€			0.138** (0.051)
More than 1.000€			0.187** (0.066)
N	436	296	436
Pseudo- loglikelihood	-247.8	-178.4	-232.5

Average marginal effects (regression coefficients and full output reported in Supplementary Table S5). Standard errors clustered at the sessions-level. All models include site and confederate fixed effects. Not reported: 'can't say' (physical stature), time of the day, part of the week, other people at site, constant. \*\*\*P < 0.001, \*\*P < 0.01, \*P < 0.05.

that show how trust increases with age (Clark and Eisenstein, 2013). Unlike previous work (Dittrich, 2015), however, there was no significant difference in distrust with regard to gender in the field setting (*P* = 0.788). Moreover, no differences were detected regarding migration background. This finding superficially conflicts with established knowledge from previous research (Alesina and La Ferrara, 2002). However, as migration background was inferred from their language proficiency, this category may also incorporate second-generation migrants who have already adapted

to the trust levels of the majority population (Dinesen and Hooghe, 2010).

Athletic cyclists were 13.7 percentage points less likely to show distrust. A possible explanation for this correlation could be that unathletic individuals perceive themselves to be more vulnerable to exploitation and thus take more care to protect valuables. Another possible explanation is that sportive cyclists might expect to be quicker with a task requiring physical effort, reducing the time for which they have to leave their bikes alone. Unsurprisingly, cyclists with cheaper bikes were 13.8 percentage points less distrusting than cyclists with bikes in the middle category and 18.7 percentage points less distrusting than cyclists with expensive bikes. The difference between the middle and the expensive categories was not significant (P = 0.363). This confirms theoretical considerations proposing that trust depends on the potential loss arising from the untrustworthiness of others (Coleman, 1990). Finally, no significant differences were found for the number of other people in the proximity of the experimental site.

For robustness, we observed ancillary indications of distrust among cyclists who left their bikes unlocked and unattended. Specifically, research assistants documented if cyclists were hesitant to leave their bike unattended, looked back at the bike while helping the confederate, or appeared to be in a rush. Table 3 reports the effects of the treatment variations on a robustness measure for distrust, which takes the value 1 if one or more of these indications applied to a cyclist, and 0 otherwise. The models corroborate the treatment effects identified in Table 2. Cyclists were more likely to look back, hesitate, or rush up and down the stairs with a bystander than without a bystander, and especially if the bystander was from an ethnic minority group. Regarding the individual controls, the robustness analysis with the reduced sample size reproduces only the effect of the value of the bike.

## Discussion and conclusion

This study examined trust discrimination against an ethno-racial minority in an everyday situation. For this purpose, I created a carefully controlled scenario in which experimental subjects left their bicycle alone for a short time. I systematically varied the presence and ethno-racial background of a bystander and operationalized trust as the decision to leave the bicycle unlocked and unattended. By translating the problem of trust into a real-life situation, this article advances our knowledge of trust discrimination, which has thus far stemmed primarily from survey instruments and laboratory experiments.

The field experiment demonstrates that the presence of a bystander considerably affected the willingness to

**Table 3** Logistic regression models for ancillary distrust indicators (average marginal effects)

	(1)	(2)	(3) Ancillary distrust
	Ancillary distrust	Ancillary distrust	
Bystander treatment	0.149** (0.044)		
Ethnic minority		0.114* (0.048)	
Treatment (ref.: nat	ive bystander)		
Control treatment			-0.070 (0.057)
Ethnic minority bystander			0.138* (0.056)
Gender (ref.: male)			
Female			-0.059 (0.071)
Age (ref.: 35 or less	)		
35–50			0.021 (0.071)
50 or older			-0.113 (0.073)
Migration backgrou	ınd		(/
Yes			-0.083 (0.082)
Physical stature (ref	:: unathletic)		
Athletic			-0.080 (0.075)
Value of bike (ref.: 1	ess than 200€)	1	
200€ to 1.000€			0.111* (0.047)
More than 1.000€			0.219*** (0.062)
N	300	193	299
Pseudo- loglikelihood	-190.7	-125.6	-178.5

Average marginal effects (regression coefficients and full output reported in Supplementary Table S6). Standard errors clustered at the sessions-level. All models include site and confederate fixed effects. Not reported: 'can't say' (physical stature), time of the day, part of the week, other people at site, constant. \*\*\*P < 0.001, \*\*P < 0.01, \*P < 0.05.

leave the bike unlocked and unattended. Besides the presence of a bystander, trust depended on the stakes involved, measured by the estimated value of the bike, and one's vulnerability to having their trust betrayed, indicated by the cyclists' athleticism. These findings undergird theoretical conceptions of trust as a rational response to the information at hand and the incentives at play (Cook and Santana, 2018).

Without formal institutions, trust is often maintained by reputation systems and social networks

providing information about interaction partners and mitigating the trust problems inherent to many market and non-market interactions (Diekmann et al., 2014; Kas et al., 2022). Yet, many encounters in complex and differentiated societies are one-off interactions with strangers. This study also suggests that in these encounters, people screen situations for potential signals to infer if their trust might be honoured (Gambetta, 1988; Blajer de la Garza, 2019). To do so, subjects interpret visual cues related to status and group membership to substitute for reliable information about a trustee. Furthermore, cyclists' behaviour hinges on their own stakes and vulnerability. Together, this evidence suggests that trust in the wild draws, at least to some degree, on strategic evaluations of the likelihood and potential loss from untrustworthiness (Coleman, 1990; Hardin, 2002).

A salient social characteristic used to assess trustworthiness is ethnicity. In the field experiment, cyclists were 12 per cent less likely to leave their bikes unlocked and unattended if bystanders were from a Black minority group rather than from the majority population. This finding squares with the burgeoning field experimental literature on ethnic discrimination regarding prosocial helping and norm enforcement. In tandem with this work, the present article suggests that subtle-and possibly unconscious—patterns of ethnic discrimination persist in public and one-off interactions. Given that trust is vital for many micro-exchanges and social interactions, already minor differences could considerably advantage some ethnic groups and marginalize others. At the aggregate level, these discrepancies might culminate in systematic inequalities in labour markets, civic cooperation, and residential housing, potentially solidifying ethnic fault lines.

To counteract ethnic discrimination, we must understand *why* people hesitate to trust ethnic minority groups. In labour markets and economic settings, people tend to discriminate less if they have more information about the abilities and qualities of actors (Tjaden *et al.*, 2018; Koopmans *et al.*, 2019). The present field experiment, however, reduced the available information about trustees to visual signs of ethnicity, such as skin colour or phenotypic traits. In such circumstances, people seem to condition their behaviour on ascribed characteristics beyond the control of the trustee. Research in this vein promises to be an exciting avenue to investigate how far additional information can reduce trust discrimination and lead people to rely less on easily discernible signals to infer trustworthiness.

A limitation of the present design is that it did not permit us to test if ethnic trust discrimination is driven by out-group aversion among the majority population or rather ethnic stereotypes about Black minorities. On the one hand, trust discrimination could result from

out-group aversion or in-group favouritism, which are rooted in biological make-up or internalized during socialization. On the other hand, it could stem from adverse beliefs about certain ethno-racial groups regardless of the trustor's own ethnic identity. While efforts to disentangle these two explanations in markets have received some attention in the existing literature (Auspurg *et al.*, 2019; Lippens *et al.*, 2022), research on the mechanisms of discrimination in social encounters, particularly those involving trust, is still in its infancy.

A limitation concerning internal validity is that the field experiment could not definitively ascertain which bystander characteristics caused differences in trust rates. Even though differences between actors were reduced as bystanders were recruited from the same age group and had a similar body stature, it is possible that unobserved characteristics besides skin colour, such as physical attractiveness, contributed to treatment differences. The findings should thus be taken in tandem with other field experiments cumulatively adding to our knowledge of differential treatment for Black individuals across a large number of test persons (Mujcic and Frijters, 2021; Zhang et al., 2022; Polavieja et al., 2023) and with laboratory studies exploring racial reactions in more controlled settings (e.g., Mendes *et al.*, 2002).

Moreover, some aspects of the experimental design likely affected the external validity of the estimates. For instance, Black bystanders were deliberately chosen as they are clearly distinguishable from the majority population. However, past work suggests that Black people are more strongly discriminated against than other races, such as Asians (Mujcic and Frijters, 2021; Weichselbaumer and Schuster, 2021; Polavieja et al., 2023). Hence, findings on discrimination do not necessarily extend to other ethnicities, especially those that do not ostensibly differ from native citizens. Likewise, even if Vienna is one of many European metropolises currently witnessing increased migration flows and ethno-racial heterogeneity, the generalizability of findings to smaller cities and remote regions remains an open empirical question. Indeed, past work suggests that inter-group attitudes and trust are lastingly shaped by inter-group contact (Laurence et al., 2019), which is likely higher in ethnically-mixed and urban areas than in other residential contexts.

Finally, recruiting bystanders only among young men and providing them with an outfit indicating a lower socioeconomic status might have raised the effect of bystanders. Previous research suggests that masculinity and low socioeconomic status are strongly associated with public perceptions of criminality (Messerschmidt, 1997). Positioning strangers next to the bike stand, who are judged to possess more trustworthy qualities,

could potentially lower or even reverse the effect of bystanders. Furthermore, those characteristics likely also conditioned the observed effect of ethnic discrimination, which is particularly strong towards men and lower-class individuals (Ward, 2019; Gereke et al., 2020; Schaub et al., 2020). A natural progression to this work would need to figure out if the findings extend to other demographic segments that are less likely to be perceived as a threat in trust situations.

Conversely, some design features suggest that the field intervention captured a lower bound of distrust and discrimination. Specifically, some elements of the experimental design led to an overrepresentation of male and native subjects in the sample. Following previous evidence (Dittrich, 2015; Ziller and Heizmann, 2020), we would thus assume that distrust is even higher among the general population than in this sample. Crucially, cyclists only qualified as experimental subjects if they provided help to a stranger. Assuming that prosociality correlates with trust, we would expect that the willingness to leave valuables unattended is even higher without this restriction. In as far as prosociality is associated with less racial bias, I may have also underestimated the true extent of ethnic trust discrimination. Additionally, the focus on cyclists, which tend to be more progressive, liberal and open-minded, might have led us to zoom in on a sample with a less discriminatory position than the general population (Gorodzeisky et al., 2006).

This being said, the study makes a key contribution to our knowledge of ethnic trust discrimination. As ethnic diversity increases throughout European countries, shedding light on implicit and hidden forms of ethnic discrimination becomes ever more important. In the context of trust, these forms of discrimination reinforce ethnic boundaries and hamper the economic integration of migrants, thus implying potential costs for the native population. Raising awareness of covert discrimination matters to support political measures aimed at addressing and overcoming prejudice and xenophobic sentiments, such as through facilitating inter-ethnic contact and mutual familiarity (Pope *et al.*, 2018; Finseraas *et al.*, 2019).

#### Notes

1. The scenario echoes a prevalent concern for elderly and physically handicapped people who, despite being able to ride electric bicycles, often find themselves unable to lift them over barriers. One person acting in the role of a confederate was a young woman. This person was appointed only to the sites without a ramp, where she was likewise unable to lift the bike over the stairs on her own. During the pilots, we discovered that many cyclists recommended taking lengthy detours. To provide a valid excuse, we additionally deflated the back tire.

- To stress this aspect, bystanders had to pretend to have a phone conversation either in German or in their mother tongue.
- In the days prior to the first session of data collection, we conducted several pilot trials (n = 66) to assess the appropriateness of the experimental locations and the positioning of bystanders.
- https://osf.io/ht4fr/?view\_only=cf7518898f0441daad700a61fd21d3e4. The code for replication is at: https://osf.io/ ucvr2/?view\_only=f5b1fb42d9254e289d704961af15aac5.
- 5. A few cyclists carried both their own bike and the confederate's bike upstairs, and then took their own bike downstairs again. Others carried their bike to a middle platform before helping the confederate and picked up their bike when they went downstairs again.

# Supplementary data

Supplementary data are available at ESR online.

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# **Data Availability**

Data available on request.

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