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A dual-process perspective on the relationship between implicit attitudes and discriminatory behaviour

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The dual-process perspective (DPP), which contrasts intuitive and deliberative cognitive processes, has advanced our understanding of the conditions under which cultural orientations, such as implicit attitudes, influence overt behaviour considerably. We test a central tenet of the DPP using a choice experiment on the placement of trust in hypothetical economic transactions. According to the principle of catalyzation, the impact of implicit cultural orientations on overt behaviour should be greater if the behaviour comes about in an intuitive rather than a deliberative manner. In this study, we focus on the implicit attitudes towards class and ethnicity and measure their impact on social behaviour via estimates of the effects of corresponding attributes within the choice experiment. Using a framing technique to experimentally induce intuitive or reflective responses, we find that implicit attitudes affect the placement of trust in the intuitive framing condition but not in the reflective framing condition. Besides providing a strict test of a central tenet of the DPP in a choice-experimental set-up, our study also sheds light on different cognitive mechanisms underlying discriminatory behaviour.

Introduction

Classist discrimination and racism are persistent phenomena in Western societies. Prejudice towards lower-class individuals and devaluations of ethnic minorities are present in various domains of life such as education (e.g. Farkas, 2003), access to health services (e.g. Williams, Lawrence and Davis, 2019), jobs (e.g. Pager, Bonikowski and Western, 2009), housing (e.g. Auspurg, Hinz and Schmid, 2017), and resources in the sharing economy (e.g. Liebe and Beyer, 2021). There has been much progress in the last decades to uncover and document taste-based and statistical discrimination using various experimental approaches including laboratory experiments, field experiments, and multifactorial survey experiments (e.g. Pager and Shepherd, 2008; Auspurg, Hinz and Schmid, 2017; Quillian *et al.*, 2019; Di Stasio *et al.*, 2021; Quillian and Midtbøen, 2021).

In this paper, we explore discriminatory behaviour in the context of economic transactions. More precisely, we will focus on the potential impact of race and class on trust in economic exchange. Trust is a key aspect of any economic exchange with information asymmetry in which the seller (trustee) has full knowledge of the quality of the product while the buyer (trustor) does not. Such asymmetries are especially severe in the exchange of used products that require some technical knowledge to evaluate the product's quality (e.g. cars, white goods, computers). The question of under what conditions buyers are willing to trust a seller in such a setting is not trivial (Gambetta, 1988; Coleman, 1990; Schilke, Reimann and Cook, 2021). Previous research in the tradition of rational-choice sociology, which conceptualizes humans as rational actors, has shown that decisions to place trust are affected by socio-structural factors that shape actors' incentives including social embeddedness (Granovetter, 1985; Raub and Weesie, 1990) and temporal embeddedness (Buskens and Weesie, 2000; Gautschi, 2002).

Complementing these studies, recent research has highlighted the significance of cultural orientations such as attitudes in trust situations (e.g. Stanley *et al.*,

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2011; Cettolin and Suetens, 2019; Keita and Valette, 2019). For instance, Liebe and Beyer (2021) found that individuals were less likely to trust a carpooling offer from a driver with a (perceived) ethnic background and that this behaviour could be explained by explicit xenophobic attitudes. These studies indicate that, in addition to economic factors such as product quality and price, attitudes may play a significant role in trust-based economic exchange. If individuals have information about all relevant economic attributes such effects of ethnicity and related attitudes can be interpreted as evidence for taste-based discrimination (Becker, 1957). This is in contrast to statistical discrimination (Phelps, 1972; Arrow, 1973), which is caused by a lack of information about crucial characteristics such as economic (product/performance) attributes.

Building on this insight, we examine under what conditions cultural orientations in the form of implicit attitudes impact discriminatory behaviour. Implicit attitudes are described 'as the automatic association people have between an object and evaluation (whether it is good or bad)' (Rudman, 2004: p. 79). These can be expressed in automatic biases such as prejudice and stereotypes towards lower-class and ethnic minority members. Individuals might not even be aware that they hold such stereotypes. To theorize on the conditions under which implicit attitudes significantly impact discriminatory behaviour, we use a dual-process perspective (DPP), which has gained increasing popularity in sociological research (Esser, 1996; Kroneberg, 2005; Vaisey, 2009; Vaisey and Lizardo, 2010; Esser and Kroneberg, 2015; Moore, 2017; Leschziner and Brett, 2019) and characterizes overt behaviour as a continuum ranging from a purely automatic reaction without any explicit reasoning ('intuitive behaviour') to a highly controlled and well-thought-of conduct ('reflective behaviour'). By now several empirical studies in sociology have demonstrated the fruitfulness of applying DPP and thus differentiating between these two fundamental types of behaviour (Vaisey and Lizardo, 2010; Srivastava and Banaji, 2011; Hoffmann, 2014; Leschziner and Brett, 2019; Tutić and Grehl, 2021).

We contribute to the literature on DPP in sociology by providing the first study combining implicit measurements of attitudes with an experimental manipulation to promote intuitive or reflective behaviour. More specifically, in the context of trust-based economic exchange we conduct the strictest test yet of the principle of catalyzation, a central tenet of DPP. According to this principle, cultural orientations have a greater impact on behaviour, if the behaviour comes about intuitive rather than reflective (Vaisey, 2009; Tutić, 2022). To test the principle of catalyzation, we employ a choice-based conjoint experiment (Buskens and Weesie, 2000; Hainmueller, Hopkins and Yamamoto, 2014, Hainmueller, Hangartner and Yamamoto, 2015; Auspurg and Hinz, 2015) on the hypothetical purchase of a used product where participants can choose between two sellers who are described by different attributes including indicators for social class and ethnic background.[1] As we also measure implicit discriminatory attitudes towards social class and ethnic minorities and experimentally manipulate the framing of the choice experiment—by promoting either intuitive or reflective behaviour through specific text prompts revealed to the participants—we can test the catalyzation principle, that is whether the effect of implicit discriminatory attitudes is stronger in intuitive than reflective decision-making in a causal framework. In the context of economic transactions, our findings will help to better understand to what extent trust related behaviour depends on biases such as prejudice and stereotypes towards lower-class and ethnic minority members and how this is affected by the framing condition, that is whether the purchasing decisions come about in the intuitive framing condition rather than in the reflective framing condition. Therefore, our study sheds more light on the conditionality of discriminatory behaviour.

Dual processes, implicit attitudes, and the principle of catalyzation

Dual processes

As previously stated, we employ the DPP as the theoretical framework for our analysis (Evans, 2008; Kahneman, 2011; Stanovich, 2011). The DPP is a generic term that encompasses a variety of theoretical models that differ in their implications for applied research, with no single and universally accepted theory being present in the literature (Lizardo *et al.*, 2016; Brett, 2022; Tutić, 2022). Despite these differences, most variants of the DPP share fundamental commonalities. In the following, we will provide a brief overview of the basics of DPP and draw theoretical implications for our research.

Uncontroversial among the different variants of the DPP is the idea that two qualitatively different types of mental processes can be distinguished in the human mind (Evans, 2008). Also, there is a widespread agreement on the characteristics of these two mental processes, which we will call Type 1 and Type 2 processes (also referred to as System 1 and System 2, see Kahneman, 2011, or spontaneous and deliberative processes, see Fazio, 1990). In general, Type 1 processes are assumed to be automatic, fast, operating without the involvement of working memory, and performable without conscious effort. Type 2 processes, on the contrary, are described as controlled, slow, relying heavily on working memory, and requiring active deliberation from the individual.[2]

While there is broad consensus within the DPP about the characteristics of these two processes, the conceptualization of the interaction between Type 1 and Type 2 processes in generating overt behaviour is more controversial (cf. Chaiken and Trope, 1999). In this paper, we adopt the prominent idea of the default-interventionist model, which assumes that the interaction of these two kinds of processes is based on a hierarchical structure (Evans, 2011, 2019; Kahneman, 2011). More precisely, the decision-making process involves two phases: First, a possible action is pre-selected by Type 1 processes and then, second, either accepted or changed through active intervention by Type 2 processes. Note that it is possible that the decision-making process can proceed entirely via Type 1 processes, without interference from Type 2 processes. In this case, we speak of a pure Type 1 process. Alternatively, we speak of mixed or pure Type 2 processes when the pre-selected action is modified or completely overridden by Type 2 processes, respectively.[3]

Whether and to what extent an intervention occurs through Type 2 processes depends on several factors. For example, Type 2 processes are less likely to intervene when the self-control of the individual is depleted (Evans *et al.*, 2011). Also, due to the cognitive demands associated with Type 2 processes, the acting individual needs sufficient free cognitive capacity and time to actively deliberate about the current decision. If an actor's cognitive resources are exhausted (Greene *et al.*, 2008) or otherwise occupied (De Neys, 2006), or if actors simply do not have enough time to contemplate (Rand, Greene and Nowak, 2012; Rand and Kraft-Todd, 2014), an intervention by Type 2 processes is not or only barely possible. Therefore, it is to be expected that in these situations the occurrence of a pure Type 1 process should be more likely.

Having outlined the internal workings of the two mental processes using the default-interventionist model, the question arises on which basis actions are pre-selected in the first phase or altered in the second phase. The sociological literature on DPP (Vaisey, 2009; Miles, 2015; Vila-Henninger, 2015; Lizardo *et al.*, 2016) suggests that Type 1 processes are mostly based on cultural orientations. Cultural orientations refer to all forms of culture acquired by an individual such as values, norms, attitudes, skills, or habits.[4] Applied to the context of trust, this means that a trustor may trust on intuitive grounds, such as living in a cultural environment with great social capital, the feeling that this is the right thing to do, positive attitudes towards the trustee, or simply because the trustor has always trusted the trustee before (Murray *et al.*, 2011). Decision-making via Type 2 processes, on the other hand, primarily involves rational considerations of goals, means, and consequences (Evans *et al.*, 2011). Hence the trustors explicitly take into account their possible gains and losses as well as the trustworthiness of the trustee and only trust if the expected benefit of placing trust exceeds the expected benefit of the status quo. In this respect, Type 2 decision-making has certain similarities with the rational-choice approach (Gambetta, 1988; Coleman, 1990; Cook and Santana, 2018). Note that Type 2 processes may also incorporate cultural orientations at this phase, for example, by having the trustor also consider the costs of adhering to or violating a certain social norm.

Yet it is the case that not all cultural orientations affect the two types of decision processes in the same way. First, a particular cultural orientation must be situationally relevant in order to influence the behaviour of an actor. A strong indicator of situational relevance is the presence of aspects of the decision situation that are linked to the respective orientation, such as significant symbols or cultural cues (DiMaggio, 1997).[5] Second, according to the DPP, intuitive Type 1 processes are more strongly influenced by so-called implicit cultural orientations than by their explicit counterpart (Olson and Fazio, 2008; Vila-Henninger, 2015). To understand this distinction between implicit and explicit cultural orientations—terms that can be equated with Lizardo's (2017) concept of non-declarative and declarative culture, respectively—it is necessary to understand how human memory is structured according to the DPP. In the literature, a distinction is made between two forms of memory in which cultural orientations can be stored and from which they can be retrieved (Vila-Henninger, 2015; Lizardo *et al.*, 2016). While explicit (or declarative) memory mainly comprises cultural memory that can be articulated expressis verbis such as facts or beliefs, implicit (or non-declarative) memory mainly comprises unconscious cultural memory such as attitudes or skills that are impossible to retrieve directly in a discursive way. In other words, explicit memories are more accessible via Type 2 processes whereas implicit memories are more accessible via Type 1 processes.[6]

Implicit attitudes

In our study, we deal with a specific form of implicit cultural orientation, namely attitudes. Attitudes are defined as the psychological tendency to evaluate an object either positively or negatively (Fazio, 1990; Eagly and Chaiken, 1993). Traditional, explicit methods of measurement such as self-reports may be subject to biases from conscious Type 2 processes (Paulhus, 1991). To avoid these biases, implicit measurement techniques are utilized, which primarily rely on automatic processes and make it difficult for participants to use conscious processes (Greenwald, McGhee and Schwartz, 1998). These techniques typically rely on subconscious responses (for an overview see Fazio and

Olson, 2003) and have been successfully employed several times in sociological research (e.g. Murray *et al.*, 2011; Srivastava and Banaji, 2011; Tutić and Grehl, 2021).

The principle of catalyzation and hypotheses

With the previous considerations, it is now possible to state a general action-theoretical principle: According to the principle of catalyzation, situationally relevant implicit cultural orientations have a greater influence on behaviour when the decision-making process leading to that behaviour occurs as a pure Type 1 process than when it occurs as a pure Type 2 process or a mixed process (Tutić, 2022). The rationale behind this principle is similar to the argument why Type 2 processes can lead to biases when measuring implicit attitudes. Since Type 1 processes primarily rely on implicit cultural orientations to pre-select an action, overt behaviour that does not involve intervening Type 2 processes should be closer to the original cultural orientations than behaviour that is altered by Type 2 processes. It should be noted that although the principle of catalyzation follows from general assumptions of the DPP, it can also be derived more thoroughly from specific variants such as the MODE model (Fazio, 1990; Olson and Fazio, 2008) or the model of frame selection (Esser, 1996; Kroneberg, 2005; Esser and Kroneberg, 2015).

In the following, we put this principle to the test by means of an experimental study on trust in economic transactions with a focus on classist and ethnic discrimination. In particular, we are interested in the question of how cultural orientations in the form of implicit attitudes towards ethnic minority group members and lower-class people affect (hypothetical) purchase decisions of used products and hence the placement of trust. Against the background of the literature on discrimination (Baert and De Pauw, 2014; Wenz and Hoenig, 2020), we expect that sellers with a lower-class background as well as sellers who stem from an ethnic minority group have a lower probability of being trusted and hence picked as a transaction partner. Taking the perspective of the buyer and focussing on the characteristics of the seller, we hypothesize that the buyer's implicit attitudes moderate the effect of ethnic and classist characteristics of the seller on purchasing decisions:

H1a The more positive the buyer's implicit attitude towards ethnic minority group members, the more likely the buyer is to choose a seller with this ethnic background.

H1b The more positive the buyer's implicit attitude towards lower-class people, the more likely the buyer is to choose a seller from the lower-class.

According to the principle of catalyzation, the influence of implicit cultural orientations on observed behaviour should be stronger if the behaviour comes about in a Type 1 rather than a Type 2 process. In our empirical application, we will experimentally manipulate the framing of the choice experiment to induce Type 1/Type 2 responses. In this setting, the principle of catalyzation breaks down to the following hypotheses:

H2a The positive association between positive implicit attitudes towards an ethnic minority and the likelihood to choose a seller from this ethnic minority is stronger if the purchasing decisions come about in the intuitive framing condition rather than in the reflective framing condition.

H2b The positive association between positive implicit attitudes towards lower-class people and the likelihood to choose a lower-class seller is stronger if the purchasing decisions come about in the intuitive framing condition rather than in the reflective framing condition.

Methods and data

Choice experiment

In the choice experiment, participants were confronted with a trust problem (Dasgupta, 1988) and asked to imagine that they wanted to buy a used laptop via local advertisements. Since the quality of a laptop cannot necessarily be fully determined during the purchase process, the participants have to trust that the laptop offered is in good order. This aspect was highlighted in the introduction to the experiment by emphasizing that the buyer desires a laptop with a functional battery, but has no means of examining the quality. The choice experiment consisted of ten scenarios in which the respondents had to choose between two alternative offers from two different sellers. For each scenario, we varied the description of the two offers and sellers based on seven attributes.

Each attribute could take one of two to four possible attribute levels (see Table 1 for an overview). To estimate the effects of these levels on the decisions via a conjoint analysis, we followed Hainmueller, Hopkins and Yamamoto (2014) and randomly drew the attribute levels in all scenarios from the uniform distribution so that they are statistically independent. In addition, the order in which these attributes were presented was randomly determined for each participant at the beginning of the choice experiment and remained constant across all scenarios. This was intended to minimize order effects.

In selecting these attributes, we made sure to include the standard predictors from the literature on rational

Table 1 Overview of all attributes and attribute levels for the choice experiment

Attributes	Attribute levels
Price	The seller charges 100 euros.
	The seller charges 150 euros.
	The seller charges 200 euros.
	The seller charges 250 euros.
Experience	No one in your circle of friends has had experience with the seller.
	A friend has had a good experience with the seller.
Acquaintance	The seller is unknown to you.
	The seller is a loose acquaintance.
Relocation	The seller just moved to the city.
	The seller is in the process of moving to another city.
Social class	The seller belongs to the lower class.
	The seller belongs to the middle class.
	The seller belongs to the upper class.
Ethnic origin	The seller is German.
	The seller is French.
	The seller is Turkish.
Friendliness	The seller is unfriendly.
	The seller is friendly.

Note: The first level of each attribute marks the reference group in the forthcoming analysis.

decision-making in trust problems (Camerer and Weigelt, 1988; Dasgupta, 1988; Raub and Weesie, 1990; Barrera, 2005). These encompass the price of the laptop (attribute 'Price'), the question of whether there is a previous experience with this seller ('Experience'), the question of whether the seller is an acquaintance of the buyer ('Acquaintance') and, finally, the relocation status of the seller ('Relocation'). While these rational attributes serve as benchmarks of effect strengths, our main interest lies on the impact of implicit attitudes towards ethnicity and class. Hence, we included the class ('Social class') as well as the ethnicity ('Ethnic origin') of the seller as attributes.[7] Finally, we also varied whether or not the seller was friendly to the buyer ('Friendliness').

Experimental framing stimuli

In our experiment, we used three experimental stimuli. In the neutral condition, no framing was used and the choice experiment was conducted as just described. In the two other cases, immediately before the first decision, we manipulated the framing of the choice experiment to induce that either Type 1 (intuitive framing condition) or Type 2 (reflective framing condition) responses are more likely to occur (cf. Ferreira *et al.*, 2006). This was done by the two versions of the text that can be seen in Table 2. To make the text salient, it was hidden behind a huge red sign that stated 'Important note. Click here!'. To proceed with the study, it was mandatory for subjects to click on the sign, which then revealed the text. In addition, the instruction to decide as intuitively (deliberatively) as possible was displayed above each scenario.

Table 2 Texts used as framing stimuli in the choice experiment

IMPORTANT: Research has shown that the best decisions are those that are made [intuitively and from the gut] [using logic and reasoned thinking]. In the following, we are interested in your [intuitive] [deliberate] decisions. Therefore, please decide in each case, as [spontaneously] [thoughtfully] as possible, from which of the two sellers you would buy.

Note: Text in the first brackets aims to induce a Type 1 response (intuitive framing condition), the text in the second brackets aims to induce a Type 2 reaction (reflective framing condition).

Sample and variables

The study was implemented in the form of an online survey that took an average of 30 minutes to complete. The survey firm Respondi sampled adult respondents from Germany and uses both online channels and telephone interviews to recruit members of their access panel. 3,519 German citizens completed the survey between September 2021 and October 2021. We employed simple quotas on gender, age, and education in line with population characteristics, although this would not have been necessary for the internal validity of our results (cf. Mutz, 2011).[8] In the following, we will give a detailed outline of the choice experiment and experimental stimuli that are both central to our study before we turn to a description of the remaining variables. Data and code are available on OSF.[9]

By design, all variables which refer to attributes of the choice situation are uniformly distributed and statistically independent. Post-hoc checks confirm both properties. Table 1 provides an overview of all attributes and attribute levels. Missing values occurred in 85 decisions in the choice experiment. Note that our analysis is based on all decisions in which no missing values are observed.

Implicit attitudes are measured prior to the choice experiment via the Brief Implicit Association Test (BIAT; Sriram and Greenwald, 2009; Nosek *et al.*, 2014; see supplemental material).[10] The implicit attitude towards Turks takes on values between –2.712 and 2.436, with

higher values indicating a more positive implicit attitude towards Turks. The variable is approximately normally distributed (M = –0.390, SD = 0.603). In testing our hypotheses, we use the indicator 'Turk +' which takes value 1 if the implicit measure is at least –0.149 (M = 0.333) and the indicator 'Turk –' which takes value 1 if the implicit measure is not greater than –0.656 (M = 0.334). The cut-off points –0.149 and –0.656 are chosen such that these two groups refer to the upper and lower terciles in our sample, respectively.

The implicit attitude towards people from the lower class takes on values between –3.145 and 2.083, with higher values indicating a more positive implicit attitude towards lower-class people. The variable is approximately normally distributed (M = –0.522, SD = 0.643). In testing our hypotheses, we use the indicator 'Lower Class +' which takes value 1 if the implicit measure is at least –0.277 (M = 0.334) and the indicator 'Lower Class –' which takes value 1 if the implicit measure is not greater than –0.814 (M = 0.333). Again, these cut-off points are the upper and lower terciles. While the main text presents analyses based on terciles regarding the attitudinal variables, the supplemental material contains several robustness checks using other cut-off points.

Empirical results

Effects of choice attributes

Figure 1 comprises estimates of the effects of attribute levels on the probability of a purchase. More specifically, the depicted numbers are nonparametric estimates of average marginal component effects (Hainmueller, Hopkins and Yamamoto, 2014). The depicted 95 per cent confidence intervals are based on clustered robust standard errors.

The attributes highlighted in traditional rational-choice theory have strong effects on the purchasing choices of our respondents and these effects point in the direction predicted by that theory. In particular, the price of the notebook looms large; a 50 € increase in price leads to a decrease in the probability of a purchase between 10.2 per cent ('150 €') and 13.7 per cent ('200 €' relative to '150 €'). In addition, the questions of whether the buyer expects to move out of town in the near future (–3.7 per cent), whether the seller is among the buyer's acquaintances (6.4 per cent), and whether the buyer's friends have made good experiences with this seller (13.1 per cent) influence purchasing behaviour as expected.

However, the data also suggest that our respondents' behaviour is not only driven by purely economic considerations. Friendly sellers have a 22.6 per cent greater chance of striking a deal than unfriendly sellers. Importantly, both the class and the ethnicity of the seller influence purchasing decisions, above and beyond the other attributes under consideration. That is, lower-class sellers have a slightly smaller probability of being trusted in comparison with middle-class sellers (4.2 per cent) and higher-class sellers (2.7 per cent). While the effects of sellers' class background are rather

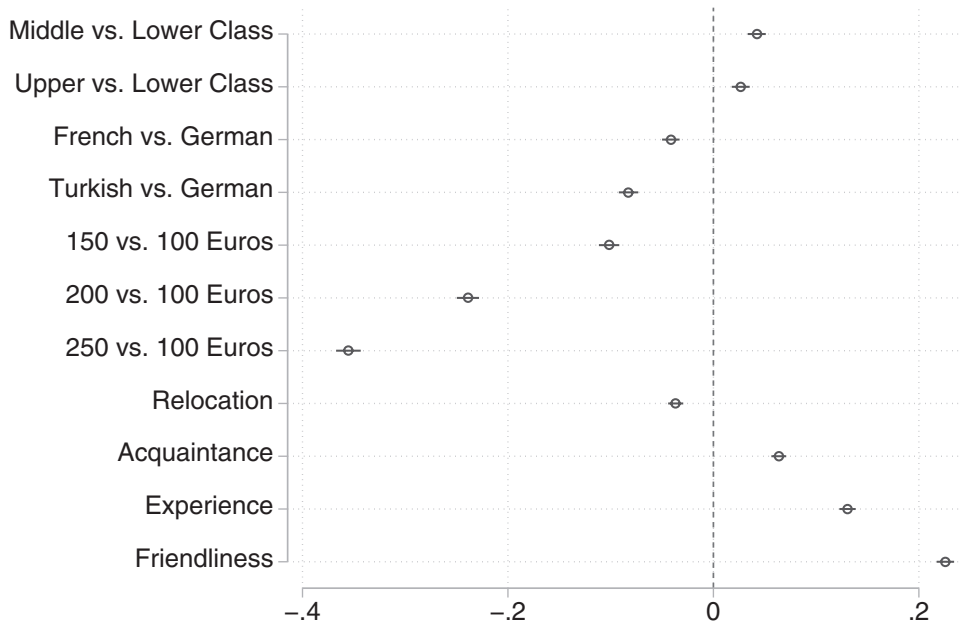

Figure 1 Effects of attribute levels on the probability of a purchase

modest, the effects of ethnic background are quite sizeable. We find that sellers from France have a 4.1 per cent lower probability of being trusted than sellers from Germany. Sellers with a Turkish background face even harsher conditions of distrust; in comparison to sellers from Germany, they have a 8.3 per cent lower probability of being picked as a transaction partner.

Implicit attitudes

According to Hypothesis 1a, we expect that among respondents with a more negative attitude towards Turks, a Turkish background of the seller weighs more heavily than among respondents with a more positive attitude. Similarly, Hypothesis 1b states that the attitude towards lower-class people moderates the effect of the attribute levels referring to the class background of the seller.

As indicated, we measure the implicit attitude towards Turks and the implicit attitude towards lower-class people via two BIATS (see Methods section). Figures 2 and 3 display the effects of the corresponding attribute levels separately for subgroups of respondents using indicator variables that identify the lowest and highest tercile with respect to these two attitudinal measures, respectively.

As suggested by Hypothesis 1a, the implicit attitude towards Turks indeed moderates the effect of choosing a Turkish seller instead of a German seller. Among respondents with a more negative attitude towards Turks, Turkish sellers face a 10.4 per cent lower probability of being trusted than German sellers. Among respondents with a more positive attitude towards Turks, this effect merely amounts to 5.7 per cent. This noticeable difference in effect sizes across subgroups is highly statistically significant ($\chi^2 = 13.11$, $P = 0.000$).

Similarly, we find support for Hypotheses 1b. Respondents with a pronounced negative attitude towards lower-class people discriminate more sharply between sellers from the middle and the lower class (6.6 per cent) and between sellers from the upper and the lower class (5.2 per cent) than respondents with a more positive attitude towards lower-class people (Middle Class: 3.8 per cent; Upper Class: 0.8 per cent). Both of these differences in effect sizes are statistically significant (Middle Class: $\chi^2 = 5.62$, $P = 0.018$ and Upper Class: $\chi^2 = 14.73$, $P = 0.000$).

Moderation by experimental manipulation of Type 1/Type 2 processes

Having established that implicit attitudes towards ethnicity and class are associated with the effect strengths of the corresponding attributes of the sellers, we are now in the position to test a central tenet of DPP in cultural sociology, that is the principle of catalyzation. In our setting, this principle breaks down to Hypotheses 2a and 2b. Accordingly, the associations between attitudes and corresponding effects of attributes should be stronger if the decision to place trust comes about in an intuitive Type 1 process rather than in a reflective Type 2 process.

As explained in Section 3, we use an experimental manipulation of the framing of the choice experiment

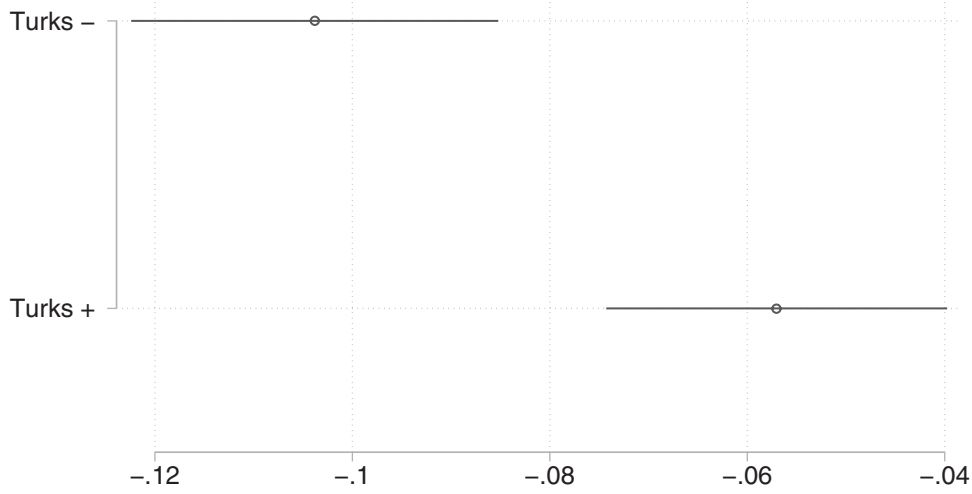

Figure 2 Subgroup-specific (negative attitude towards Turks versus positive attitude towards Turks) effect of the attribute level 'Turkish' on the probability of a purchase

to induce Type 1 (intuitive framing) or Type 2 (reflective framing) responses.[11] Analogously to Figures 2 and 3, Figures 4 and 5 present subgroup-specific effects of the attitudinal relevant attribute levels for both framing conditions separately.

As it turns out, Hypotheses 2a and 2b generally receive some support. In terms of the observed differences in effect strengths, differences in underlying attitudes have a pronounced influence in the intuitive framing condition and are rather negligible in the reflective framing

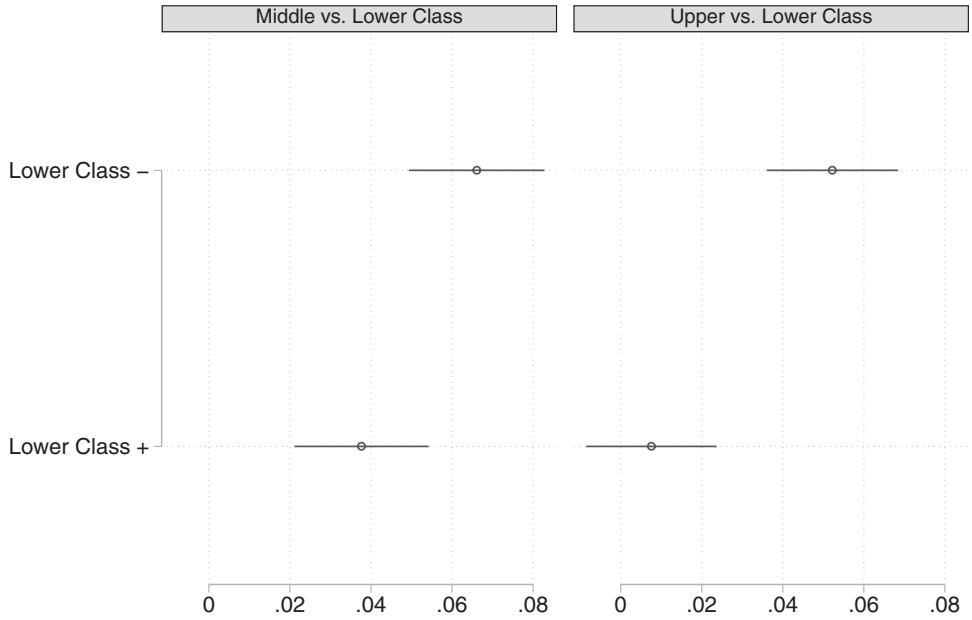

Figure 3 Subgroup-specific (negative attitude towards lower-class people versus positive attitude towards lower-class people) effect of the attribute levels 'Middle Class' and 'Upper Class' on the probability of a purchase

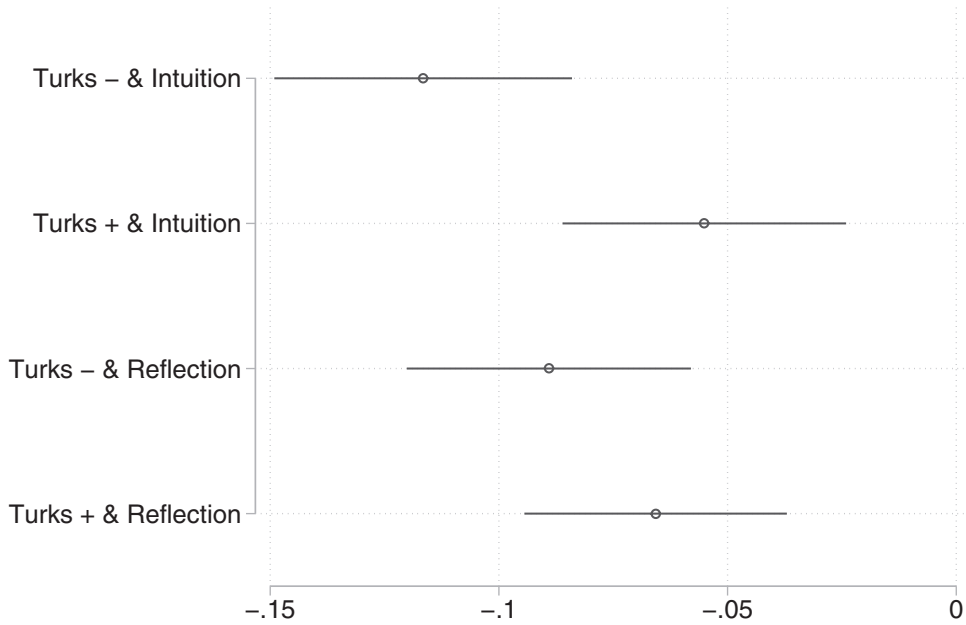

Figure 4 Subgroup-specific (negative attitude towards Turks vs. positive attitude towards Turks X intuitive framing vs. reflective framing) effect of the attribute level 'Turkish' on the probability of a purchase

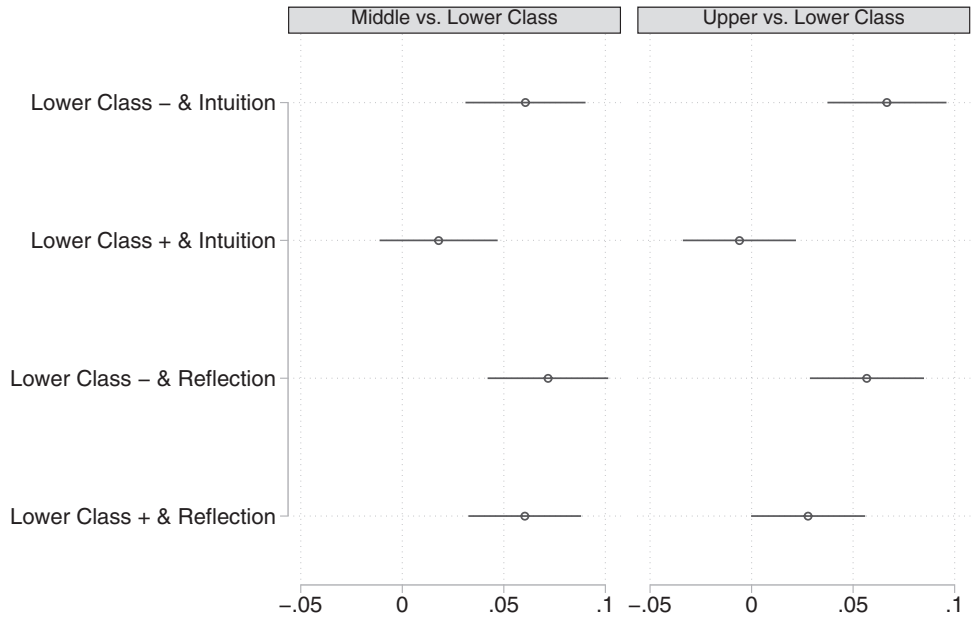

Figure 5 Subgroup-specific (negative attitude towards lower-class people vs. positive attitude towards lower-class people X intuitive framing vs. reflective framing) effect of the attribute levels 'Middle Class' and 'Upper Class' on the probability of a purchase

condition. Consider, for example, the effect of 'Middle Class' (left part of Figure 5). Participants with a more positive attitude towards lower-class people differ in terms of the effect of this attribute level markedly from respondents with a more negative attitude towards lower-class people; however, this is only true if these respondents participated in the intuitive framing condition (6.1 per cent vs. 1.8 per cent). Under the conditions of a reflective framing, the attitudinal subgroups do not differ much (7.2 per cent vs. 6.0 per cent). In fact, the difference in effect sizes across subgroups is statistically significant in the intuitive framing condition ($\chi^2 = 4.13$, $P = 0.042$), but insignificant in the reflective framing condition ($\chi^2 = 0.31$, $P = 0.581$).

Qualitatively similar findings are also obtained with respect to the attribute level 'Upper Class', that is attitudinal subgroups differ more pronouncedly in the intuitive framing condition (6.7 per cent vs. –0.6 per cent; $\chi^2 = 12.54$, $P = 0.000$) than in the reflective framing condition (5.7 per cent vs. 2.8 per cent; $\chi^2 = 2.06$, $P = 0.151$). Also, with respect to 'Turkish', we find a stronger effect of attitudes under the condition of intuitive framing (–11.7 per cent vs. –5.5 per cent; $\chi^2 = 7.26$, $P = 0.007$) than reflective framing (–8.9 per cent vs. –6.6 per cent; $\chi^2 = 1.18$, $P = 0.277$). Robustness checks in the supplemental material demonstrate that these results are robust with regard to attitudinal subgroups derived from the median-split, quartiles, and quintiles, instead of terciles.

The χ^2 values reported above refer to tests whether the differences between attitudinal groups are statistically significant within framing conditions; the results establish that attitudes do not statistically significantly influence overt behaviour in the reflective framing condition but do so in the intuitive framing condition. In addition, we can take a differences-in-differences approach and test whether the observed differences between attitudinal groups differ statistically significantly between framing conditions. For 'Turkish' we obtain $\chi^2 = 1.48$ ($P = 0.223$), for 'Upper Class' $\chi^2 = 2.31$ ($P = 0.129$), and for 'Middle Class' $\chi^2 = 1.13$ ($P = 0.287$). While these statistical tests do not back our theoretical expectations, the consistency of the descriptive findings as well as the strength of the observed effects (differences-in-differences: 'Turks' 3.9 per cent, 'Middle Class' 3.1 per cent, 'Upper Class' 4.4 per cent), especially considered against the background of the overall effect strengths (see Figure 1: 'Turks' 8.3 per cent, 'Middle Class' 4.2 per cent, 'Upper Class' 2.7 per cent), speak towards the empirical validity of Hypotheses 2a and 2b. In addition, we also find statistically significant differences-in-differences for alternative specifications of the attitudinal subgroups (see supplemental material), that is for 'Turks' using quartiles at the 10 per cent level ($\chi^2 = 3.03$, $P = 0.082$) and for 'Turks' using quintiles at the 5 per cent level ($\chi^2 = 6.46$, $P = 0.011$).

Discussion

This paper presents results from a choice experiment testing a central tenet of the DPP in cultural sociology with the placement of trust in economic transactions as

an application. According to the principle of catalyzation, implicit cultural orientations should have a greater effect on overt behaviour if the latter comes about in a pure Type 1 process rather than a pure Type 2 or a mixed process (Vaisey, 2009; Tutić, 2022). In our study, the cultural orientations under consideration are the implicit attitudes towards class and ethnicity and the estimates of the effects of the corresponding attributes figure as measures of their behavioural impact. Type 1 and Type 2 responses are experimentally manipulated by employing a standard framing technique from cognitive psychology (Ferreira *et al.*, 2006). Empirically, the principle of catalyzation finds support in our study. Both the implicit attitude towards class as well as the implicit attitude towards ethnicity only matter in the intuitive framing condition but not in the reflective priming condition.

This paper advances the discourse on the DPP in cultural sociology in two respects. First, we provide a strict, methodologically refined and, in a sense, novel test of a central tenet in the DPP. The claim that cultural orientations and in particular non-declarative cultural orientations should exert a stronger effect on overt behaviour has been front and centre in cultural sociology, at least since Vaisey's (2009) seminal contribution. However, to the best of our knowledge, this is the first sociological study that tests the principle of catalyzation with a design that combines two methodologically refined features: That is, firstly, we measure implicit attitudes properly by implicit association tests instead of working with explicit attitudes. And, secondly, we employ an experimental manipulation of whether behaviour comes about in a Type 1 or a Type 2 process.

A second aspect of the current study which advances the ongoing sociological discourse on the DPP is related to the problem of conceptualizing the interplay of Type 1 and Type 2 processes in determining behavioural outputs. Much like traditional dual-process theories in psychology (see Lizardo *et al.*, 2016), the dominant dual-process account in cultural sociology (Vaisey, 2009) can be criticized to take an oversimplifying stance in this regard (see also Leschziner and Brett, 2019; Brett and Miles, 2021; Brett, 2022). That is, taking up Swidler's (1986) seminal ideas, Vaisey (2009) argues that automatic Type 1 responding normally occurs in settled times which are made up of rather routine situations, whereas Type 2 responding is reserved to occur in unsettled times which pose new challenges for actors. However, recent advances in psychology (Thompson, Turner and Pennycook, 2011; Pennycook, Fugelsang and Koehler, 2015; De Neys, 2018) and also alternative dual-process models in sociology (Esser, 1996; Kroneberg, 2005; Esser and Kroneberg, 2015) do suggest that there is no one-to-one correspondence between routine situations and Type 1/Type 2 responses. Our results demonstrate that a situational factor such as framing manipulation makes a difference in overt behaviour, in particular when it comes to the relevance of implicit cultural orientations. This indicates that calls for a more complex conceptualization of the interplay of Type 1 and Type 2 processes are warranted (Luft, 2020; Brett, 2022; Tutić, 2022).

While our main interest in this paper lies in testing the principle of catalyzation in a choice-theoretical set-up, our findings are also instructive for research on ethnic and classist discrimination. Our most important finding is that implicit attitudes towards ethnicity and class matter with respect to the effects of corresponding attributes within the choice experiment, but only in the intuitive framing condition and not in the reflective framing condition. We observe the greatest degree of discrimination among respondents who (presumably) decide on intuitive grounds and have strong negative implicit attitudes towards the class or ethnicity of the seller, and we observe the smallest degree of discrimination among respondents who decide intuitively and have strong positive implicit attitudes. It is important to note that this finding does *not* imply that we only find evidence for discrimination in the intuitive framing but not in the reflective framing condition. In fact, we find that there is some moderate, in-between degree of discrimination among respondents who participate in the reflective framing condition.

As in the choice experiment we provided and experimentally varied relevant information about both the product and the seller, statistical discrimination (Phelps, 1972; Arrow, 1973, 1998; Guryan and Charles, 2013; Baert and De Pauw, 2014), which originates from a lack of information, is less likely at play. It seems reasonable to interpret any significant effect of the class or the ethnicity of the seller as evidence for a taste of discrimination (Becker, 1957).

Yet the fact that implicit attitudes matter less with respect to the degree of discrimination in the reflective framing condition shows that discriminatory behaviour in the intuitive framing condition is based on a different cognitive mechanism than in the reflective framing condition. While in both conditions status beliefs seem to (some extent) guide choice behaviour, in the reflective framing condition individuals might additionally reflect on the importance of ethnicity and class as criteria in a purchase decision or provide rather socially desirable choices, anticipating that classist and ethnic discrimination is socially undesirable. This could be further tested in a choice experiment design where each respondent answers one choice task only, as methodological research suggests that, compared with within-subject designs (i.e. multiple choice tasks per

respondent) such between-subject designs can further reduce social desirability bias (Walzenbach, 2019).[12] Further, we measured the implicit attitudes before the choice experiment tasks and future research could investigate whether choice experiment outcomes are subject to directional context effects, that is whether attitudes are measured before or after the choice tasks (Liebe *et al.*, 2016).

Study designs that encompass both implicit attitudes as well as explicit measurements of factors that are deemed as relevant for the placement of trust among respondents could go a long way in furthering our understanding of the various (cognitive) mechanisms underlying discriminatory behaviour in trust situations. While this study focussed only on implicit attitudes as a particular example of implicit cultural orientations, future research could investigate whether other implicit cultural orientations, such as habits or routines, are also influenced by the type of decision-making process and whether the principle of catalyzation applies in these cases as well.

Notes

1. In this study, hypothetical choices in fictitious choice situations are under consideration. To avoid redundancies in language, in the following we will simply refer to 'behaviour' instead of 'hypothetical behaviour'.
2. The associated properties of the two types of processes are, of course, only theoretical idealizations, which should be understood as correlates rather than universally valid descriptions.
3. In the context of trust, Murray *et al.* (2011) refer to pure Type 1 processes as 'impulsive trust' and to pure Type 2 processes as 'deliberative trust'. Stoltz and Lizardo (2018) use 'reliance' as a generic term for both types of trust and distinguish between 'intuitive faith' and 'deliberative trust'.
4. In this respect, cultural orientations align with Lizardo's (2017) conceptualization of personal culture.
5. To illustrate this, consider attitudes towards a particular sports club. These attitudes are likely to influence an individual's behaviour when interacting with a person wearing a jersey of this particular sports club, but it is unlikely that these attitudes will influence the individual's behaviour in a completely unrelated area of life, such as responding to one's partner about who takes out the garbage.
6. A good example of knowledge stored in the implicit memory is the skill to ride a bicycle. While it is impossible to communicate and transmit the skill directly, it is still possible to communicate about how to ride a bicycle. However, this kind of explicit (Type 2) communication is only a distorted form of the underlying skill.
7. While we featured three ethnicities as well as three class backgrounds in the choice experiment, we have only measured the implicit attitude towards Turks (largest cultural distance to German background) and the implicit attitude towards lower-class people (main target of classist discrimination) in the accompanying questionnaire. Since our interest lies in testing hypotheses regarding the behavioural impact of implicit attitudes, we will therefore focus on the Turkish ethnicity and the lower-class background in the empirical analyses.
8. 53.94 per cent of our 3,519 respondents identify as male, 45.89 per cent as female, and 0.17 per cent as 'other'. According to official statistics (Statistisches Bundesamt, 2021), the German population consists of 49.3 per cent males and 50.7 per cent females, so our sample is lacking somewhat in females. Mean age in our sample equals 48.08 years, which is above the mean age of 45.9 years in the population (Federal Institute for Population Research, 2021). Differentiating regarding education between lower (20.98 per cent), middle (37.63 per cent) and higher (41.39 per cent) forms of secondary schooling, our sample is skewed towards higher education (Statistisches Bundesamt, 2019: lower 33.9 per cent, middle 31.2 per cent, higher 34.9 per cent). Since we aim at testing a general action-theoretical principle, which should hold regardless of the composition of the sample, the fact that our quotas turned out to be not ideal, is not too troubling.
9. https://osf.io/du4fz/?view_only=6f67524bee604c-4fa1ab093a237d3ae1
10. Due to an initial error, the results of the last BIAT were not saved for the first 1,037 participants. Since the order of the two BIATs was random, we are missing 513 values for the implicit attitude towards Turks and 524 values for the implicit attitudes towards people from the lower class. However, because we consider both types of discrimination separately, these incomplete cases could still be included in those analyses for which the respective measure was available.
11. The supplemental material contains a manipulation check via response latencies.
12. As suggested by one of the reviewers, regarding research methodology our experimental results indicate that choice experiment outcomes can be subject to framing effects (see also e.g. Carlsson, García and Löfgren, 2010) and an intuitive framing condition (i.e. time pressure) might help to reduce social desirability bias, if the measurement of discriminatory preferences is the aim.

Supplementary data

Supplementary data are available at *ESR* online.

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