# Ethnic salience and discrimination

Zahra Murad[1,3], Emel Öztürk[2,3], Yi Sheng[2], and Sigrid Suetens[2,*]

[1]School of Accounting, Economics and Finance, University of Portsmouth
[2]Department of Economics, CentER, Tilburg University
[3]UNEC Cognitive Economics Centre, Azerbaijan State University of Economics
[*]Corresponding author: Sigrid Suetens, s.suetens@uvt.nl

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### Abstract

We report the results of three controlled experiments in which individuals who belong to a majority group make choices that affect an individual with an ethnic minority background. Each of the experiments consists of several experimental waves that vary in terms of ethnic salience. The variation in ethnic salience comes from the differential timing of the experimental waves, and, in one experiment, additionally from variation in the information provided about the ethnic background. The key result is that individuals behave seemingly more pro-socially towards minorities as ethnic salience increases, while there is no effect on pro-sociality towards other majority members. We provide evidence that social desirability bias is an important mechanism behind the result.

# 1 Introduction

Minorities across the world face discrimination by employers, landlords, traders, judges, public services etc.[1]. For policy design and welfare analysis, it is important to understand to which extent discrimination is due to statistics or tastes. Statistical discrimination can occur if productivity is unobservable (Phelps, 1972; Arrow, 1973; Bohren et al., 2022).

In such a context, individuals (e.g. employers) rely on beliefs about the average productivity of a group to which another individual (e.g. employee) belongs to form beliefs about individual productivity, which may lead them to discriminate on the basis of an observable group characteristic (e.g. ethnicity). Taste-based discrimination implies there is animus against a particular group, which leads individuals to attach a lower utility to the well-being of members from that group as compared to members from the own group, or to be willing to pay a penalty to avoid interacting with them (Becker, 1971; Akerlof and Kranton, 2000). Whereas statistical discrimination is eliminated by revealing information about productivity, eliminating taste-based discrimination requires changing preferences, which is arguably more tedious. Since in empirical studies or correspondence studies it is tedious to identify the separate role of statistics and tastes—productivity is typically unobservable—lab and lab-in-the-field experiments have become a key empirical strategy to study the nature of discrimination (initiated by Fershtman and Gneezy, 2001).[2]

Economic experiments have the advantage that decision settings can be used that switch on and off uncertainty about productivity of strategic partners, or whether the partner has a strategic role in the first place. Any discrimination observed in a setting with uncertainty can be due to statistics and/or tastes, whereas any discrimination left if uncertainty is removed or if the partner has no strategic role can only be due to tastes. For example, dictator experiments are commonly used to study taste-based discrimination: the wealth of the decision-maker of interest (the dictator) and that of the partner (the recipient) are fully determined by the dictator's decision, making the productivity of the partner irrelevant for wealth.[3] Given that experiments have become widespread to identify taste-based discrimination, it is important to understand what they can and cannot achieve. In this paper we use data from three online experiments designed to elicit taste-based discrimination to argue that *issue salience* may confound the inter-

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[1]This is shown in empirical studies (e.g., Anwar et al., 2012; Arnold et al., 2018, 2021, 2022; Bar and Zussman, 2017; Shayo and Zussman, 2011), correspondence studies (e.g., Ahmed and Hammarstedt, 2020; Bartoš et al., 2016; Bertrand and Mullainathan, 2004; Button and Walker, 2020; Flage, 2018; Giulietti et al., 2019; Zschirnt and Ruedin, 2016) and other field experiments (e.g., Hedegaard and Tyran, 2018; List, 2004)

[2]Other examples are Berge et al. (2020), Bouckaert and Dhaene (2004), Cettolin and Suetens (2019), Habyarimana et al. (2007), Hedegaard and Tyran (2018), List (2004) and Whitt and Wilson (2007). See Guryan and Charles (2013) for a discussion and Lane (2016) for a meta-study.

[3]For example, Berge et al. (2020), Fershtman and Gneezy (2001), Habyarimana et al. (2007), List (2004), Whitt and Wilson (2007) employed dictator experiments. Other examples are trust and ultimatum experiments, where second movers make a decision that affects wealth, after observing the decision of the first mover, or conditional on the latter's decision (e.g. Fershtman and Gneezy, 2001; Bouckaert and Dhaene, 2004; Cettolin and Suetens, 2019). Hedegaard and Tyran (2018) ran an experiment in which partner choices of employees who are informed about the productivity and ethnicity of their partners are compared to that of uninformed employees.

pretation of elicited behavior.

Issue salience refers to an issue being salient to a particular individual or to the public in general at a certain point in time, which can be measured as the coverage the media affords to the given issue (Epstein and Segal, 2000). Think, for example, of sexual harassment issues being salient following allegations against Harvey Weinstein in October 2017, which led to the spread of the *Me Too* movement through social media, or of racism problems being salient in the months of the *Black Lives Matter* protests after the homicide of George Floyd in May 2020. Issue salience is a key component in theories of electoral behavior in political science, and has been shown to correlate with voting behavior (see Dennison, 2019, for a review). In this paper we shed light on a different effect of issue salience, namely on how it affects behavior of subjects in economic experiments. We focus in particular on the effect of *ethnic* issue salience on experimentally elicited behavior towards ethnic minorities and discrimination. Ethnic issue salience, which we abbreviate as ethnic salience, refers to the salience of issues related to ethnicity, immigration and discrimination. Several events that have occurred in recent years have invoked substantial public attention to these issues.

The experiments under consideration each included a condition with high ethnic salience and a condition with low ethnic salience. Moreover, they all had decision-makers from a native majority group make choices that directly affected the wealth of a pair of two participants. The pairs included one *vulnerable* participant, which belonged to an ethnic minority group in one treatment condition and to an ethnic majority group in another condition.[4] Two of the experiments took place in the Netherlands, one in 2020 and another one in 2014-2015 (which we refer to as NL2020 and NL1415, respectively) with majority participants from the general majority population and minority participants from the immigrant population with a Turkish or Moroccan background.[5] The third experiment took place in the United Kingdom, in 2019-2020 (which we refer to as UK1920), where the decisions were made about a pair consisting of a white majority and a non-white minority student.

In all three experiments, the variation in ethnic salience was induced by the timing of different experimental waves. In NL1415 one wave was run right before the terrorist attack in January 2015 on the Charlie Hebdo office in Paris and another wave (with different participants) was run right after, thus giving us a low and high ethnic salience condition, respectively. In UK1920, one wave was ran at the time that the *Black Lives Matter* (BLM) movement spread globally (high salience condition), and earlier waves were ran about half a year before (low salience condition). In NL2020, one wave was ran around the same time that the high-salience UK1920 wave was ran, at a time that the BLM movement reached the Netherlands (high salience condition), and another wave was run about 4 months later.[6] We back up our

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[4]Vulnerability refers here to a combination of lack of decision power about one's own wealth and the possibility to end up in a position in which one is much less wealthier than another participant.

[5]See Cettolin and Suetens (2019) and Shen and Suetens (2023) for detailed accounts and analyses of the low ethnic salience waves of NL1415 and NL2020, respectively.

[6]In NL2020 additional variation in salience was induced by the researchers. Specifically, in the high salience

ethnic salience assumptions with a time trend of the intensity of Google searches on topics related to ethnicity and discrimination in the Netherlands and the UK, in line with the suggestion of Epstein and Segal (2000) to use appearance in the media as a proxy for issue salience.

Comparisons between the high and low salience conditions show that in all three experiments ethnic salience induced decision-makers to (seemingly) act more pro-socially towards vulnerable participants who belonged to an ethnic minority group: in the high salience condition they ended up with a relatively larger share of the total earnings made by the pairs of participants than in the low salience condition. To lend a causal interpretation to this result, we rely on three identification assumptions. The first assumption is that the composition of the sample does not vary between the low and high salience conditions within each experiment. Balancing tables showing that the samples do not systematically differ between low and high salience conditions underscore the plausibility of this assumption. The second assumption is that pro-sociality in general is not affected by ethnic salience nor follows a certain time trend, an assumption which is supported by the finding that ethnic salience condition did not have a meaningful effect on the share of earnings of the vulnerable participants if they belonged to the majority. The third assumption is that there are no factors other than ethnic salience in the periods of study that have had a general effect on behavior towards ethnic minorities.

In general, there are three possible interpretations of the results. The first of these is that ethnic salience has spurred decision-makers to reveal their "genuine" social preferences by having triggered them to pay more attention to the ethnicity of the interaction partner(s). The second interpretation is that ethnic salience has made decision-makers more empathic with minority interaction partners, thus leading to a change in social preferences involving minority partners. Third, ethnic salience may have made it more likely that decision-makers matched to a minority interaction partner would anticipate that the research study was about ethnic discrimination, thereby inducing them to act more pro-socially towards them than they otherwise would, an effect that would be an outing of social desirability bias. Social desirability bias is a well-known bias in experiments and surveys; it refers to participants responding or behaving in a more socially acceptable way than they would behave otherwise, for example, because they are concerned about their social image or reputation towards the researchers (e.g. Levitt and List, 2007). Under this interpretation, ethnic salience leads individuals to make choices that are seemingly more pro-social if these choices affect a minority partner and to less taste-based discrimination against them than justified on the basis of genuine social preferences.

We argue that the latter interpretation is the more plausible interpretation. We show that ethnic salience has not led to heterogeneous effects depending on the decision-makers' attitudes towards ethnic diversity and multiculturalism, which is what ought to be expected if it were merely to attract attention to the ethnic background of a matched participant (e.g. Colussi et al., 2021). We also show that the global spread of the BLM movement or the attack on the

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condition, decision-makers received information about the country of birth of the partner's parents (either the Netherlands, Morocco or Turkey), whereas such information was not provided in the low salience condition.

**Table 1: Overview of Experiments**

| Ethnic salience | NL2020 | UK1920 | NL1415 |
|---|---|---|---|
| **Low** | | | |
| Signaling ethnicity: | first name | white/non-white | first name |
| Timing: | December 7-29 , 2020 | October 11, 2019 & January 7-8, 2020 | December 1-31, 2014 |
| **High** | | | |
| Signaling ethnicity: | first name & ethnicity information | white/non-white | first name |
| Timing: | July 6-28, 2020 | July 7 & 10, 2020 | February 2-24, 2015 |
| Trigger of ethnic salience: | revealing information about the country of birth of the recipient's parents (The Netherlands, Turkey or Morocco) | international mass protests in support of the Black Lives Matter movement & Black Lives Matter banner on Prolific (June-July 2020) | Charlie Hebdo shooting in Paris by members of the Islamic terrorist group Al-Qaeda (January 7, 2015) |
| Valence: | positive | positive | negative |
| Country: | the Netherlands | United Kingdom | the Netherlands |

Charlie Hebdo office have not led to a similar change in political preferences in respectively the UK and the Netherlands as the choices in the experiments. Finally, we connect the behavioral data in the NL experiments to a proxy for the decision-makers' proneness to social desirability bias, which was elicited in an independent survey; we illustrate that choices affecting a vulnerable minority partner but not those affecting a vulnerable majority partner are related to this proneness proxy.

## 2 The data

The data come from three experiments with incentivized decisions designed to study ethnic discrimination. The experiments share four key features. First, participants are from the general population. Second, decision-makers belong to the native majority group and make choices that affect a pair of participants, of which one is *vulnerable*. Vulnerability refers to the reference payoff being (weakly) lower than that of the paired participant and having no control over the ultimate payoff distribution in the pair (this is decided by the decision-maker). Third, the experiments include treatment variation in the background of the vulnerable participant in the sense that the latter either belongs to the native majority group or to an ethnic minority group. Fourth, each of the experiments includes two conditions that differ in the extent of *ethnic salience*. Ethnic salience in the context of this paper refers either to the salience of the ethnic background of the vulnerable participant, or to ethnic issue salience.

Table 1 provides an overview of the main design features of the three experiments, labeled NL2020, UK1920, and NL1415, and the triggers of alleviated ethnic salience.

Figure 1 shows time trends of Google searches in the Netherlands and the UK on topics

**Figure 1: Trends in ethnic salience**
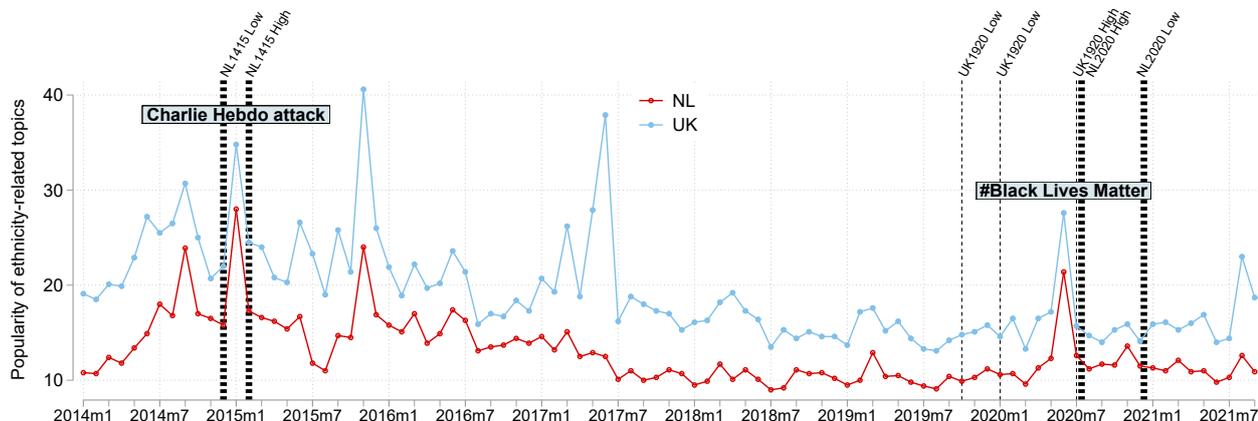


*Notes*: Data are based on trends in the Netherlands and the UK of Google searches (Google Trends) on ethnicity-related topics (including ethnic group, racism, immigration, Black people, Muslim, terrorism, Islam, Al Qaeda). Data points represent the number of times the above-mentioned topics have been searched for on Google in proportion to all searches on all topics of the given geography and time range (scaled on a range of 0 to 100). The vertical dashed lines show the timing of the different waves in the experiments.

related to ethnic background and discrimination between 2014 and 2021. The purpose is to illustrate that search intensity on these topics peaked right before some of the experimental waves took place, which provides a justification for our assumption that ethnic salience was high at the point of decision-making in these waves. This applies in particular to the February 2015 wave of NL1415, which was fielded about three weeks after the terrorist attack on the Charlie Hebdo office in Paris, and to the July 2020 wave of UK1920, which took place a few weeks after the BLM movement and protests spread globally.

## 2.1 Experiment in the Netherlands in 2020

A first source of data is an experiment conducted in the Netherlands in July and December 2020, which we refer to as NL2020. The sample was drawn from the Longitudinal Internet Studies for the Social Sciences (LISS), managed by CentERdata, a research institute located on the campus of Tilburg University. The panel consists of about 7000 individuals in 4500 households and is based on a true probability sample of households drawn from the population register of Statistics Netherlands.[7]

The decision-makers in the experiment and their parents were born in the Netherlands. They made 42 binary choices that determined how an amount of money was allocated to themselves and a random anonymous recipient from the sample. The recipients were born in the

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[7]The households in the panel are first recruited through a letter and a brochure explaining the nature of the panel study, and then either contacted by phone or visited at home. Households that have no internet connection are provided with the necessary technology in order to participate by means of their television. See https://www.lissdata.nl for detailed information about the panel.

Netherlands and between 20 and 40 years old. They were either a member of the same majority group as the decision-maker or of an ethnic minority group (Turkish or Moroccan). In order to signal the ethnic background, decision-makers were communicated the first name of the matched recipient.[8] We refer to the treatments in which the recipient had a native Dutch background as *Majority* and to the treatments with a minority recipient as *Minority*. Decision-makers were informed that there was a 10 percent chance that one randomly selected choice (out of the 42) would be paid out for real. The full set of instructions and the lists of names used to represent recipients are in Section A of the Appendix.

In the wave ran in July 2020, decision-makers were also provided information about the place of birth of the recipient's parents (the Netherlands, Turkey or Morocco), whereas in the December 2020 wave such information was not included. We refer to the December wave as the Low condition and to the July wave as the High condition, respectively referring to the relatively low and high degree of ethnic salience.[9]

Table 2 includes statistics by treatment on a range of socio-demographic characteristics of the decision-makers (gender, age, income, education, population density of the place of residence and civil status). The table also include the intention expressed to vote for far-right political parties in December 2019, well before the experiment took place. It can be seen in the table that the wave with High and Low salience are well-balanced in terms of the measured characteristics.

After decision-making had ended, the participants went through a post-experimental questionnaire including a number of post-evaluation questions and a question on what they thought was the purpose of the study. In the open answers given to the latter question, we identified two main themes, namely social preferences and ethnicity-related.[10] Table 2 shows how the answers to this latter question differed between the Low and High ethnic salience conditions. In particular, significantly more participants in High matched to a *Minority* recipient believed that the study involved an ethnicity-related topic than participants in Low matched to a *Mi-*

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[8]The allocated name was randomly drawn from a list of 10 names that corresponded to the ethnic background and gender of the recipient. The list was constructed based on the most common names in the corresponding category in the LISS panel. Because of privacy regulations we could not use the true name.

[9]The experiment was run by Sheng and Suetens for the purpose of structurally estimating social preference functions with parameters depending on the ethnic background of the involved individuals, using representative samples in the Netherlands and Germany (pre-registered at https://doi.org/10.17605/OSF.IO/469G2). The first wave was conducted in the Netherlands only, and after the analysis of the Dutch data had revealed that decision-makers seemingly acted more pro-socially towards a minority recipient than towards a majority recipient, the researchers adjusted the instructions in the German wave. Specifically, they removed the information about the birth place of the recipient's parents, speculating that the information could have revealed the purpose of the experiment to the decision-makers and trigger social desirability bias. After discovering that the German wave, ran in October 2020, showed no positive discrimination, the researchers ran another wave in the Netherlands in December 2020, where the additional information was removed. That allowed identifying whether the difference between the results for the Netherlands and Germany was due to a Dutch-German behavioral difference or to the difference in ethnic salience. The December wave in the Netherlands was run using a sample drawn from the LISS panel, different from the July 2020 wave.

[10]An independent coder, not aware of the purpose of our research, classified the answers of the participants in the experiment into categories social preferences and/or ethnicity-related based on lists that included keywords related to the respective categories.

## Table 2: Balancing table NL2020

| | Minority | | | Majority | | |
|---|---|---|---|---|---|---|
| | High | Low | *P*-value | High | Low | *P*-value |
| Male | 0.48 | 0.46 | 0.427 | 0.47 | 0.48 | 0.805 |
| Age | 54.62 | 54.64 | 0.979 | 54.35 | 54.03 | 0.802 |
| Personal net income | 1721.79 | 1762.62 | 0.535 | 1654.79 | 1743.39 | 0.515 |
| Education | | | 0.669 | | | 0.164 |
| Primary | 0.07 | 0.05 | | 0.06 | 0.08 | |
| Junior high | 0.21 | 0.21 | | 0.24 | 0.19 | |
| High school | 0.10 | 0.10 | | 0.11 | 0.08 | |
| Junior college | 0.25 | 0.26 | | 0.25 | 0.25 | |
| College | 0.24 | 0.26 | | 0.25 | 0.27 | |
| University | 0.14 | 0.12 | | 0.10 | 0.13 | |
| Population density | | | 0.822 | | | 0.159 |
| < 500 | 0.24 | 0.24 | | 0.26 | 0.21 | |
| 500-1'000 | 0.20 | 0.22 | | 0.21 | 0.23 | |
| 1'000-1'500 | 0.20 | 0.18 | | 0.18 | 0.21 | |
| 1'500-2'500 | 0.20 | 0.21 | | 0.22 | 0.19 | |
| > 2'500 | 0.17 | 0.15 | | 0.13 | 0.16 | |
| Civil status | | | 0.788 | | | 0.917 |
| Married | 0.51 | 0.55 | | 0.55 | 0.56 | |
| Separated | 0.00 | 0.00 | | 0.00 | 0.00 | |
| Divorced | 0.11 | 0.10 | | 0.11 | 0.09 | |
| Widowed | 0.07 | 0.06 | | 0.07 | 0.06 | |
| Never married | 0.31 | 0.28 | | 0.27 | 0.29 | |
| Far Right | 0.13 | 0.13 | 0.898 | 0.13 | 0.12 | 0.653 |
| Research purpose | | | | | | |
| Ethnicity-related | 0.13 | 0.04 | 0.000 | 0.00 | 0.00 | 0.316 |
| Social preferences | 0.54 | 0.58 | 0.133 | 0.58 | 0.60 | 0.459 |
| Observations | 612 | 631 | | 408 | 409 | |

*Notes:* All variables except income are categorical or binary variables. Associated *P*-values based on $\chi^2$ tests. The *P*-values associated with income are based on *t*-tests. Education levels refer to (the Dutch) basisonderwijs, VMBO, HAVO/VWO, MBO, HBO, and WO (ordered from primary to university). Population density represents the surrounding address density per km2. Far Right is equal to 1 for participants who intent to vote for Party of Freedom (PVV) or Forum for Democracy (FvD). Research purpose is based on participants' responses to the question "What do you think is the research purpose of the study?", which are divided into ethnicity-related topics and social preferences.

*nority* recipient. Yet perceptions about social preferences as a theme are not sensitive to ethnic salience, nor are perceptions of participants matched to a *Majority* recipient.

## 2.2 Experiment in the UK in 2019-2020

Our second data source is an experiment performed in the UK on the Prolific online platform (www.prolific.co), to which we refer as UK1920. The first waves of the experiment were run in October 11, 2019 and January 7-8, 2020 and the second wave was run in July 7&10, 2020. For the purpose of the current paper, it is relevant information that the first wave was run at a time

when there were no major events going on in the UK or Europe related to ethnic minorities, as can be seen in Figure 1.

The second wave, instead, was run not long after mass protests broke out in several parts of the world in the first half of June 2020, including the UK, in support of the Black Lives Matter (BLM) movement. BLM is a decentralized political and social movement that seeks to highlight racism, discrimination, and inequality experienced by black people. Especially after the brutal murder of George Floyd by a police officer on May 26, 2020 in Minneapolis, BLM gained increasing support among whites in the US, which spilled over to other parts of the world. Half of the Britons supported it in the summer of 2020 according to an Ipsos survey.[11] The events were extensively covered in the media, resulting in increased interest in ethnic topics, as illustrated in Figure 1. At the time of the second wave of the experiment, the Prolific platform also included a banner on their homepage in support of BLM. This evidence indicates that it is plausible to assume that the ethnic salience among participants in the second wave of the experiment was higher than that among participants in the first wave. We refer to the second wave as the High salience condition and the first wave as the Low salience condition.

The decision-maker participants in the experiment made choices in the role of a "spectator" and constituted a representative sample of the UK population in terms of age and sex. They were faced with a pair of "agents" who had made investment decisions in an investment game played in an earlier phase of the experiment. The agents were all students between 18 and 25 years old, residing in the UK. In the investment game, they were provided with 50 tokens, which they could either keep or invest fully in a risky lottery that would triple the amount to 150 tokens with 50 percent probability. 80 percent of the agents chose to invest their 50 tokens, implying that most of them ended up with either 150 or 0 tokens. It is these observations that we use in our data analysis. The instructions are in Section B in the Appendix.

The spectators were informed about the investment game, and about the decisions and outcomes of two agents. Their task was to decide whether to reallocate tokens between the agents. They could opt (i) not to reallocate, (ii) to reallocate and equalize the earnings of the agents, or (iii) to partially reallocate, in which case the high earner would get 110 tokens and the low earner 40 tokens.[12] Crucially, apart from the age range and country of residence, which were the same across all agents, the spectators were informed about the ethnicity of the agents (white or non-white). The pairing of agents was done in such a way that most spectators faced one white and one non-white agent, and we uniquely use data from mixed pairs in the analysis. All spectators were white.[13] To keep the terminology consistent across the three experiments,

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[11]See https://www.ipsos.com/en-uk/half-britons-support-aims-black-lives-matter-movement.

[12]Notice that spectators on July 7, 2020 were not restricted to these three options but could reallocate freely. Given that these spectators engaged in positive discrimination of non-white agents, in contrast to what we found in the earlier waves ran in October 2019 and January 2020, we decided to run another wave, on July 10, 2020, with the same choice design as in the earlier waves. That would inform us about the source of the differential behavior (due to design differences or the timing of the experiment). Since the results on July 7 and July 10 were similar, and for the sake of simplicity and statistical power, we merge the two sets of spectator choices into one July wave.

[13]We preselected spectators and agents that satisfied the mentioned criteria by using basic demographic informa-

**Table 3: Balancing table UK1920**

| | Minority | | | Majority | | |
| --- | --- | --- | --- | --- | --- | --- |
| | High | Low | *P*-value | High | Low | *P*-value |
| Male | 0.47 | 0.50 | 0.710 | 0.54 | 0.52 | 0.770 |
| Age | | | 0.435 | | | 0.258 |
|   18-32 | 0.28 | 0.32 | | 0.30 | 0.20 | |
|   33-48 | 0.28 | 0.32 | | 0.23 | 0.33 | |
|   49-64 | 0.34 | 0.33 | | 0.37 | 0.38 | |
|   65+ | 0.10 | 0.03 | | 0.09 | 0.08 | |
| Education | | | 0.935 | | | 0.166 |
|   Secondary | 0.21 | 0.22 | | 0.19 | 0.20 | |
|   A-level/college/professional | 0.37 | 0.32 | | 0.40 | 0.27 | |
|   Bachelor | 0.24 | 0.27 | | 0.29 | 0.37 | |
|   Master | 0.16 | 0.18 | | 0.12 | 0.12 | |
|   PhD | 0.03 | 0.02 | | 0.01 | 0.05 | |
| Residence type | | | 0.904 | | | 0.042 |
|   Village | 0.25 | 0.25 | | 0.20 | 0.32 | |
|   Town | 0.51 | 0.53 | | 0.54 | 0.37 | |
|   City | 0.24 | 0.22 | | 0.26 | 0.32 | |
| Municipality population size | | | 0.000 | | | 0.001 |
|   < 10'000 | 0.22 | 0.00 | | 0.19 | 0.00 | |
|   10'000-50'000 | 0.28 | 0.27 | | 0.23 | 0.37 | |
|   50'000-100'000 | 0.16 | 0.25 | | 0.22 | 0.18 | |
|   100'000-500'000 | 0.16 | 0.13 | | 0.19 | 0.13 | |
|   500'000-1'000'000 | 0.09 | 0.22 | | 0.10 | 0.15 | |
|   > 1'000'000 | 0.09 | 0.13 | | 0.08 | 0.17 | |
| Observations | 60 | 225 | | 60 | 227 | |

*Notes:* All variables are categorical or binary variables, with associated *P*-values based on $\chi^2$ tests.

we refer to the condition in which the non-white agent started out with 0 tokens (and the white agent with 150 tokens) as *Minority* and to the mirror condition as *Majority*.

Table 3 shows that the different treatments are balanced in terms of gender, age, education and residence type. There is some statistically significant imbalance in the municipality population size, with fewer individuals living in very small municipalities or villages in the waves with low ethnic salience than in the wave with high ethnic salience. It will thus be important to control for this variable in the regressions that estimate the effect of ethnic salience.

## 2.3   Experiment in the Netherlands in 2014-2015

Our third data source is a trust game experiment conducted with the LISS sample in the Netherlands, to which we refer as NL1415. Similarly to UK1920, the first wave was conducted at a time that was not characterized by particular noteworthy events related to ethnic minorities,

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tion collected by Prolific.

namely in December 2014, as can be seen in Figure 1.[14] Yet the second wave, conducted in February 2015, shortly followed shootings that took place on January 7, 2015 in the offices of the newspaper *Charlie Hebdo* in Paris by two men who identified themselves as part of an Islamic terrorist group. The men were second-generation immigrants, born in France, whose parents were born in Algeria. The shootings killed twelve people and led to demonstrations in France and surrounding countries, including the Netherlands, in which *"Je suis Charlie"* became a common slogan. The events received substantial attention in the media, and were also on the mind of people living in the Netherlands, as shown in Figure 1. We therefore deem it plausible to assume that the wave of the experiment conducted in December 2014 is associated to low ethnic salience, and the wave in February 2015 to high ethnic salience.

In contrast to NL2020 and UK1920, ethnic minorities (in particular those associated with a Muslim background) are now presented negatively in the High condition, which is due to the fact that the direct culprits have a minority background and the victims belong to the majority.

The experiment consisted of three trust games that were displayed simultaneously to the participants. Participants were randomly allocated to the role of trustor or trustee. Each trustor was asked to decide whether to trust the matched trustee or not. If the trustor did not trust, they earned 35 Euros each. If the trustor instead invested trust, then earnings depended on the trustee's decision. If the trustee reciprocated trust, then they earned either 40, 60 or 80 Euros each (depending on the game) and if the trustee did not reciprocate trust, the trustor earned 20 Euros and the trustee earned 85 Euros. Reciprocation choices of trustees were elicited using the strategy method. In both the High and the Low conditions, 5 pairs out of approximately 200 were randomly chosen and paid according to their decision for one choice situation randomly drawn from the three.

Trustees were all native Dutch and trustors where either native Dutch or had a non-Western immigration background.[15] Trustors and trustees were informed about their partner's first name, gender and age range (the latter fixed between 16 and 89 years old). The first name provided a non-intrusive signal of the ethnic background of the partner without revealing personal information, thus generating between-subjects variation in the ethnic background of the trustor for the trustee.[16] In what follows, we focus on reciprocation choices of trustees and refer to the treatment in which the trustor had a native Dutch background as *Majority* and to the treatments in with the trustor was a (first- or second-generation) immigrant as *Minority*.

Table 4 shows that High and Low are well-balanced in terms of gender, income, education, population density of the place of residence and intention to vote for the Far Right (measured in December 2013). There are marginally significant imbalances in terms of age and civil status, but these can be controlled for by including individual characteristics as control variables in regressions on the effect of ethnic salience.

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[14]See Cettolin and Suetens (2019) for a detailed account of the December 2014 wave.

[15]Trustors in the latter group were either born outside the Netherlands, or had at least one parent born elsewhere.

[16]A separate laboratory experiment conducted with Dutch students revealed that in 89% of the cases it was correctly perceived whether a first name is of a native Dutch person or not (see Cettolin and Suetens, 2019).

**Table 4: Balance table for NL1415**

| | Minority | | | Majority | | |
| | High | Low | *P*-value | High | Low | *P*-value |
|---|---|---|---|---|---|---|
| Male | 0.48 | 0.49 | 0.905 | 0.52 | 0.49 | 0.556 |
| Age | 50.31 | 52.49 | 0.085 | 52.54 | 51.84 | 0.599 |
| Personal net income | 1444.34 | 1500.67 | 0.446 | 1464.12 | 1502.80 | 0.628 |
| Far Right | 0.08 | 0.09 | 0.731 | 0.10 | 0.09 | 0.648 |
| Education | 3.79 | 3.86 | 0.522 | 3.67 | 3.60 | 0.576 |
|    Primary | 0.05 | 0.04 | | 0.07 | 0.08 | |
|    Junior High | 0.19 | 0.23 | | 0.22 | 0.25 | |
|    High | 0.12 | 0.08 | | 0.12 | 0.08 | |
|    Junior College | 0.26 | 0.25 | | 0.25 | 0.26 | |
|    College | 0.30 | 0.30 | | 0.24 | 0.21 | |
|    University | 0.08 | 0.11 | | 0.10 | 0.12 | |
| Population density | 3.03 | 2.94 | 0.295 | 2.90 | 2.94 | 0.740 |
|    < 500 | 0.14 | 0.15 | | 0.16 | 0.18 | |
|    500-1'000 | 0.2 | 0.25 | | 0.23 | 0.21 | |
|    1'000-1'500 | 0.28 | 0.23 | | 0.24 | 0.22 | |
|    1'500-2'500 | 0.23 | 0.26 | | 0.27 | 0.25 | |
|    > 2'500 | 0.15 | 0.11 | | 0.10 | 0.14 | |
| Civil status | 2.57 | 2.33 | 0.069 | 2.35 | 2.45 | 0.450 |
|    Married | 0.54 | 0.61 | | 0.62 | 0.56 | |
|    Separated | 0.01 | 0.00 | | 0.00 | 0.06 | |
|    Divorced | 0.09 | 0.08 | | 0.05 | 0.09 | |
|    Widowed | 0.06 | 0.06 | | 0.06 | 0.08 | |
|    Never married | 0.30 | 0.25 | | 0.27 | 0.26 | |
| Observations | 355 | 362 | | 322 | 329 | |

*Notes:* All variables except income are categorical or binary variables, with associated *P*-values based on $\chi^2$ tests. The *P*-values associated with income are based on *t*-tests. Far Right is equal to 1 for participants who intent to vote for Party of Freedom (PVV) or Forum for Democracy (FvD). Education levels refer to (the Dutch) basisonderwijs, VMBO, HAVO/VWO, MBO, HBO, and WO (ordered from primary to university). Population density represents the surrounding address density per km2.

# 3 Empirical strategy

The first step of our empirical strategy is to study whether (majority) decision-makers behave differently towards ethnic minorities in High than in Low. For this purpose we estimate for the three experiments the effect of being part of a High salience condition on behavior of decision-makers towards a minority participant. To allow for a uniform representation of results and a comparison of effect sizes across the three experiments, we use as our main dependent variable the standardized share of earnings of the (vulnerable) minority participant in the earnings of majority-minority pairs. For NL2020 the variable refers to the earnings of the minority recipient divided by the sum of earnings made by the majority decision-maker and minority recipient. For UK1920 the variable refers to the earnings of the minority agent divided by the sum of earnings made by the majority and minority agent. For NL1415 the variable refers to the earnings of the minority trustor divided by the sum of earnings made by the majority trustee and

minority trustor. We regress for each experiment the (standardized) earnings share of the minority participant on an indicator of high ethnic salience. Across the three experiments we find that ethnic salience increases the share of earnings of minority participants (Section 4).

To lend a causal interpretation to this effect, we rely on three identification assumptions. The first assumption, supported by evidence in Table 2, Table 3, and Table 4 is that there are no systematic differences between decision-makers across the low and high salience conditions within the experiments. The second assumption is that the general degree of pro-sociality is not affected by ethnic salience nor follows a certain time trend, an assumption which we test by estimating whether decision-makers also act more pro-socially towards vulnerable majority partners with High than with Low ethnic salience. We find that this is not the case: ethnic salience has no significant effect on the earnings share of vulnerable majority participants. Moreover, we find that the difference-in-differences effect is significantly positive in two out of the three experiments. The third assumption is that there are no factors in the periods of study other than ethnic salience induced by the Charlie Hebdo attack, BLM, or adjusted instructions that had the potential to generate a similar effect on choices affecting ethnic minorities. This occurs to us as a plausible assumption.

The second step of our strategy is to explore three possible interpretations of the main result. In general, we consider three possible interpretations of the change in behavior towards minority partners caused by an increase in ethnic salience. First, the increase in ethnic salience may have made it more likely that decision-makers behaved according to their preferences because it made them pay more attention to (signals about) the ethnic background of the interaction partner(s). Second, the increase in ethnic salience made decision-makers more empathic with ethnic minorities, in the sense that it led to an increase in the weight they put on the welfare of ethnic minorities in their utility function (assuming other-regarding preferences as e.g. in Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000). Third, the results are due to social desirability bias, implying that ethnic salience induced participants to respond in a more socially acceptable or appropriate way than they would if they would act according to their genuine preferences. Contexts in which participants feel observed when making choices that affect the payoffs of others are prone to such bias (see Levitt and List, 2007, for a discussion). In Section 4 we explore these interpretations, amongst others by connecting the experimental data to survey data available from a post-experimental questionnaire or from other survey data sources.

## 4 Results and interpretation

### 4.1 Main results

Table 5 shows regression results on the effect of ethnic salience on the earnings share of vulnerable minority and majority participants across the three experiments, as well as the dif-in-dif effects. As can be seen in the upper part of the table, the earnings share of minority participants in treatments characterized by high ethnic salience is substantially larger across the three experiments ($p < 0.01$ in all three cases). Majority decision-makers thus acted seemingly more pro-social towards minorities, the higher the ethnic salience.

12

### Table 5: Effect of ethnic salience on earnings share

| Dep. var.:<br>Earnings share | NL2020 | | UK1920 | | NL1415 | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **Minority** | | | | | | |
| High | 0.206*** | 0.199*** | 0.506*** | 0.560*** | 0.255*** | −0.040 |
| | (0.059) | (0.059) | (0.146) | (0.154) | (0.075) | (0.078) |
| Constant | −0.060 | −0.443** | −0.319** | −0.519* | −0.118** | 0.058 |
| | (0.040) | (0.202) | (0.129) | (0.269) | (0.055) | (0.233) |
| Observations | 1,243 | 1,234 | 289 | 288 | 717 | 646 |
| R-squared | 0.010 | 0.019 | 0.038 | 0.095 | 0.016 | 0.006 |
| **Majority** | | | | | | |
| High | 0.061 | 0.067 | 0.058 | −0.012 | −0.038 | −0.040 |
| | (0.066) | (0.065) | (0.128) | (0.140) | (0.077) | (0.078) |
| Constant | −0.094** | −0.357* | −0.128 | −0.046 | 0.010 | 0.058 |
| | (0.044) | (0.208) | (0.112) | (0.280) | (0.054) | (0.233) |
| Observations | 817 | 809 | 289 | 289 | 651 | 646 |
| R-squared | 0.001 | 0.021 | 0.001 | 0.041 | 0.000 | 0.006 |
| **Diff-in-diff** | | | | | | |
| Minority | 0.034 | 0.045 | 0.058 | 0.077 | −0.127* | −0.120 |
| | (0.059) | (0.060) | (0.128) | (0.134) | (0.077) | (0.077) |
| High | 0.061 | 0.066 | −0.191 | −0.165 | −0.038 | −0.042 |
| | (0.066) | (0.065) | (0.170) | (0.172) | (0.077) | (0.078) |
| Minority × High | 0.145 | 0.131 | 0.448** | 0.399** | 0.292*** | 0.288*** |
| | (0.088) | (0.088) | (0.195) | (0.196) | (0.108) | (0.108) |
| Constant | −0.094** | −0.434*** | −0.128 | −0.213 | 0.010 | −0.001 |
| | (0.044) | (0.149) | (0.112) | (0.204) | (0.054) | (0.163) |
| Observations | 2,060 | 2,043 | 578 | 577 | 1,368 | 1,354 |
| R-squared | 0.009 | 0.019 | 0.028 | 0.054 | 0.009 | 0.016 |
| Controls | No | Yes | No | Yes | No | Yes |

*Notes:* Earnings share is standardized. Standard errors in parentheses. Statistical significance markers: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

As shown in the middle and bottom part of the table, ethnic salience has no significant effect on the earnings share of majority decision-makers. Moreover, the effect on the earnings share of vulnerable minority participants is significantly different from the effect on the earnings share of vulnerable majority participants for all three experiments. Ethnic salience is thus not associated with a general change in pro-sociality. Figure 2 visualizes the differential effect of ethnic salience on behavior towards minority partners as compared to majority partners.

In what follows we provide an interpretation of the results. In Section 4.2 we provide evidence that increased attention is most likely not the key reason why ethnic salience has led to choices that made minority agents better off. We then argue in Section 4.3 that the data are consistent with an interpretation in terms of social desirability bias rather than reflecting a genuine change in preferences.

**Figure 2: Main results**
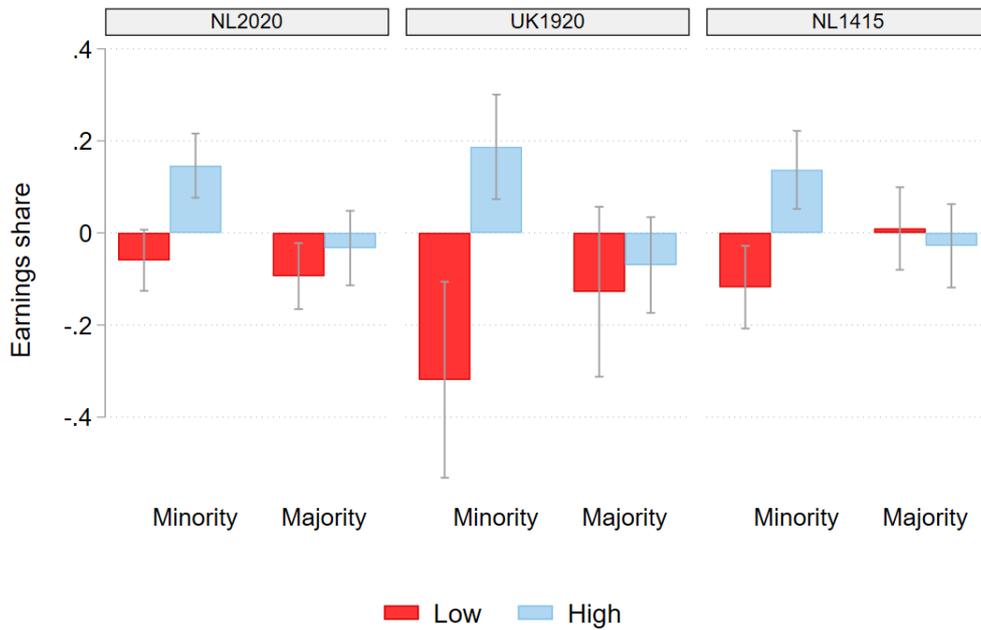
*Notes*: The figure shows for the three experiments standardized earnings shares of the vulnerable participants depending on the ethnic background of the participant (Majority or Minority) and the salience condition (High or Low).

## 4.2 Increased attention

We first explore whether ethnic salience has made it more likely that preferences were revealed without changing these preferences by triggering attention to the ethnic background. If the salience effect would be a matter of increased attention, then it would arguably be polarizing: individuals with a rather negative attitude to ethnic minorities would become less pro-social towards minorities and individuals with a rather positive attitude to ethnic minorities would become more pro-social towards them, especially if they expect that a group of decision-makers acts particularly anti-socially towards them.[17]

Another possible sign that increased attention is an important mechanism would be that ethnic salience has led to a shift in beliefs about the income of minority recipients. Specifically, if at least some people are inequality averse, they may be inclined to allocate more money (i.e. act more pro-socially) towards others, the poorer they believe these others to be. If members of a minority group are typically believed to be poorer than members of the majority, and ethnic salience made decision-makers more attentive to the ethnic background of the recipients, then ethnic salience may have shifted the beliefs and induced decision-makers to allocate relatively

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[17]Colussi et al. (2021) find that due to an increased salience of ethnic minorities, there is an increased tendency to vote for far-right political parties, and attribute this effect to increased attention. They also find an increased tendency to vote for pro-immigrant left-wing political parties. They explain this last effect as a second-order salience effect, triggered by a reaction to the increased support for the far-right parties.

more money to minority recipients than to majority recipients. In what follows, we use additional data to show that there are no signs of ethnic salience having polarizing effects, nor that shifts in beliefs about income are responsible for the salience effects.

**Polarizing effects**    We study whether ethnic salience induced decision-makers with a rather negative attitude to ethnic minorities to act (weakly) less pro-socially towards minorities and individuals with a rather positive attitude to ethnic minorities to act (weakly) more pro-socially for NL2020 and NL1415.[18] To do so, we link the data gathered in the experiments to the LISS Core Survey on Politics and Values using an individual identification key.[19] The survey is conducted yearly among LISS panelists and includes questions related to attitudes towards immigrants and ethnic diversity. We use the survey conducted in December 2019 to link to the NL2020 experimental data and the survey conducted in December 2013 to link to the NL1415 data, so there is at least a half a year time gap between survey and experiments.

We perform analyses that split the sample of decision-makers according to their attitude to ethnic minorities, which we compile from ratings of six normative statements related to immigration and ethnic diversity in society on a seven-points Likert scale (see also Achard et al., 2022; Cettolin and Suetens, 2019). The statements are included in Table D.1 in the Appendix and after coding negatively framed questions in reverse, we average the ratings to obtain a single index, which we refer to as attitude index. We have information about this index for 96 and 81 percent of the decision-makers in NL2020 and NL1415, respectively.[20] We divide the decision-makers in the experiments using a median split of the index and refer to individuals with a score above (below) the median as individuals who are rather progressive (conservative) on issues related to ethnic diversity (abbreviated as pro-diversity). We then run regressions that allow testing whether the positive effect of ethnic salience on the earnings share of vulnerable minority agents is mostly driven by individuals categorized as pro-diversity. To do so, we run a triple interaction model regressing the earnings share of the vulnerable participant on the high salience indicator, the minority treatment indicator, and a pro indicator. The polarization hypothesis posits that ethnic salience has a stronger positive effect on pro-sociality towards minorities for progressive decision-makers than for more conservative decision-makers, implying that the triple interaction term should be positive.

Table 6 reports the regression results of the triple interaction model for NL2020 and NL1415. As can be seen, both for NL2020 and NL1415 the triple interaction term is statistically not significant. This implies that the effect of salience on discrimination is not different between

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[18]For UK1920 we have no data that allow such an exercise; we only measured these attitudes in the high-salience wave but not so in the low-salience waves.

[19]The data of the LISS core surveys are publicly available at https://www.dataarchive.lissdata.nl/.

[20]The LISS Core Survey on Politics and Values also includes questions related to voting intentions, but only about 68 percent in NL1415 and 60 percent in NL2020 filled out political party preferences. Since those who filled out the questions differ significantly in many respects from those who did not fill out the questions (for example, they have a more positive attitude to ethnic diversity), we preferred to use the attitudes data to perform an analysis of polarization.

**Table 6: Heterogeneous effects depending on attitude to ethnic diversity**

| Dep. var.: | NL2020 | | NL1415 | |
| Earnings Share | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| High | 0.075 | 0.088 | −0.100 | −0.109 |
| | (0.090) | (0.090) | (0.136) | (0.138) |
| Minority | 0.037 | 0.054 | −0.379*** | −0.341** |
| | (0.086) | (0.087) | (0.140) | (0.142) |
| High × Minority | 0.061 | 0.031 | 0.591*** | 0.565*** |
| | (0.122) | (0.123) | (0.193) | (0.196) |
| Pro-diversity | 0.202** | 0.196** | 0.004 | −0.002 |
| | (0.086) | (0.088) | (0.123) | (0.125) |
| High × Pro-diversity | −0.002 | −0.028 | 0.058 | 0.056 |
| | (0.132) | (0.132) | (0.176) | (0.180) |
| Minority × Pro-diversity | 0.024 | 0.005 | 0.345* | 0.291 |
| | (0.118) | (0.119) | (0.176) | (0.177) |
| High × Minority × Pro-diversity | 0.139 | 0.178 | −0.336 | −0.284 |
| | (0.178) | (0.178) | (0.247) | (0.250) |
| Constant | −0.202*** | −0.484*** | −0.024 | 0.200 |
| | (0.062) | (0.153) | (0.099) | (0.203) |
| Observations | 1,984 | 1,968 | 1,107 | 1,093 |
| R-squared | 0.026 | 0.029 | 0.022 | 0.025 |
| Controls | No | Yes | No | Yes |

*Notes:* Robust standard errors in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Pro-diversity means above median score on the immigration attitudes scale.

progressive and conservative decision makers. Furthermore, the High × Minority interaction term has a significantly positive effect in NL1415, implying that a positive salience effect is exhibited among decision-makers who hold a rather negative attitude to ethnic minorities. If anything, effects are thus opposite to the effects that would be observed under polarization hypothesis. These findings lead us to conclude that the main effects of ethnic salience are not due polarization triggered by an increase in attention.

**Beliefs about income** For UK1920 we collected information about the decision-makers' incentivized beliefs about the income of the matched recipients in the post-experimental questionnaire.[21] We investigate whether the salience effects on the earnings share of minority agents are driven by a change in beliefs about the monthly income of minority agents as compared to that of majority agents. To do so we rerun the basic regressions, but now controlling for these beliefs. Results are reported in Table 7. As can be seen, beliefs about income difference do

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[21] The question was as follows: "What do you think is the monthly disposable income that Agent [white and non-white student] has available to spend after paying for rent and major household bills?" The answer was measured in steps of £250. The question was a part of an incentivized questionnaire where spectators were paid for their accuracy of each guess a small amount of bonus payment.

**Table 7: Effect of salience on beliefs about income**

| Dep. var.: | White more | | | Earnings share | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| High | 0.101 | 0.114* | 0.064 | 0.080 | 0.044 | 0.063 |
| | (0.071) | (0.067) | (0.128) | (0.135) | (0.130) | (0.135) |
| Minority | 0.256*** | 0.260*** | −0.165 | −0.153 | −0.093 | −0.084 |
| | (0.075) | (0.071) | (0.171) | (0.172) | (0.178) | (0.178) |
| High × Minority | −0.156* | −0.151* | 0.433** | 0.393** | 0.386* | 0.358* |
| | (0.082) | (0.078) | (0.193) | (0.195) | (0.200) | (0.201) |
| White more | | | −0.111 | −0.053 | −0.127 | 0.028 |
| | | | (0.113) | (0.116) | (0.302) | (0.308) |
| High × White more | | | | | 0.245 | 0.195 |
| | | | | | (0.279) | (0.284) |
| Minority × White more | | | | | −0.257 | −0.338 |
| | | | | | (0.239) | (0.240) |
| Constant | | | −0.124 | −0.206 | −0.124 | −0.212 |
| | | | (0.112) | (0.205) | (0.113) | (0.209) |
| Observations | 578 | 577 | 578 | 577 | 578 | 577 |
| R-squared | 0.052 | 0.1079 | 0.030 | 0.054 | 0.033 | 0.058 |
| Controls | No | Yes | No | Yes | No | Yes |

*Notes:* Models 1 and 2 report the marginal effects of probit regressions with as a dependent variable a binary variable equal to one if the decision maker believed that the white agent had a higher income than the non-white agent (labeled as *White more*). Models 3-6 report OLS results with standardized income share as the dependent variable. Robust standard errors in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

not absorb the effect of the high salience indicator. We thus conclude that shifted beliefs about the relative income of minority partners are not a key mechanism that help understanding the effect of ethnic salience on choices that affect a vulnerable minority individual.

## 4.3 Change in preferences versus bias

Having shown that increased attention is not helpful for understanding the positive effect of ethnic salience on the earnings share of minority agents, there are broadly speaking two possible interpretations left: the change in behavior either reflects a change in social preferences in the sense that decision-makers have become genuinely more pro-social towards minorities, or reflects a behavioral bias.

In the UK1920 experiment, it is in principle conceivable that the salience effects were due to individuals having turned genuinely more pro-social towards others from an ethnic minority group. The growth of the BLM movement was initiated by the brutal murder of a Black person by a white policeman, which may have induced (white) decision-makers who are sensitive to social emotions such as compassion and guilt to become more pro-social towards minorities.[22]

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[22]For example, Iyer et al. (2003) find white guilt to be predictive of support for affirmative action policies targeted

Yet for NL2020, where the high salience wave also took place after the global spread of the BLM movement but *preceded* the low salience wave by 4 months, one would expect that if BLM made individuals genuinely more pro-social towards ethnic minorities, the effect would still be seen after 4 months, when media attention abated. This is clearly not the case; the earning share of the vulnerable minority participant went down in the low salience wave of NL2020.[23] Moreover, concerning NL1415, it is also difficult to imagine that the terrorist attacks of the Charlie Hebdo office led to more empathy among people that belong to the majority population with individuals who share, in their eyes, an ethnic group identity with the terrorists (immigrants with Arab roots). Castanho Silva (2018) shows that these attacks have not had an impact on public opinions collected in the European Social Survey on, for example, xenophobia and anti-Muslim attitudes, self-reported ideologies and immigration policy preferences. Several studies have shown that Islamic terrorist attacks have, if anything, opposite effects and lead to increased hostility towards individuals with an Arab or Middle Eastern migration background (Echebarria-Echabe and Fernández-Guede, 2006; Edling et al., 2016; Finseraas et al., 2011).

To investigate further whether the seeming increase in pro-sociality towards minorities should be interpreted as a change in preferences or as indicating a bias, we explore in what follows whether ethnic salience has made political preferences shift away from parties that have an explicit anti-immigration or anti-multiculturalism agenda or towards parties that are more progressive on these issues. If these preferences have not shifted in the same direction as the behavior in the experiments, then that would raise doubts about the preferences interpretation. In a final step, we use individual data on proneness to social desirability bias that allow us to investigate whether individuals who are particularly prone to this bias respond more strongly to ethnic salience than individuals who are less prone. We take from these exercises that the bias interpretation seems more plausible than the preferences interpretation.

**Political preferences**   In UK1920 we asked decision-makers in all waves about their political position. In particular, we asked them whether they supported the Conservative Party, the Labour Party, the Liberal Democrats, the Green Party, or another party, or whether they considered themselves independent.[24] This allows us to test whether political preferences have evolved and were different in the more recent (high salience) wave than in the earlier (low salience) waves.

To test whether political preferences have changed between the low and the high salience waves, we define for UK1920 a binary variable that indicates whether or not decision-makers associate with a political party that does not oppose or even appreciates ethnic diversity (for

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at Black people in the US. Examples of studies that show that feelings of guilt can lead to more pro-social behavior are Scaffidi Abbate et al. (2022), Katelaar and Au (2003) and Nunney et al. (2022).

[23]Also, it is quite implausible that social preferences depend on how the ethnic background is signaled, for example by a name versus through providing explicit information about the background as is the case in NL2020.

[24]If we consider the election outcomes in the 2019 elections in the UK, the largest political parties, accounting for 93.9% percent of the votes, were the Conservative Party, the Labour Party, the Liberal Democrats, the Scottish National Party and the Green Party (of Commons Library, 2020).

**Table 8: Effect of salience on political preferences**

| Dep. var.: | Supported party is pro diversity (yes=1) | | | |
| --- | --- | --- | --- | --- |
| | (1) | (2) | (3) | (4) |
| High | 0.072 | 0.077 | 0.071 | 0.064 |
| | (0.055) | (0.055) | (0.052) | (0.053) |
| Observations | 448 | 448 | 545 | 545 |
| Pseudo R-squared | 0.003 | 0.099 | 0.003 | 0.068 |
| Controls | No | Yes | No | Yes |

*Notes:* Marginal effects of probit regressions based on data from UK1920. Models 1-2 take the Conservative Party as the baseline category and models 3-4 take the Conservative Party and parties in category "Other" as the baseline category. Robust standard errors in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

example, through migration or multiculturalism).[25] To classify the parties on the basis of their stance on this theme, we compiled an index based on data from the Chapel Hill Expert Survey (CHES). The CHES collects expert opinions about party positioning on ideology and policy issues and international relations for national parties in countries across the world (see https://www.chesdata.eu/).[26] From the four parties we collected information about among the decision-makers in the experiment, the Conservative Party is clearly least supportive of ethnic diversity, whereas the Labour Party, the Liberal Democrats and the Green Party are supportive to a similar degree (see Table D.2 in the Appendix for the scores of the political parties on the compiled CHES index). Therefore, we categorize the Labour Party, the Liberal Democrats and the Green Party as pro-diversity. This categorization also aligns with the revealed support of the political parties for BLM: a survey executed among members of parliament shows that only 6% of the surveyed associated to the Conservative Party reported they supported the movement, compared to 82% of those associated to the Labour Party (NFPSynergy, 2021).

We run two sets of probit regressions in which we regress the Pro-diversity political preferences indicator on the High salience indicator. In the first set of regressions we exclude data from decision-makers who do not associate with one of the four parties, implying that only decision-makers who associate with the conservatives are in the baseline category. In the second set of regressions, we include all data, implying that the baseline category now includes decision-makers who associate with the conservatives or with other unclassified parties. Notice that in all regressions we exclude data from decision-makers who reported not to associate with any party or refused to answer (covering 5 percent of the decision-makers). Table 8 reports the regression results. As can be seen, political preferences have moved somewhat in the direction of parties that are rather in favor of ethnic diversity, but not in a statistically significant way.

Next, we use evidence from another data source that provides information on the evolution

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[25]We did not collect information on political preferences in the different waves of NL2020 or NL1415.
[26]CHES-Europe covers six waves: 1999, 2002, 2006, 2010, 2014, and 2019.

**Figure 3: Evolution of political preferences in the UK**
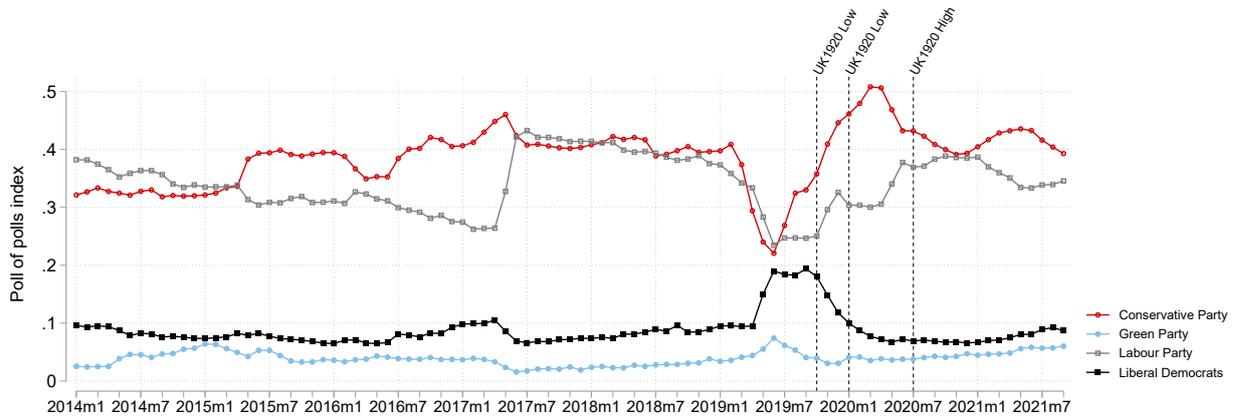


*Notes*: Polling data from POLITICO Poll of Polls – politico.eu/pollofpoll.

of political preferences, this time among the general population. In particular, we show the evolution of polled voting behavior in the UK and the Netherlands in the period January 2014 to December 2021, collected in Politico Poll of Polls. Politico aggregates data from polls collected by all polling companies across Europe that satisfy the criteria of transparency and representativeness.[27] Compared to behavioral experiments, polls are anonymous and thus increase the likelihood that "true" preferences are revealed. Figure 3 shows the evolution of polled voting behavior for the UK. As can be seen, voting intentions have evolved quite a bit between the low and high salience waves, with the Labour Party gaining popularity at the expense of the Liberal Democrats. Yet this pattern has set in well before June 2020, when the BLM protests started to spread globally. With respect to the Conservative Party, support was on an increasing trend from mid 2019 and started to decrease well before June 2020. Considering the timing of the experimental waves, it can be seen that support for the conservatives was, on average, not that different between the two low salience waves and the high salience wave. All in all, the polling data suggest that political preferences on the theme of ethnic diversity have not shifted into one particular direction due to the BLM protests.

Figure 4 shows the evolution of polled voting intentions for the Netherlands. Given that the political landscape in the Netherlands is highly scattered with more than 10 political parties having a seat in the parliament, we classified the parties into four categories based on their stance on ethnic diversity, immigration and multiculturalism, consistent with CHES data from 2017 (see Table D.2 in the Appendix). With respect to NL1415, it can be seen in the figure that

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[27]Politico requires that a poll must at a minimum include information about how it was conducted, when the fieldwork was done, who conducted it, who commissioned it and paid for it, and about the sample size, and that the polling company purposefully recruits the participants. The polls are aggregated using Kalman filtering with the last election result as a starting point. Every poll, along with its sample size and margin of error, is taken as a new piece of information to plot a trend line. Larger polls with a smaller margin of error have a bigger influence on the Poll of Polls measure, and so do more recently conducted polls compared to those that are older (www.politico.eu).

**Figure 4: Evolution of political preferences in the Netherlands**
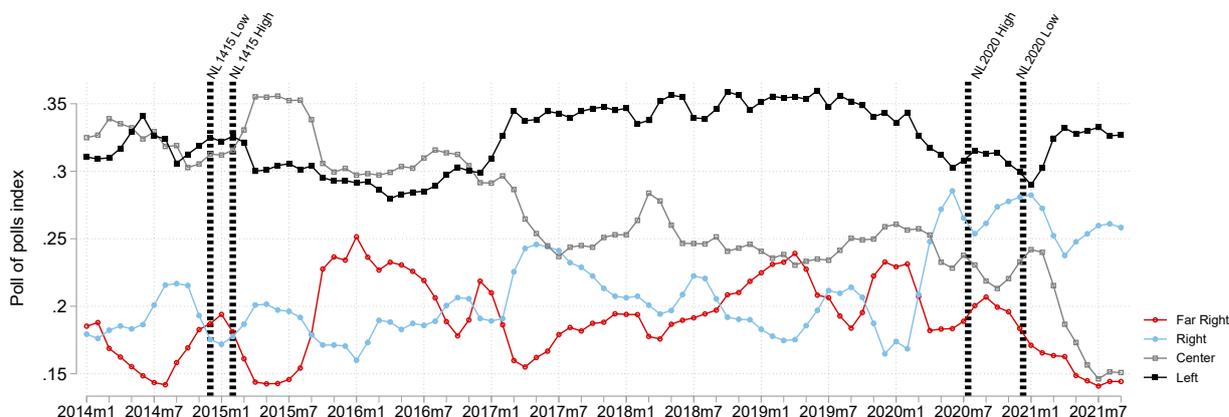


*Notes*: Polling data from POLITICO Poll of Polls – politico.eu/pollofpoll. Political parties are classified according to their stance on ethnic diversity, immigration and multiculturalism (see Table D.2 in the Appendix).

right after the Charlie Hebdo attack, in January 2015, the Far Right started to lose popularity to the benefit of the Right and, with some delay, the Center. Half a year later, with the onset of the so-called European migrant crisis in 2015, its popularity jumped up again and that of the Right and the Center declined. The popularity of the Left remained stable right after the Charlie Hebdo attack and then declined to some extent. The short-run adjustment of political preferences after the Charlie Hebdo attack is thus consistent with the effects on ethnic discrimination in the experiment. Yet, since half a year later the Far Right gained popularity again, at a level much higher than before the Charlie Hebdo attack, it is not clear whether the initial decline in popularity can be interpreted as Dutch citizens becoming more accepting of ethnic diversity and multiculturalism.

**Social desirability bias** We link the data of NL2020 and NL1415 to individual data on the Marlow-Crowne Social Desirability Scale included in the LISS Core Survey on Personality, which is executed on annual basis.[28] The scale assesses the extent to which a respondent is concerned with social approval by asking to rate the extent to which one associates with personality traits that are too good to be true (Crowne and Marlowe, 1960, see Table D.3 in the Appendix). The LISS survey includes ten items from the 33-item original scale and for each of the ten statements, respondents indicate whether the statement is true or false for them personally. The number of times they opt for the socially desirable answer (which we refer to as the SD score) is a proxy for proneness to social desirability bias. We use the 2020 wave (conducted in May and June) to match to NL2020 and the 2014 wave (conducted in November and December) to match to NL1415. Among the participants in NL1415, the SD scores for individuals in Low and High are 5.873 and 5.844, respectively ($p = 0.749$ in a $t$-test). The mean SD score of

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[28]For UK1920, data on proneness to social desirability bias are not available.

participants in NL2020 is 6.309 and 6.325 in Low and High, respectively ($p = 0.866$ in a $t$-test).[29]

We explore the role of the SD score of decision makers for understanding choices that affect a minority participant by running a triple interaction model. Particularly, we run regressions in which the earnings share of vulnerable participants is regressed on High (referring to high ethnic salience), Minority (referring to the background of the vulnerable agent), a binary variable indicating whether the SD score is above median (High SD), and interactions. The triple interaction term allows to test whether individuals who are particularly prone to social desirability bias respond more strongly to ethnic salience than individuals who are less prone, and whether the answer to this question holds in particular if the vulnerable participant has a minority background. In general, the regression results will provide information about the extent to which the SD score is correlated with behavior in general, or with behavior of decision-makers matched to a minority participant.

Table 9 shows the regression results.[30] Let us first focus on the results for NL2020. The interaction between High and Minority is positive and statistically significant, which implies that high ethnic salience induces individuals who are not that prone to social desirability bias (they have a low SD score) to give more money to the vulnerable participant if the latter has a minority background. The negative effect of the triple interaction indicates that individuals with a high SD score respond less to ethnic salience, yet the difference with low-SD individuals is statistically not significant. In any case, the results show that the general effect of ethnic salience on the earnings share of a minority partner is not due to individuals who are susceptible to social desirability bias.

We now turn to the results for NL1415. As can be seen in Table 9, the triple interaction effect is positive and qualitatively and statistically significant. The results show that with low ethnic salience, individuals with a high SD score give significantly less money to a minority partner than individuals with a low SD score, corresponding to almost 57 percent of a standard deviation, an effect which is fully undone with high ethnic salience. Yet, SD scores are not significantly related to money given to a majority partner. We conclude from these results that individuals who are prone to social desirability bias are responsible for the main effect of ethnic salience on the earnings share of vulnerable minority agents in NL1415.

Why do results differ between NL2020 and NL1415? A quite remarkable result for NL2020 is that individuals with a high SD score are generally more responsive to the ethnic background of the vulnerable agent than individuals with a low SD score, even with low ethnic salience. As can be seen in Table 9, they give significantly more money to a minority partner than towards a majority partner, with an effect size of 28.9 percent of a standard deviation, whereas the

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[29]For 1,844 out of the 2,060 individuals in NL2020 (equal to about 90 percent) and for 1,294 out of the 1,368 individuals of NL1415 (equal to 95 percent) the data can be matched to a SD score. For NL1415, the average SD score of those who participated in the experiment is 5.86, whereas it is 5.745 for those who did not participate in 2014 or 2015 experiments ($p = 0.032$ in a t-test). For NL2020, the average SD score of those who participated in the experiment is 6.317, whereas it is 6.110 for those who did not participate in 2020 ($p = 0.000$ in a t-test). Overall, individuals who are relatively sensitive to social desirability bias are thus more likely to participate in experiments.

[30]See Table D.4 for results if merely controlling for SDB rather than including interactions.

**Table 9: Heterogeneous effects depending on proneness to social desirability**

| Dep. var.: | NL2020 | | NL1415 | |
| Earnings share | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| High | −0.026 | −0.039 | 0.116 | 0.118 |
| | (0.104) | (0.104) | (0.131) | (0.131) |
| Minority | −0.150 | −0.161 | 0.244** | 0.248** |
| | (0.099) | (0.101) | (0.118) | (0.118) |
| High × Minority | 0.315** | 0.325** | −0.031 | −0.025 |
| | (0.145) | (0.146) | (0.171) | (0.171) |
| High SD | −0.026 | −0.041 | 0.157 | 0.162 |
| | (0.094) | (0.096) | (0.112) | (0.112) |
| High × High SD | 0.149 | 0.182 | −0.206 | −0.223 |
| | (0.138) | (0.138) | (0.164) | (0.165) |
| Minority × High SD | 0.289** | 0.317** | −0.569*** | −0.565*** |
| | (0.126) | (0.128) | (0.157) | (0.158) |
| High × Minority × High SD | −0.277 | −0.320* | 0.500** | 0.492** |
| | (0.188) | (0.189) | (0.224) | (0.226) |
| Constant | −0.100 | −0.474*** | −0.111 | −0.125 |
| | (0.074) | (0.164) | (0.086) | (0.176) |
| | | | | |
| Observations | 1,844 | 1,827 | 1,294 | 1,280 |
| R-squared | 0.016 | 0.024 | 0.024 | 0.029 |
| Controls | No | Yes | No | Yes |

*Notes:* SDB refers to an above median score on a 10-items Marlow-Crowne Social Desirability Bias scale. Robust standard errors in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

ethnicity of the partner has no significant effect among individuals with a low SD score (shown in the estimated effect of Minority). This general sensitivity to concerns about social desirability in NL2020 may have led to a ceiling effect of the interaction between the SD score and ethnic salience.

Why are choices of participants matched to a minority participant in NL2020 generally more sensitive to social desirability bias than those in NL1415? A possible explanation relates to the nature of decision-making; allocational decisions as those in NL2020 have been shown to be particularly sensitive to social desirability concerns and experimenter demand effects (e.g. Levitt and List, 2007; Zizzo, 2010; De Quidt et al., 2018). Arguably, the decision-making setting in NL1415 may have been less sensitive to social desirability bias because there was scope for moral wiggling with the reciprocation choices. Evidence that underscores the moral wiggling interpretation can be seen in Table 6: the combination of a significantly negative effect of the Minority indicator in NL1415 with a significantly positive effect of the interaction term Minority × Pro-diversity of about the same size implies that only decision-makers with a conservative attitude to ethnic diversity and multiculturalism discriminate against a minority partner in the low salience condition. For NL2020 no such effect is observed; the difference in seeming pro-sociality towards a minority partner and that towards a majority partner is not correlated with the decision-makers' attitude to ethnic diversity and multiculturalism in the low salience

condition (nor in the high salience condition). Given that such attitudes are typically strongly correlated with ethnic discrimination (e.g., Carlsson and Eriksson, 2017), the results suggest that choices in NL2020 affecting a minority partner already suffer from social desirability bias in the low salience condition.

Considering all pieces of evidence leads us to conjecture that social desirability bias is the main mechanism behind the effect of ethnic salience on choices involving a minority partner.

# 5   Conclusion

This paper analyzes data from three experiments aimed at measuring taste-based discrimination against ethnic minorities in the UK and the Netherlands. In experimental waves that took place right after an event that arguably increased ethnic salience, individuals who belonged to a majority group behaved seemingly more pro-social towards a vulnerable interaction partner from an ethnic minority group than in waves ran in a period with low ethnic salience.

We provide evidence that the mechanism behind this pattern relates to ethnic salience having induced individuals to adopt socially desirable behavior, which led them to treat minority partners better than they otherwise would have. First, there is no effect of ethnic salience on choices of individuals who belong to a majority group that affect a vulnerable majority partner. Second, the results are not due to decision-makers having paid more attention to the ethnicity of the interaction partner in the high ethnic salience waves because that should have led to more polarization, and this is not what we observe. Third, political preferences expressed in polls have not followed the same pattern. If anything, political parties with an anti-immigration or -multiculturalism agenda became more popular after the events that induced high ethnic salience. Finally, by connecting individual-level data on a proxy for proneness to social desirability bias to the behavioral data, we show that this proxy is meaningfully related to choices that affect a vulnerable minority partner, but not to those affecting a vulnerable majority partner.

The findings have implications for the interpretation of behavior in lab or lab-in-the-field experiments on taste-based discrimination in which decisions are made in a context without strategic uncertainty (such as, for example, dictator giving or second-mover behavior in trust or ultimatum games). In general, little or no discrimination is detected in such experiments, and this has led to the conclusion that tastes are not the most important mechanism behind discrimination in society (for example, Fershtman and Gneezy, 2001; List, 2004; Berge et al., 2020). Our findings suggest that this conclusion may need to be reconsidered: rather than interpreting the extent of taste-based discrimination observed in a particular experiment as an indicator of what can be expected in the corresponding context outside of the lab, it is more useful to interpret it as the *minimum* extent that can be expected.

The findings may also have implications for the design of policies trying to tackle discrimination. If such policies make the issue salient, then people may be encouraged to hide their discrimination and adjust their behavior towards ethnic minorities in a socially desired way only if they are or feel observed by others. Yet, their preferences may not change and they

will still discriminate in situations where the discrimination is not obvious or can be hidden or justified easily (e.g., Barron et al., 2022; Cunningham and de Quidt, 2022; Eyting, 2022).

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# Appendix - For online publication only

## A  Instructions NL2020

### A.1  For Recipients

This is a study by researchers at Tilburg University. By participating, you earn a fixed amount as stated with your survey invitation and on top of that possibly an additional amount of money that ranges between 7 and 53 euro. The additional amount depends on the choice of another participant in this study. You do not have to do anything yourself. The possible additional euro amount will be added to your user account the same way as the regular credits for survey participation.

You will be asked to answer a number of questions. Some of your answers to the questions will be used to show to other participants in this research. The other participants will however not receive any of your personal data. It is impossible for them and for the researchers to connect your answers to your personal data. Your identity and the identity of other participants is strictly confidential.

If you would like to participate, it is important to give your consent on the next screen.

I hereby give my consent for participating in this study. I confirm that I have read and understood the instructions of the study and I have been given adequate time to consider my participation. I understand that I will not earn any money if I do not give consent.

I understand that some of my answers to the questions in this research will be communicated to other participants. I understand that none of my personal data will hereby be revealed. I understand that all the data collected from my responses are anonymous and will not be linked to my identity.

I agree that if needed I will be represented in this research by a randomly chosen name from the list below.
*[list of 10 majority/minority female/male names of respondents with Dutch/Turkish/Moroccan background]*

- I GIVE CONSENT
- I DO NOT GIVE CONSENT

### A.1.1 Name List

| Experiment | Treatment | Gender | Name list |
|---|---|---|---|
| High or Low | Dutch | Male | Dennis, Tim, Tom, Kevin, Patrick, Sander, Mark, Peter, Roy, Bart |
| | | Female | Anne, Laura, Kim, Joyce, Linda, Marjolein, Sanne, Esther, Inge, Judith |
| | Turkish | Male | Burak, Enes, Faruk, Hamdi, Oktay, Serkan, Siyar, Umit, Ali, Achim |
| | | Female | Busra, Defne, Lutfiye, Meryem, Serap, Seyhan, Suela, Sule, Zeynep, Ayse |
| | Moroccan | Male | Mohammed, Akram, Najim, Nihad, Rachid, Safouane, Youssef, Yassine, Mustafa, Mehmet |
| | | Female | Anissa, Chahida, Ekram, Maroua, Hafida, Smahan, Souad, Rachida, Fadila, Fatma |

## A.2 For decision makers

This is a study by researchers at Tilburg University. We ask you to make a number of choices. There are no right or wrong choices here. The only thing that matters is your personal preference. You can earn additional money, and the amount depends on your choices.

The choices you make have consequences for your earnings and the earnings of another participant. The other participant is someone from the LISS panel, born and living in the Netherlands. The other participant does not make choices and is not informed about your task.

Your identity and the identity of the other participant is strictly confidential. Choices are made available to the researchers in anonymized format.

You will be asked to make 42 choices. Each time you will be asked to make a choice between option A and option B. Both options state how much money you would get and how much money another participant would get if you choose that option.

The other participant is called [first name] and remains the same for all the 42 choices. [first name] is a [man/woman] between 20 and 40 years old. {**[His/her] parents are born in [Netherlands/Morocco/Turkey]. [He/she] almost never plays badminton and did not go to an opera performance during the last year.**} *These two sentences were only included in the treatment with High ethnic salience, ran in July-August 2020.*

This is an example of a choice:

|   |          | I receive ... | [first name] receives ... |
|---|----------|---------------|---------------------------|
| O | Option A | 50 Euro       | 10 Euro                   |
| O | Option B | 45 Euro       | 60 Euro                   |

If you choose option A, you receive 50 Euro and [first name] receives 10 Euro.

If you choose option B, you receive 45 Euro and [first name] receives 60 Euro.

At the end of this research, a random draw determines who will be selected for payment of their choices. Out of all participants 10% will be paid. For example: if there are 1000 participants in the study, 100 will be paid.

In the case you are selected, 1 out of the 42 choices you made will be randomly drawn and paid for real. This means that you and [first name] will then receive those amounts as indicated in the randomly drawn choice. The money from this extra payment will then be transferred to your bank account with the third quarter payment.

If you would like to be considered for this additional payment, it is important that you complete the study. The expectation is that it takes maximum 10 minutes from now on to complete everything.

Before you can make your choices, we test whether you understand the task. We ask you two test questions for this.

Take the same example of a choice as before:

| | | I receive ... | [first name] receives ... |
|---|---|---|---|
| O | Option A | 50 Euro | 10 Euro |
| O | Option B | 45 Euro | 60 Euro |

If you chose option A, how many euros will you receive?

[add 4 options]

If you chose option B, how many euros will you receive?

[add 4 options]

When you are ready to start, click on 'Continue'. Note: after you have made your first choice on the next screen, you cannot go back to the previous screen.

**Choice 1**

Please select your choice: A or B.

| | | I receive ... | [first name] receives ... |
|---|---|---|---|
| O | Option A | 22 Euro | 42 Euro |
| O | Option B | 38 Euro | 29 Euro |

# B   Instructions UK

{**Screen 1**}

You will be shown instructions for this study on the next screens. Please pay attention to the instructions and to your decisions. Your decisions may have consequences for the earnings of other participants. You will be paid a fixed amount of £1.00 for completing this study. In addition, you can earn a bonus depending on your answers in a questionnaire regarding the experiment. All the information that you will get to see on your screens is true and correct.

{**Screen 2**}

In this experiment, there are two types of participants: Allocators and Agents. You are an Allocator.

Agents participate in Phase 1 of the study. They are given 50 tokens and are asked if they want to invest the tokens. If they decide not to invest, they keep 50 tokens. If they decide to invest, a random draw by a computer determines if their investment is successful or not. There is a 50% chance that the investment earns them 150 tokens and a 50% chance that they lose the tokens and are left with 0 tokens. The conversion rate between tokens and real money is 30 tokens per £1.

In Phase 2 of the study, Allocators are shown the investment decisions and tokens earnings by two Agents in Phase 1. Allocators are asked whether they want to re-allocate tokens between the two Agents. Out of every 100 participants in the role of Allocator, the allocation choice of 10 Allocators will be implemented for real for a pair of Agents.

{**Screen 3**}

This is Phase 2. So you are asked to make an allocation choice for two Agents. Your choice does not affect your earnings, but may determine the earnings of two Agents, as explained above. On the next screens, you will get information about two Agents, and you are asked to make your choice.

Agents in Phase 1 are informed about Phase 2. They are informed that they may be paid based on the allocation choices of an Allocator instead of based on Phase 1.

{**Screen 4**}

In the table below, you are informed about two agents, referred to as Agent 1 and Agent 2, who participate in Phase 1. As a result of their investment decisions in Phase 1, Agent 1 earns 0 tokens and Agent 2 earns 150 tokens. The sum of earnings for both Agents in Phase 1 is thus equal to 150 tokens.

| **Agent 1** | **Agent 2** |
|---|---|
| Participant Number: Agent1Code | Participant Number: Agent2Code |
| Age: 18-25 | Age: 18-25 |
| Residence: UK | Residence: UK |
| Ethnicity: White | Ethnicity: Non-White |
| Education Level: Currently a student | Education Level: Currently a student |
| Chooses to invest 50 tokens | Chooses to invest 50 tokens |
| Investment was successful | Investment was unsuccessful |
| Phase 1 earnings are 0 tokens | Phase 1 earnings are 150 tokens |

We now ask you how you choose to allocate the total amount of 150 tokens between the two agents.[31]

| Allocation to Agent 1 | 0 |
|---|---|
| Allocation to Agent 2 | 0 |
| Total | 0 |

{**Screen 5**}

Please briefly describe how you made your allocation decision [Free text].

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[31]Screenshot from Qualtrics.

{**Screen 6**}

Thank you for making your decision. We now ask you some questions about each Agent. For each correct guess, you will receive an additional £0.10 as a bonus.

{**Screen 7**}

For each correct guess, you will receive an additional £0.10 as a bonus.

[*Above-included table is shown*]

What do you think is the monthly disposable income that Agent 1 (Agent 2) has available to spend after paying for rent and major household bills?

- £0-£250/£251-£500/£501-£750/£751-£1000/£1000+

Do you think Agent 1 (Agent 2) is a temporary or permanent resident in the UK?

- Temporary Resident/Permanent Resident

{**Screen 8**}

To reward your attention in the experiment, you receive £0.10 as a bonus for each correct answer you provide to the next questions.

{**Screen 9**}

To reward your attention in the experiment, you receive £0.10 as a bonus for each correct answer you provide to the questions below.

What is Agent 1 (Agent 2)'s sex?

- Male/Female/Not Displayed

What is Agent 1 (Agent 2)'s ethnicity?

- White Ethnicity/Other Non-White Ethnicity/Not Displayed

Where does Agent 1 (Agent 2) reside?

- UK/USA/Australia

{**Screen 10**}

Thank you for your answers. To be eligible for the bonus payment, please complete the questionnaire below.

What is your highest level of education?

- Secondary School/A-level-College-Professional Training/Bachelor Degree/Master Degree/PhD Degree

What is your employment status?

- Employed full-time/Employed part-time/Unemployed looking for work/Unemployed not looking for work/Retired/Student/Disabled - Unable to Work/ Other

What is your monthly disposable income available to spend after paying for rent and major household bills?

- £0-£250/£251-£500/£501-£750/751-£1000/£1000+

What is your political preference?

- Conservative/UKIP/Labour/Liberal Democrat/Independent/Green-Environmental/Other-None/I don't want to say

Where do you live?

- Village/Town/City

What is the approximate population size of the village/town/city you live in?

- Less than 10,000 people/ Between 10,000 and 50,000 people/ Between 50,000 and 100,000 people/ Between 100,000 and 500,000 people/ Between 500,000 and 1,000,000 people/ More than 1,000,000 people

{**Screen 11**}

How easy was it to understand the instructions?

- Extremely easy/Somewhat easy/Neither easy nor difficult/Somewhat difficult/Extremely difficult

How clear was the allocation decision you had to make?

- Extremely clear/Somewhat clear/Neither clear nor unclear/Somewhat unclear/Extremely unclear

How much did the experiment make you think?

- Far too much/Slightly too much/Neither too much nor too little/Slightly too little/Far too little

Did you find the experiment interesting?

- Extremely interesting/Very interesting/Moderately interesting/Slightly interesting/Not interesting at all

{**Screen 12**}

And finally please complete the following questionnaire. For each statement please express how much you agree or disagree with the statement. [Options were: Strongly agree/Somewhat agree/Neither agree nor disagree/Somewhat disagree/Strongly disagree] *[Only included in the July 2020 waves.]*

- It is good if society consists of people from different cultures.

- It should be made easier to obtain asylum in the UK.

- Legally residing foreigners should be entitled to the same social security as UK citizens.

- There are too many foreign people in the UK.

- Some sectors of the economy can only continue to function because people of foreign origin or descent work there.

- It does not help a neighborhood if many people of foreign origin or descent move in.

{**Screen 13**}

Is there anything else you would like to tell us about this experiment? [Free text]

# C   Instructions NL1415

The instructions (from Cettolin and Suetens, 2019) are translated from Dutch and were those shown to LISS panel members who (would) play in the role of trustee. Apart from role-related instructions, the instructions for the trustors were the same. In order to proceed to the next screen, participants had to click a 'Continue' button at the bottom right of the screen. From screens 2 to 4, and 6 to 8 they could go back one screen by clicking a 'Back' button at the bottom left of the screen. On screens 5 and 6, they could not go back.

{**Screen 1**}

This research is commissioned by Tilburg University. By participating you can earn money, in additional to the usual participation fee.

The amount of money that you can earn in addition, depends on choices made by yourself and another participant. All choices are anonymous. The identity of all participants (including yourself) remains strictly confidential.

For the research it is important that you read the instructions carefully.

{**Screen 2**}

You will get a role: A or B.

A will be asked to choose between 'IN' and 'OUT' in three choice situations and B will be asked to choose between 'UP' or 'DOWN' in the same three choice situations. The figure below illustrates the choice situations.

If A chooses 'OUT', A and B both receive an amount of €35 in the three situations, and the choice of B does not count.

If A chooses 'IN' and B chooses 'DOWN', then A receives €20 and B receives €85 in the three situations.

If A chooses 'IN' and B chooses 'UP', then A and B both receive an amount x, where x is equal to €40 (situation 1), €60 (situation 2), or €80 (situation 3).

{**Screen 3**}

At the end of the research, one of the three choice situations will be drawn randomly. Also, 5 pairs (1 A and 1 B) will be drawn randomly. Each of these pairs will receive that amount that corresponds to the choices they made in the randomly drawn choice situation. The payment will be included in the regular payment. In total, there will be about 200 participants with role B.
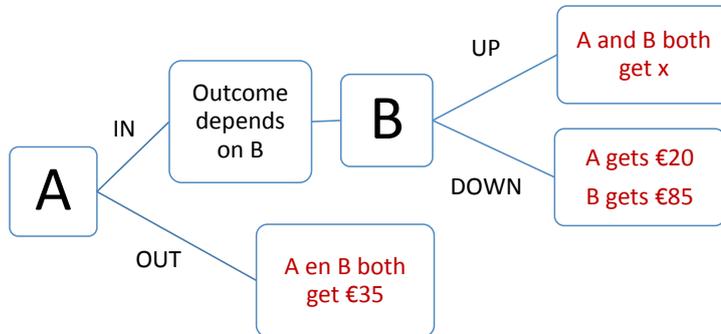
{**Screen 4**}

You have role **B**.

The matched participant with role A is called [*first name*], lives in the Netherlands, is [*male/female*], and is between 16 and 89 years old. To guarantee anonymity, we cannot give you more details about A's identity.

Indicate your 3 choices at the bottom of the screen and click 'Continue' to enter your choices. Be careful, once you have clicked 'Continue', you cannot come back to this screen.

[*Figure is shown*]

|  | UP | DOWN |
|---|---|---|
| Your choice in situation 1: x = €40 | O | O |
| Your choice in situation 2: x = €60 | O | O |
| Your choice in situation 3: x = €80 | O | O |

{**Screen 5**}

We would like to ask you now to indicate for each of the three choice situations what you think that other participants with role B choose. For convenience, assume that there are 100 participants with role B when answering the questions.

[*Figure is shown*]

Number of participants B out of 100 who choose 'UP' if x = €40:
Number of participants B out of 100 who choose 'DOWN' if x = €40:
Number of participants B out of 100 who choose 'UP' if x = €60:
Number of participants B out of 100 who choose 'DOWN' if x = €60:
Number of participants B out of 100 who choose 'UP' if x = €80:
Number of participants B out of 100 who choose 'DOWN' if x = €80:

{**Screen 6**}

Finally, we would like to ask you to indicate for each of the three choice situations what you think that **participants with role A (like [*first name of A*])** choose. For convenience, assume that there are 100 participants with role A when answering the questions.

[*Figure is shown*]

Number of participants A out of 100 who choose 'IN' if x = €40:
Number of participants A out of 100 who choose 'OUT' if x = €40:
Number of participants A out of 100 who choose 'IN' if x = €60:
Number of participants A out of 100 who choose 'OUT' if x = €60:
Number of participants A out of 100 who choose 'IN' if x = €80:
Number of participants A out of 100 who choose 'OUT' if x = €80:

{**Screen 7**}

How do you see yourself: Are you generally a person who is willing to take risks, or are you rather someone who avoids risks? Please tick a box on the scale, where the value 0 means: 'not at all willing to take risks' and the value 10 means: 'very willing to take risks'.

| totally disagree | | | | | | | | | | totally agree |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| O | O | O | O | O | O | O | O | O | O | O |

{**Screen 8**}

NB: Please finish the questionnaire until you arrive at the starting screen. Only then the system registers the questionnaire as **complete**.

What did you think of the current survey:

**1 = totally not; 5 = totally**

|  | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Did you find it difficult to answer the questions? | O | O | O | O | O |
| Did you find the questions clear? | O | O | O | O | O |
| Did the questionnaire make you think? | O | O | O | O | O |
| Did you find the topic interesting? | O | O | O | O | O |
| Did you like to fill out the questionnaire? | O | O | O | O | O |

{**Screen 9**}

Do you have remarks about the questionnaire?

O        yes

O        no

[*if yes, a text box appeared*]

# D Supplementary tables

### Table D.1: Survey items related to attitudes toward ethnic diversity

1. It is desirable for a society to consist of people from different cultures.
2. It should be made easier to obtain asylum in the Netherlands.
3. Legally residing foreigners should be entitled to the same social security system as Dutch citizens.
4. There are too many people of foreign origin or descent in the Netherlands.
5. It does not help a neighborhood if many people of foreign origin or descent move in.
6. Some sectors of the economy can only continue to function because people of foreign origin or descent work in them.

*Notes:* Statements on ethnic diversity and immigration in the LISS Core Survey on Politics and Values. Respondents are asked to what extent they agree with each of these statements on a seven-point scale.

### Table D.2: Political parties in the Netherlands and UK

| Party | Vote share (%) | CHES Index | Category | Pro-diversity |
|---|---|---|---|---|
| **NL** | (in 2017) | | | |
| Party of Freedom (PVV) | 14.21 | 0.000 | Far Right | 0 |
| Forum for Democracy (FvD) | 3.75 | 0.000 | Far Right | 0 |
| Reformed Political Party (SGP) | 1.99 | 0.176 | Right | 0 |
| People's Party for Freedom and Democracy (VVD) | 20.38 | 0.340 | Right | 0 |
| Christian Democratic Appeal (CDA) | 11.13 | 0.404 | Center | 0 |
| 50Plus | 3.41 | 0.482 | Center | 0 |
| Socialist Party (SP) | 7.83 | 0.543 | Center | 1 |
| Christian Union (CU) | 3.56 | 0.569 | Center | 1 |
| Labour Party (PvdA) | 6.92 | 0.705 | Left | 1 |
| Party for Animals (PvdD) | 3.57 | 0.740 | Left | 1 |
| Democrats' 66 (D66) | 12.26 | 0.914 | Left | 1 |
| THINK (DENK) | 1.95 | 0.961 | Left | 1 |
| Green Links (GL) | 9.51 | 1.000 | Left | 1 |
| **UK** | (in 2019) | | | |
| Conservative Party (CONS) | 33.93 | 0.280 | Right | 0 |
| Labour Party (LP) | 4.51 | 0.858 | Left | 1 |
| Liberal Democrats (LIBDEM) | 29.50 | 0.904 | Left | 1 |
| Green Party (GREEN) | 14.40 | 1.000 | Left | 1 |

*Notes:* Vote shares are based on polling data from POLITICO Poll of Polls – politico.eu/pollofpoll in election year 2017 for the Netherlands and 2019 for the UK. The CHES index is based on data from the Chapel Hill Expert Sur- vey (https://www.chesdata.eu/)). We first created a pro-diversity score by summing the political stance of party ratings on a scale from 0 to 10 on nationalism, immigration policy, multiculturalism, and support for ethnic minority rights and then taking the negative of it. The CHES index is the standardized version of this score. A party is categorized as pro-diversity when the CHES index is above 0.5.

**Table D.3: Statements Marlow-Crowne social desirability scale**

| Statement | Socially desirable answer |
|---|---|
| I never hesitate to go out of my way to help someone in trouble. | True |
| I have never intensely disliked anyone. | True |
| There have been times when I felt like rebelling against people in authority even though I knew they were right. | False |
| I can remember "playing sick" to get out of something. | False |
| When I don't know something I don't at all mind admitting it. | True |
| I am always courteous, even to people who are disagreeable. | True |
| At times I have really insisted on having things my own way. | False |
| I would never think of letting someone else be punished for my wrongdoings. | True |
| There have been times when I was quite jealous of the good fortune of others. | False |
| I am sometimes irritated by people who ask favors of me. | False |

*Notes:* The statements are the 10 out of the 33 items of the Marlowe Crowne Social Desirability Scale (Crowne and Marlowe, 1960) included in the LISS Core Study on Personality.

**Table D.4: Main effect of ethnic salience on earnings share with SDB as a control**

| | NL2020 | | NL1415 | |
|---|---|---|---|---|
| Variables | (1) | (2) | (3) | (4) |
| High | 0.072 | 0.081 | 0.002 | −0.005 |
| | (0.069) | (0.069) | (0.079) | (0.080) |
| Minority | 0.043 | 0.052 | −0.097 | −0.088 |
| | (0.062) | (0.062) | (0.078) | (0.079) |
| High × Minority | 0.129 | 0.111 | 0.265** | 0.266** |
| | (0.093) | (0.093) | (0.110) | (0.111) |
| SDB | 0.139*** | 0.144*** | −0.113** | −0.115** |
| | (0.047) | (0.048) | (0.056) | (0.056) |
| Constant | −0.208*** | −0.598*** | 0.044 | 0.043 |
| | (0.054) | (0.157) | (0.065) | (0.166) |
| Observations | 1,844 | 1,827 | 1,294 | 1,280 |
| R-squared | 0.014 | 0.021 | 0.013 | 0.019 |
| Controls | No | Yes | No | Yes |

*Notes:* Robust standard errors in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.
SDB means above median score on the Social Desirability Bias scale from the LISS panel survey.