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**Working Paper**

# The strategic use of social identity

CeDEx Discussion Paper Series, No. 2023-01

**Provided in Cooperation with:**
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*Suggested Citation:* Lane, Tom (2023) : The strategic use of social identity, CeDEx Discussion Paper Series, No. 2023-01, The University of Nottingham, Centre for Decision Research and Experimental Economics (CeDEx), Nottingham

This Version is available at:
https://hdl.handle.net/10419/284276

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Discussion Paper No. 2023-01

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February 2023

CeDEx Discussion Paper Series
ISSN 1749 - 3293


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# The strategic use of social identity


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## February 2023


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**Abstract**: The importance of social identities (e.g. race, gender, political ideology) in economic interactions is well established, but little is known about how people strategically manipulate the visibility or salience of their multiple identity types. This paper experimentally explores a common type of situation in which one party can choose between different identity characteristics to truthfully reveal about oneself before entering an economic exchange. Results demonstrate the choice this party makes has substantial potential to influence their payoff: individuals can increase earnings by around 22% by selecting the characteristic most favoured by their counterpart, relative to choosing randomly. Anticipating discriminatory treatment, individuals make strategic choices over which characteristic to reveal, and benefit from a broadly accurate understanding of which dimensions of social identity counterparts will more strongly discriminate along. However, they only reap a fraction of the potential returns from strategic social identity revelation, partly because beliefs about counterparts' likely behaviour are saddled with misperceptions (for instance, overestimating likely in-group favouritism). Approximately half of individuals display willingness to sacrifice expected payoffs in exchange for making their preferred characteristics visible, suggesting that intrinsic utility is derived from social identity.



**Keywords**: Social Identity; Multidimensionality; Discrimination; Prediction Accuracy; Strategic Revelation

**JEL Classifications**: D83; D91; J15; J16

**Notes and acknowledgements**: This study received ethical approval from the University of Nottingham Ningbo China. It did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. Declarations of interest: none.

## 1. Introduction

The importance of social identity has been well established within economics. Empirically, it has been shown to affect key economic choices – for instance involving labour supply (Oh, 2021), delayed gratification (Benjamin et al., 2010) and ethical conduct (Cohn et al., 2014) – as well as preferences over redistribution (Chang et al., 2019), work performance (Afridi et al., 2015) and the willingness to contribute ideas (Coffman, 2014). Prominent theory has focused on the economic consequences of identity-specific prescriptions or norms (Akerlof and Kranton, 2000; Shayo, 2009). Perhaps most importantly, however, social identity shapes the way we are treated by other people. A vast body of evidence documents the ways in which economic discrimination benefits some groups and penalises others (Romei and Ruggieri, 2014; Zschirnt and Ruedin, 2016; Bertrand and Duflo, 2017; Lang and Spitzer, 2020). Such discrimination is likely to be a major factor contributing to group-level differences in economic prosperity (Blau and Kahn, 2017; Chetty et al., 2020).

A complication is that every person belongs to a myriad of different social categories, along multiple *dimensions* of identity. You are not merely your gender or your ethnicity, but both and many things besides. The treatment you receive from others may be influenced by any of your social characteristics, depending upon which are regarded as more important or relevant. This could be context-dependent: it has been shown that, for a given person, different identity categories can be activated, or made salient, under different circumstances, with different consequences (Cadsby et al., 2013; Chen et al., 2014; Chowdhury et al., 2016; Ravetti et al., 2019; Fernandez-Duque, 2022). The Scottish politician Frank Roy put it thus: 'Monday to Friday, my body belongs to the trade union movement. Saturday my heart belongs to Celtic [football club]. And Sunday, my soul belongs to the Catholic Church.'[1]

To date, economic theorists and experimenters have largely explored this multi-dimensional nature of social identity as an *exogenous* phenomenon. That is, it is understood that particular dimensions of a person's identity might matter more at particular moments of their life, but the processes

[1] This quote is taken from a conversation recounted by former British government minister Rory Stewart on *The Rest is Politics* podcast, July 28 2022: https://podcasts.apple.com/gb/podcast/question-time-the-last-days-of-blair-and/id1611374685?i=1000571398500.

determining which dimensions become salient when have not been thoroughly investigated. In reality, the activation of one's identity categories may often be an *endogenous* process, deliberately manipulated by oneself or other people. Aware both of the payoff consequences of discrimination and of the malleability of identity category salience, individuals may *choose* the dimension of identity along which they want a given economic interaction to take place.

One can imagine, for instance, a scenario in which an entrepreneur meets a prospective business partner for the first time. How might each party attempt to foster the development of mutually beneficial trust? Perhaps the entrepreneur, upon noticing both have blond hair and blue eyes, might point out that the two should have no problems working profitably together: that, both being members of the white race, they can each be confident of the other's high productivity and moral values. Alternatively, the entrepreneur might, upon spotting the emblem of their favourite sports team in the prospective partner's office, ask them if they saw the game on Saturday and lead into a conversation about the team's prospects for the current season. This kind of endogeneity over identity category salience can easily be generalised to other areas of economic interaction, such as manager-employee relationships, and (more closely analogous to the present study) can be extended for instance to anonymous online interactions, where one party can fully control which social identity dimensions become relevant by selecting which of their own characteristics to *reveal* to their counterpart.

If we accept that people often have considerable control over the salience or visibility of social identity categories, this leads naturally to questions about how strategically, and how successfully, they make these choices. In the example above, the deliberate activation of white-race identity seems both less likely to occur and less likely to result in a profitable partnership than the activation of shared sporting fandom, if the meeting is assumed to take place in a modern liberal society (if it is assumed to take place within a colonial clubhouse in the British Raj, all bets are off). But, in general, the category choices facing individuals are more complex and more difficult than this simple dichotomy. When confronted with a wide array of possible social identities to bring into focus, are people generally able – and, indeed, willing – to select the one that results in material payoff maximization from the interpersonal exchange at hand? Do individuals always choose to conduct interactions along lines of *in-group* identity, or do they sometimes prefer to hold them on the basis of *out-group* identity: that is, given the choice, would they always choose to make salient

identity dimensions on which the parties have shared characteristics rather than those whether they have divergent characteristics?

This paper empirically explores these and related questions. The investigation is motivated partly by striking results from Lane (2016), which studied the levels of discrimination typically found in economic laboratory experiments. In this meta-analysis, I showed that the strength of in-group favouritism detected in such studies has tended to differ markedly according to the dimension of group identity made relevant by the experimenters. In short, the strongest levels of discrimination against out-groups have been in interactions between socially or geographically differentiated groups, followed by interactions between 'minimal groups' – groups artificially generated within an experiment, on the basis of a trivial characteristic such as one's preference for the paintings of one artist over another – then by interactions between groups based on nationality, religion or ethnicity, and finally by interactions between gender groups.

These results raised eyebrows, including my own. In particular, many observers commented on their surprise at the finding of stronger discrimination occurring between absurdly meaningless minimal groups than between those based on lifelong, and extremely meaningful, identity characteristics like nationality. Nevertheless, co-authors and I have since replicated, in a controlled experiment, the result of stronger discrimination between minimal groups than between national groups (Barr et al., 2018). If those who research group identity professionally appear unable to consistently make accurate judgments over which dimensions of group identity will lead to stronger in-group favouritism, we might fairly question how successfully this can be done by ordinary people who have presumably given rather less thought to the matter.

This is relevant because accurate beliefs about how one's counterparts will discriminate along each possible identity dimension are a pre-requisite for the successful strategic manipulation of multidimensional social identity. An essential step in my study therefore involves evaluating such beliefs. This evaluation takes place in the context of an experiment employing two-person games to measure discrimination along five different social identity dimensions: political ideology, university faculty, minimal group identity, ethnicity and gender. In advance of the games, the potential beneficiaries/victims of such discrimination were required to report – after first discovering their partners' identity characteristics – their beliefs about the direction and strength of partners' likely discrimination along each dimension. They were also required to select one of

the dimensions upon which to conduct the interaction, by making their group identity along only this chosen dimension known to their partner. By eliciting both predictions of discrimination and choices of identity dimension, it is possible to examine of how both relate to actual discrimination, and to each other.

The experiment was run among a student population in the United Kingdom in June 2022, employing as the two-person interactions both trust games and dictator games, which provide alternative contexts in terms of the types of discrimination they may draw out (taste-based and/or statistical). Results show discrimination in favour of in-groups along all dimensions but, as expected, substantial variation across identity dimensions in its degree. By far the strongest discrimination occurred along the political dimension, defined in this case by an individual's support for or opposition to the United Kingdom leaving the European Union. Discrimination was weaker on the basis of gender or faculty, and weaker still on the basis of ethnicity or minimal group identity. Differences in discriminatory preferences also emerged between different groups along particular identity dimensions: for instance, in-group ethnic favouritism was exhibited by ethnic minorities but not by whites, and in-group gender favouritism was displayed by females but not males.

The patterns of discrimination were predicted with quite some astuteness by their recipients. In aggregate, predictors correctly understood that the political dimension was likely to see much the strongest in-group favouritism, and that there would be fairly similar levels of in-group favouritism along each of the other dimensions. Even more impressively, the predictions accurately picked up some of the variations in strength of discrimination between decision-makers of different groups along a given dimension. Overall, subjects were able to predict, with a success rate significantly better than chance, the relative profitability that would result from conducting a game along each of the available identity dimensions, thereby creating the potential for strategic dimension selection to result in payoff increases. This potential was, however, limited by systematic imperfections to their predictions. Subjects exhibited tendencies toward certain misperceptions, for example that males would discriminate against those of non-binary gender (they did not) or that whites would discriminate against ethnic minorities (they did not). Strikingly, they also tended to vastly overestimate the prevalence and strength of discrimination along all identity dimensions.

As a result of their ability to anticipate the patterns of discrimination, subjects succeeded in generating material gains through their choices over which identity dimension to make salient. By far the most frequently revealed characteristic was political ideology. Such revelations were almost exclusively made by those sharing the same ideology as their partner, thereby allowing the revealing individual to benefit from preferential treatment. Ethnicity was rarely revealed, except by Asians playing with other Asians (whereupon favourable treatment was provided). Gender was very rarely revealed by males and only revealed at relatively high frequency by females if they were matched with other females.

While there was, on the whole, a strong strategic component to identity dimension choice, this was far from ubiquitous: approximately half of subjects chose to reveal a characteristic that they believed would *not* result in the most favourable treatment by their partner. It appears therefore that individuals derive intrinsic utility from placing emphasis on their preferred identity characteristics. Subjects demonstrated stronger preferences for revealing in-group characteristics than could be fully explained by their predictions alone; as a consequence, as many as four fifths of decision-makers chose to create in-group matches. Overall, the strategic use of social identity resulted in subjects improving their payoffs above a random selection strategy by approximately 7.9% in dictator games and 5.3% in trust games. Although both statistically and economically significant, these increases are only a fraction of the payoff improvements of 21.8% and 21.6% they could have generated in the two games if they had made optimal selections to fully harness their partners' discriminatory preferences.

This paper contributes primarily to the literature on endogenous social identity. This research area has been gradually pushing forward since Akerlof and Kranton (2000) considered the possibility that individuals could sometimes choose their social identity, proposing that such a choice may represent 'the most important "economic" decision people make'. In this and the subsequent theoretical literature it inspired (Shayo, 2009, 2020; Bernard et al., 2016), the choice is between different groups along a particular identity dimension (for example, the choice between becoming a conservative or liberal). Empirically, how individuals select into social groups on dimensions of identity with flexible group membership has been explored by Hett et al. (2020) and Munoz-Herrera (2023), the first of which found individuals were willing to forgo payoffs in order to belong to preferred groups. Empirical research has also drawn attention to cases where individuals

anticipate being discriminated against along a particular dimension, and respond by either obscuring their group affiliation or even deceitfully passing themselves off as members of a different group (Zussman, 2013; Kang et al., 2016; Charness et al., 2020; Aksoy et al., 2021; Kudashvili and Lergetporer, 2022; Abraham et al., 2023).[2, 3] This literature has, however, also found individuals willing to sacrifice payoffs in exchange for revealing their true group membership; for instance, in the experiment of Kudashvili and Lergetporer (2022), a substantial proportion of Armenians passed up the opportunity to conceal their true nationality to Georgians with whom they were interacting, even though they expected the Georgians to discriminate against them as Armenians.

Where the current study breaks new ground is in approaching the endogenous manipulation of social identity from a multidimensional perspective, addressing not how individuals select into particular identity *groups* but instead how they select between different *dimensions* of identity. The discovery that subjects in my experiment were often willing to put forward dimensions they expected not to be payoff-maximising fits well with the above studies finding individuals willing to pay to belong to or reveal preferred groupings. Together, the evidence is indicative of intrinsic utility being derived from identity group membership (on this point, see also Hargreaves Heap and Zizzo, 2009).

The multidimensionality of social identity has received increased attention in recent years, but remains a nascent topic, with a leading scholar in the field referring to a 'paucity of literature'

[2] On the flip side, Heyes and List (2016) presented a study which found individuals were willing to pay to reveal, at the start of a trust game, their characteristics (in the form of a photo) to their partner, behaviour which the authors proposed may have been strategically driven by expectations of favourable treatment. Their design provides some of the building blocks for my experiment.

[3] It should be noted that there also exists a relevant stream of literature studying settings where individuals can choose who to play, or avoid playing, games with from a pool of prospective partners who have either in-group or out-group identity along a particular dimension (e.g. Currarini and Mengel, 2016; Caria and Fafchamps, 2020; Banuri et al., 2022). This literature generally finds, like the current paper, strong preferences for creating in-group matchings, which can be partially explained by expectations of preferential treatment in such pairings. Studies within this literature which have moved towards the current paper's focus on the multidimensionality of social identity are Charness et al. (2014) and Adnan et al. (2022), which explored not only whether players preferred to select in-group partners but also upon which of multiple available dimensions of identity they chose to do so.

while exhorting further research on it (Li, 2020). Besides the current paper, a growing number of studies have attempted to measure levels of discrimination, within a given sample, along more than one identity dimension and therein draw controlled comparisons between them (e.g. Li et al., 2011; Goette et al., 2012; Chen et al., 2014; Dugar and Shahriar, 2012; Grossman and Honig, 2017; Barr et al., 2018; Abbink and Harris, 2019; Ravetti et al., 2019; Eckel et al., 2022; Enke et al., 2022). One striking finding of this literature is of the remarkable potency of political identity, which has been found to produce stronger discrimination than identity dimensions, such as race, traditionally regarded as primary societal dividing lines (Ben-ner et al., 2009; Iyengar and Westwood, 2015; Westwood et al., 2018). The current paper strongly supports this position. In fact, the ranking of identity dimensions in my experiment by levels of discrimination is mostly in line with previous evidence. However, in this study the relative strength of discrimination along each dimension is merely the starting point for exploring individuals' exploitation of the prominence of these dimensions for material gain.

This paper also contributes to the economic literature on prediction accuracy (e.g. Cavallo et al., 2017; DellaVigna and Pope, 2018; Snowberg et al., 2007). As a whole this literature is expansive, but relatively little research has investigated the accuracy of predictions specifically about discrimination. Those studies which have done so have mostly elicited predicted discrimination for a single dimension of identity, with some finding beliefs to be well calibrated (Güth et al., 2009; Grimm et al., 2017) and others finding a tendency for predicted discrimination to exceed actual levels (Haaland and Roth, 2017; Charness et al., 2020; Aksoy et al., 2021). To the best of my knowledge, only one existing study has elicited beliefs about levels of economic discrimination along more than one identity dimension: Goette et al. (2012), whose participants were able to accurately predict levels of discrimination on two dimensions, and therefore also correctly anticipated the increase in discrimination for one dimension relative to the other. In measuring and comparing predicted discrimination simultaneously along five different dimensions, the current study provides the richest investigation to date of beliefs about discrimination. By exploring social identity as a multidimensional phenomenon, I produce an additional discovery: subjects tend to be more accurate at predicting the discriminatory behaviour of others the more identity characteristics they have in common. This helps explain how subjects in the experiment enjoy an impressively perceptive understanding of some of the discriminatory tendencies in existence within their local population, which to an outsider do not appear intuitively easy to predict.

## 2. Experimental Design

The experiment was designed to achieve the following objectives. First, it was intended to measure discrimination, and to do so along various different identity lines. This would reveal the patterns of discrimination for each dimension of social identity considered and, importantly, establish which dimensions produced relatively strong or weak discrimination. Secondly, the experiment sought to explore whether the potential victims (or beneficiaries) of discrimination could accurately predict the discriminatory tendencies in action and how these varied across identity groups and dimensions. Thirdly, it set out to identify whether, when given a choice over which aspect of one's social identity to reveal in an anonymous interaction, individuals would make choices they expected to be profit-maximising, and – related to the previous objective – to furthermore identify the extent to which their choices would actually be profit-enhancing, given the genuine discriminatory preferences of the other party.

As an additional design feature, these questions were pursued in two separate contexts, between which there existed a fundamental difference in terms of which *types* of discrimination were possible. In economic theory, discrimination has traditionally been divided into two categories: taste-based discrimination (Becker, 2010) and statistical discrimination (Phelps, 1972; Arrow, 2015). The two kinds occur for radically different reasons. Taste-based discrimination describes preferential treatment provided towards one group over another as a simple consequence of the decision-maker's preference for bestowing greater benefits upon the more favoured group (e.g. because of animus towards the discriminated-against group). Statistical discrimination, in contrast, refers to differential treatment of members of different groups by a decision-maker merely attempting to maximise own material profit in the face of imperfect information; if they believe there to be average differences between groups in behaviours which can affect the decision-maker's own payoff, they may adopt different strategies towards members of the different groups (e.g. investing more in those belonging to groups they believe to be more trustworthy on average).

### 2.1. Games

In the experiment, subjects participated in two tasks. In one task, both taste-based and statistical discrimination were possible. In the other, only taste-based discrimination could occur. Both tasks

consisted of simple economic games played between two people. For convenience, I will refer to the first mover in both games as the *sender* and the other player as the *receiver*. In the task where only taste-based discrimination could occur, subjects played a dictator game (Forsythe et al., 1994). In this interaction, the sender was originally endowed with £14, while the receiver started empty handed. The sender's task was to decide an amount (which could be zero) of the endowment to donate to the receiver, after which the game ended. If a sender in this game has discriminatory preferences, the amount they choose to donate may depend upon the social identity of the receiver. Note that this would necessarily be a case of taste-based discrimination; the receiver has no opportunity to make a decision and therefore any statistical beliefs the sender holds about their identity type are irrelevant to the payoffs the sender can earn from the game.

The task in which both forms of discrimination could potentially come into play was a trust game (Berg et al., 1995). In the version of this game used in the experiment, both the sender and receiver were initially endowed with £5. The sender could choose to send any amount (including zero) to the receiver, upon which the amount sent would be tripled by the experimenter. The receiver could then choose to return any amount (including zero) within their possession to the sender. In this game, a sender might condition the amount sent on the social identity of the receiver for two reasons: either because (like in the dictator game) they have a taste for treating some groups more generously than others, or because they believe members of some groups will tend to return more money in the game's second stage than members of others. Such statistical beliefs about group differences in trustworthiness could alter the sender's belief about the profit-maximising amount to send.

The trust game is therefore a more complex interaction than the dictator game. Prior experiments studying discrimination have often employed both games in order to diagnose the motivations behind discrimination (e.g. Fershtman and Gneezy, 2001; Guillen and Ji, 2011; Binzel and Fehr, 2013), and have often found that patterns of discrimination do differ between the two, with differential beliefs about groups' trustworthiness either aggravating or moderating discrimination in the trust game relative to the dictator game (see Lane, 2016). For receivers in the current experiment, the trust game is therefore also potentially the more challenging environment in which to predict sender discrimination – their ability to do so accurately could not be automatically

inferred if such an ability were to be observed in the dictator game. This provides the justification for including both games in the study.

### 2.2.Measuring discrimination on multiple identity dimensions

In each game, discrimination is measured as a difference in the amount transferred from sender to receiver resulting from a difference in the group identity of the receiver.[4] For instance, male/female gender discrimination in a particular game can be measured as the difference in the amount a sender transfers to female relative to male receivers. As per the standard approach in the lab experimental literature, this was facilitated by truthfully revealing to the sender only one piece of information about the receiver (e.g. their gender), thus allowing a controlled measurement of discrimination from observing the effect of varying the content of this piece of information on the amount sent.

In order to separately measure discrimination along multiple identity lines, the single piece of information revealed about receivers would be a characteristic relating to one of various dimensions of social identity. Discrimination on a given dimension would then be identified by taking the sender's transfer if the information revealed the receiver to belong to one identity group, and comparing it against the transfer if it revealed them to belong to a different group within the same identity dimension. For instance, discrimination along the political identity dimension was measured by comparing sender transfers to receivers revealed to be Brexit supporters against transfers to those revealed to be Brexit opposers.

Discrimination was measured along five identity dimensions, which were carefully selected in light of the existing literature: gender, ethnicity, painting preference (hereafter referred to in this experiment as *artificial* identity), university faculty and political ideology. The order I have listed the dimensions here represents the relative strength of in-group favouritism I expected to observe on each, with the weakest favouritism expected along gender lines and the strongest along political

[4] In the trust game, it is also possible to measure discrimination in the responses of receivers to senders of different groups. While the beliefs of senders about such discrimination may well influence their sending decisions, studying the discrimination of receivers does not closely relate to this paper's main research objectives and is therefore not included.

lines. These expectations were based primarily on the meta-study of Lane (2016), which found in-group gender favouritism in lab experiments to be slightly negative (i.e. males favour females and vice versa) and significantly weaker than the in-group favouritism observed on the basis of ethnicity, which in turn was significantly weaker than in-group favouritism between artificially induced identity groups (which have often been based upon painting preferences in ways similar to the induction method of the current study). Faculty fits under the umbrella of identity types based on social/geographical groupings, which the meta-study found to yield significantly stronger discrimination than artificial identity.[5] A clear prediction on the strength of political discrimination is not available from Lane (2016), which included few studies on political identity and placed it in an 'other' category. However, there is evidence for particularly strong discrimination between members of political groupings, relative to groupings along other identity dimensions, by several studies (e.g. Ben-ner et al., 2009; Iyengar and Westwood, 2015; Abbink and Harris, 2019). For instance, Westwood et al. (2018) found, in several countries, discrimination between members of opposing political parties to be stronger than that between religious, linguistic, ethnic or regional groups.

These five identity dimensions were thus selected with the expectation that, by producing varying levels of discrimination, they would create an interesting environment in which to explore the extent to which this variation was well understood by receivers. It is worth noting that my prior expectations about how these dimensions would rank in terms of in-group favouritism, while informed by previous literature, should not be regarded as strong hypotheses, and testing for consistency with earlier studies is not the primary objective of this research. Lane (2016) found substantial heterogeneity within the lab experimental literature on discrimination – even along a particular identity dimension, different experiments run in different populations have estimated very different levels of in-group favouritism. It would therefore not be surprising if, due to the idiosyncrasies of the population from which subjects in the current study are drawn, we observe stronger or weaker in-group favouritism along certain dimensions than have occurred on average in previous experiments.

[5] In measuring discrimination between social groupings based upon units within a university, I am following many previous studies, including for instance Song et al. (2012), Banuri et al. (2022) and Eckel et al. (2022).

Subjects were placed into identity groupings for each of the five dimensions from their answers to five questions at the beginning of the experiment. Gender identity was elicited by asking subjects to report the gender they identified as belonging to. There were three possible responses: in reflection of the growing societal presence of non-binary identification, a 'Neither Female nor Male' option was added to the other two.[6] For ethnic identity, I based the wording of the question on the 2021 Census of the United Kingdom[7], the country in which this experiment was run. Subjects were asked to select out of five options 'the ethnic group that best describes your background'. The options were 'White', 'Mixed or Multiple ethnic groups', 'Asian or Asian British', 'Black, Black British, Caribbean or African' and 'Other ethnic group', with additional explanations, borrowed from the accompanying text to the census question, outlining which sub-groups belonged to each of the five.[8] The artificial identity groupings were generated by a procedure based on that famously introduced in the original minimal group research of Tajfel et al. (1971): subjects were presented with two paintings, one by Paul Klee and the other by Wassily Kandinsky, and asked to select which they preferred, thereby inducing a Klee identity and a Kandinsky identity. For faculty, subjects were asked which of their university's five faculties their main field of study fell under (Arts, Engineering, Medicine/Health Sciences, Science, or Social Sciences). Political identity was elicited by asking subjects whether, in hindsight, they believed

[6] To the best of my knowledge, no lab-type experiment has previously studied economic discrimination toward non-binary people. Treatment of anti-transgender individuals has been investigated in field studies (Button et al., 2020; Granberg et al., 2020).

[7] See https://www.ons.gov.uk/census/censustransformationprogramme/questiondevelopment/nationalidentityethnicgrouplanguageandreligionquestiondevelopmentforcensus2021

[8] Inevitably, there will be disagreements about whether this is the most appropriate way to delineate ethnicity in the United Kingdom. Given that ethnicity is a social construct with unsound scientific basis, this can hardly be avoided whichever way the lines are drawn. Basing the experimental groupings on those of the census had the advantage of confronting subjects with a conventional taxonomy they were likely to be familiar with; an additional benefit was that the instructions could explicitly state the census was the source of the taxonomy, thus avoiding the impression that it represented the experimenter's own view of the world, and hopefully sidestepping any negative reactance from subjects that such a perception could result in.

the United Kingdom's decision to leave the European Union was right or wrong.[9] This question harnessed the political issue which in Britain had towered above all others in the years following the 2016 referendum, and upon which stronger polarisation may have been built even than support for different political parties (Sobolewska and Ford, 2020; Hobolt et al., 2021). While the perceived importance of Brexit may have somewhat subsided by the time the experiment was conducted in 2022, it likely still carried substantial emotional weight, especially for supporters of Remain. Note that, while I selected the UK-specific issue of Brexit as the most applicable basis for political identity in this study given the population in which it was conducted, the divisive liberal-conservative polarisation at the heart of the Brexit debate translates quite closely to that observed in other western democracies in recent years (Norris and Inglehart, 2019).

Discrimination along each identity line was measured at the individual level. In each game, every sender made a separate decision on how much to send to a receiver belonging to each one of the possible groupings within each identity dimension. This was done by employing the strategy method, a standard tool in experimental economics for generating incentive-compatible choices for more decision scenarios than actually occur in a game.[10] The sender was told that one true characteristic about the receiver would be revealed to them, but that this revelation would only occur later in the experiment. The sender was therefore required, for every possible characteristic that could be revealed about a receiver, to make a binding pre-commitment to an amount they wanted to send to the receiver if the receiver was revealed to belong to this particular grouping. This resulted in a set of 17 decisions being made in each game, equal to the number of different possible characteristics that receivers might possess (3 types of gender identity; 5 types of ethnic

[9] The wording of this question was based on that employed in YouGov's Brexit opinion tracker (YouGov, 2022a).

[10] Measuring discrimination using the strategy method, to elicit actions towards members of different groups, has been a frequently employed approach in the literature. Examples include Ben-ner et al. (2009), Hett et al. (2020) and Restrepo-Plaza and Fatas (2022).

identity; 2 types of artificial identity; 5 types of faculty-based identity; 2 types of political identity).[11]

### 2.3.Eliciting receiver choices and predictions

The one characteristic revealed to senders was, in fact, selected by the receiver. They were required to choose their answer to one of the five identity elicitation questions to be displayed to the sender. Receivers made this decision after learning the rules of the game and the circumstances under which the sender would decide how much to send them (including how this would be elicited using the strategy method). Receivers knew senders would not be told that the selection of the characteristic revealed to them was the result of the receiver's choice; senders would merely be told that it had already been determined which piece of information would eventually be revealed to them, but would not receive any further details about the determination process.[12]

Importantly, in advance of playing each game, receivers were provided with full information about the sender's group identity on all five dimensions. Indeed, it was common knowledge among both players that the receiver possessed this information. The receiver could, therefore, decide which characteristic to reveal in the knowledge of which ones were shared by the sender. In other words,

[11] Senders may of course draw inferences about secondary characteristics of receivers from the single piece of information revealed. For instance, from the information that a receiver is an arts subject, senders may infer a relatively high probability that they are female. Such inferences about secondary characteristics are what underlie statistical discrimination and may also result in quasi-discrimination (Hoffmann and Coate, 2022) – where discrimination on the basis of one characteristic mechanically results in apparent discrimination on a closely correlated characteristic – and the potential for them is not specifically related to the use of the strategy method for revealing receiver identity.

[12] If senders had been aware the choice of information to be revealed was made by the receiver themself, this could rather complicate matters by leading senders to make guesses about the secondary characteristics of receivers who exhibited the preference for revealing a certain type of social identity. Omitting an explanation to senders about how the characteristic to be revealed was determined does not constitute deception under its conventional understanding in experimental economics (see e.g. Cooper, 2014). The reason for explicitly making it clear to senders that it had already been determined which piece of information would be revealed was to remove any suspicions that which of their decisions was ultimately implemented might depend upon their choices over how much to send (e.g. whether they engaged in discrimination or not).

receivers could choose to set the game up either with an in-group or out-group matching (as long as they shared at least one characteristic with the sender, and did not share all characteristics with them) and had it within their power to select the identity dimension along which they believed they would receive the most favourable treatment, given the observable characteristics of the sender. Exploring the extent to which they used this power is a key objective of the experiment. Note that, while the experimental setting is an abstract one, it is not difficult to think of a range of ordinary situations that it loosely resembles. For instance, in economic exchanges on online platforms, one party can often select exactly which of their identity characteristics to reveal, often in the knowledge of a full set of the other party's characteristics (think of a prospective guest on Airbnb deciding what to reveal about oneself to a host whose complete profile is visible to them). Similarly, a job applicant can choose which identity characteristics to signal on their resume, having first researched an employer's profile.

In addition to selecting an identity type to be revealed, in each game the receiver also made a set of 17 predictions over the amounts their matched sender would commit to transferring to receivers of each group. This elicited receivers' expectations about the discriminatory tendencies of senders, along each identity dimension. It also made it possible to rank the receiver's five actual characteristics available for selection according to the amounts they predicted they would receive from senders upon revealing them. We can therefore assess the extent to which receivers' selections of identity dimensions along which to conduct the games were driven by strategic motives to select those dimensions they expected to be more profitable for them, in addition to assessing how profitable their choices actually turned out to be. Since it seemed plausible that receivers' predictions could be influenced by having already selected a characteristic to reveal, or alternatively their revelation choices might be affected by having first been prompted to make predictions, it was randomized whether receivers first made revelation decisions or predictions.[13]

### 2.4.Implementation

[13] The accuracy of receivers' predictions was not incentivized. The merits of employing incentivized belief elicitations in experimental economics remain an unresolved debate (Blanco et al., 2010; Schotter and Trevino, 2014; Trautmann and van de Kuilen, 2015). For a compelling recent account showing that incentivizing belief elicitation can distort truthful reporting, see Danz et al. (2022).

The experiment was programmed on Qualtrics and conducted online in June 2022. Subjects played both the dictator and trust games, but remained in the role of either sender or receiver across both. Which game they made decisions for first was randomised. It was made clear to subjects that they would be matched with a different partner in the two games. The experiment was conducted over two waves, which ran at separate times for senders and receivers, with approximately a one-week gap between waves. In the first wave, senders just answered the five identity elicitation questions. In receivers' first wave, they initially answered these five questions, then received instructions about the first game and made their predictions and revelation decision for this game, before undergoing the same process for the second game. In senders' second wave, they received instructions for the first game and made their decisions, and then did the same for the second game. Only after making the sets of decisions for both games was the relevant identity characteristic about each receiver they were matched with revealed to the sender. In receivers' second wave, senders' decisions were transmitted to them and they made their decision on an amount to return in the trust game.[14] For each subject, it was then randomly determined whether they were paid their earnings from the dictator game or the trust game (as had been explained to them from the outset), which they received, via Paypal, in addition to a participation fee of £3.[15]

Sending decisions, and the corresponding predictions of receivers, were made by adjusting sliders. All 17 sliders were on the same screen. In order to control for potential list effects, the order in which the five sets of sliders (i.e. one set for each identity dimension) were presented was randomized across subjects, with one of ten different possible orderings selected. The order of items within the set of sliders for each dimension was the same for all subjects. In all explanations in the instructions, when the five dimensions were listed this was always in the same order that

[14] In each game, only the sender's one decision that was actually implemented was revealed to the receiver. The sender's other 16 decisions, about amounts to send corresponding to characteristics that were not revealed about the receiver, remained private. It was explained in advance to both senders and receivers that this would be the case. This meant that senders in the trust game did not need to worry about being punished by receivers who noticed they had indicated discriminatory preferences for sending different amounts to different types of receivers.

[15] Because of the time gap between waves, subjects were reminded in the second wave of the social identity elicitation questions from the first wave and their own responses to these, since some may otherwise not have remembered certain answers (especially their painting preference).

they appeared on the decision screens. For a given subject, the ordering of dimensions was the same in the dictator game and trust game. Also, the matching of players was made subject to the constraint that the ordering of dimensions was the same for both players within a sender-receiver pair. Moreover, when making their predictions and choices, it was clear to receivers that senders would experience the same ordering as themselves; in each game the receiver was shown pictures of the screens the sender they were matched with would see, in order to give them the best possible understanding of the decision environment this sender faced. The matching was also constrained such that the order of playing the dictator and trust games was the same for each subject within a sender-receiver pair. In addition, for each receiver, whether predictions were elicited before or after revelation choices was held constant across the two games.

Care was taken to ensure subjects understood the tasks as well as possible. A set of understanding test questions were presented to both senders and receivers for both games; further explanations appeared on screen whenever a question was answered incorrectly. It was also made clear to receivers that senders would undergo the same rigorous understanding testing process, which further ensured that when making predictions receivers were in possession of complete information about the process senders would have gone through. The full instructions presented to senders and receivers, and the decision screens they faced, are provided in Online Appendix A.

### 2.5. Sample

All subjects were students at the University of Nottingham, recruited via ORSEE (Greiner, 2015). The experiment was conducted with 214 assigned pairs of senders and receivers in each game. However, one designated receiver dropped out before completing the first wave of the experiment, and therefore we have 213 sets of receiver decisions to analyze. The dataset contains 203 sets of sending decisions for each game, because in 11 pairs the sender did not complete the second wave of the experiment.[16] Table B1 (Online Appendix B) presents the frequency of different identity

[16] These were mainly subjects who failed to respond to the reminder to complete the experiment, but also includes one case where, due to a glitch, a sender completed the first wave twice and was by accident initially matched twice with receivers for each game. This sender was then only invited to complete the second wave once. In pairs where the sender did not make sending decisions, the sender was not paid and the receiver was compensated by being given both players' endowments as their payoff from the game in question.

types in the experiment. A slight majority of subjects were female. The sample was very ethnically diverse, with white and Asian the two largest groups. The most represented faculty was Social Sciences. 86.9% of subjects were opposed to Brexit, as would roughly be expected from a sample of young people in Britain (see YouGov, 2022b). A large majority also selected the Kandinsky painting in preference to the Klee. However, these distributions would not have been obvious to any subject, as the experiment was conducted online and they only received any information about the characteristics of those they were matched with.

## 3. Results

This section will proceed by first presenting the choices made by senders in the two games, and the patterns of discrimination therein. I will then examine receivers' predictions in order to gauge the accuracy of their understanding of sender behaviour. Finally, I will consider receivers' revelation decisions, and how they relate both to receivers' predictions and senders' actual behaviour.[17]

### 3.1. Senders' choices and patterns of discrimination

Since every sender made a set of 17 decisions in each game, a general measure of their willingness to share, in each game, can be constructed by taking the mean of the 17 amounts sent. In the dictator game this averaged at £3.19 (approximately 22.8% of the £14 endowment), while in the trust game it came to £1.68 (33.6% of the £5 endowment).

How were the amounts sent conditioned upon the social identity of receivers? I address this separately for each of the five identity dimensions. Figures 1-5 present the mean amounts, in each game, senders committed to transfer to those revealed as members of each possible identity group. The analyses are separated by the sender's identity group within the relevant dimension, in order

[17] All analyses in this section will pool observations from subjects who played the dictator game first with those who played the trust game first. I have, however, re-run the analyses separately for each of these two sub-samples; this yielded qualitatively very similar results in each case, suggesting no important role of game order. The interested reader can verify this by running the do-file in the replication package to be made available as a supplementary material upon publication.

to observe, for each dimension, how much senders of each group tend to send to their own group members and how much they send to members of each out-group. Behaviour of subjects from identity groups with 10 or fewer senders is not presented, due to the small sample sizes.

*(FIGURES 1-5 ABOUT HERE)*

First considered, in Figure 1, is the gender dimension, the one along which my prior expectation was for the lowest degree of in-group favouritism. Indeed, male senders barely adjusted their transfers according to the receiver's gender in either game. For females, the patterns look rather different: they sent more in both games to females than to either males or non-binary subjects. Significance tests on gender discrimination are presented in the top panels of Tables B2 and B3 (Online Appendix B).[18] These show that the in-group favouritism of female senders is highly significant (in both games, $p<.01$ for female vs male receiver and female vs non-binary receiver). Females also sent significantly less to males than non-binary receivers in the trust game (but not in the dictator game). In contrast, there is no significant gender discrimination by males in either game, while we have insufficient observations from non-binary senders to analyse.[19]

Ethnic discrimination is addressed in Figure 2, with significance test results in the top panels of Tables B4 and B5. Again, the patterns look broadly similar across the two games, but markedly

[18] In this paper, significance tests comparing amounts sent (or predicted amounts sent) to different groups are generally matched-pairs t-tests, which reflect the within-subject nature of the analysis. In cases where there are less than 30 pairs of observations, Wilcoxon signed-rank tests are used instead. All tests in this paper are two-tailed. Some of the strong levels of significance may appear surprising in light of the sizable confidence intervals visible in Figures 1-5. These confidence intervals are large because there is substantial variation across subjects in average amounts sent (or predicted amounts sent). However, there is a high level of correlation within a subject's set of 17 transfers (i.e. senders who send high amounts to one type of receiver tend also to send high amounts to others) and within those predicted by their matched receiver; due to the resulting low degree of variation in transfers (or predicted transfers) at the individual level, the average variation at the individual level in *discrimination* (or predicted discrimination) is also relatively small.

[19] Significant in-group gender favouritism by females is not unheard of in the experimental literature. It was found, for instance, by Eckel and Grossman (2001). However, it is certainly not commonplace, as established by Lane (2016).

different for senders of different identity groups. White senders did not engage in in-group favouritism – in fact, they sent less in both games to white receivers than to any other ethnicity. Their reverse discrimination, in favour of each of the four ethnic out-groups, is significant in the trust game (at the 10% level for black and 'Other', at the 5% level for mixed and Asian), while in the dictator game it is only significant for black receivers (at the 10% level). Such behaviour may not be in line with traditional models of in-group favouritism, but previous studies have occasional found evidence for ethnic out-group favouritism by whites (e.g. Terum et al., 2018; Gerhards et al., 2021), while null results for ethnic discrimination in lab experiments are common (Lane, 2016). White senders' behaviour could plausibly reflect the development of extremely strong social norms against mistreatment of ethnic minorities by members of a privileged majority group, and 'white guilt' motivating reverse discrimination to redress the historical balance (Swim and Miller, 1999; Iyer et al., 2003).

Unlike the whites, Asian and black senders did strongly favour ethnic in-group receivers. Asian senders transferred more to Asian receivers than to each of the other four ethnic groups in the trust game (significant at the 1% level for black and 'Other' receivers, at the 5% level for white receivers, and at the 10% level for mixed ethnicity receivers); in the dictator game they sent significantly more to Asians than to whites ($p<.01$), black receivers ($p=.037$) and 'Other' receivers ($p=.059$) but not those of mixed ethnicity ($p=.179$). They also discriminated *among* out-groups, sending significantly less to whites than to black or mixed race receivers in the dictator game (both $p\leq.038$), and sending significantly less to 'Other' receivers than to mixed race (at the 10% level) or white (at the 5% level) receivers in the trust game.[20] That whites were the receivers least favoured by Asians in the dictator game, but received more than other ethnicities from them in the trust game, suggests a strong taste-based component of anti-white discrimination which was mitigated somewhat by relatively high levels of trust towards them. No such mitigation appeared among black senders, who sent significantly less to whites than to each of the other ethnic groups in both games (all $p<.01$). Black senders also sent significantly more to black receivers than to each of the

[20] Discrimination against the 'Other' group at first glance appears odd, since by definition senders did not know the specific ethnicity of these receivers, but it may reflect discrimination against Arabs, who were the only group explicitly mentioned as falling into this category in the explanation accompanying the ethnicity elicitation question.

other groups in both games (all $p<.01$), and sent more to 'Other' receivers than to those of mixed ethnicity in the trust game ($p=.018$).[21] Overall, that strong discrimination is found by black and Asian senders, but not by whites, may reflect a greater willingness to discriminate resulting from a group's minority status within society, which would be consistent with some previous research (Gupta et al., 2018).

Figure 3 and the top panels of Tables B6 and B7 pertain to discrimination along the artificial identity dimension. In spite of my prior expectation of stronger discrimination based on painting preferences than on gender or ethnicity, in-group favouritism here is in fact very mild and barely statistically detectable in the dictator game ($p=.082$ for Kandinsky senders; $p=.163$ for Klee senders), while it is not significant at all in the trust game (both $p\geq.112$). One possible explanation for such mild discrimination is that artificial identity inducement loses its bite in a context where subjects are simultaneously primed to think about several other, more meaningful identity types.[22]

A general tendency for discrimination did occur along the faculty dimension (Figures 4A and 4B; Tables B8 and B9), but again this was not entirely consistent. Senders from the Science faculty significantly favoured their own over each of the other faculties except Medicine in both games (all $p\leq.029$). Senders from Social Sciences also exhibited significant in-group favouritism over all other faculties in the dictator game (at the 10% level for Medicine; at the 5% level for Science; at the 1% level for Arts and Engineering), but such favouritism was only significant over Engineering in the trust game ($p=.011$). The sample sizes for senders of the other three faculties are rather smaller and the significance of discrimination is somewhat patchy, but a general tendency emerges for larger transfers to in-group than out-group receivers in both games. Along this dimension, there are also many instances of senders differentiating their treatment towards different out-groups. This perhaps reflects the varying closeness of academic and social ties between different faculties.

[21] There were only eight senders from each of the mixed and 'Other' ethnic groups, but among mixed senders there is some indication of discrimination against white receivers in the dictator game (see Table B4).

[22] With regard to this explanation, there is little previous evidence to draw upon, as studies have not tended to induce artificial identity while priming natural identities at the same time. However, one study which did this (Eckel et al., 2022) found weaker discrimination between minimal groups than between university colleges in the sessions where both were measured and, interestingly, found that minimal group discrimination was milder if it was elicited *after* natural group discrimination.

For instance, social scientists provided preferential treatment for medics over arts and engineering students in both games (all $p \leq .028$) and also favoured science over engineering students ($p \leq .041$ in both games). Scientists favoured medics over arts and social science students in both games (all $p \leq .027$). Medics favoured scientists over all other out-groups in the trust game (at the 10% level over Engineering, the 5% level over Social Sciences, and the 1% level over Arts), though not in the dictator game.

Finally, discrimination along political lines is demonstrated in Figure 5 (significance tests in Tables B10 and B11). Strong discrimination emerges, but again this depends upon the identity group of the sender. Anti-Brexit senders transferred approximately twice as much to fellow anti-Brexiters as to pro-Brexiters in both games; this discrimination is significant at the 1% level in each case. In contrast, the in-group favouritism from pro-Brexiters was much milder and not statistically significant in either game (although note the small sample size of 27 pro-Brexit senders). This is consistent with research in recent years finding greater hostility from liberals toward conservatives than vice versa (Ford and Cowley, 2016; Pew Research Center, 2017; YouGov, 2018; Duffy et al., 2021).

Overall, how do levels of in-group favouritism differ across the five identity dimensions? This is addressed in Figures 6A and 6B, and Table 1. The figures plot the distribution of (average) in-group favouritism in the two games, for each dimension, *at the individual level*: this is calculated by subtracting the average amount a subject committed to sending receivers belonging to each of the possible out-groups along the relevant dimension (or simply the amount they committed to sending receivers from the single out-group, for dimensions with only two groups) from the amount they committed to sending in-group receivers on the same dimension. On all dimensions, the plots show a high density of favouritism close to zero in both games. However, the distributions are markedly flatter for political identity than every other dimension, indicating that substantial discrimination is commonplace along this dimension, whereas along all the others most senders tend to treat in- and out-groups with near equality.

*(FIGURES 6A AND 6B ABOUT HERE)*

Table 1 presents the mean levels of (average) in-group favouritism along each dimension. This is significantly greater than zero in all cases except for artificial identity in the trust game, according to t-tests. The table confirms that the political dimension exhibits by far the strongest in-group

favouritism, followed by gender, faculty, ethnicity and then artificial identity in the dictator game; the order is the same for the trust game except that in-group favouritism here is slightly stronger by faculty than by gender. Matched-pairs t-tests find that in-group favouritism is significantly stronger, at the 1% level, for politics than each of the other dimensions in both games. In the dictator game, in-group favouritism is also significantly stronger for both gender and faculty than for ethnicity (at the 10% level) and artificial identity (at the 5% level for gender vs artificial; at the 1% level for faculty vs artificial); there is no significant difference between gender and faculty, or between ethnic and artificial identity. Results for the trust game are similar, but in this case there are also insignificant differences between ethnicity and both gender and faculty, while the significance of the difference between faculty and artificial identity falls to the 5% level. Overall, the relative strength of in-group favouritism for different identity dimensions is approximately in line with my prior expectations based on previous literature – although gender ranks rather higher than expected and artificial identity rather lower.

*(TABLE 1 ABOUT HERE)*

### 3.2.Receivers' predictions

As outlined in the previous sub-section, the array of discriminatory patterns exhibited by senders is a complex one. How well is this complexity of behaviour understood by its potential victims and beneficiaries? Underneath the actual amounts senders committed to transfer to different groups of receivers, Figures 1-5 also display the corresponding mean amounts that their matched receivers predicted they would commit to sending each group. This allows for measurements of predicted discrimination, the significance of which are reported in the middle panels of Tables B2-B11. In the bottom panel of these figures, I also present tests comparing the actual and predicted levels of discrimination, in order to examine where receivers' average perceptions of discrimination exhibit significant inaccuracies. Note that, although each analysis focuses on discrimination along a particular identity dimension by senders of a particular group, when making their predictions receivers also had at their disposal full information on their matched sender's other four identity characteristics, which they could potentially use to aid their prediction.

The immediately striking characteristic of the graphs is that receivers consistently expected in-group favouritism to be much stronger than it was in reality, along every identity dimension and

in both games.[23] On the gender dimension, female senders discriminated in favour of their in-group over male and non-binary receivers to a significantly lesser extent than receivers predicted in both games (see Tables B2 and B3; all $p<.01$). With regards to ethnicity, the absence of in-group favouritism by white senders was not fully anticipated; in both games, the difference in in-group versus average out-group transfers by white senders predicted by their receivers was significantly more in-group-biased than actual behaviour (see Tables B4 and B5; $p=.018$ in dictator game; $p<.01$ in trust game). Average in-group favouritism was also significantly overestimated for Asian senders ($p<.01$ in both games), though not for black senders.[24] Tables B6 and B7 illustrate the overestimation of in-group favouritism by artificial identity was significant for both sender groups and in both games, except in the dictator game for senders with Klee identity (all other $p<.01$). On the faculty dimension, predicted average in-group favouritism significantly exceeded what was actually observed of senders from all faculties in both games, except for the small sample of Arts senders in the dictator game (see Tables B8 and B9; all other $p\leq.038$). Finally (Tables B10 and B11), the in-group political favouritism by anti-Brexit senders was overestimated at the 1% significance level in both games, while that of pro-Brexit senders was overestimated at the 5% level in the dictator game (the effect is insignificant in the trust game).

Thus, there appears to exist a strong general misperception that others are more parochial than is really the case. This can also be seen in Figures 6A and 6B, where the distributions of constructed predictions on (average) in-group favouritism for the full sample are inserted next to the distributions for senders' corresponding actual behaviour, and in Table 1, which displays the mean values of predicted (average) in-group favouritism along each identity dimension across all senders

[23] Receivers also expected senders to be more generous than they really were. The mean transfer they predicted senders to commit to in the dictator game, across all 17 decisions, was £4.18. This was significantly greater than the mean amount senders actually committed to transfer (two-tailed matched-pairs t-test, $p<.01$). Such overoptimism about the generosity of other players has sometimes been found in previous dictator games (e.g. Eckel et al., 2011), though other studies have found beliefs to be accurate (Dreber et al., 2013; Brañas-Garza et al., 2017) or even to underestimate giving (Molnár and Heintz, 2016). I also find receivers overestimate, at £1.87, the mean amount across all decisions that senders will commit to transferring in the trust game, although here the difference from actual behaviour is not significant ($p=.142$).

[24] Despite the very small sample sizes, a significant overestimation of average in-group favouritism is also found for mixed ethnicity ($p=.016$) and 'Other' ($p<.01$) senders in the trust game (not in the dictator game).

in each game. The distributions of predictions consistently lie to the right of those for actual behaviour; along all dimensions, a majority of receivers did *not* expect their sender's level of favouritism to be in the vicinity of zero, and for political identity the predictions do not even spike at this point, indicating that near-equal treatment was not even the most common expectation for behaviour. It would probably then come as a surprise to most receivers to discover that almost as many as half of senders transferred equal amounts – or amounts that differed only by a few pence – to pro-Brexit and anti-Brexit receivers. As shown in Table 1, the predicted level of in-group favouritism was more than double that of its actual level for all dimensions in both games, and sometimes surpassed it by a much greater factor.

Despite this striking across-the-board overestimation of in-group favouritism, receivers' perceptions are in other ways impressively astute. Table 1 demonstrates that on average receivers clearly recognized political identity would generate much the strongest in-group favouritism. For the trust game, the ranking of dimensions by predicted average in-group favouritism almost perfectly matches the actual ranking, the only difference being that ethnicity and artificial identity rank fourth and fifth in reality whereas they were predicted to rank the other way around. For the dictator game, the predicted and actual rankings are slightly less well aligned – politics and faculty were correctly predicted to rank first and third respectively, but artificial identity was predicted to rank second whereas in fact it ranks fifth, gender was predicted to rank fourth but came second, and ethnicity was predicted to rank fifth but came fourth – but the predictions accurately pick up the qualitative feature from the actual data of one dimension lying far apart from the remaining relatively bunched dimensions.

The predictions also caught some of the subtle within-dimension variations. Receivers correctly anticipated that in both games female senders would discriminate between female and male receivers, while male senders would not. They misperceived that white senders would be in-group-biased, but rightly envisaged such bias would be stronger among Asian and black senders. They also correctly predicted Asian and black senders would discriminate against white receivers more than against other ethnic out-groups (except for Asian senders in the trust game, who were predicted to exhibit such behaviour but in fact did not). With regard to faculty, receivers accurately anticipated that social scientists would send more to medics and scientists than to arts and engineering students in the dictator game; they held the same beliefs for the trust game and were

generally correct, although there the degree of predicted anti-arts discrimination exceeded reality. The favouritism of science students towards medicine over arts receivers was also predicted in both games, but again its expected degree was too high in the dictator game. Furthermore, receivers correctly believed medics would favour science receivers over all other faculties in the trust game (although this prediction also carried over to the dictator game, where evidence for this was generally lacking in actual behaviour). On the political dimension, it is evident from Figure 5 that receivers correctly understood the unwillingness of anti-Brexiters to provide equal treatment to political opponents would be greater than that of pro-Brexiters.

On the other hand, there were some glaring mis-projections in receivers' beliefs specific to certain groups. A notable example is the treatment of non-binary receivers by male senders. Receivers expected such senders to transfer substantially less to non-binary than to male receivers. In reality, however, any such discrimination is very mild and not statistically significant.[25] In another example, engineers were expected to disfavour social science and arts relative to science and medicine receivers, but such patterns generally did not emerge (or only appeared at weak levels of significance).[26]

[25] Receivers' inaccurate perceptions appear not to be completely unfounded, as males have been found to be less supportive than females of transgender rights (see Harrison and Michelson, 2019). It is not possible to say whether the inconsistency of this previous finding with the behaviour of senders in the current study is down to differences between the populations in the research, or to unsupportive attitudes failing to translate into economic discrimination.

[26] While not of primary interest to the research design, the data also allows an analysis of which types of receiver expected particularly strong or weak in-group favouritism along each identity dimension. Tables B12 and B13 (Online Appendix B) report OLS regressions on predicted in-group favouritism in the dictator game and trust game respectively. In particular, the variable *In-group Receiver* facilitates a test of whether the receiver sharing the sender's identity group along a given dimension affects their prediction for the level of in-group favouritism on that dimension, controlling for other sender and receiver characteristics. The analysis generally suggests not; among the ten regressions, the coefficient on this variable is significant only for artificial identity in the dictator game and faculty identity in the trust game, in each case at the 10% level. This demonstrates that the excessive predictions of strong in-group favouritism did not come merely from the potential victims of such discrimination but also from its beneficiaries. Few other receiver characteristics in the models have significant coefficients, although one striking

The analysis so far reveals the instances in which predictions of discrimination were, or were not, systematically biased at an aggregate level. However, this is not sufficient to tell us how accurate predictions tended to be at an individual level – in principle, an accurate aggregate-level prediction of discrimination could result from very inaccurate individual predictions which cancel each other out by being wrong equally often in either direction. To explore individual-level accuracy, I calculate the absolute error on each receiver's prediction of their matched sender's (average) in-group favouritism along each dimension. This is done by measuring the absolute distance this predicted favouritism (constructed, as above, from the receiver's set of predictions for amounts sent on the given dimension) falls in either direction from the sender's actual (average) in-group favouritism.

Table 2 reports the means of these absolute prediction errors for each identity dimension in each game. It is evident that the prediction errors are largest for the political dimension in both games – this is driven by the particularly strong tendency, documented above, for receivers to overestimate the extent to which senders of both political groups would favour their own. Matched-pairs t-tests find the mean absolute prediction error for the political dimension to be greater than for each of the other dimensions, at the 1% significance level, in both games. The errors for the artificial and gender dimensions are significantly greater than for ethnicity in both games (both $p \leq .034$ for gender vs ethnicity; for artificial vs ethnicity, $p < .01$ in dictator game, $p = .010$ in trust game) and faculty in the dictator game only ($p = .042$ for gender vs faculty; $p < .01$ for artificial vs faculty). The error for ethnicity is also lower than for faculty at the 10% significance level in the trust game (though not in the dictator game). Overall, the evidence suggests that ethnicity was the dimension along which subjects had the most accurate understanding of levels of in-group favouritism.

Overall, there seem to be more hits than misses in receivers' understanding of senders' discriminatory tendencies. It seems interesting that some of these tendencies could certainly not have been predicted by me, a researcher armed with knowledge of hundreds of previous laboratory experiments on discrimination but without intimate familiarity of the student population from

observation is that black receivers tend to expect particularly strong in-group favouritism, not only along the ethnic dimension but also along others.

which the subjects were drawn. For instance, I had no idea that female senders would discriminate between female and male receivers while male senders would not – yet, this appears to have been anticipated by their counterparts in the games. This prompts a question: can a person's discriminatory behaviour be predicted more accurately by those more similar to the person? To shed light on this I estimate, for each identity dimension in each game, the Pearson's correlation coefficient between the receiver's absolute prediction error on (average) in-group favouritism and the number of the five identity dimensions they shared with the sender. Except for faculty identity in the trust game, these coefficients are all negative, indicating that receivers made better predictions the more they had in common with the senders; the coefficients are significant in the dictator game for ethnicity (p=.013), faculty (p=.032) and gender (p=.074), though in the trust game only for ethnicity (p=.060). The better ability to predict levels of favouritism by one's own group members makes sense, of course, if predictions rely mostly on introspection about how oneself would behave if placed in the sender's position.

*(TABLE 2 ABOUT HERE)*

The focus so far has been on receivers' predictions of *overall* patterns of discrimination, but what is of most relevance to the receivers' choices and payoffs in the experiment is their understanding of those patterns that would affect them personally: how favourably would the sender treat the specific identity groups the receiver in fact belonged to? To address this, we can focus on the five predictions each receiver made in each game as to the amount their matched sender would commit to transferring for each of the identity groups this receiver could actually select to truthfully reveal. How well does the ranking of these five identity characteristics in terms of the profitability expected by the receiver of revealing them match up with their ranking in terms of the profitability that revealing them would in fact provide?[27]

[27] Roughly speaking, the ranking of these five identity characteristics by their profitability as predicted by the receiver should correspond to the ranking of the five identity dimensions according to the receiver's expectations of the degree of favouritism the sender would show to the receiver's group relative to others along that dimension. In principle, these two rankings could diverge if a receiver believed senders would be systematically more generous to *all* groups along some dimensions than along others, perhaps due to list effects. However, the data shows no tendency for receivers to expect this (or indeed for senders to actually behave in such a way). More generally, there is no evidence for any type of systematic list effect, suggesting that the order in which identity dimensions are listed

Table 3 uses OLS regression analysis to approach the question. Each receiver's five characteristics are ranked 1-5 in descending order of the actual and predicted profitability (adjusted for ties, such that the mid-points in the rankings are fixed at 3). For each characteristic, the predicted rank is then regressed against the actual rank. This analysis is conducted for the dictator game in models (1) and (2), and the trust game in models (3) and (4). Models (2) and (4) include additional co-variates. In each model, the standard errors are clustered at the individual level, with five observations per receiver.

*(TABLE 3 ABOUT HERE)*

In the models without other co-variates, the coefficients on *Actual Rank* are positive and significant at the 1% level. A one unit change in a characteristic's actual rank is associated in the dictator game with a 0.111 unit change of its predicted rank, and in the trust game with a 0.099 unit change in this. In short, receivers were clearly capable of predicting the relative profitability of revealing a characteristic at a success rate better than chance. In the dictator game, the significance of *Actual Rank* disappears once the regression also includes a dummy variable for whether the given characteristic is an in-group match with the sender, and a set of dummies for the identity dimension. This indicates that the success of receivers' predictions can be fully explained by their understanding of the average differences in profitability of revealing characteristics from different identity dimensions, combined with their understanding of the average effects of a characteristic being shared with the sender. In the trust game, however, *Actual Rank* remains a significant variable after the inclusion of the others. This suggests the accuracy of subjects' predictions must rely also on more sophisticated understanding of sender behaviour than mere average effects – for instance, understanding of how the importance of in-group status varies across dimensions, or even between different characteristics within a dimension. The negative coefficients on *In-group* in models (2) and (4) demonstrate that, controlling for a characteristic's actual profitability rank, an in-group match leads to movement up the predicted ranking by almost one place – in other words, and consistent with analysis earlier in this section, receivers substantially overestimated how profitable revealing in-group characteristics would prove. There are also significant coefficients on *Ethnicity* and *Artificial*. This means that, relative to political identity (the omitted category),

on the decision screens does not influence receivers' predictions or senders' choices, either in terms of levels of overall giving or of discrimination (see Tables B14-B21, Online Appendix B).

subjects generally overestimated how poorly employing characteristics from these two dimensions would fare (i.e. they very strongly overestimated how large political in-group favouritism would be, leading to political identity being ranked as more profitable according to prediction than reality).

The magnitude of the coefficients in models (1) and (3) show that, while receivers' predictions were better than random, they were certainly far from perfect. To explore this further, consider specifically the characteristic that each receiver believed would obtain the highest transfer of their five. In the dictator game, on average, a receiver had 1.197 characteristics which would actually receive a higher transfer than the characteristic the receiver believed to be most profitable, while they had 1.414 characteristics which would receive lower transfers than it.[28] In the trust game, the corresponding statistic is 1.236 higher-earning and 1.567 lower-earning characteristics. The number of lower-earning characteristics is significantly different from the number of higher-earning ones in the trust game ($p=.031$, matched-pairs t-test), indicating that the characteristic receivers believed to be most profitable to reveal did indeed generally perform better than a randomly selected characteristic, while this was not quite significantly the case in the dictator game ($p=.150$).

### 3.3.Receivers' revelation choices

The previous subsection has established that receivers generally enjoy a sophisticated, yet imperfect, understanding of senders' discriminatory tendencies. The final piece of the puzzle is the extent to which they exploit this understanding for material benefit. Table 4 provides a breakdown of the identity characteristics revealed by receivers to senders. This makes apparent that by far the most popular characteristic to reveal was the receiver's political identity, which of course was also the dimension with the strongest discrimination and strongest predicted discrimination. Political identity was selected by 95/213 receivers in the dictator game and 94/213 in the trust game. This is more than twice the revelation frequencies of any of the other identity dimensions in either game,

[28] In cases where the receiver predicted two or more characteristics would equally receive the highest transfer, this statistic is calculated by comparing the amount sent to each characteristic against the average of the amounts transferred to these two or more highest-predicted characteristics.

all of which were roughly similar, ranging from 23/213 to 40/213. Ethnicity was the least revealed identity dimension in both games.[29]

Recall, however, that the large majority of subjects shared anti-Brexit ideology, so the popularity of selecting political identity may have resulted partly from this identity type being an in-group match in most cases. The fourth and fifth columns of the table record how frequently each identity characteristic was revealed, separately for cases when it was shared as an in-group matching between sender and receiver and for cases when it was not. Overall, in-group characteristics were selected with an overwhelmingly higher frequency than out-group characteristics: there were 176 selections of in-group characteristics compared to 37 selections of out-group characteristics in the dictator game, while the corresponding ratio in the trust game was 170:43. This tendency is indeed reflected for political identity, where 92/173 receivers with in-group identity in the dictator game – and 92/162 in the trust game – chose to reveal this identity, but the selection rates for receivers with out-group identity were only 3/40 in the dictator game and 2/51 in the trust game. The final column reports the results of Fisher Exact tests for differences in the proportions of receivers selecting a given identity dimension between those possessing in-group and out-group characteristics on that dimension. With the exception of faculty identity in the trust game, selection rates were significantly higher for in-group than out-group characteristics on every dimension (all $p \leq .024$). This strong preference for revealing in-group characteristics is consistent with receivers' (excessive) expectations of in-group favouritism along all dimensions, and is clearly suggestive of strategic behaviour.

The table further separates the choices for different identity groups within each dimension, illuminating some stark differences. Female identity was revealed at a higher frequency than male identity, a difference shown to be significant by Fisher Exact tests in the dictator game ($p<.01$ over the full sample; $p<.01$ for receivers with same gender as sender; $p=.453$ for receivers with different gender from sender), though not quite so in the trust game ($p=.109$ over the full sample; $p=.606$ for receivers with same gender as sender; $p=.447$ for receivers with different gender from sender).

[29] However, according to chi-squared tests, the frequency of ethnicity revelation was significantly below only that of political identity in both games ($p<.01$) and faculty in the trust game ($p=.032$). The selection frequency for political identity was significantly higher than that of all other identity dimensions in both games (all $p<.01$). All other frequency comparisons between dimensions were insignificant.

This is consistent with receivers' expectations that female receivers would be treated better than males. Similarly, ethnic identity was revealed very rarely by white receivers (on 2/97 occasions in both games), which chimes with the receivers' beliefs that whites would receive only mild favouritism from white senders and heavy discrimination from out-group senders. In contrast, ethnicity was revealed quite often by Asian receivers, especially in in-group matches (14/31 in the dictator game and 13/33 in the trust game) – recall that Asian senders were predicted to engage in rather strong in-group ethnic favouritism.[30] Political identity was revealed significantly more often by anti-Brexit than pro-Brexit receivers (Fisher Exact tests: $p=.026$ in dictator game; $p<.01$ in trust game) but this seems to be driven by the fact that due to their small number pro-Brexit subjects were rarely matched with each other; on the few occasions they were, there was a high probability of political identity being revealed.

*(TABLE 4 ABOUT HERE)*

Despite these clear indications that receivers' choices were informed by their expectations of sender preferences, it is also evident that they were not purely motivated by profit. Excluding for each game the few subjects (14 in both cases) who predicted exactly the same amount would be sent to receivers of each of the five identity groups they belonged to, only 49.7% of receivers in the dictator game and 54.3% in the trust game chose to reveal a characteristic which they predicted would not be outperformed by any of their other available characteristics in the transfer it would draw from the sender. 22.6% in the dictator game and 18.6% in the trust game made a selection they believed would be outperformed by one available characteristic; 14.1% in the dictator game and 14.6% in the trust game made a selection they expected to be outperformed by two; 8.0% in the dictator game and 7.0% in the trust game made a selection they expected to be outperformed by three; and 5.5% of receivers in both games made a selection they expected to be less profitable than revealing any of their other four available characteristics.[31] This represents a striking

[30] Fisher Exact tests find the revelation rates are significantly higher for Asians than whites across the full sample, as well as specifically for in-group matches, in both games (all $p<.01$). For out-group matches, they are significantly higher for Asians in the dictator game ($p<01$) but not the trust game ($p=.221$).

[31] Chi-squared tests find that these distributions of the number of predicted dimensions outperforming the chosen one do not significantly differ between subjects making selections before their predictions and those making them

departure from *homo economicus* behaviour: it appears that many people are quite willing to sacrifice expected payoffs in order to conduct economic exchanges along their preferred dimension of social identity.[32]

To further explore the determinants of receiver's choices, I run conditional logit regressions. This type of discrete choice model is suitable for analysing scenarios where decision-makers must select one out of a set of alternatives (in this case, characteristics to reveal), each of which has different attributes; the regression estimates the effects of the attributes on the probability of an alternative being chosen. Output is presented in Table 5. The attributes included in the models are the receiver's prediction of the amount the sender would transfer in the case of the given characteristic being revealed, a dummy variable representing whether or not the given characteristic is an in-

afterwards (p=.704 in dictator game; p=.389 in trust game). This suggests that being forced to consciously consider which identity types would be most profitable to reveal did not lead receivers to take a more payoff-maximising approach. More generally, there is an overall absence of evidence for order effects in this experiment. Chi-squared tests find no significant differences in the frequencies of the five identity dimensions selected between those choosing before and after making predictions (p=.466 in dictator game; p=.992 in trust game). Furthermore, there is little indication that receivers' predictions are affected by having first made revelation decisions. T-tests were run for differences in the predicted level of (average) in-group favouritism, on each identity dimension and in each game, between those who made predictions before and after revelation choices; only one of the ten tests returned a significant result (which is likely to occur by chance when running this many tests), with receivers predicting lower ethnic in-group favouritism in the dictator game if they had already made choices (p=.032). Likewise, such tests found only one case wherein receivers' absolute prediction errors for in-group favouritism significantly differed between those predicting before and after choices (ethnicity in trust game, p=.069).

[32] One might question whether this behaviour could instead result from subjects misunderstanding the games or entering random responses to complete the experiment quickly. In order to explore this possibility, I construct a measure of subject misunderstanding/disengagement from the number of incorrect answers provided to the understanding test questions for each game. The number of available characteristics a receiver predicted would outperform their selected choice is indeed significantly positively correlated with their number of incorrect answers (Pearson: p<.01 in both games). This suggests misunderstanding or disengagement did play some role. However, it is a limited one: even among receivers who correctly answered every understanding test question, only 63% in the dictator game and 65% in the trust game selected the identity type they expected to be the most or equally most profitable of their five options (excluding cases where they predicted all five would be equally profitable).

group match with the sender, and a set of dummy variables indicating which identity dimension the given characteristic lies on.

The coefficients on *Predicted amount sent* are significantly positive at the 1% level for both the dictator game (model (1)) and the trust game (model (2)). This indicates that the more a receiver believes will be sent to those with a particular characteristic, the more likely they are to reveal it, thereby confirming the presence of strategic motivations in revelation decisions. However, there are also strongly significantly positive effects on *In-group* for both games: even controlling for how much they expect to be sent when revealing a particular characteristic, receivers are more likely to do so when it is shared with the sender. This helps explain why there is such a big majority of in-group selections made – not only are receivers over-optimistic about how much they will be favoured for being an in-group, they appear to exhibit an additional intrinsic preference for letting senders know they belong to the same group.

There are also significant effects on the dimension dummies. Specifically, receivers are significantly more likely – at the 1% level in both games – to reveal political identity than ethnic identity (the omitted category), even after controlling for the expected payoffs they expect to result from either choice. Wald tests show the coefficient on *Politics* is also significantly different at the 1% level from those on *Gender* and *Artificial* in both games, and from *Faculty* at the 10% level in the dictator game. Such tests furthermore find *Faculty* has a significantly positive effect on revelation probability relative to *Artificial* in the dictator game ($p=.013$) and relative to *Artificial* ($p<.01$), *Gender* ($p=.033$) and *Ethnicity* ($p=.029$) in the trust game. As such, it appears that receivers gain relatively high intrinsic utility from disclosing their political ideology and field of study, and relatively little from disclosing their gender or ethnicity. Far from demonstrating any enthusiasm for 'playing the race card', receivers appear to shy away from doing so.

*(TABLE 5 ABOUT HERE)*

Taking all this together, we can finally answer one of the paper's key questions: how much do receivers actually benefit materially from their choices over which identity characteristics to reveal to senders? But first, let us also consider the scope for benefiting from making optimal revelatory choices. In the dictator game, the average amount a sender commits to transferring to receivers of the five identity groups their counterpart actually belongs to is £3.31 – this therefore represents the average amount receivers would earn if they made their selections randomly. The mean highest

amount among this set of five transfers is £4.03, while the mean lowest amount is £2.58. This creates quite a wide range, indicative of relatively high levels of discrimination in general, and means the choices of receivers have the potential to substantially affect their earnings – choosing the materially optimal characteristic on average should increase a receiver's payoff by 21.8% relative to choosing randomly and by 56.2% relative to making the materially worst choice. The calculations are very similar for the trust game, where the average transfers would be £1.71 for random choice, £2.08 for the materially optimal choice and £1.33 for the materially worst choice.[33]

In fact, the mean amounts sent to receivers, given their actual revelation choices, were £3.57 in the dictator game and £1.80 in the trust game. Both amounts are above what receivers would earn from random choice – a 7.9% improvement in the dictator game and one of 5.3% in the trust game. These increases are both economically and statistically significant (matched-pairs t-tests on amount sent vs expected amount from random choice: $p<.01$ in dictator game; $p=.013$ in trust game). However, they are far below the surpluses that could be gained from optional choice. The improvement on random choice gained by receivers' actual selections in the dictator game is 36.1% of the improvement they could have generated from materially optimal choices; for the trust game, it is 24.3%.[34]

This inefficiency is the result of the systematic biases in receivers' perceptions of senders' discriminatory practices, as well as the inherent heterogeneity in senders' preferences which makes predicting the behaviour of any individual sender an inexact science. Based on the evidence above, we would also expect a third factor behind the inefficiency: that receivers lost profit because

[33] It should be noted that in the trust game, the final payoffs are not determined until after the second stage of the game, in which the receiver chooses an amount to transfer back to the sender. Therefore, a receiver revealing the characteristic maximising their first stage transfer would not automatically maximise their final payoff. However, there is typically a very close correlation in trust games between the receiver's first stage and overall payoffs (indeed, in this experiment this correlation is significantly positive; $p=.016$). Larger first-stage transfers also have the mechanical consequence of increasing the two players' combined payoffs – so a strategic choice by a receiver in the trust game confers potential benefits not only to oneself but also for social efficiency.

[34] The gains were unevenly distributed. In the dictator game, 91 receivers obtained more than their expected payment would be from random choice, while 51 obtained less and 61 obtained an equal amount. In the trust game, the corresponding numbers are 91, 61 and 51.

around half of them voluntarily selected a characteristic different from the one they expected to maximise payoffs. In a strange twist, however, it turns out that receivers fared no worse than they would if they selected the characteristic they believed would be the most profitable of the five: if all receivers followed such a strategy, their average received transfers would be £3.33 in the dictator game and £1.76 in the trust game, amounts below those they actually received. This appears to result from receivers' intrinsic preference for revealing political identity – it shifted some receivers who believed a different characteristic would be the most profitable choice to instead select political identity, which was in reality the most profitable choice on average. There is, however, no obvious reason to suppose this stroke of luck for receivers would generalise to corresponding decision scenarios in other populations with different social identity structures – in general, we should surely expect that an individual's preference for revealing identity types they expect not to be payoff-maximising will indeed prove materially costly.

## 4. Conclusion

This paper has focused on the strategic use of social identity in a multidimensional context. I have shown that people can and do select the dimensions of identity upon which to conduct economic exchanges with a view to enhancing material outcomes. This is made possible by a broadly accurate understanding of the patterns of discrimination that will emerge within the local population. However, the results also indicate that payoff-maximisation is a far from universal strategy, with many individuals apparently deriving inherent utility from their identity dimension selections.

The experiment illustrates both the substantial potential to profit from strategic social identity manipulation, and also the limits to these gains in practice. The gains receivers make relative to random choice are certainly economically meaningful, but they capture only a fraction (36.1% in the dictator game and 24.3% in the trust game) of those that would result from perfect selection. In writing this paper, I found it difficult to decide whether these fractions should be characterised as large or small: should we argue that receivers are enjoying a high degree of strategic success in an inherently challenging task, or that they are throwing away a large slice of a free lunch?

One possible response involves exploring how easy it would be to devise a revelation strategy which in practice outperforms receivers in profit-generation. To this end, I built a simple algorithmic strategy and simulated the transfers receivers would obtain if they always followed it. The algorithm involved first ranking, for each game, the five identity dimensions by average levels of in-group favouritism across the whole sample (i.e. using the information in Table 1) and then selecting for revelation the receiver's characteristic on the highest ranked dimension of identity for which they shared in-group status with the sender (or, in rare cases where the receiver and sender shared no in-group characteristics, selecting the lowest ranked dimension). For instance, in the dictator game, the receiver would reveal their political identity if they were a political in-group member to the sender, and would otherwise reveal their gender, unless they also had gender out-group status, in which case they would instead reveal their faculty if they were an in-group member on this dimension, etc. It turns out this strategy would result in improvements over random choice of 10.1% in the dictator game and 5.6% in the trust game, amounts higher, but insignificantly so, than the improvements receivers generated from their actual choices (matched-pairs t-tests: p=.339 in dictator game; p=.871 in trust game). This provides a rough illustration of the level of sophistication receivers are operating at equivalence to. On the one hand, the algorithmic strategy relies on extremely powerful information about the general ranking of in-group favouritism by identity dimension, which of course was not available in reality to receivers. On the other, it can be seen as quite a wasteful strategy, since it treats all senders as homogeneous and throws away any information about their actual identity characteristics, which ought to be helpful in predicting how they will discriminate. A more complex strategy combining knowledge about general differences between identity dimensions with that of specific differences between groups within each dimension would be able to out-earn the experimental subjects.

One feature of this study is that it has explored receivers' predictions and identity choices in two different games. The trust game involves greater complexity than the dictator game, and intuitively appears a more challenging environment for predicting discrimination, since there is a statistical component to consider in addition to the sender's tastes. In fact, receivers' ability to predict senders' behaviour appears similar across the two games. This may result from the dual observations that groups of senders exhibited similar patterns of discrimination across the two games (with rare exceptions, such as the more favourable treatment of white receivers by Asian senders in the trust game than in the dictator game) and that receivers' predictions about how senders would

discriminate also did not differ much between the games. In essence it appears that, in the particular circumstances of this paper's experiment, the statistical component of discrimination tended to be negligible and was also assumed to be so by receivers.

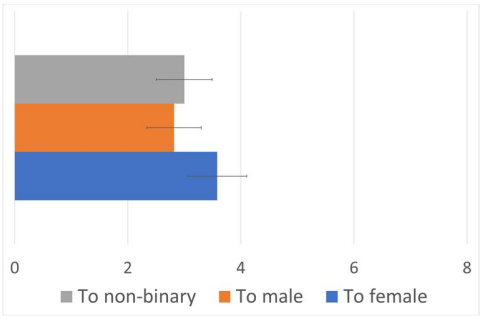
One of the paper's most striking findings is the tendency for receivers to greatly overestimate how strong and prevalent discrimination would be, along all dimensions of identity. Understanding the sources of such misperceptions is beyond the scope of this study, but could be an important matter for future research. Matters of social identity and discrimination have received heavy media coverage in recent years: while it is clearly important that attention is given to them, in light of the shocking behaviours which continue in all societies, a possible conjecture is that a side-effect of this reporting has been to instil the impression that things are (even) worse than they really are. We should give careful thought to the pros and cons of any attempt to correct these misperceptions. On the one hand, an overly pessimistic view about the even-handedness of others does not appear a healthy bias for people to hold, and could even result in a general increase in the willingness to discriminate (if discriminatory behaviour is influenced by descriptive norms). On the other hand, strong and widespread beliefs about the severity of discrimination may be necessary for it to be taken seriously as a problem requiring address, and an added dose of misperception here may not be unhelpful. Of relevance is the finding of Haaland and Roth (2017) that action to redress discrimination is much more likely to be taken by those who believe it to exist at relatively high levels.

The study demonstrates some of the consequences arising from the salience of different dimensions of social identity being malleable. Not only does the manipulation of social identity allow higher payoffs for the manipulators – and, in the trust game, higher social efficiency – but it also affects the relative frequency with which different dimensions of identity are brought to the surface. In the experiment reported, political identity was by far the most utilised dimension – partly because it was the one with strongest expected in-group favouritism, and also because it happened to be shared as an in-group characteristic in most pairs. There may be dynamic consequences for future research to consider: in a society where people naturally tend to frequently encounter in-group members along certain identity dimensions for which there are existing strong preferences for favouritism, should we expect these identity types to become increasingly amplified, resulting in ever stronger polarisation?

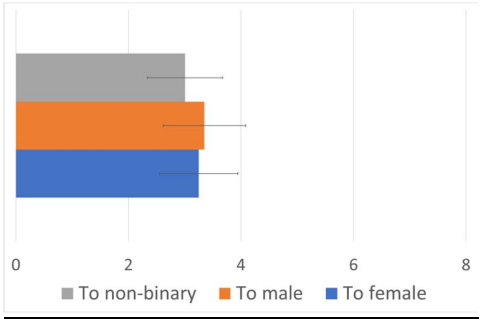
**Figures and Tables**

**Figure 1: Mean amounts sent by Sender and Receiver gender (and corresponding Receiver predictions)**

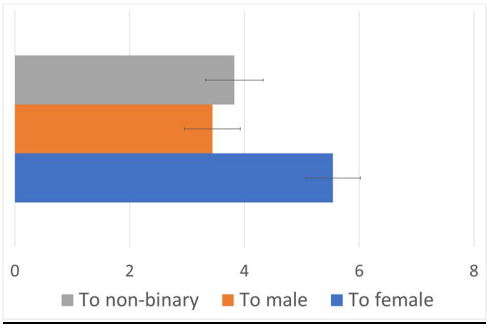
**Female senders – amount sent (DG) (N=121)**



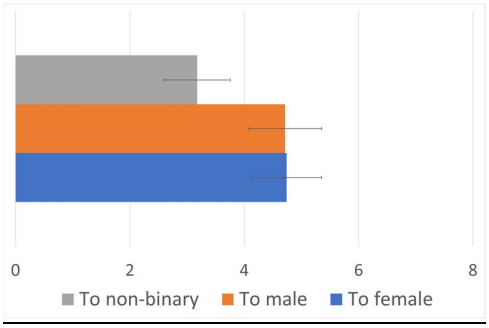

**Male senders – amount sent (DG) (N=77)**



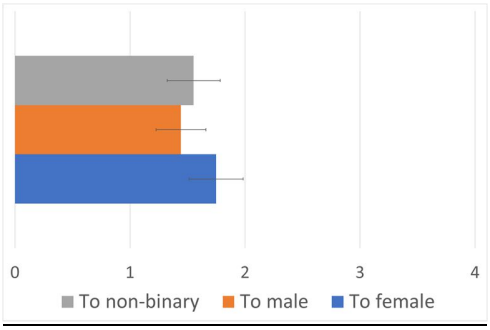

**Female senders – predicted amount sent (DG) (N=127)**



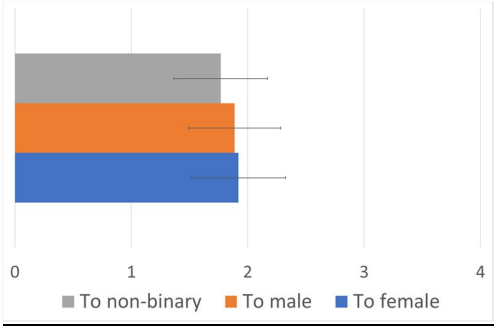

**Male senders – predicted amount sent (DG) (N=81)**



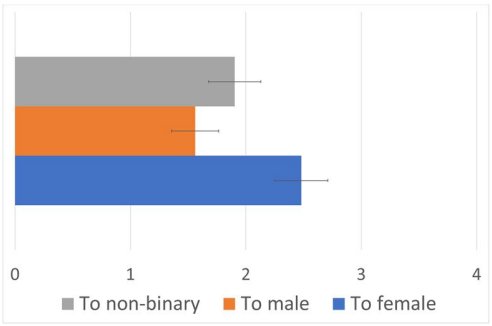

**Female senders – amount sent (TG) (N=121)**



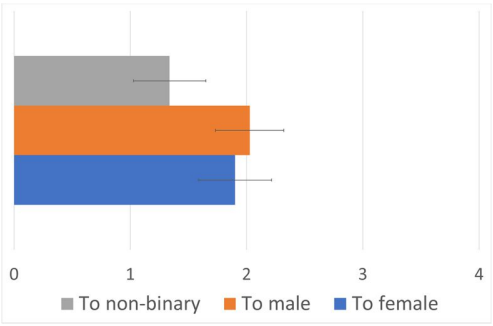

**Male senders – amount sent (TG) (N=77)**




**Female senders – predicted amount sent (TG) (N=127)**

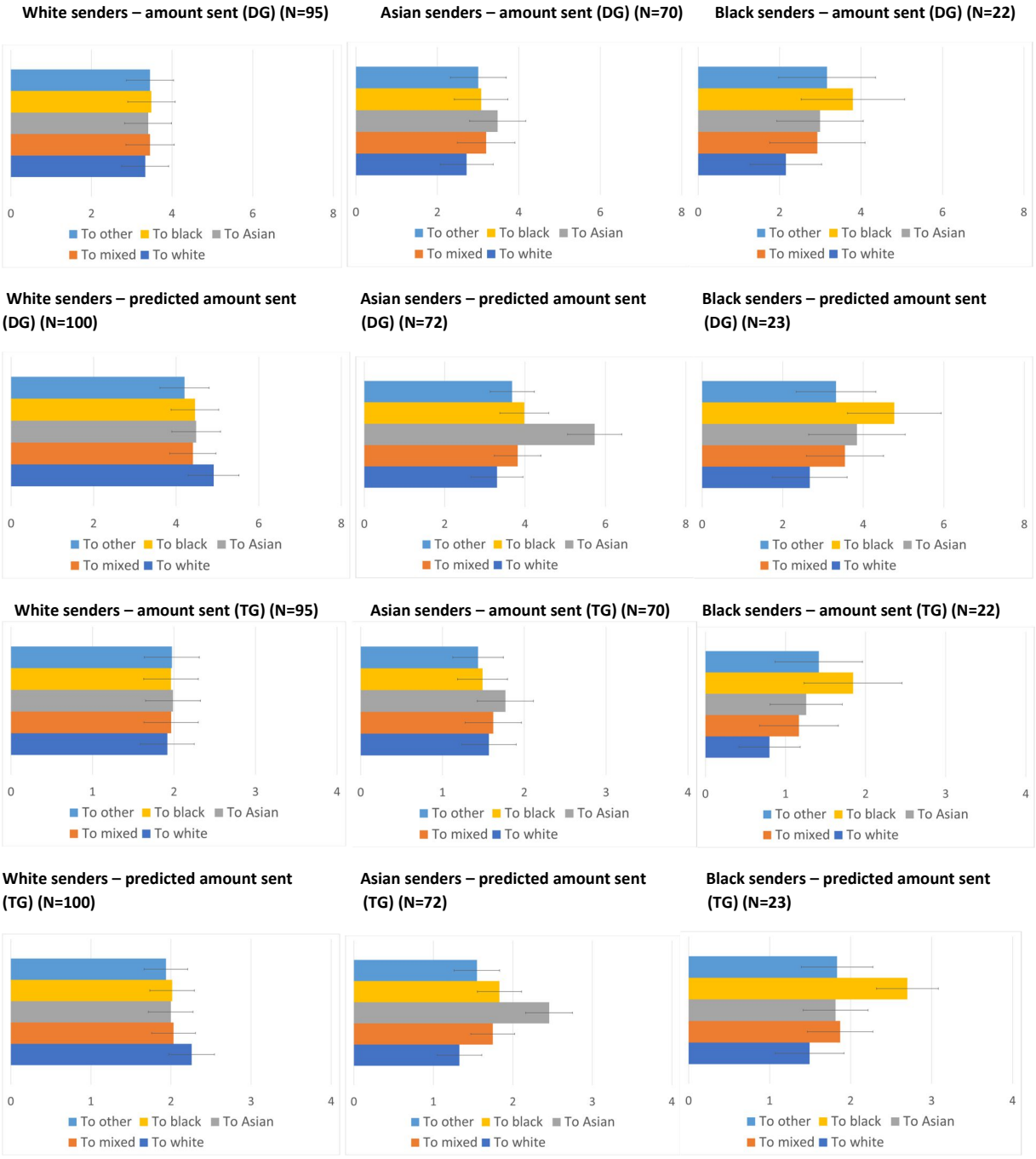



**Male senders – predicted amount sent (TG) (N=81)**




Note: non-binary senders (N=5) not presented. 95% confidence intervals displayed. DG=dictator game; TG=trust game.

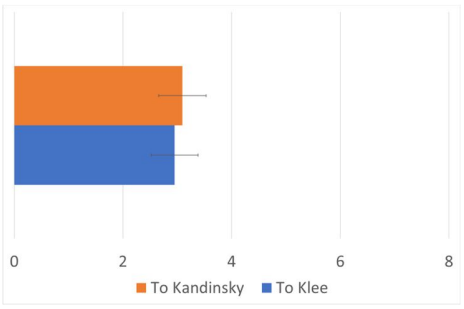
**Figure 2: Mean amounts sent by Sender and Receiver ethnicity (and corresponding Receiver predictions)**



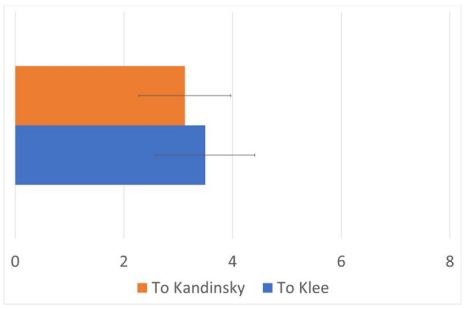

Note: mixed senders (N=8) and other senders (N=8) not presented. 95% confidence intervals displayed. DG=dictator game; TG=trust game.

**Figure 3: Mean amounts sent by Sender and Receiver painting preference (and corresponding Receiver predictions)**

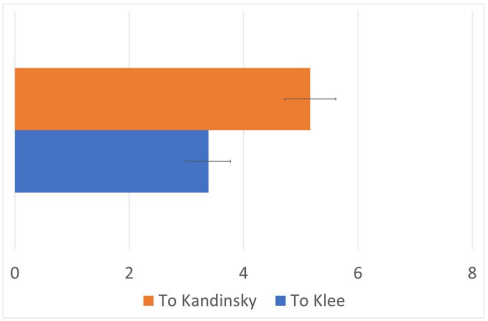
**Kandinsky senders – amount sent (DG) (N=166)**



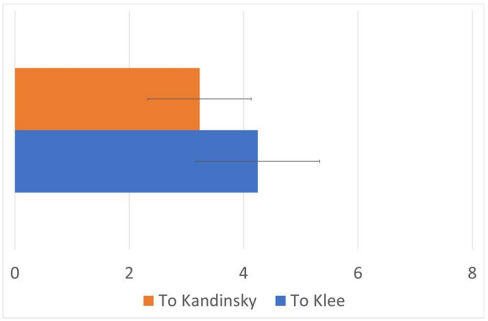

**Klee senders – amount sent (DG) (N=37)**



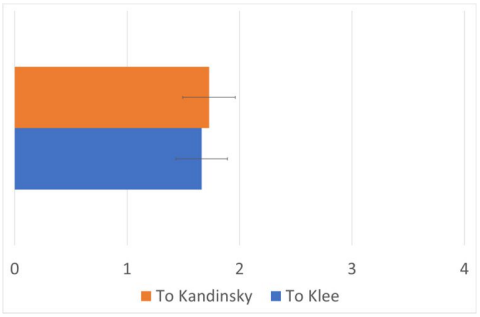

**Kandinsky senders – predicted amount sent (DG) (N=172)**



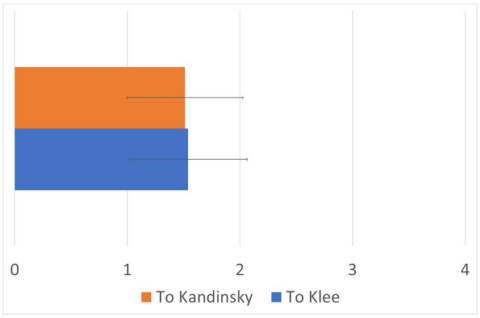

**Klee senders – predicted amount sent (DG) (N=41)**



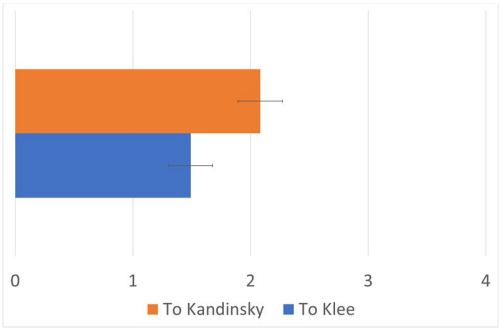

**Kandinsky senders – amount sent (TG) (N=166)**



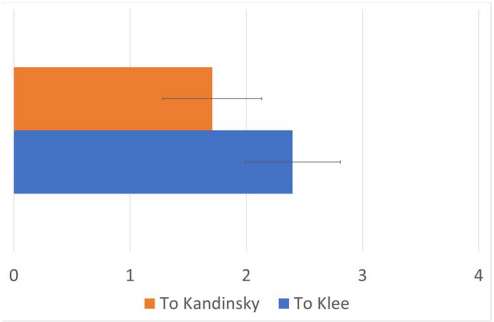

**Klee senders – amount sent (TG) (N=37)**




**Kandinsky senders – predicted amount sent (TG) (N=172)**



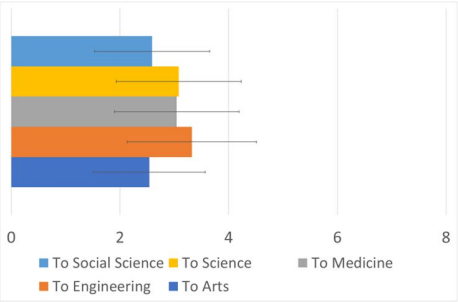

**Klee senders – predicted amount sent (TG) (N=41)**



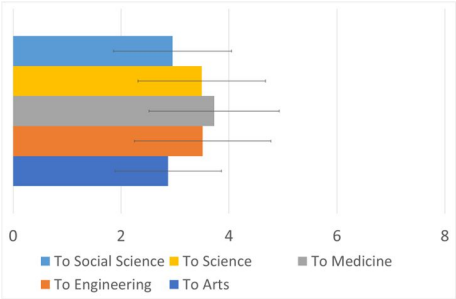

Note: 95% confidence intervals displayed. DG=dictator game; TG=trust game.

**Figure 4A: Mean amounts sent by Sender and Receiver faculty (and corresponding Receiver predictions) – dictator game**

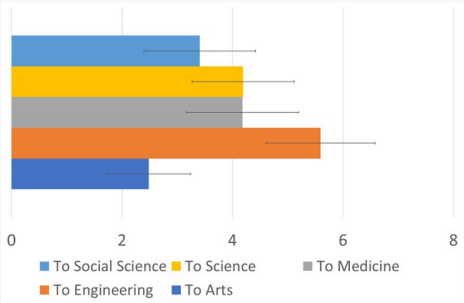
**Engineering senders – amount sent (N=32)**



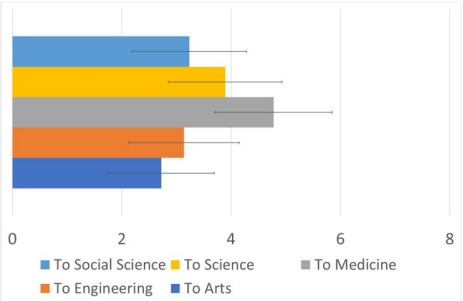

**Medicine senders – amount sent (N=26)**



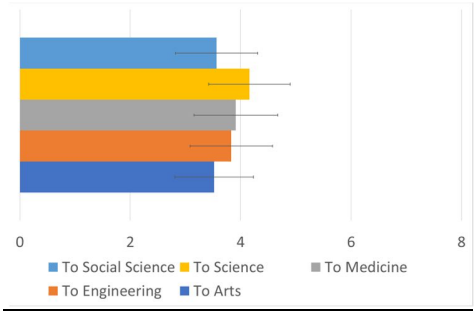

**Engineering senders – predicted amount sent (N=36)**



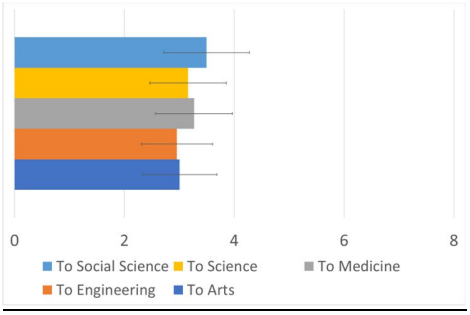

**Medicine senders – predicted amount sent (N=26)**



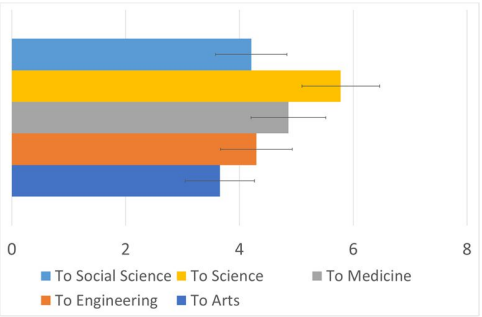

**Science senders – amount sent (N=61)**



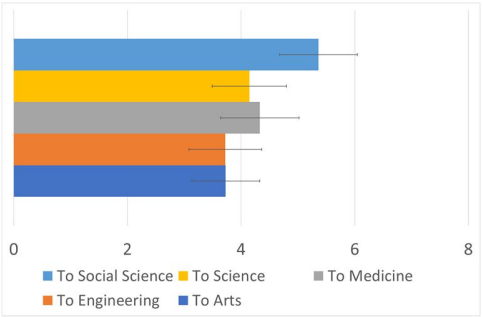

**Social Science senders – amount sent (N=74)**




**Science senders – predicted amount sent (N=62)**



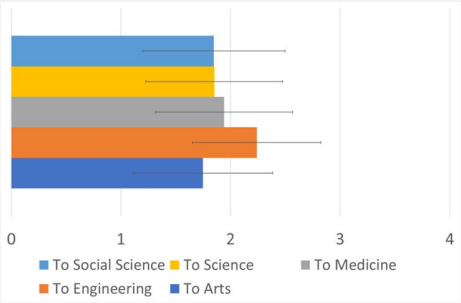

**Social Science senders – predicted amount sent (N=79)**



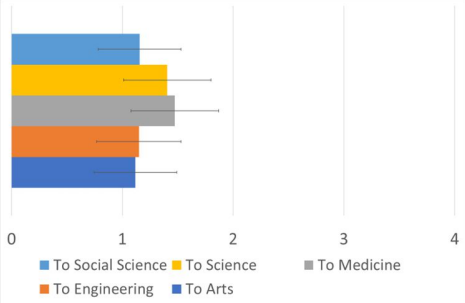

Note: Arts senders (N=10) not presented. 95% confidence intervals displayed.

**Figure 4B: Mean amounts sent by Sender and Receiver faculty (and corresponding Receiver predictions) – trust game**

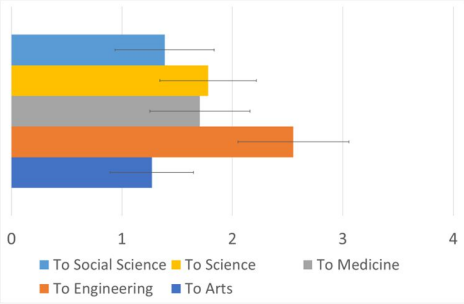
**Engineering senders – amount sent (N=32)**



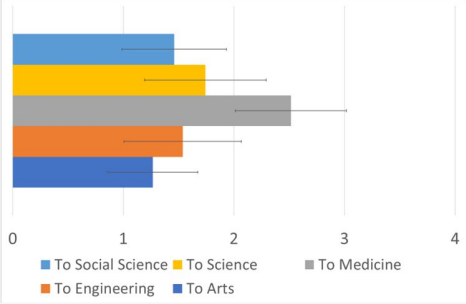

**Medicine senders – amount sent (N=26)**



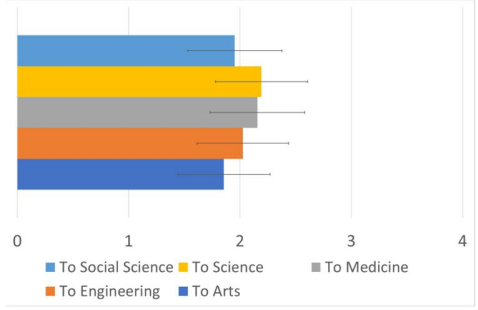

**Engineering senders – predicted amount sent (N=36)**



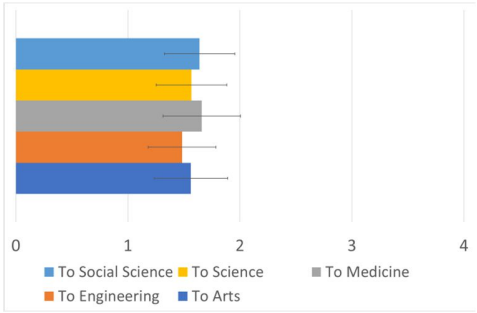

**Medicine senders – predicted amount sent (N=26)**



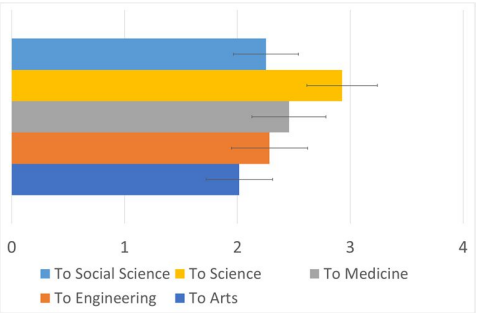

**Science senders – amount sent (N=61)**



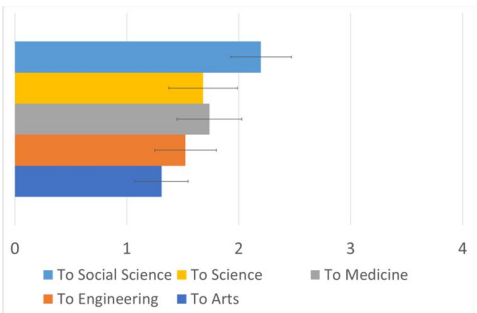

**Social Science senders – amount sent (N=74)**




**Science senders – predicted amount sent (N=62)**



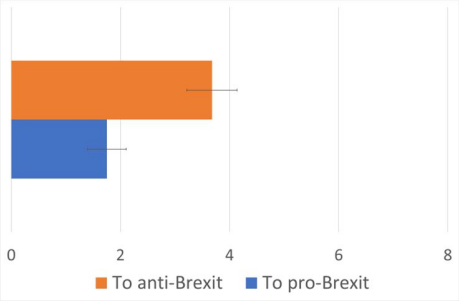

**Social Science senders – predicted amount sent (N=79)**



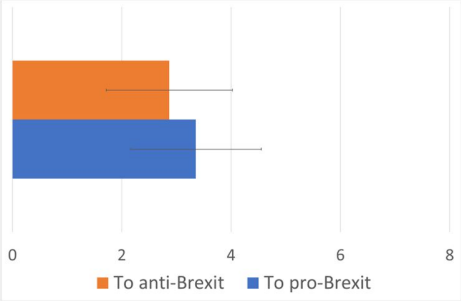

Note: Arts senders (N=10) not presented. 95% confidence intervals displayed.

**Figure 5: Mean amounts sent by Sender and Receiver politics (and corresponding Receiver predictions)**

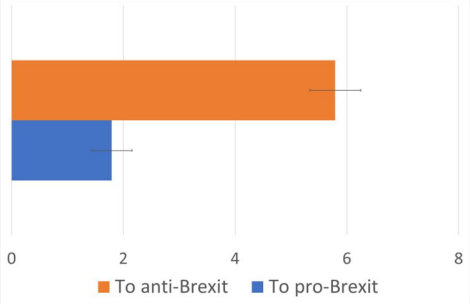
**Anti-Brexit senders – amount sent (DG) (N=176)**



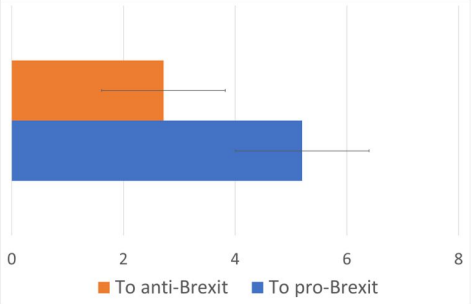

**Pro-Brexit senders – amount sent (DG) (N=27)**



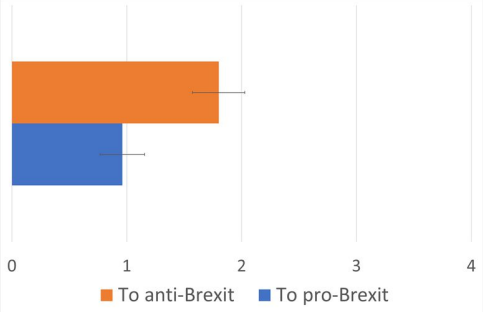

**Anti-Brexit senders – predicted amount sent (DG) (N=185)**



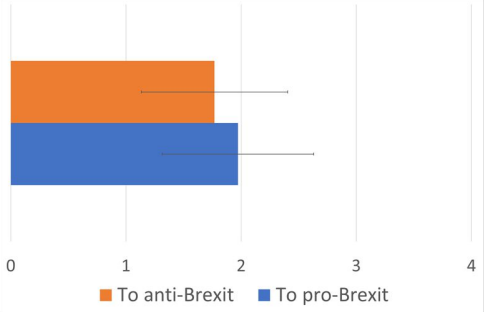

**Pro-Brexit senders – predicted amount sent (DG) (N=28)**



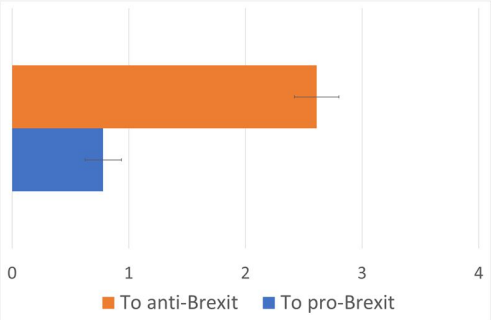

**Anti-Brexit senders – amount sent (TG) (N=176)**



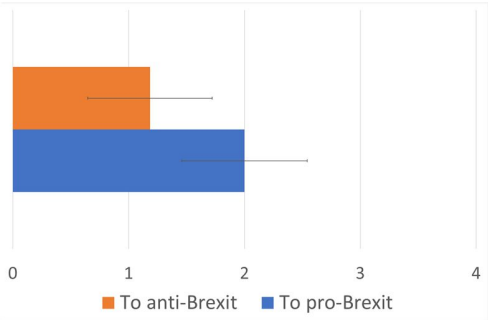

**Pro-Brexit senders – amount sent (TG) (N=27)**




**Anti-Brexit senders – predicted amount sent (TG) (N=185)**

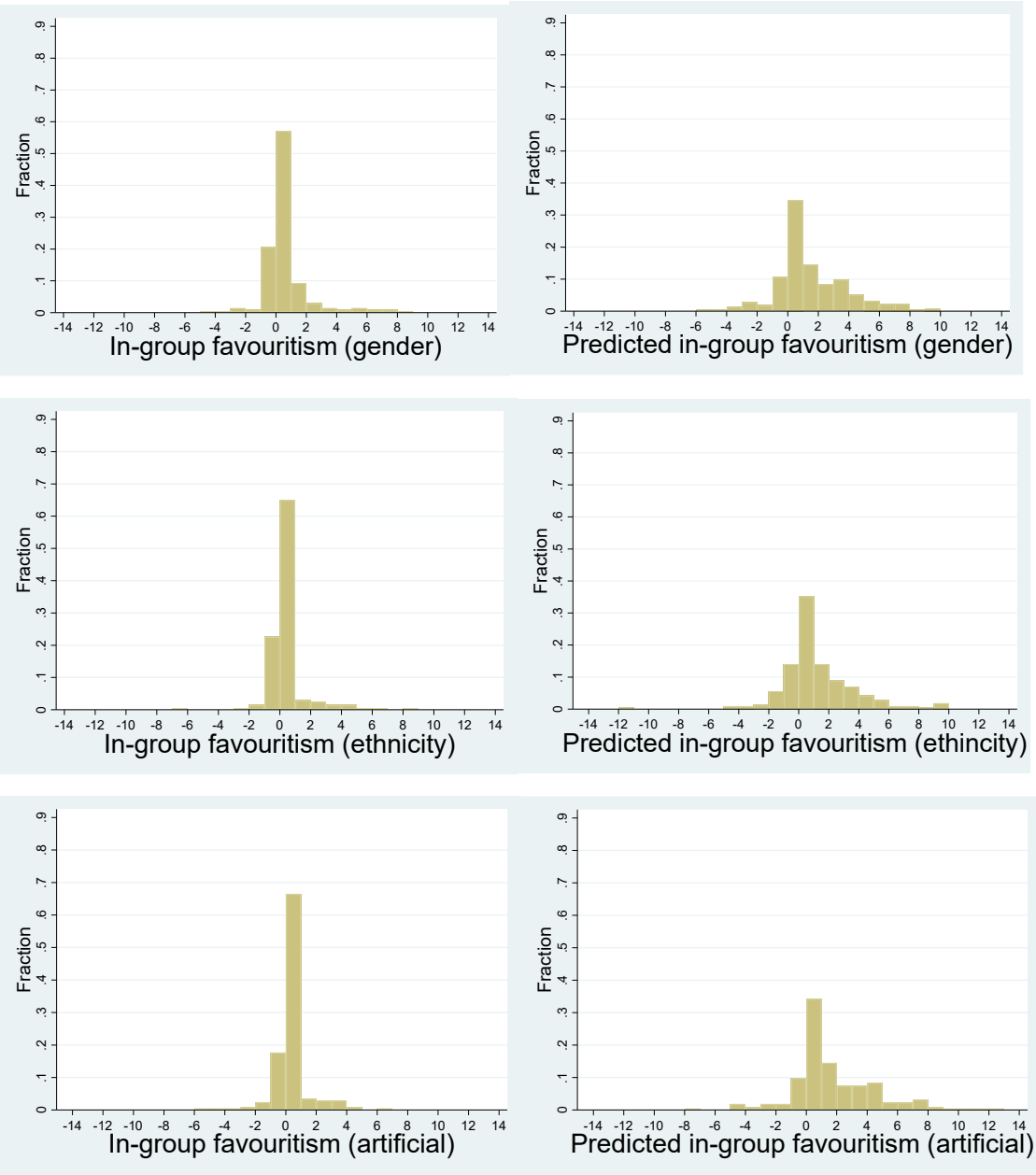


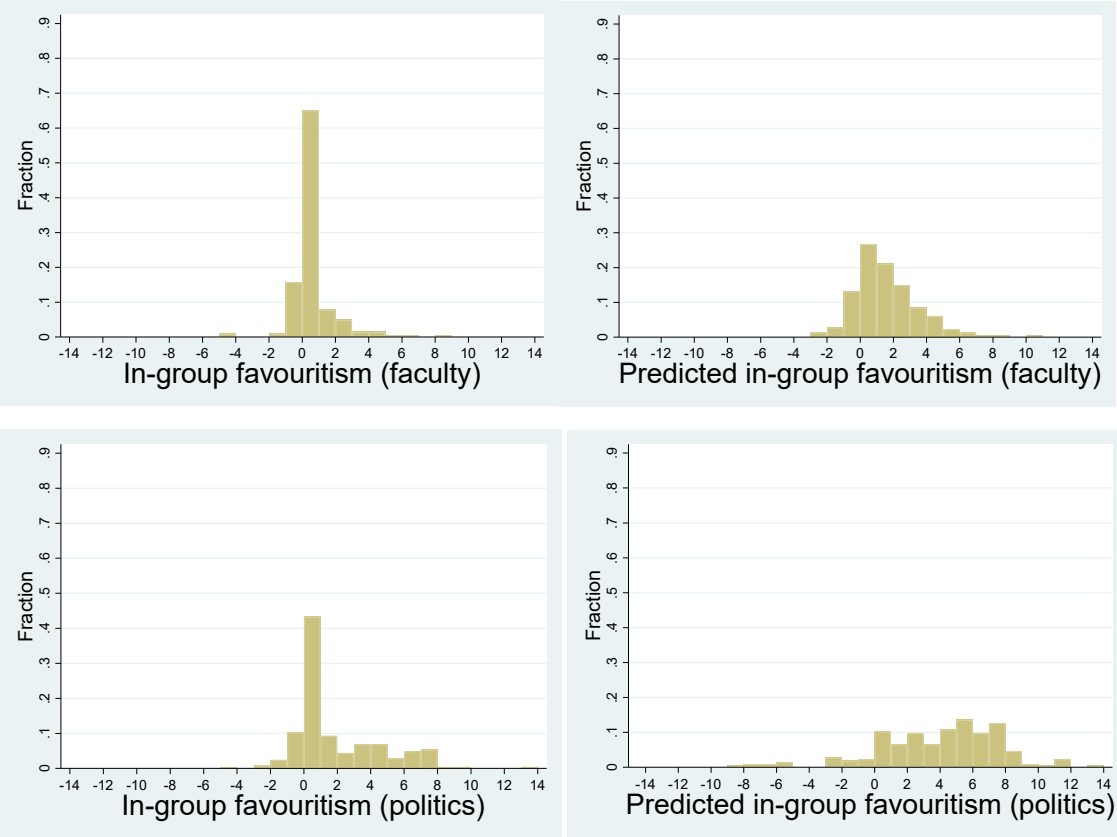

**Pro-Brexit senders – predicted amount sent (TG) (N=28)**




Note: 95% confidence intervals displayed. DG=dictator game; TG=trust game.

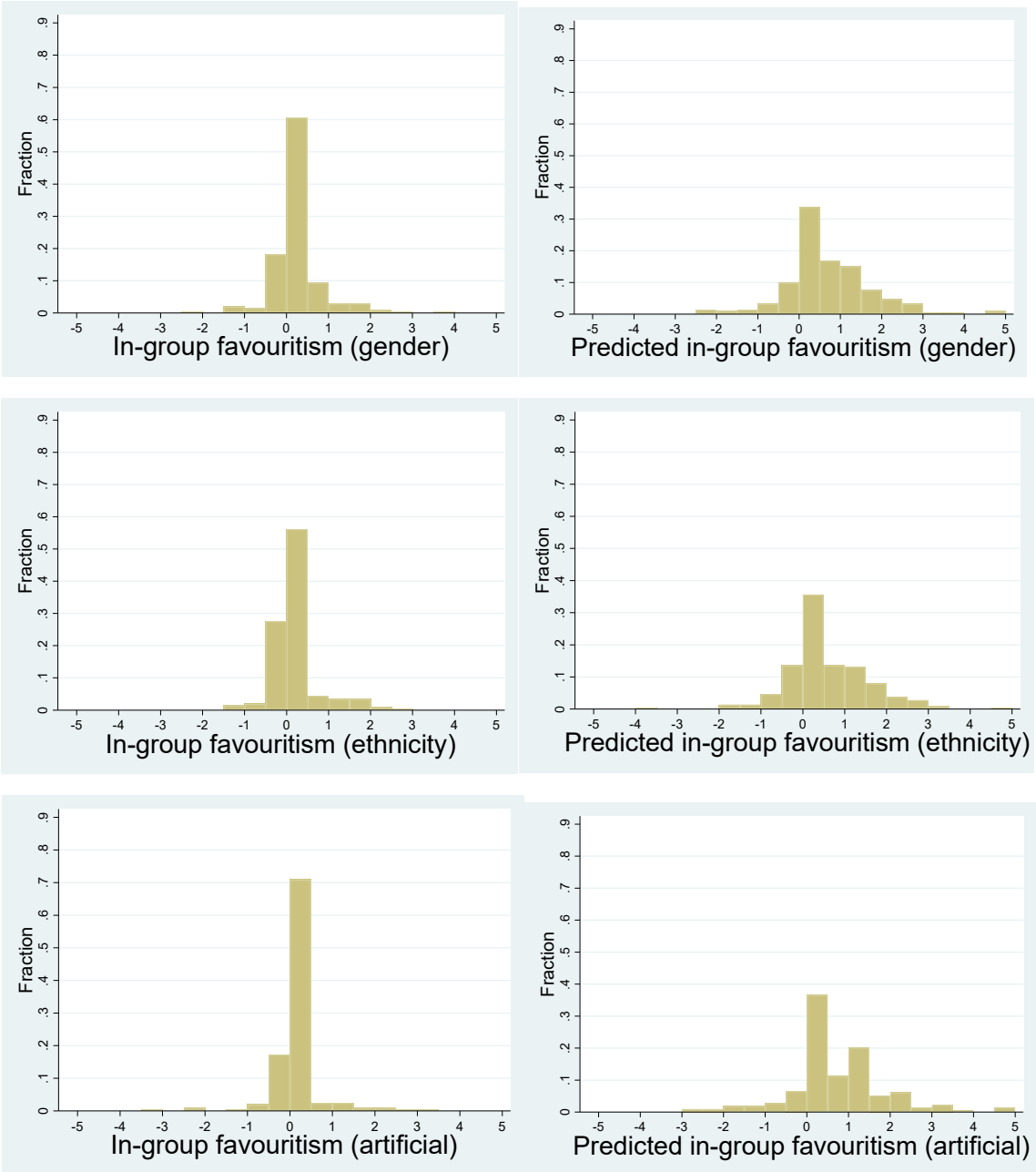
**Figure 6A: Distribution of actual and predicted in-group favouritism by dimension (dictator game)**

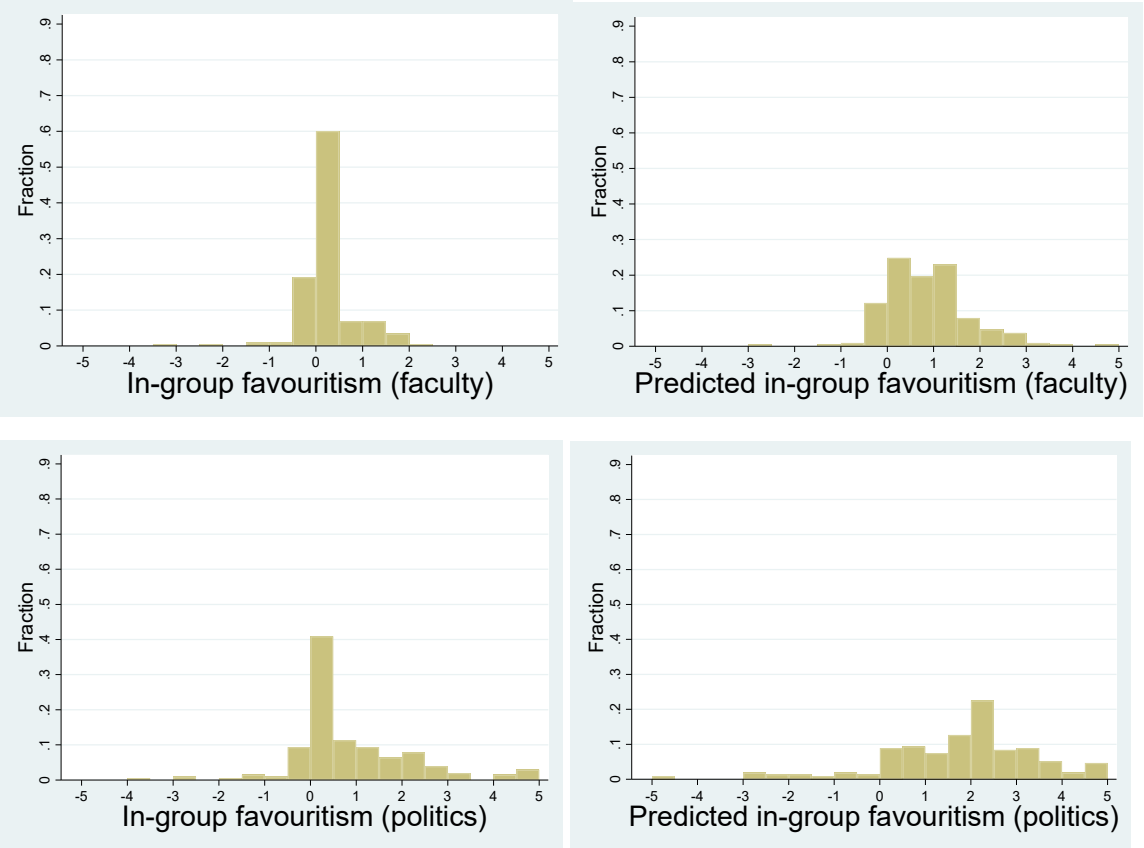





Notes: The figure presents for each identity dimension the distribution of senders by level of in-group favouritism, measured as the difference between amount sent to in-group receiver and (average) amount sent to out-group receivers, and by level of predicted in-group favouritism, as constructed from receivers' corresponding predictions.

**Figure 6B: Distribution of actual and predicted in-group favouritism by dimension (trust game)**






Notes: The figure presents for each identity dimension the distribution of senders by level of in-group favouritism, measured as the difference between amount sent to in-group receiver and (average) amount sent to out-group receivers, and by level of predicted in-group favouritism, as constructed from receivers' corresponding predictions.

**Table 1: Actual and predicted in-group favouritism by identity dimension**

| Dimension | Dictator Game | | Trust Game | |
|---|---|---|---|---|
| | Actual | Predicted | Actual | Predicted |
| Gender | 0.510*** | 1.467*** | 0.178*** | 0.615*** |
| Ethnicity | 0.260*** | 1.141*** | 0.128*** | 0.532*** |
| Artificial | 0.189** | 1.634*** | 0.059 | 0.610*** |
| Faculty | 0.465*** | 1.549*** | 0.186*** | 0.807*** |
| Politics | 1.736*** | 3.799*** | 0.755*** | 1.701*** |

Notes: The table presents mean levels of in-group favouritism, measured as the difference between amount sent to in-group receiver and (average) amount sent to out-group receivers, and predicted in-group favouritism constructed from receivers' corresponding predictions. Two-tailed t-test versus zero: *p<0.1, **p<0.05, ***p<0.01.

**Table 2: Absolute prediction errors for (average) in-group favouritism by identity dimension**

| Dimension | Mean absolute prediction error (dictator game) | Mean absolute prediction error (trust game) |
|---|---|---|
| Gender | 2.132 (2.209) | 0.912 (0.936) |
| Ethnicity | 1.808 (2.155) | 0.773 (0.863) |
| Artificial | 2.317 (2.531) | 0.950 (1.022) |
| Faculty | 1.832 (1.775) | 0.901 (0.826) |
| Politics | 4.061 (2.772) | 1.869 (1.347) |

*Notes: standard deviations in parentheses. N=203 for all. Absolute prediction error for a given dimension is the absolute value of (predicted amount sent to in-group – predicted average amount sent to out-groups) – (actual amount sent to in-group – actual average amount sent to out-groups).*

**Table 3: Relationship between actual and predicted ranking of identity characteristics' profitability**

| | Dependent Variable = Predicted Rank | | | |
|---|---|---|---|---|
| | (1) Dictator Game | (2) Dictator Game | (3) Trust Game | (4) Trust Game |
| Actual Rank | 0.111*** | 0.017 | 0.167*** | 0.099** |
| | (0.04) | (0.04) | (0.04) | (0.04) |
| In-group | | -0.860*** | | -0.938*** |
| | | (0.09) | | (0.09) |
| Gender | | 0.093 | | 0.030 |
| | | (0.15) | | (0.13) |
| Ethnicity | | 0.504*** | | 0.327** |
| | | (0.15) | | (0.15) |
| Artificial | | 0.517*** | | 0.376** |
| | | (0.14) | | (0.15) |
| Faculty | | 0.215 | | -0.135 |
| | | (0.16) | | (0.15) |
| Constant | 2.667*** | 3.155*** | 2.500*** | 3.076*** |
| | (0.13) | (0.17) | (0.12) | (0.17) |
| N | | 1015 | 1015 | 1015 |
| r2 | | 0.144 | 0.021 | 0.157 |

Note: the omitted identity dimension is Politics. Standard errors, in parentheses, are clustered at the individual level, with 203 clusters. Each model excludes the predictions of 10 receivers whose matched sender failed to complete the second wave of the study. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

**Table 4: Receiver revelation choices**

| Dictator Game | | | | | |
|---|---|---|---|---|---|
| **Dimension** | **Receiver identity** | **Chosen** | **Chosen (in-group match)** | **Chosen (out-group match)** | **P-value** |
| **Gender** | **All** | **32/213** | **25/111** | **7/102** | **0.002** |
| | Female | 29/137 | 24/82 | 5/55 | 0.005 |
| | Male | 3/74 | 1/29 | 2/45 | 1.000 |
| | Non-binary | 0/2 | - | 0/2 | - |
| **Ethnicity** | **All** | **25/213** | **16/81** | **9/132** | **0.007** |
| | White | 2/97 | 2/48 | 0/49 | 0.242 |
| | Mixed | 2/16 | 0/1 | 2/15 | 1.000 |
| | Asian | 21/77 | 14/31 | 7/46 | 0.008 |
| | Black | 0/11 | - | 0/11 | - |
| | Other | 0/12 | 0/1 | 0/11 | - |
| **Artificial** | **All** | **28/213** | **25/150** | **3/63** | **0.024** |
| | Kandinsky | 26/169 | 24/139 | 2/30 | 0.174 |
| | Klee | 2/44 | 1/11 | 1/33 | 0.442 |
| **Faculty** | **All** | **33/213** | **18/65** | **15/148** | **0.002** |
| | Arts | 4/16 | - | 4/16 | - |
| | Engineering | 5/20 | 2/3 | 3/17 | 0.140 |
| | Medicine | 8/41 | 3/13 | 5/28 | 0.692 |
| | Science | 6/46 | 4/12 | 2/34 | 0.033 |
| | Social Science | 10/90 | 9/37 | 1/53 | 0.001 |
| **Politics** | **All** | **95/213** | **92/173** | **3/40** | **<0.001** |
| | Anti-Brexit | 88/185 | 87/165 | 1/20 | <0.001 |
| | Pro-Brexit | 7/28 | 5/8 | 2/20 | 0.009 |
| **Total** | | | **176/211** | **37/202** | |
| **Trust Game** | | | | | |
| **Dimension** | **Receiver identity** | **Chosen** | **Chosen (in-group match)** | **Chosen (out-group match** | **P-value** |
| **Gender** | **All** | **32/213** | **25/111** | **7/102** | **0.002** |
| | Female | 25/137 | 20/83 | 5/54 | 0.040 |
| | Male | 7/74 | 5/28 | 2/46 | 0.097 |
| | Non-binary | 0/2 | - | 0/2 | - |
| **Ethnicity** | **All** | **23/213** | **16/83** | **7/130** | **0.003** |
| | White | 2/97 | 2/48 | 0/49 | 0.242 |
| | Mixed | 3/16 | 1/1 | 2/15 | 0.187 |
| | Asian | 15/77 | 13/33 | 2/44 | <0.001 |
| | Black | 3/11 | - | 3/11 | - |
| | Other | 0/12 | 0/1 | 0/11 | - |
| **Artificial** | **All** | **24/213** | **22/144** | **2/69** | **0.006** |
| | Kandinsky | 24/169 | 22/136 | 2/33 | 0.171 |
| | Klee | 0/44 | 0/8 | 0/36 | - |
| **Faculty** | **All** | **40/213** | **15/59** | **25/154** | **0.169** |
| | Arts | 2/16 | ½ | 1/14 | 0.242 |
| | Engineering | 6/20 | 2/3 | 4/17 | 0.202 |
| | Medicine | 8/41 | 2/7 | 6/34 | 0.606 |
| | Science | 11/46 | 3/11 | 8/35 | 1.000 |
| | Social Science | 13/90 | 7/36 | 6/54 | 0.361 |
| **Politics** | **All** | **94/213** | **92/162** | **2/51** | **<0.001** |
| | Anti-Brexit | 92/185 | 90/160 | 2/25 | <0.001 |
| | Pro-Brexit | 2/28 | 2/2 | 0/26 | 0.003 |
| **Total** | | | **170/210** | **43/208** | |

*Notes: p-value reports outcome of two-sided Fisher Exact test on in-group match proportion chosen vs out-group match proportion chosen. The denominators in the bottom row ("Total") of each panel exclude for in-group matches receivers who had no in-group characteristics available for selection, and for out-group matches receivers who had no out-group characteristics available for selection.*

**Table 5: Conditional logit regressions on revelation choices**

| | Dependent Variable: Characteristic Selected | |
|---|---|---|
| | (1) | (2) |
| | Dictator Game | Trust Game |
| Predicted amount sent | 0.229*** | 0.819*** |
| | (0.06) | (0.15) |
| In-group | 1.254*** | 1.109*** |
| | (0.23) | (0.22) |
| Gender | -0.021 | 0.051 |
| | (0.28) | (0.29) |
| Artificial | -0.379 | -0.302 |
| | (0.29) | (0.31) |
| Faculty | 0.317 | 0.619** |
| | (0.28) | (0.28) |
| Politics | 0.710*** | 0.925*** |
| | (0.25) | (0.25) |
| N | 1065 | 1065 |
| Pseudo $r^2$ | 0.219 | 0.259 |

Notes: The dependent variable indicates whether or not an identity characteristic is revealed by a given receiver. The omitted identity dimension is ethnicity. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

**References**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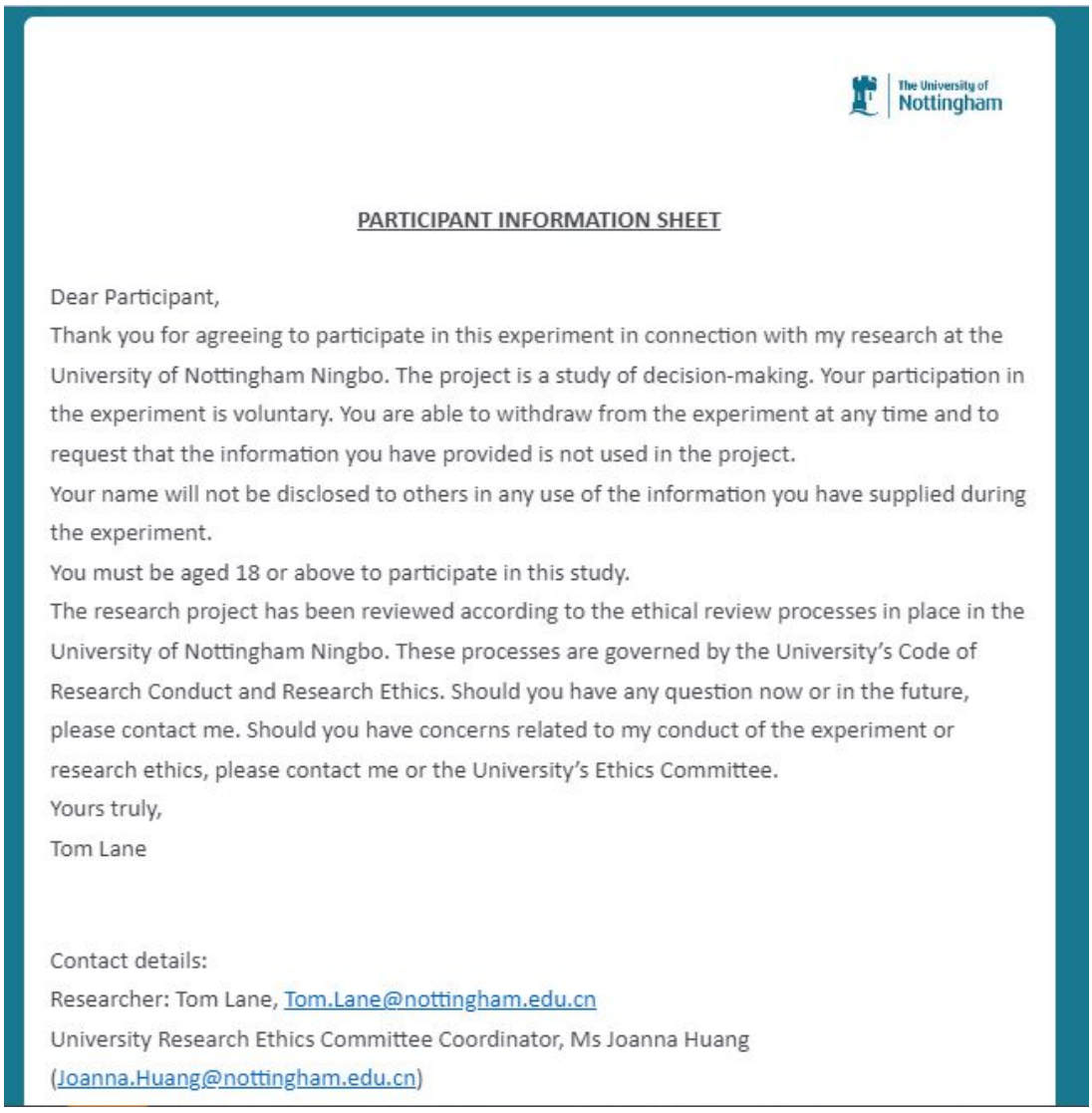
## Online Appendix A: Screenshots of experimental instructions

The following are exemplar screenshots from a version of the experiment in which the trust game is played before the dictator game, and second movers make predictions about the amounts first movers will send before they choose which piece of information to reveal.

### First movers – Wave 1



The University of Nottingham

PARTICIPANT INFORMATION SHEET

Dear Participant,

Thank you for agreeing to participate in this experiment in connection with my research at the University of Nottingham Ningbo. The project is a study of decision-making. Your participation in the experiment is voluntary. You are able to withdraw from the experiment at any time and to request that the information you have provided is not used in the project.

Your name will not be disclosed to others in any use of the information you have supplied during the experiment.

You must be aged 18 or above to participate in this study.

The research project has been reviewed according to the ethical review processes in place in the University of Nottingham Ningbo. These processes are governed by the University's Code of Research Conduct and Research Ethics. Should you have any question now or in the future, please contact me. Should you have concerns related to my conduct of the experiment or research ethics, please contact me or the University's Ethics Committee.

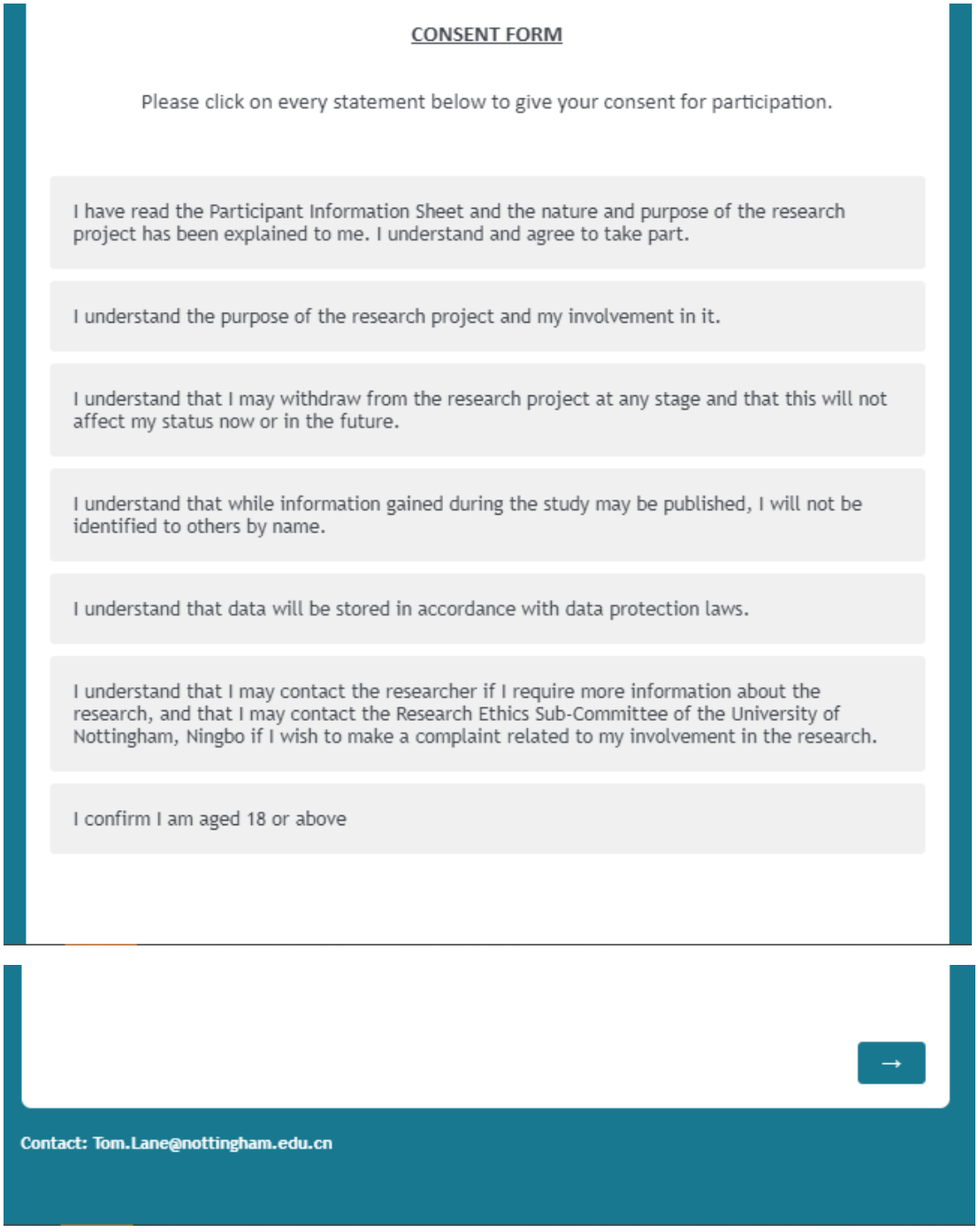
Yours truly,

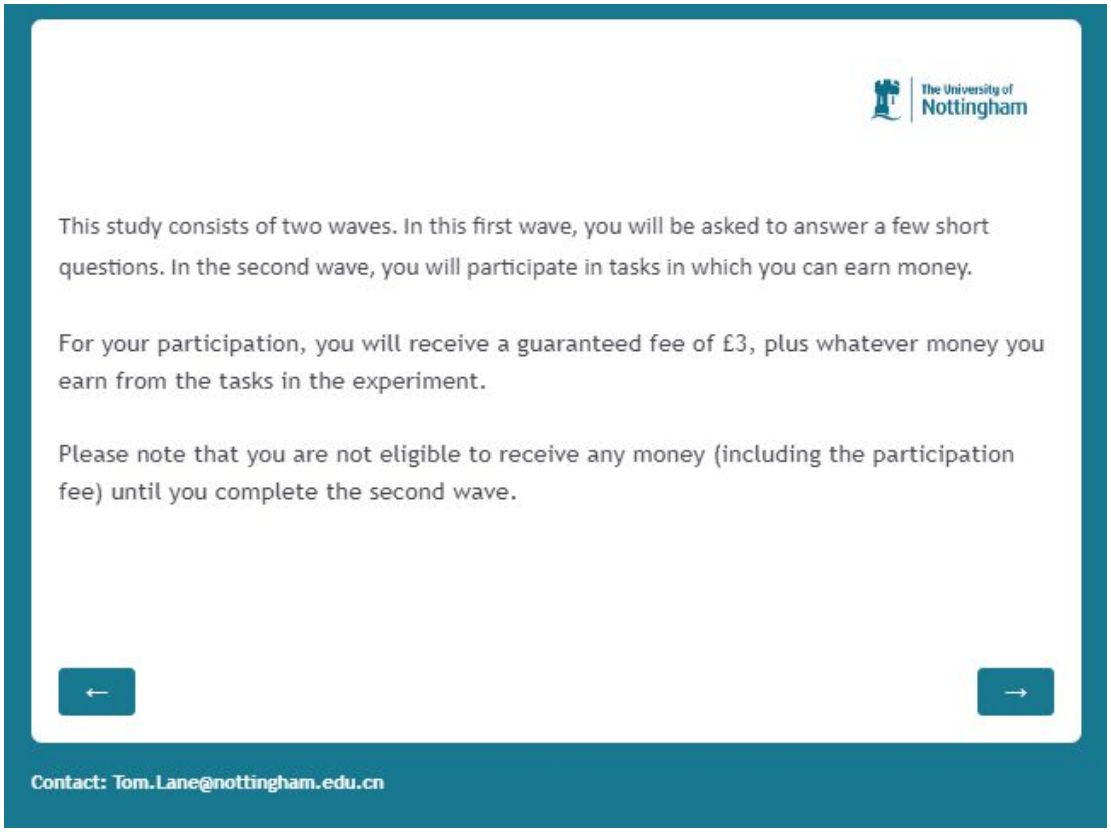
Tom Lane

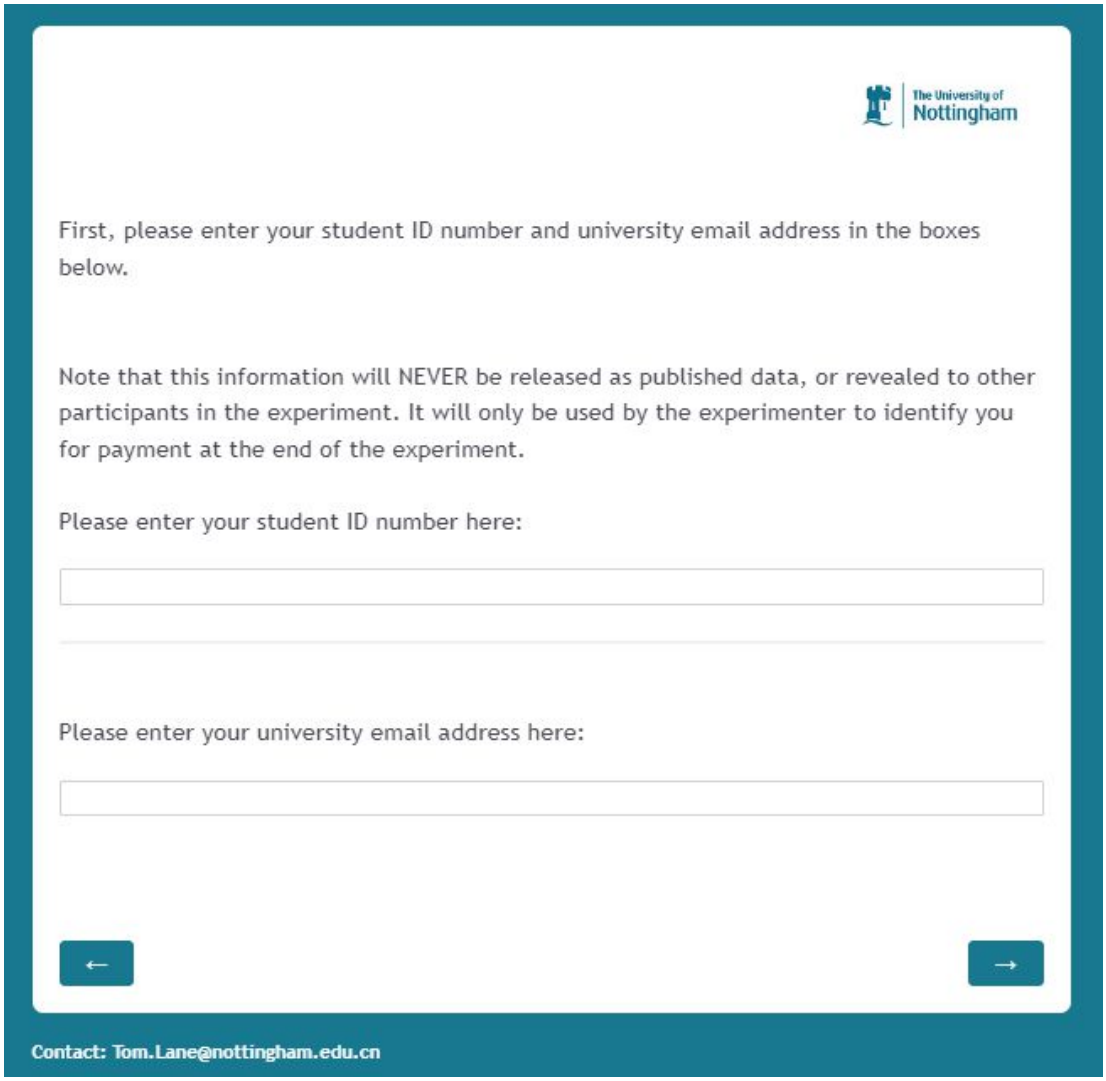
Contact details:

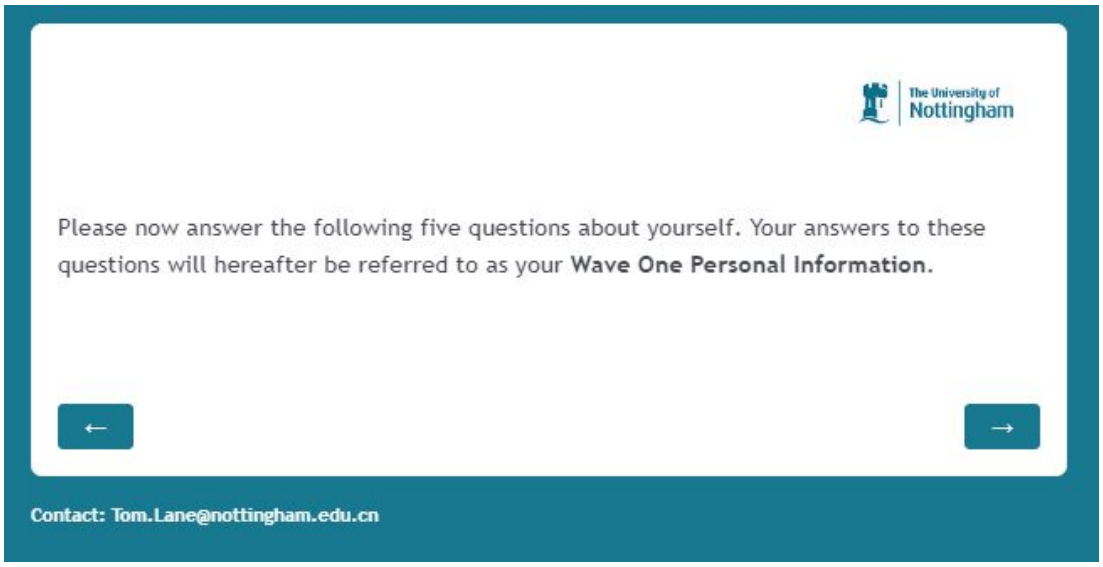
Researcher: Tom Lane, Tom.Lane@nottingham.edu.cn

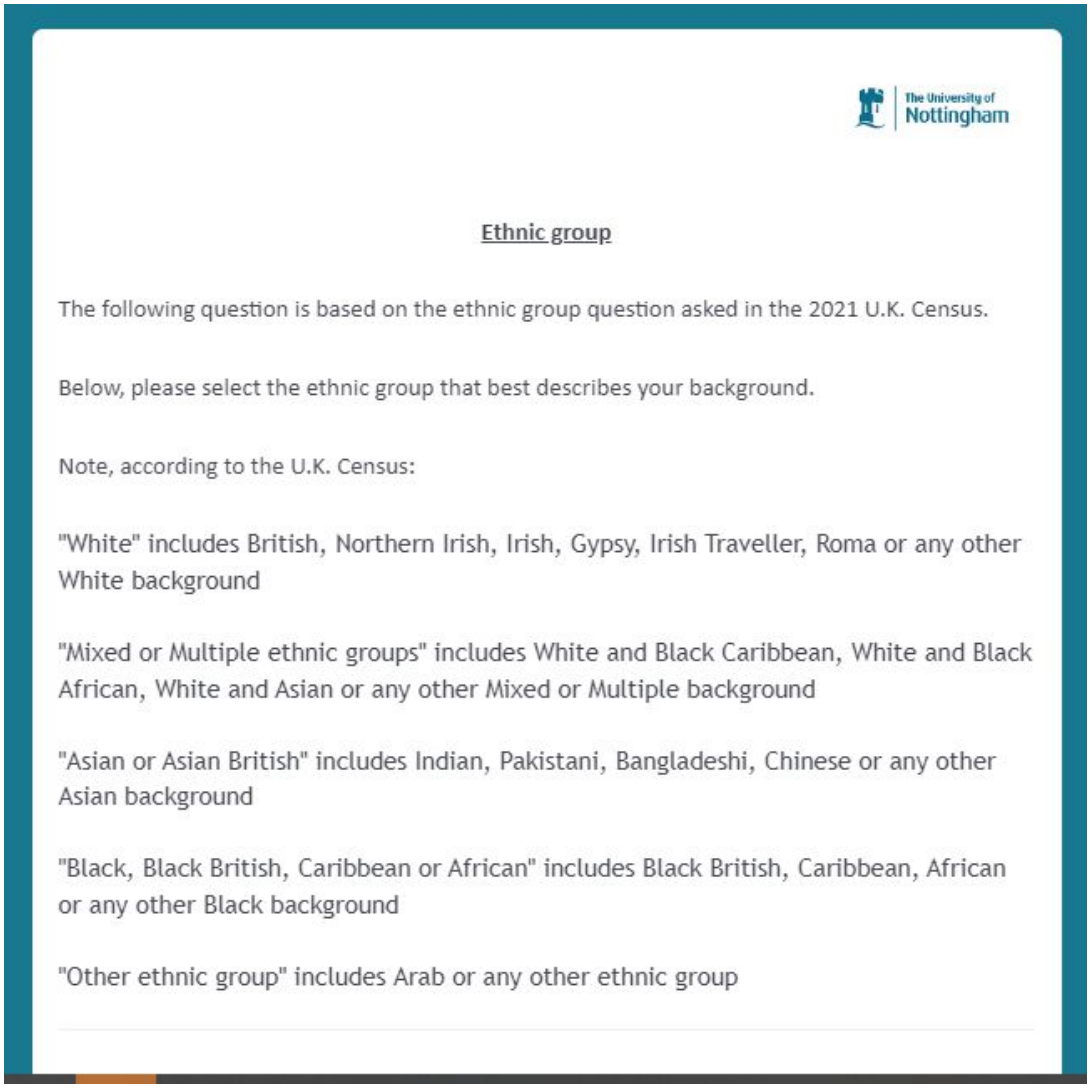
University Research Ethics Committee Coordinator, Ms Joanna Huang (Joanna.Huang@nottingham.edu.cn)

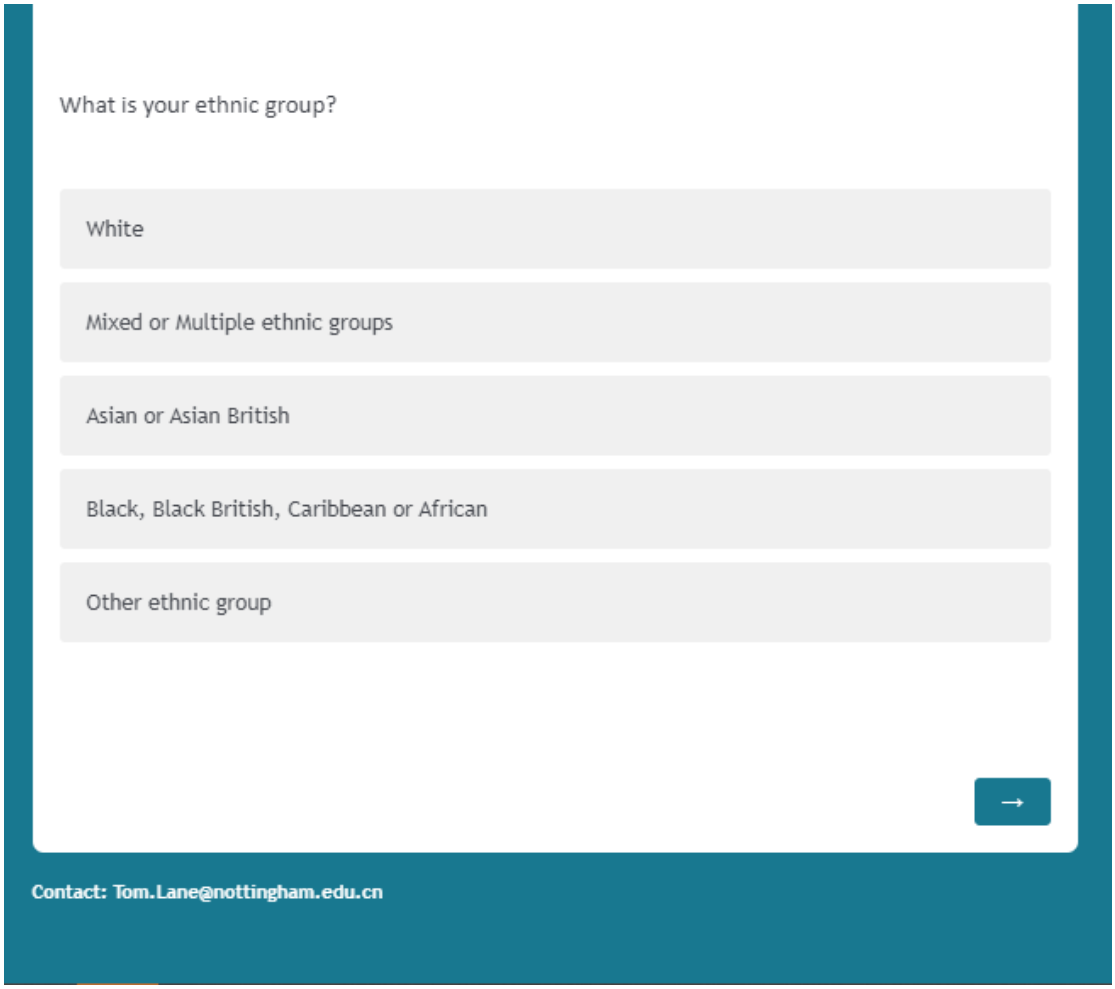

CONSENT FORM
Please click on every statement below to give your consent for participation.
I have read the Participant Information Sheet and the nature and purpose of the research project has been explained to me. I understand and agree to take part.
I understand the purpose of the research project and my involvement in it.
I understand that I may withdraw from the research project at any stage and that this will not affect my status now or in the future.
I understand that while information gained during the study may be published, I will not be identified to others by name.
I understand that data will be stored in accordance with data protection laws.
I understand that I may contact the researcher if I require more information about the research, and that I may contact the Research Ethics Sub-Committee of the University of Nottingham, Ningbo if I wish to make a complaint related to my involvement in the research.
I confirm I am aged 18 or above
→
Contact: Tom.Lane@nottingham.edu.cn

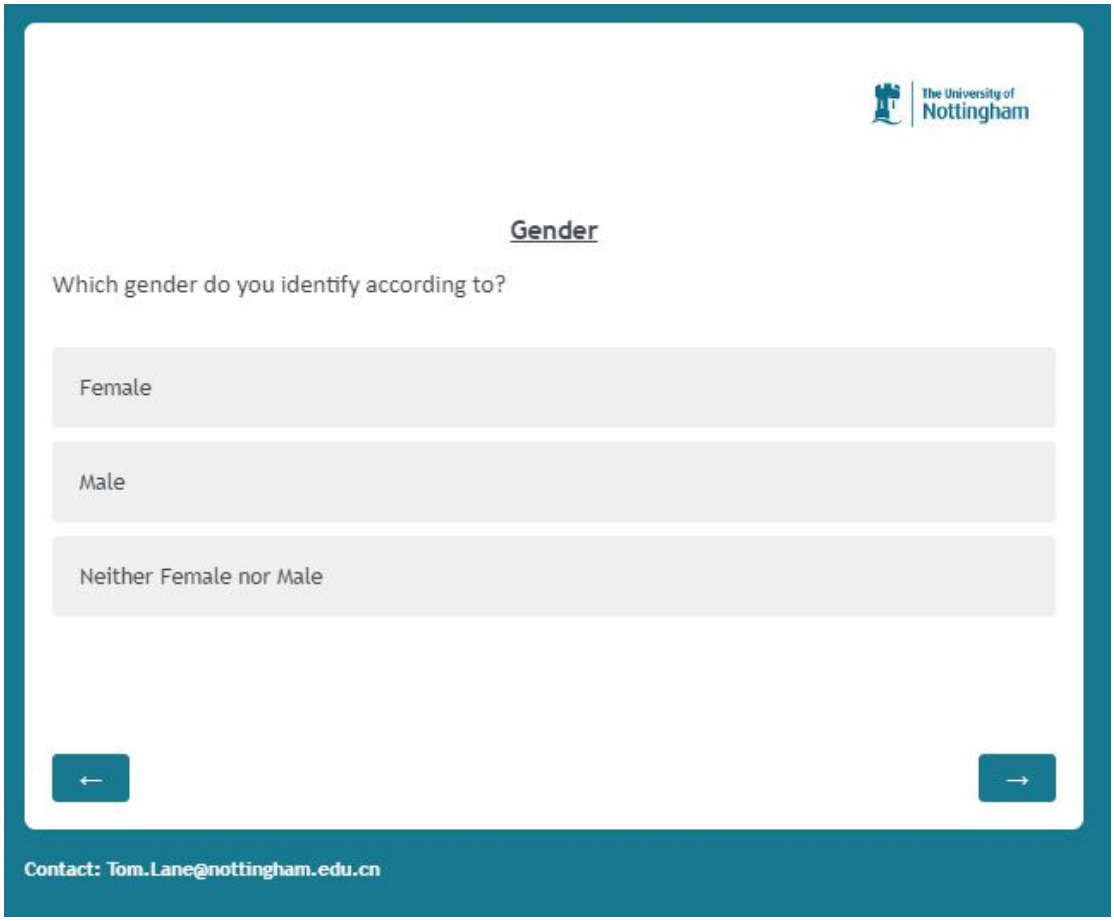

The University of Nottingham
This study consists of two waves. In this first wave, you will be asked to answer a few short questions. In the second wave, you will participate in tasks in which you can earn money.
For your participation, you will receive a guaranteed fee of £3, plus whatever money you earn from the tasks in the experiment.
Please note that you are not eligible to receive any money (including the participation fee) until you complete the second wave.
←
→
Contact: Tom.Lane@nottingham.edu.cn

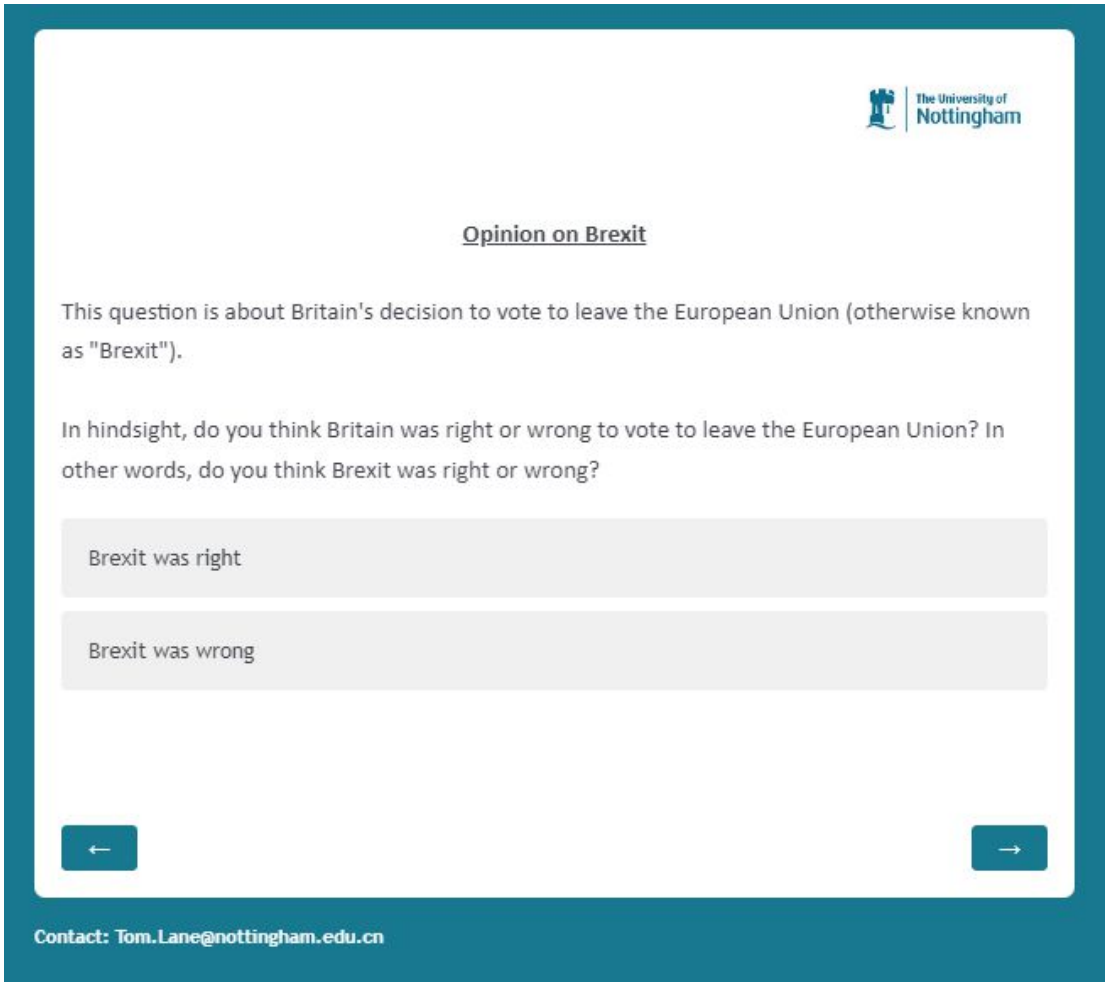

The University of Nottingham
First, please enter your student ID number and university email address in the boxes below.
Note that this information will NEVER be released as published data, or revealed to other participants in the experiment. It will only be used by the experimenter to identify you for payment at the end of the experiment.
Please enter your student ID number here:
Please enter your university email address here:
←
→
Contact: Tom.Lane@nottingham.edu.cn

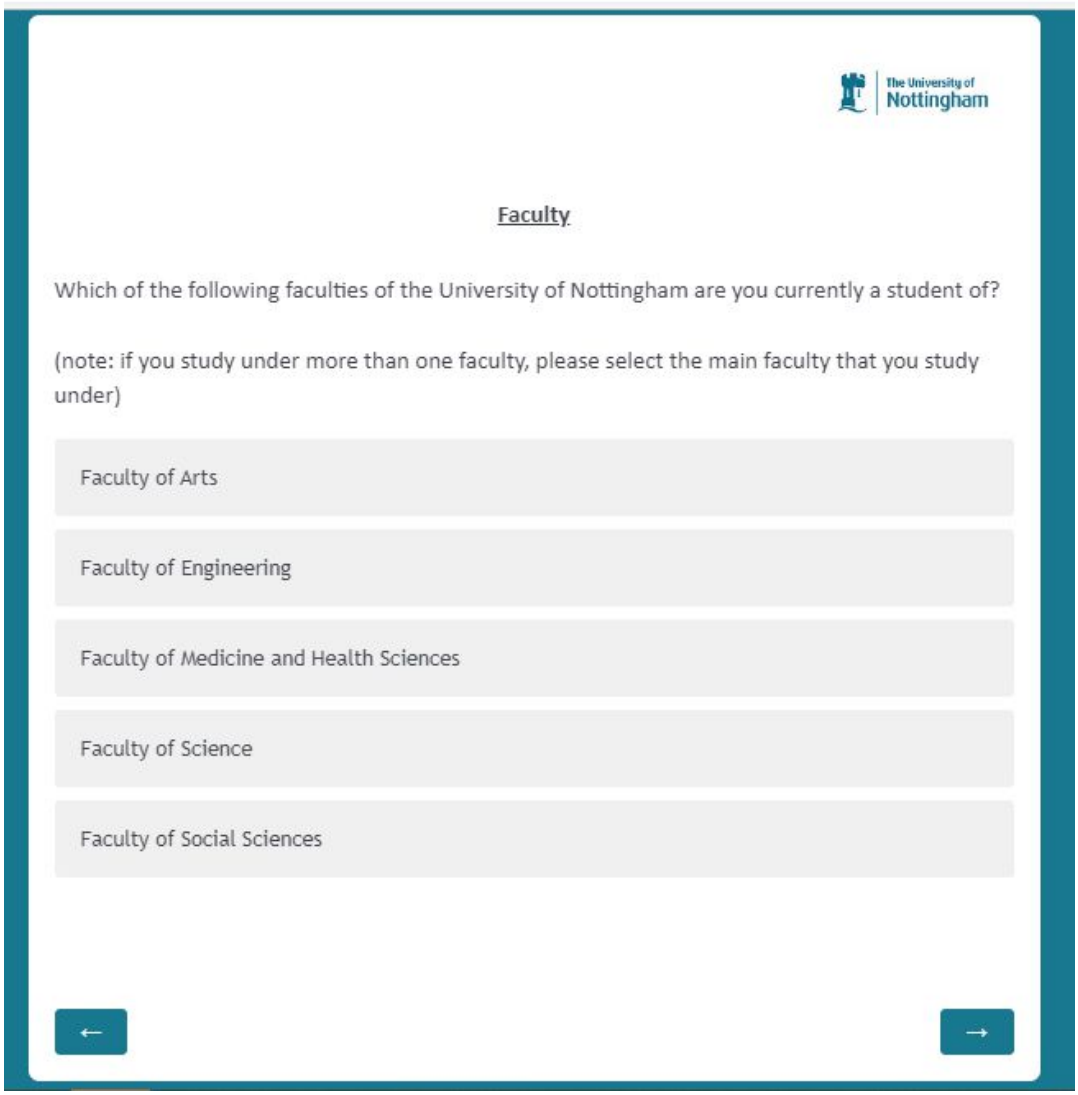

The University of Nottingham
Please now answer the following five questions about yourself. Your answers to these questions will hereafter be referred to as your **Wave One Personal Information**.
←
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Ethnic group
The following question is based on the ethnic group question asked in the 2021 U.K. Census.
Below, please select the ethnic group that best describes your background.
Note, according to the U.K. Census:
"White" includes British, Northern Irish, Irish, Gypsy, Irish Traveller, Roma or any other White background
"Mixed or Multiple ethnic groups" includes White and Black Caribbean, White and Black African, White and Asian or any other Mixed or Multiple background
"Asian or Asian British" includes Indian, Pakistani, Bangladeshi, Chinese or any other Asian background
"Black, Black British, Caribbean or African" includes Black British, Caribbean, African or any other Black background
"Other ethnic group" includes Arab or any other ethnic group


What is your ethnic group?
White
Mixed or Multiple ethnic groups
Asian or Asian British
Black, Black British, Caribbean or African
Other ethnic group
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Gender
Which gender do you identify according to?
Female
Male
Neither Female nor Male
←
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Opinion on Brexit
This question is about Britain's decision to vote to leave the European Union (otherwise known as "Brexit").
In hindsight, do you think Britain was right or wrong to vote to leave the European Union? In other words, do you think Brexit was right or wrong?
Brexit was right
Brexit was wrong
←
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Faculty
Which of the following faculties of the University of Nottingham are you currently a student of?
(note: if you study under more than one faculty, please select the main faculty that you study under)
Faculty of Arts
Faculty of Engineering
Faculty of Medicine and Health Sciences
Faculty of Science
Faculty of Social Sciences
←
→

The University of Nottingham

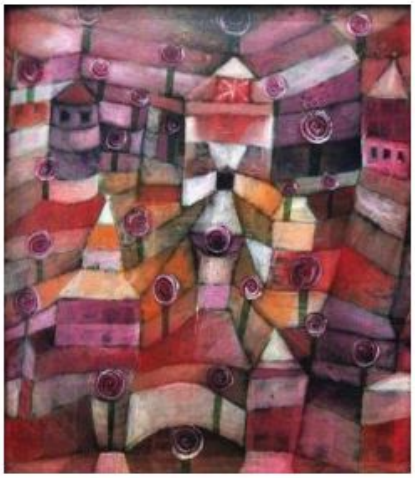
## Painting Preference

You will now be asked which of 2 paintings you prefer.

---

## Painting 1: Klee

The painting below is by Klee.



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**Painting 2: Kandinsky**

The painting below is by Kandinsky

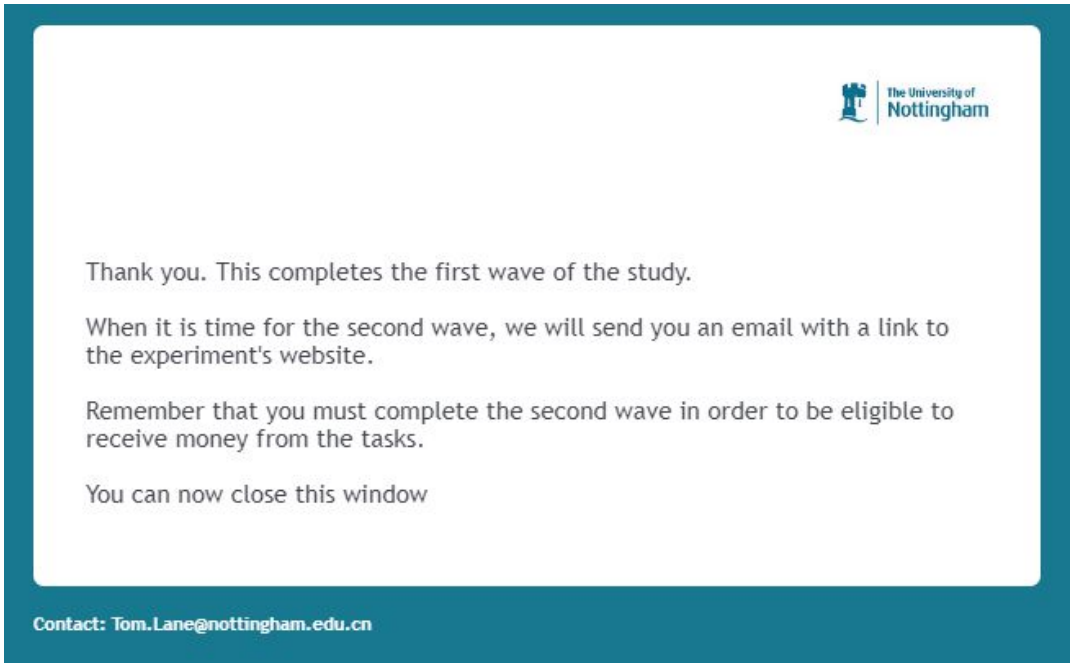
Which of the two paintings above do you prefer?

Klee

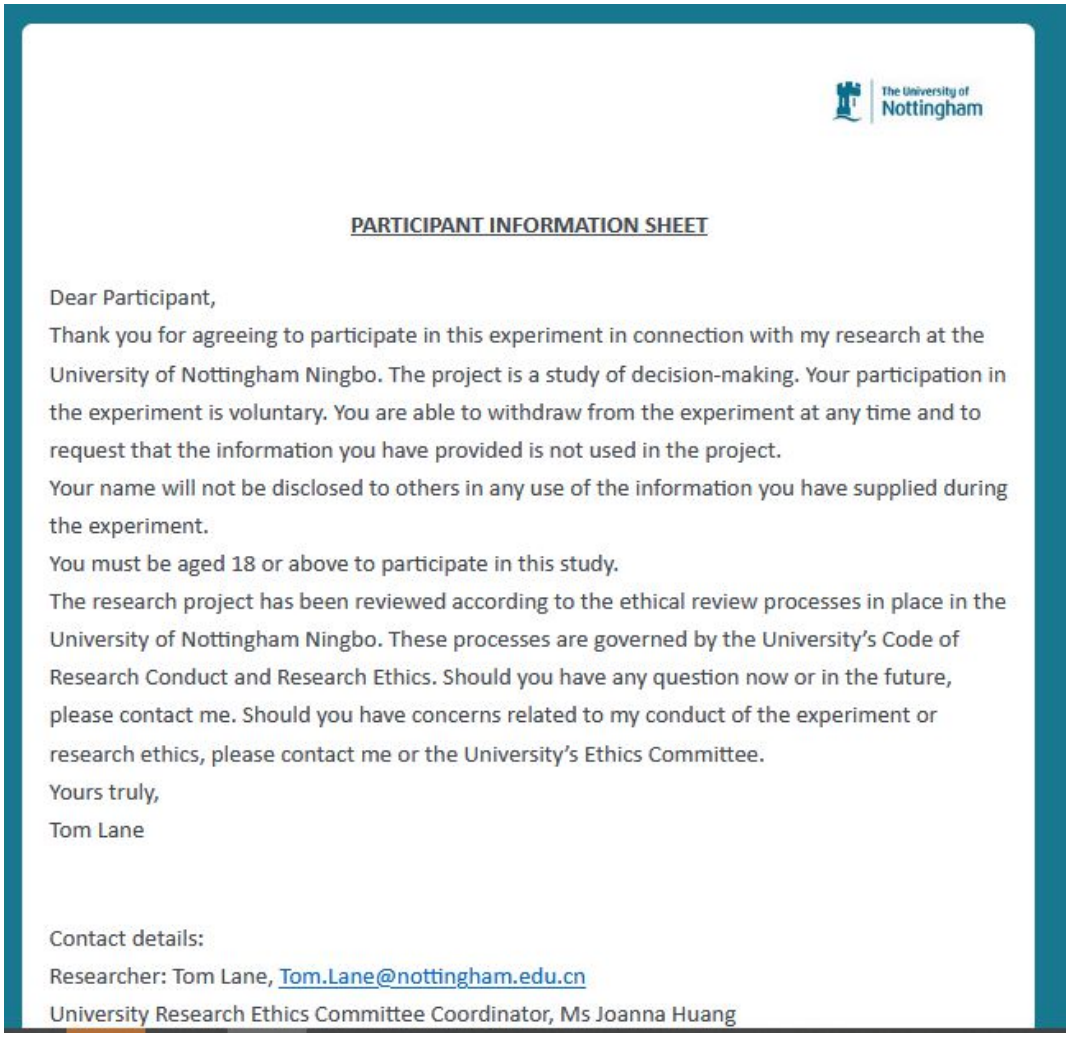
Kandinsky

←

→


The University of Nottingham
Thank you. This completes the first wave of the study.
When it is time for the second wave, we will send you an email with a link to the experiment's website.
Remember that you must complete the second wave in order to be eligible to receive money from the tasks.
You can now close this window
Contact: Tom.Lane@nottingham.edu.cn

**Second movers – Wave 1**



The University of Nottingham

**PARTICIPANT INFORMATION SHEET**

Dear Participant,

Thank you for agreeing to participate in this experiment in connection with my research at the University of Nottingham Ningbo. The project is a study of decision-making. Your participation in the experiment is voluntary. You are able to withdraw from the experiment at any time and to request that the information you have provided is not used in the project.

Your name will not be disclosed to others in any use of the information you have supplied during the experiment.

You must be aged 18 or above to participate in this study.

The research project has been reviewed according to the ethical review processes in place in the University of Nottingham Ningbo. These processes are governed by the University's Code of Research Conduct and Research Ethics. Should you have any question now or in the future, please contact me. Should you have concerns related to my conduct of the experiment or research ethics, please contact me or the University's Ethics Committee.

Yours truly,

Tom Lane

Contact details:

Researcher: Tom Lane, Tom.Lane@nottingham.edu.cn

University Research Ethics Committee Coordinator, Ms Joanna Huang

(Joanna.Huang@nottingham.edu.cn)

**CONSENT FORM**

Please click on every statement below to give your consent for participation.

I have read the Participant Information Sheet and the nature and purpose of the research project has been explained to me. I understand and agree to take part.

I understand the purpose of the research project and my involvement in it.

I understand that I may withdraw from the research project at any stage and that this will not affect my status now or in the future.

I understand that while information gained during the study may be published, I will not be identified to others by name.

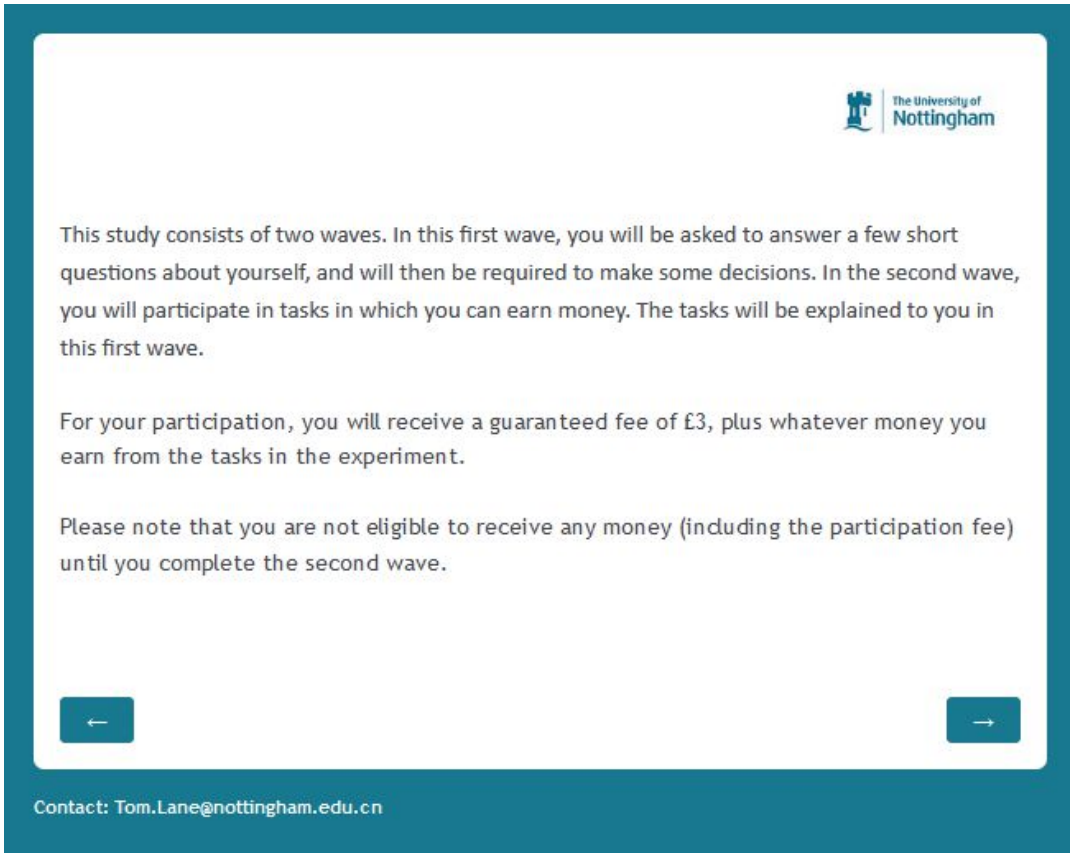
I understand that data will be stored in accordance with data protection laws.

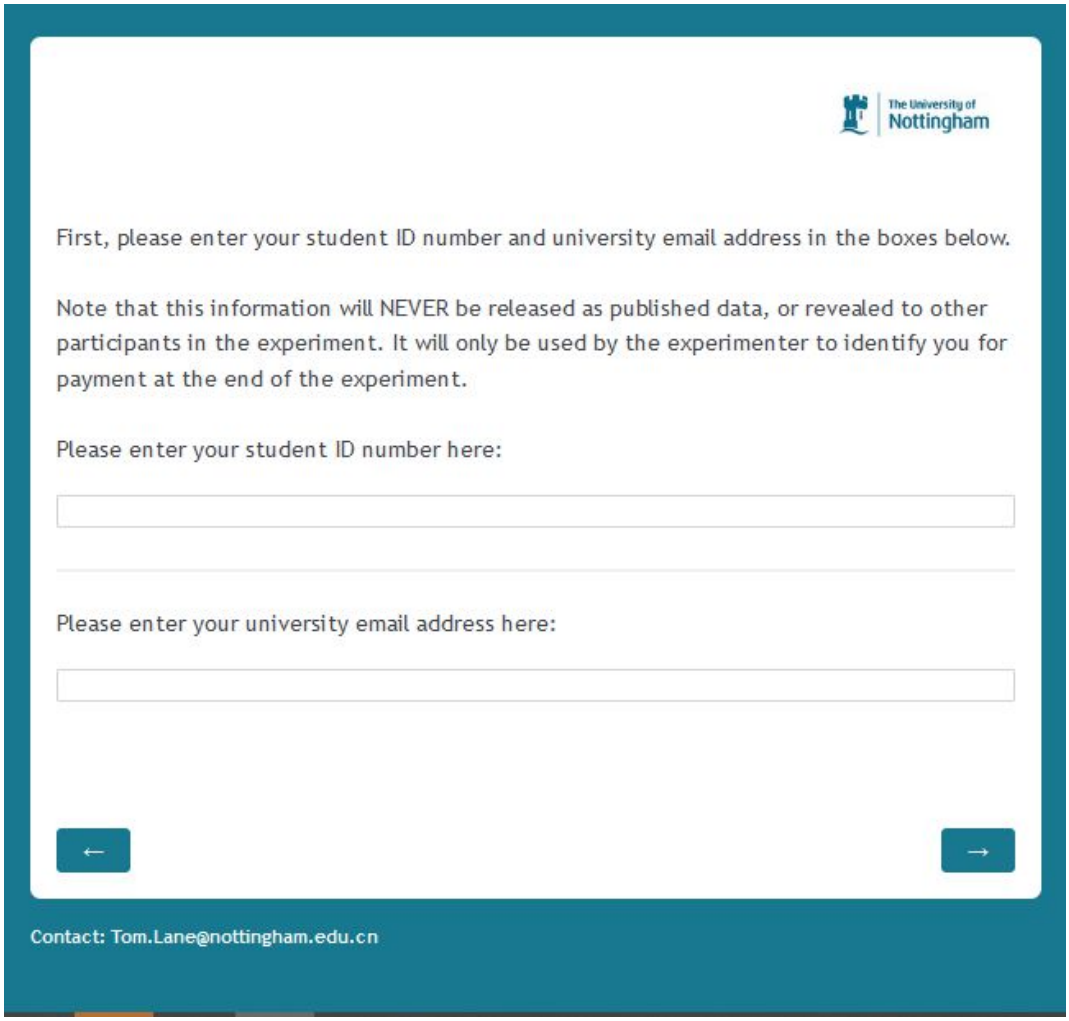
I understand that I may contact the researcher if I require more information about the research, and that I may contact the Research Ethics Sub-Committee of the University of Nottingham, Ningbo if I wish to make a complaint related to my involvement in the research.

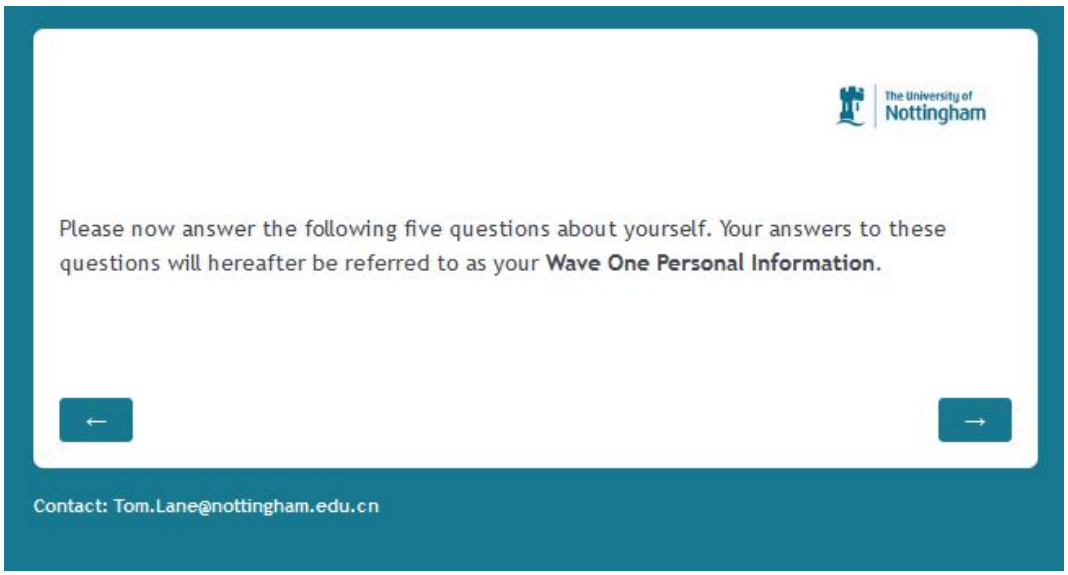
I confirm I am aged 18 or above

→

Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
This study consists of two waves. In this first wave, you will be asked to answer a few short questions about yourself, and will then be required to make some decisions. In the second wave, you will participate in tasks in which you can earn money. The tasks will be explained to you in this first wave.
For your participation, you will receive a guaranteed fee of £3, plus whatever money you earn from the tasks in the experiment.
Please note that you are not eligible to receive any money (including the participation fee) until you complete the second wave.
←
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
First, please enter your student ID number and university email address in the boxes below.
Note that this information will NEVER be released as published data, or revealed to other participants in the experiment. It will only be used by the experimenter to identify you for payment at the end of the experiment.
Please enter your student ID number here:
Please enter your university email address here:
←
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Please now answer the following five questions about yourself. Your answers to these questions will hereafter be referred to as your **Wave One Personal Information**.
←
→
Contact: Tom.Lane@nottingham.edu.cn

## Ethnic group

The following question is based on the ethnic group question asked in the 2021 U.K. Census.

Below, please select the ethnic group that best describes your background.

Note, according to the U.K. Census:

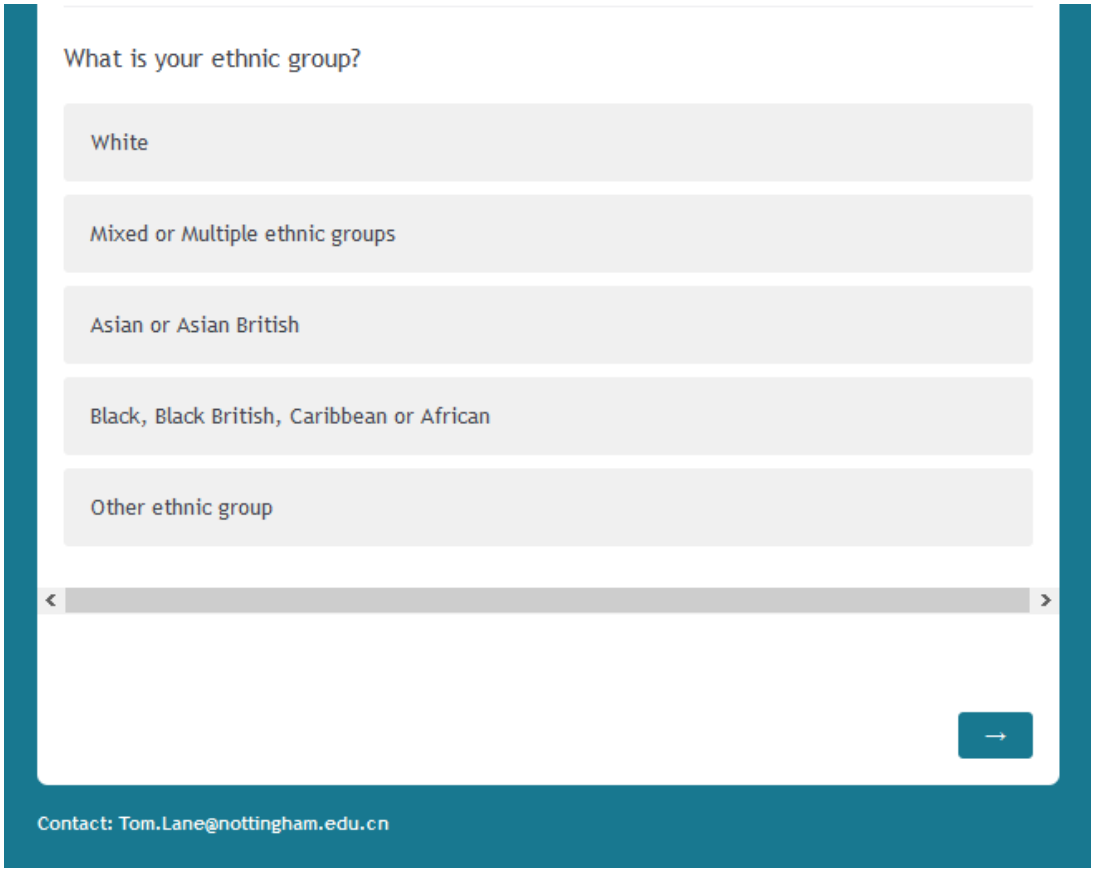
"White" includes British, Northern Irish, Irish, Gypsy, Irish Traveller, Roma or any other White background

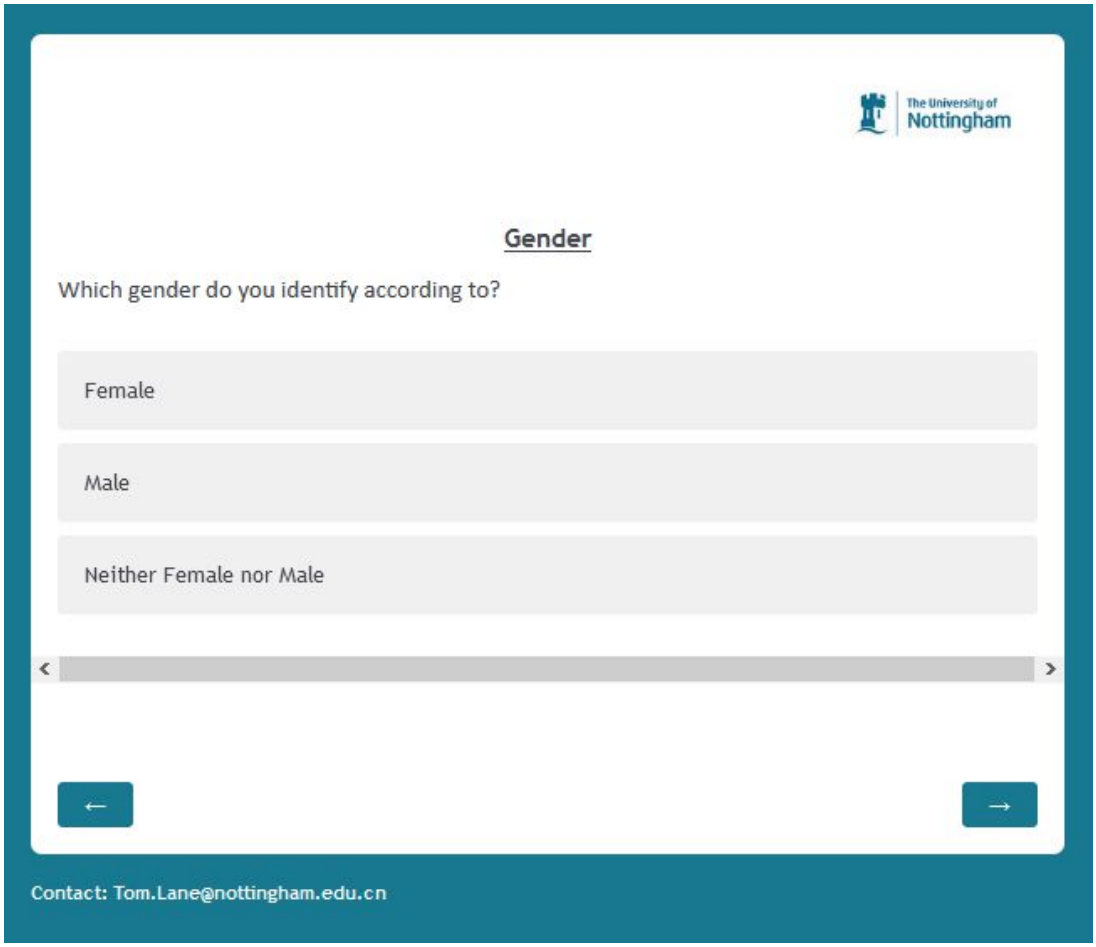
"Mixed or Multiple ethnic groups" includes White and Black Caribbean, White and Black African, White and Asian or any other Mixed or Multiple background

"Asian or Asian British" includes Indian, Pakistani, Bangladeshi, Chinese or any other Asian background

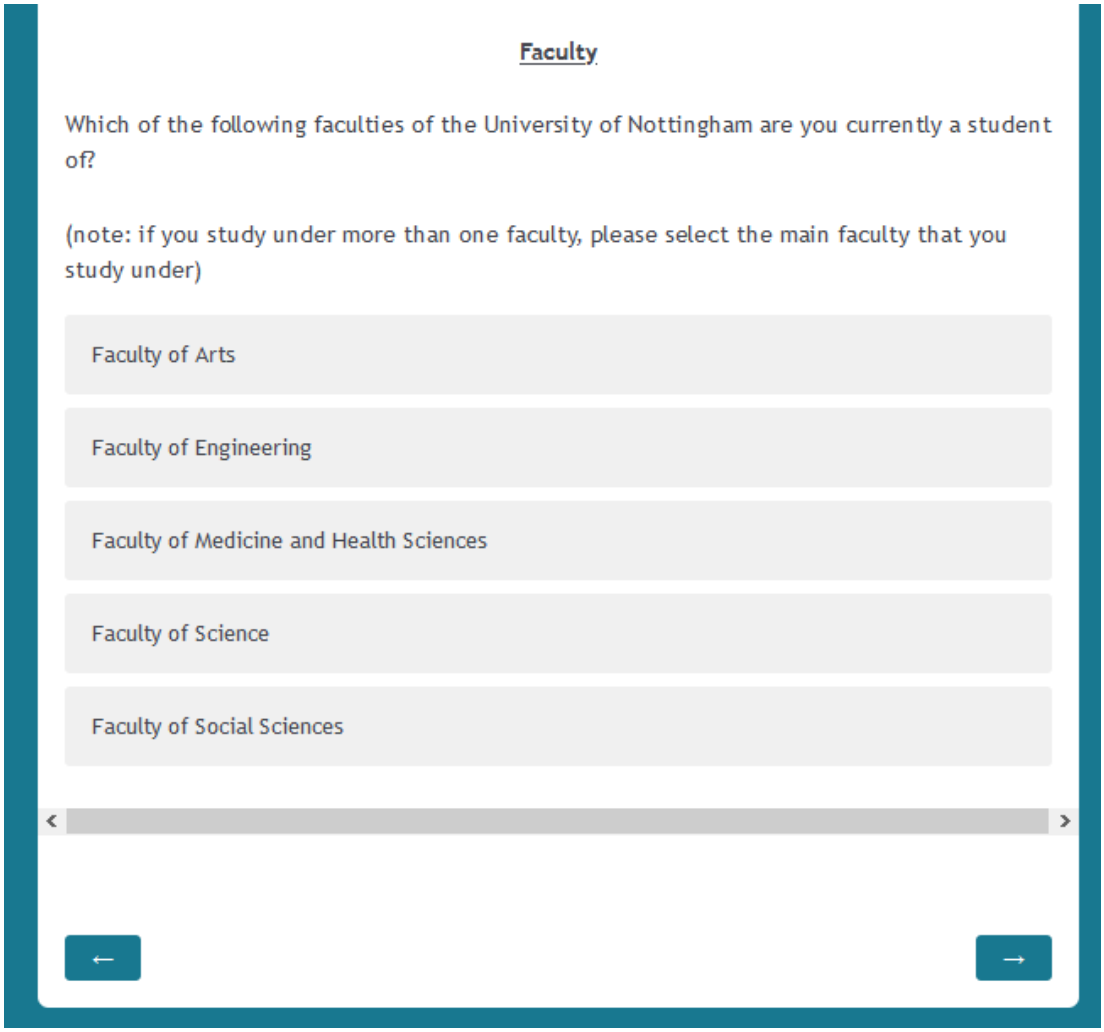
"Black, Black British, Caribbean or African" includes Black British, Caribbean, African or any other Black background

"Other ethnic group" includes Arab or any other ethnic group


What is your ethnic group?
White
Mixed or Multiple ethnic groups
Asian or Asian British
Black, Black British, Caribbean or African
Other ethnic group
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Gender
Which gender do you identify according to?
Female
Male
Neither Female nor Male
←
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Opinion on Brexit
This question is about Britain's decision to vote to leave the European Union (otherwise known as "Brexit").
In hindsight, do you think Britain was right or wrong to vote to leave the European Union? In other words, do you think Brexit was right or wrong?
Brexit was right
Brexit was wrong
←
→
Contact: Tom.Lane@nottingham.edu.cn


Faculty
Which of the following faculties of the University of Nottingham are you currently a student of?
(note: if you study under more than one faculty, please select the main faculty that you study under)
Faculty of Arts
Faculty of Engineering
Faculty of Medicine and Health Sciences
Faculty of Science
Faculty of Social Sciences
←
→

The University of Nottingham

**Painting Preference**

You will now be asked which of 2 paintings you prefer.

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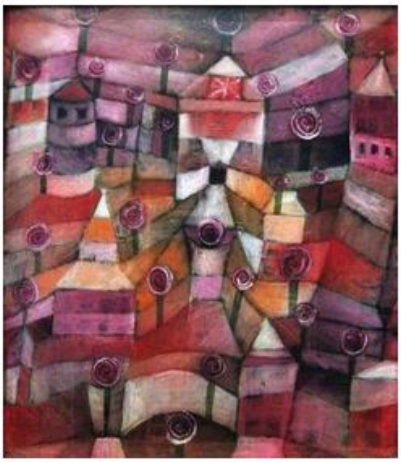
**Painting 1: Klee**

The painting below is by Klee.



**Painting 2: Kandinsky**

The painting below is by Kandinsky

Which of the two paintings above do you prefer?

- Klee
- Kandinsky

←

→

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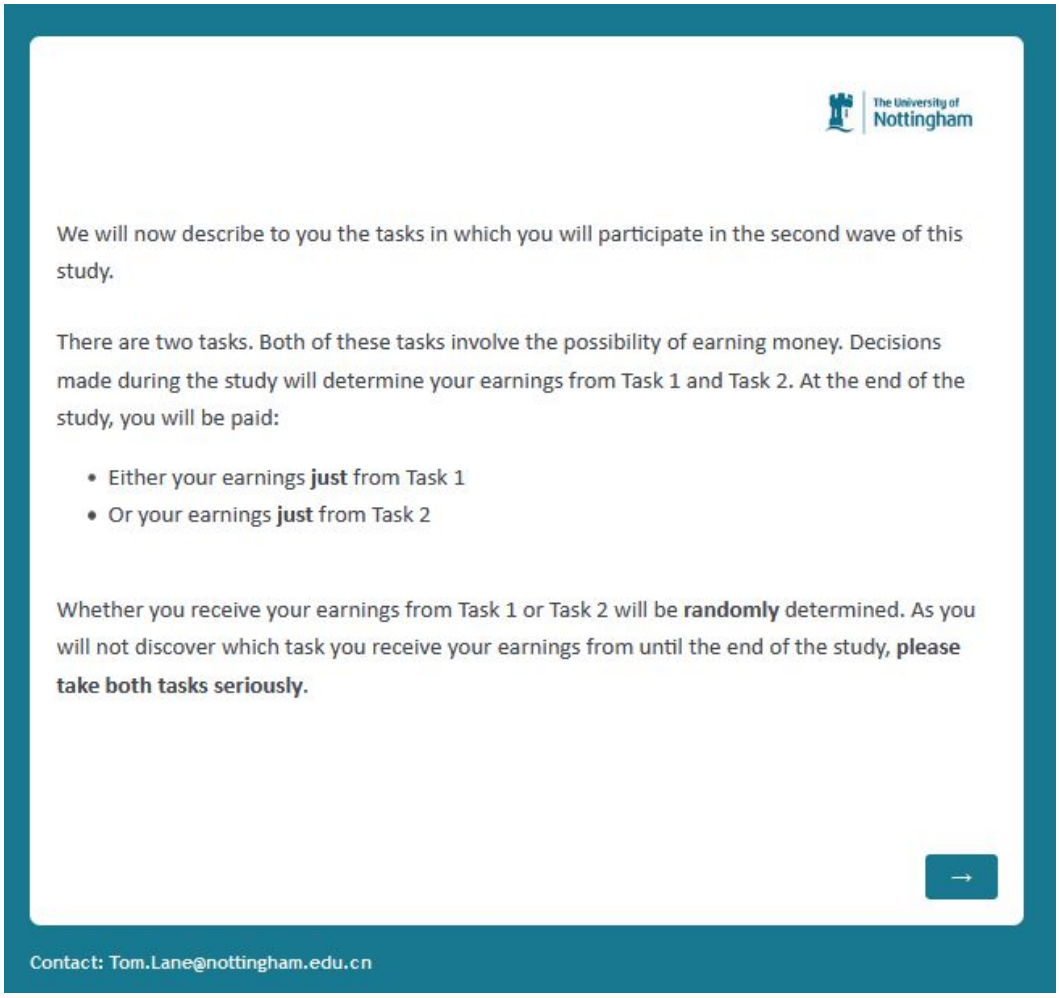
The University of Nottingham
We will now describe to you the tasks in which you will participate in the second wave of this study.
There are two tasks. Both of these tasks involve the possibility of earning money. Decisions made during the study will determine your earnings from Task 1 and Task 2. At the end of the study, you will be paid:
• Either your earnings **just** from Task 1
• Or your earnings **just** from Task 2
Whether you receive your earnings from Task 1 or Task 2 will be **randomly** determined. As you will not discover which task you receive your earnings from until the end of the study, **please take both tasks seriously**.
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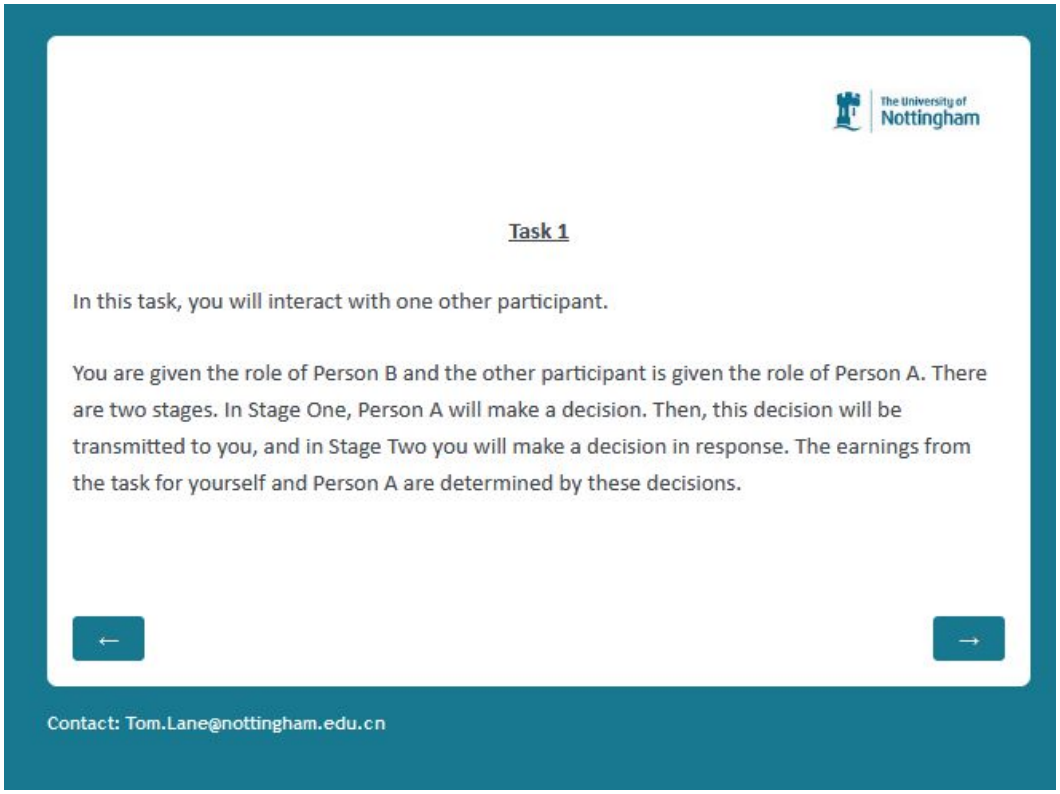
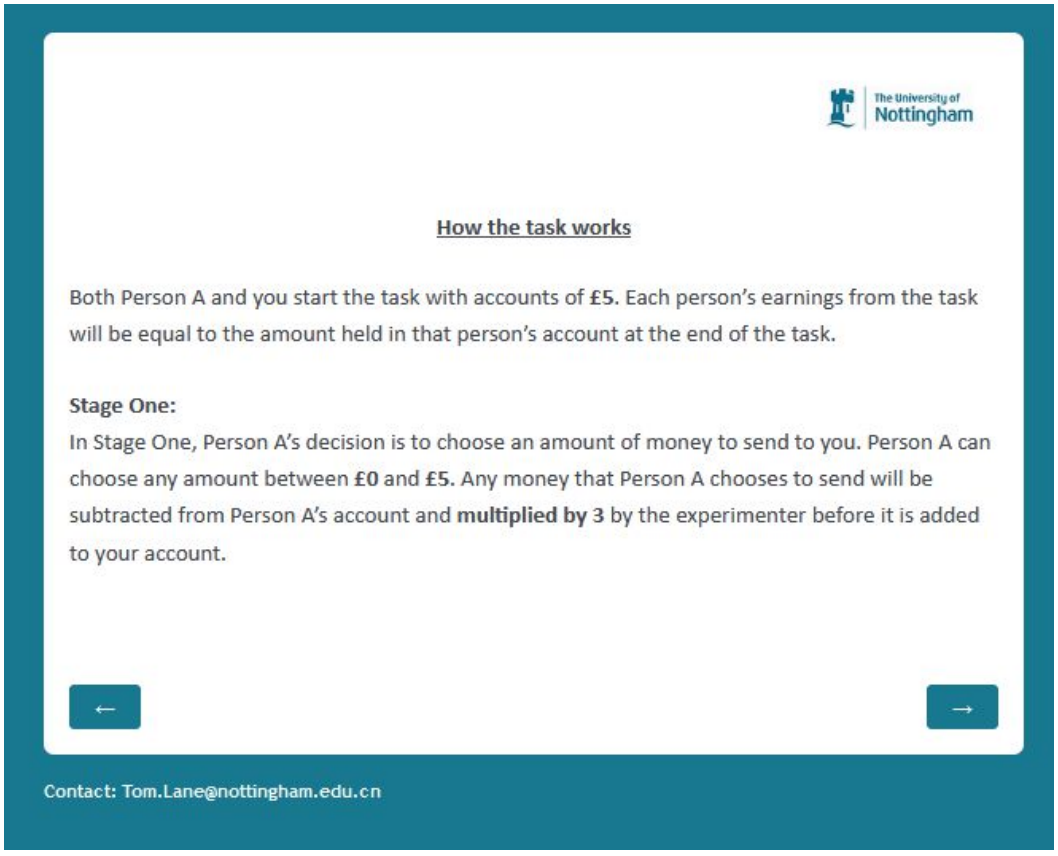
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Task 1
In this task, you will interact with one other participant.
You are given the role of Person B and the other participant is given the role of Person A. There are two stages. In Stage One, Person A will make a decision. Then, this decision will be transmitted to you, and in Stage Two you will make a decision in response. The earnings from the task for yourself and Person A are determined by these decisions.
←
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
How the task works
Both Person A and you start the task with accounts of £5. Each person's earnings from the task will be equal to the amount held in that person's account at the end of the task.
Stage One:
In Stage One, Person A's decision is to choose an amount of money to send to you. Person A can choose any amount between £0 and £5. Any money that Person A chooses to send will be subtracted from Person A's account and multiplied by 3 by the experimenter before it is added to your account.
←
→
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Let's go through two examples to make it clear how Stage One works.

**Example 1**

- Person A and you both have **£5** in your starting accounts.
- Person A decides to send **£4** to you. This amount is **multiplied by 3** by the experimenter. The amount received by you is **3 x £4 = £12**.
- At the end of Stage One, Person A's account has **£5 – 4 = £1**. Your account has **£5 + 12 = £17**.

**Example 2**

- Person A and you both have **£5** in your starting accounts.
- Person A decides to send **£1** to you. This amount is **multiplied by 3** by the experimenter. The amount received by you is **3 x £1 = £3**.
- At the end of Stage One, Person A's account has **£5 – 1 = £4**. Your account has **£5 + 3 = £8**.

←

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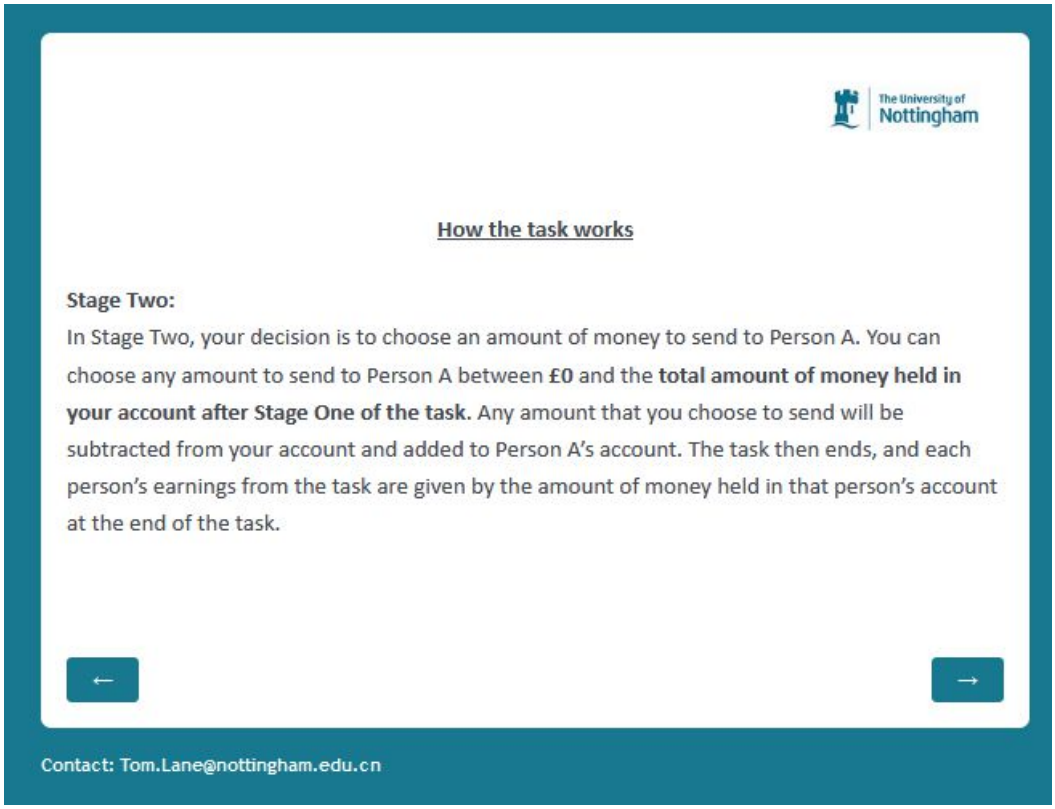
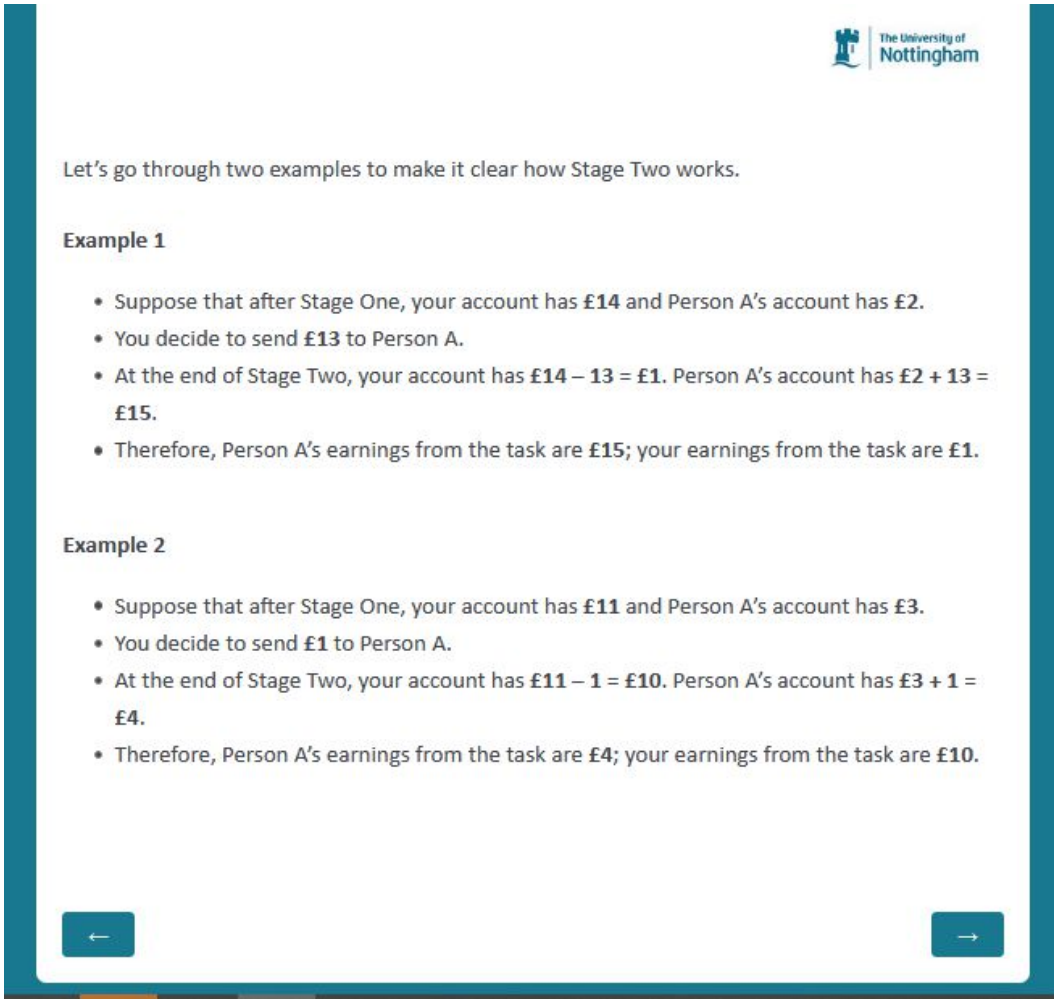

The University of Nottingham
How the task works
Stage Two:
In Stage Two, your decision is to choose an amount of money to send to Person A. You can choose any amount to send to Person A between £0 and the total amount of money held in your account after Stage One of the task. Any amount that you choose to send will be subtracted from your account and added to Person A's account. The task then ends, and each person's earnings from the task are given by the amount of money held in that person's account at the end of the task.
←
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Let's go through two examples to make it clear how Stage Two works.
Example 1
• Suppose that after Stage One, your account has £14 and Person A's account has £2.
• You decide to send £13 to Person A.
• At the end of Stage Two, your account has £14 – 13 = £1. Person A's account has £2 + 13 = £15.
• Therefore, Person A's earnings from the task are £15; your earnings from the task are £1.
Example 2
• Suppose that after Stage One, your account has £11 and Person A's account has £3.
• You decide to send £1 to Person A.
• At the end of Stage Two, your account has £11 – 1 = £10. Person A's account has £3 + 1 = £4.
• Therefore, Person A's earnings from the task are £4; your earnings from the task are £10.
←
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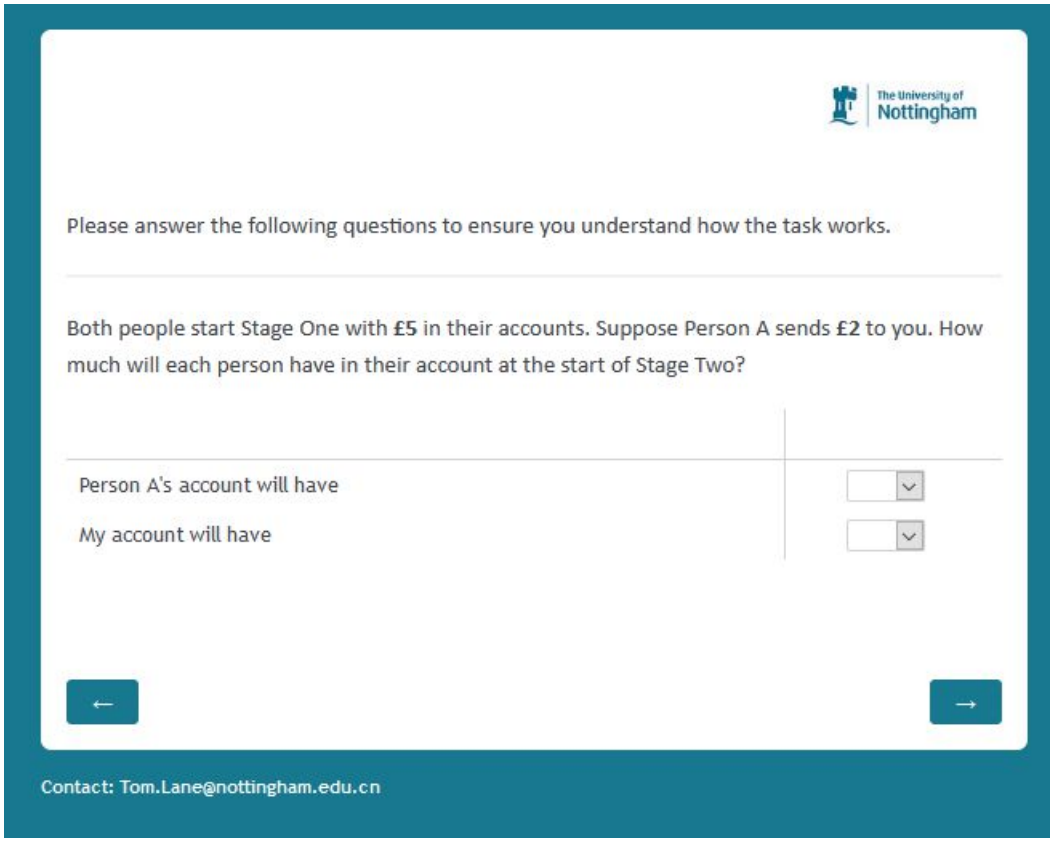
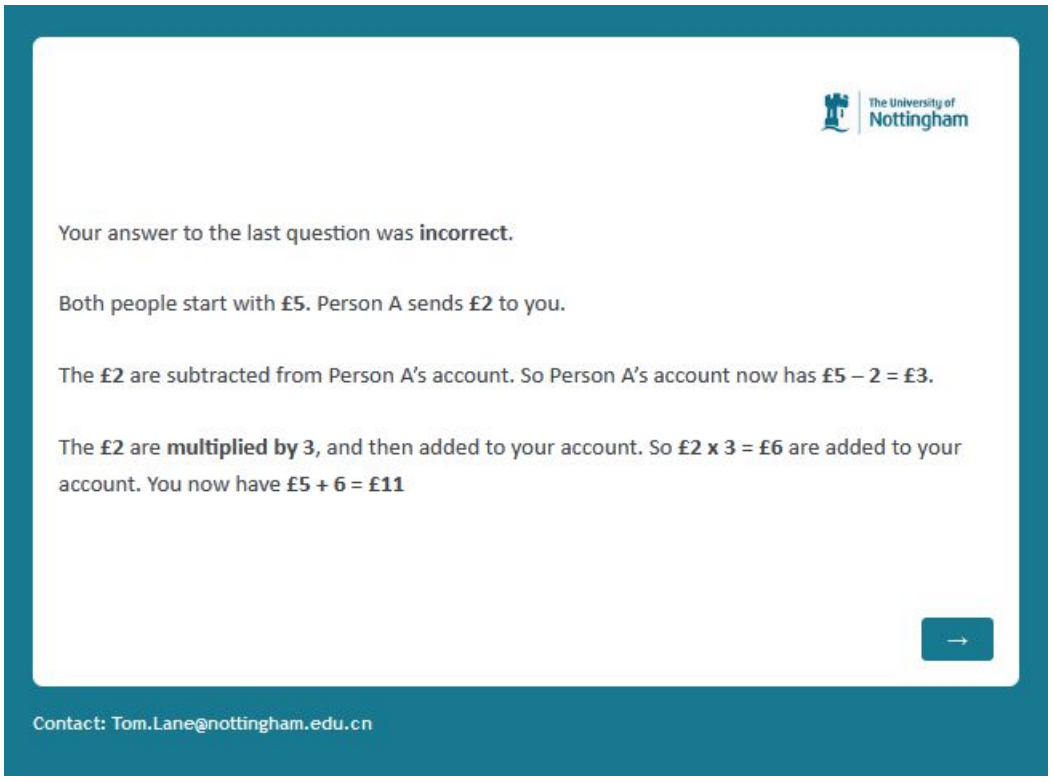
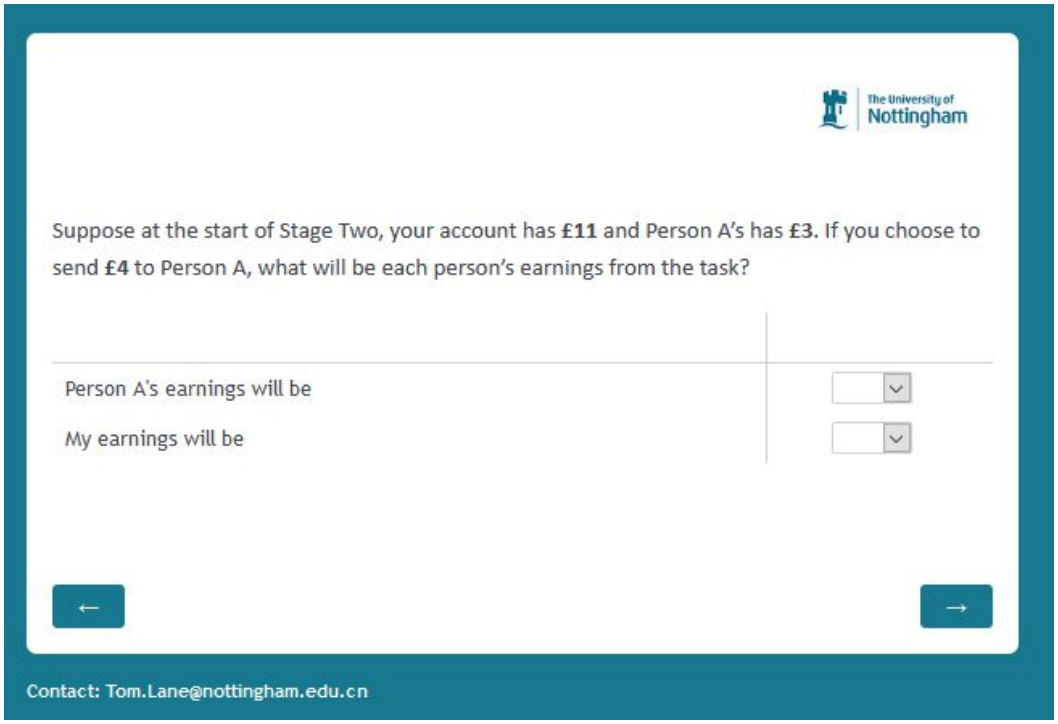
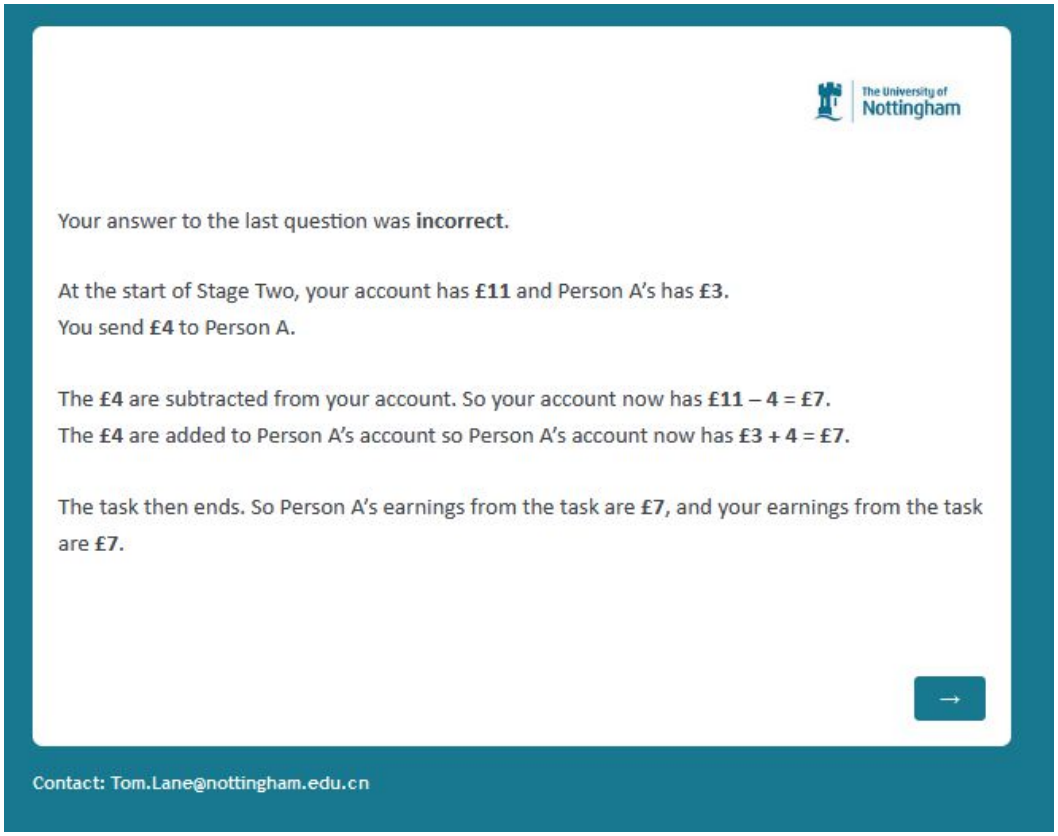

The University of Nottingham
Please answer the following questions to ensure you understand how the task works.
Both people start Stage One with £5 in their accounts. Suppose Person A sends £2 to you. How much will each person have in their account at the start of Stage Two?
Person A's account will have
My account will have
←
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Your answer to the last question was incorrect.
Both people start with £5. Person A sends £2 to you.
The £2 are subtracted from Person A's account. So Person A's account now has £5 – 2 = £3.
The £2 are multiplied by 3, and then added to your account. So £2 x 3 = £6 are added to your account. You now have £5 + 6 = £11
→
Contact: Tom.Lane@nottingham.edu.cn

Note: the screen above appeared only if the previous question was answered incorrectly.




Note: the screen above appeared only if the previous question was answered incorrectly.

Please note that Person A has already completed the first wave of the study, in which we asked the same five questions that you answered earlier. We have therefore already collected Person A's **Wave One Personal Information**, and can reveal this information in full below.

**Person A**

Ethnic Group: Other ethnic group

Gender: Neither Female nor Male

Opinion about Brexit: Brexit was wrong

Faculty: Faculty of Social Sciences

Painting Preference: Kandinsky

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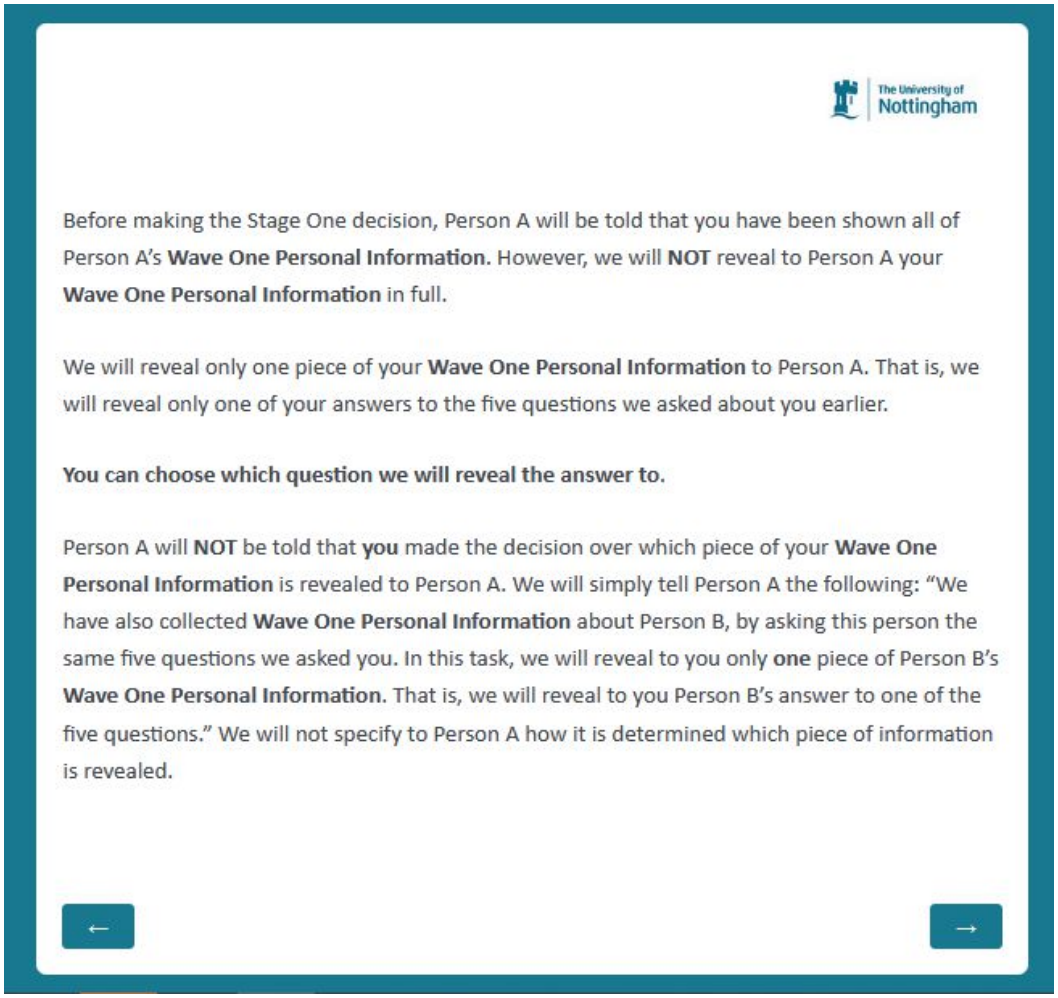
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Before making the Stage One decision, Person A will be told that you have been shown all of Person A's **Wave One Personal Information**. However, we will **NOT** reveal to Person A your **Wave One Personal Information** in full.
We will reveal only one piece of your **Wave One Personal Information** to Person A. That is, we will reveal only one of your answers to the five questions we asked about you earlier.
**You can choose which question we will reveal the answer to.**
Person A will **NOT** be told that **you** made the decision over which piece of your **Wave One Personal Information** is revealed to Person A. We will simply tell Person A the following: "We have also collected **Wave One Personal Information** about Person B, by asking this person the same five questions we asked you. In this task, we will reveal to you only **one** piece of Person B's **Wave One Personal Information**. That is, we will reveal to you Person B's answer to one of the five questions." We will not specify to Person A how it is determined which piece of information is revealed.
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The University of Nottingham

To further clarify the process of the experiment, we will now explain the exact process through which Person A will make the Stage One decision over how much money to send you.

- First, we will explain to Person A the rules of the task, in the same way we have just explained them to you (including through use of the same numerical examples).

- Then, we will explain to Person A that all of Person A's **Wave One Personal Information** is visible to you, but that only one piece of your **Wave One Personal Information** will be revealed to Person A.

- Then, before the one piece of your **Wave One Personal Information** is revealed, Person A is asked to **commit** to a set of decisions over how much to send you, **by making one separate decision for EVERY possible piece of information that *might* be revealed about you.**

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Let us explain this point more precisely. You have answered five questions about yourself, providing five pieces of **Wave One Personal Information**. However, there were a total of 17 possible answers to the five questions (5 possible answers to Q1, 3 possible answers to Q2, 2 possible answers to Q3, 5 possible answers to Q4, and 2 possible answers to Q5). Each possible answer to each of the questions is one possible piece of **Wave One Personal Information** that might be true for some participant in this study.

As Person A does not initially know anything about you, from Person A's perspective any of these 17 pieces of information *might* be true about you (even though, in fact, only five of them are true). Person A is asked to commit to 17 separate decisions over how much to send you, for every possible case of one of the following pieces of information being revealed to be true about you:

- Your U.K. Census ethnic group is revealed to be **White**
- Your U.K. Census ethnic group is revealed to be **Mixed or Multiple ethnic groups**
- Your U.K. Census ethnic group is revealed to be **Asian or Asian British**
- Your U.K. Census ethnic group is revealed to be **Black, Black British, Caribbean or African**
- Your U.K. Census ethnic group is revealed to be **Other ethnic group**
- You are revealed to be **Female**
- You are revealed to be **Male**
- You are revealed to be **Neither Female nor Male**
- You are revealed to believe **Brexit was right**

- You are revealed to believe **Brexit was wrong**
- You are revealed to study in the **Faculty of Arts**.
- You are revealed to study in the **Faculty of Engineering**.
- You are revealed to study in the **Faculty of Medicine and Health Sciences**.
- You are revealed to study in the **Faculty of Science**.
- You are revealed to study in the **Faculty of Social Sciences**.
- You are revealed to prefer the **Klee** painting over the Kandinsky painting
- You are revealed to prefer the **Kandinsky** painting over the Klee painting

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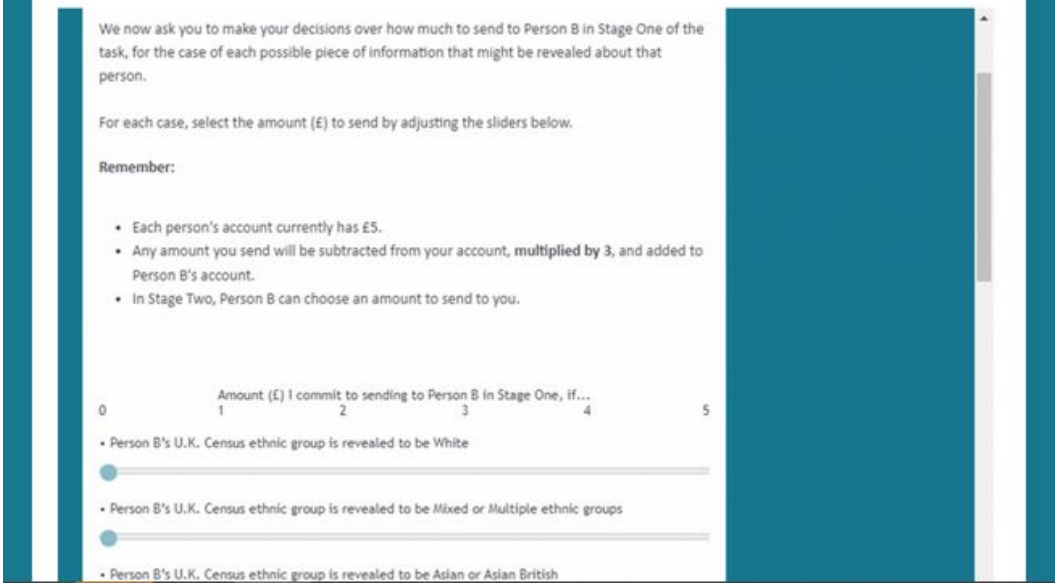
Person A will insert these decisions on a screen which looks like the picture below:




• Person B's U.K. Census ethnic group is revealed to be Black, Black British, Caribbean or African
• Person B's U.K. Census ethnic group is revealed to be Other ethnic group
• Person B is revealed to be Female
• Person B is revealed to be Male
• Person B is revealed to be Neither Female nor Male
• Person B is revealed to believe Brexit was right
• Person B is revealed to believe Brexit was wrong
• Person B is revealed to study in the Faculty of Arts
• Person B is revealed to study in the Faculty of Engineering
• Person B is revealed to study in the Faculty of Medicine and Health Sciences
• Person B is revealed to study in the Faculty of Science
• Person B is revealed to study in the Faculty of Social Sciences
• Person B is revealed to prefer the Klee painting over the Kandinsky painting
• Person B is revealed to prefer the Kandinsky painting over the Klee painting
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Powered by Qualtrics
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The University of Nottingham

- Then, your actual piece of **Wave One Personal Information** will be revealed. This will be the piece of information that you have chosen to reveal (although Person A will **NOT** be told that **you** made the decision over which piece of information would be revealed).

- At this point, the one decision Person A **committed to** over how much to send you, for the case of receiving the particular piece of your **Wave One Personal Information** that is actually revealed, will be implemented. Person A's other 16 decisions will not be implemented and will not count toward determining the outcome of the task.

- Upon discovering which piece of information is actually revealed, Person A is not allowed to change the decision already committed to about the amount to send you. Therefore, we emphasize to Person A that although only 1 out of the 17 decisions will turn out to be for real, all decisions should be made carefully.

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Again, note that Person A will not be told how it is determined which piece of your **Wave One Personal Information** is revealed. However, it will be made clear that this is **NOT** determined by the decisions made by Person A over how much money to send under any of the 17 different circumstances. The following will be explained to Person A:

"Note that your decisions over how much to send will **NOT** affect which piece of information is revealed to you. In fact, this has already been determined. We ask you to commit to all 17 decisions *before* we reveal the piece of information for the simple reason that we want to learn what decision you *would* make under all 17 different circumstances."

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Contact: Tom.Lane@nottingham.edu.cn

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To avoid any confusion, we want to emphasize one important point. Of the 17 decisions Person A makes, 5 will correspond to pieces of information which are actually true about you (i.e. you provided 5 true pieces of information in response to the 5 questions asked). However, it is ***only*** the one decision Person A makes, corresponding to the case of receiving the piece of information **that is actually revealed**, that will be implemented. The other 4 decisions Person A makes corresponding to the cases of receiving pieces of information which are in fact true about you, but not revealed to Person A as true, will **NOT** be implemented – nor will the 12 decisions made corresponding to the cases of receiving pieces of information which are in fact untrue about you. Decisions that are not implemented will not count toward determining the outcome of the task.

To illustrate this with an example, suppose that instead of the 5 questions we actually asked, the **Wave One Personal Information** we collected instead consisted of answers to the following two questions: "Do you prefer baseball or football?" and "Is your height above or below 6 foot?" Suppose that your answers were "baseball" and "above 6 foot", and you chose to reveal the piece of information that you prefer baseball to football.

Suppose that Person A had chosen:

- To send "Amount A" in the case that you were revealed to prefer **baseball**
- To send "Amount B" in the case that you were revealed to prefer **football**
- To send "Amount C" in the case that you were revealed to be **above 6 foot**
- To send "Amount D" in the case that you were revealed to be **below 6 foot**

In this example, the amount Person A would send to you would be "Amount A", because you were revealed to prefer baseball. "Amount C" would not be sent to you, even though it was true that you were above 6 foot, because this was not the piece of information revealed to Person A.

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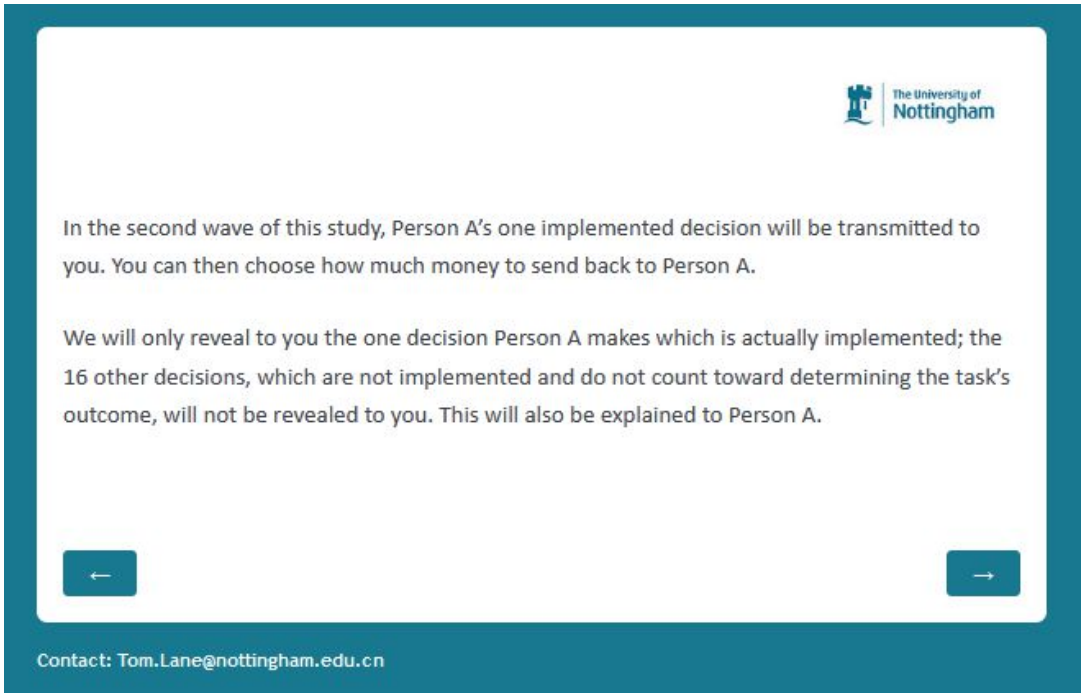
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
In the second wave of this study, Person A's one implemented decision will be transmitted to you. You can then choose how much money to send back to Person A.
We will only reveal to you the one decision Person A makes which is actually implemented; the 16 other decisions, which are not implemented and do not count toward determining the task's outcome, will not be revealed to you. This will also be explained to Person A.
←
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Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Please answer the following questions to ensure you understand how the task works.
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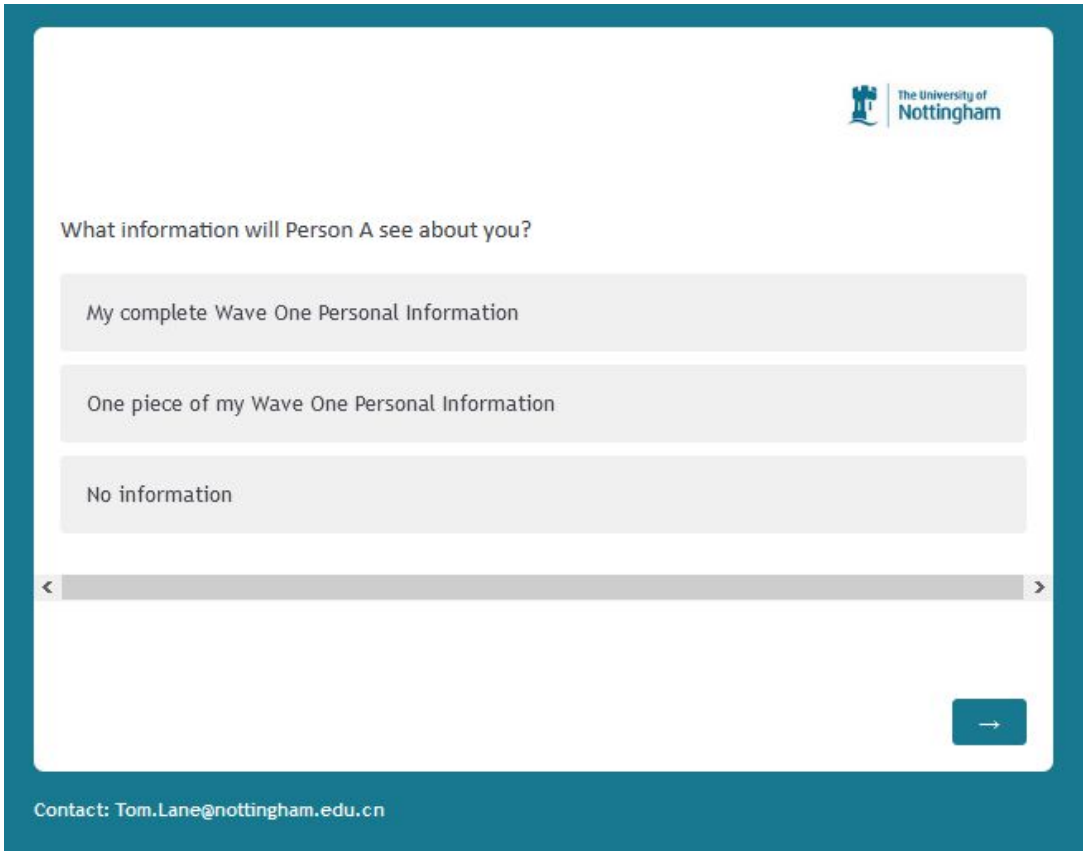
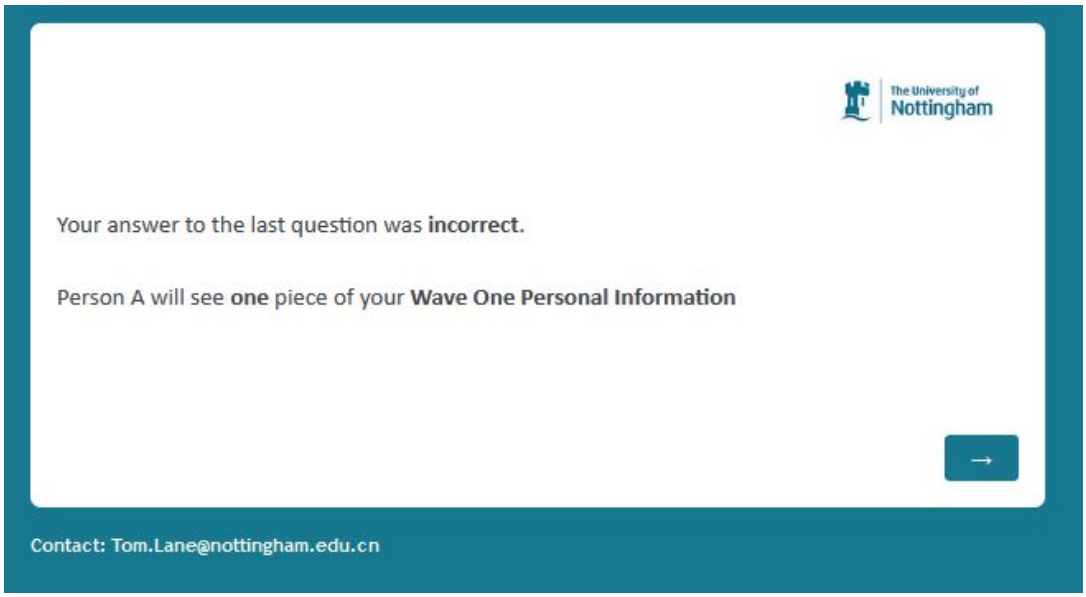
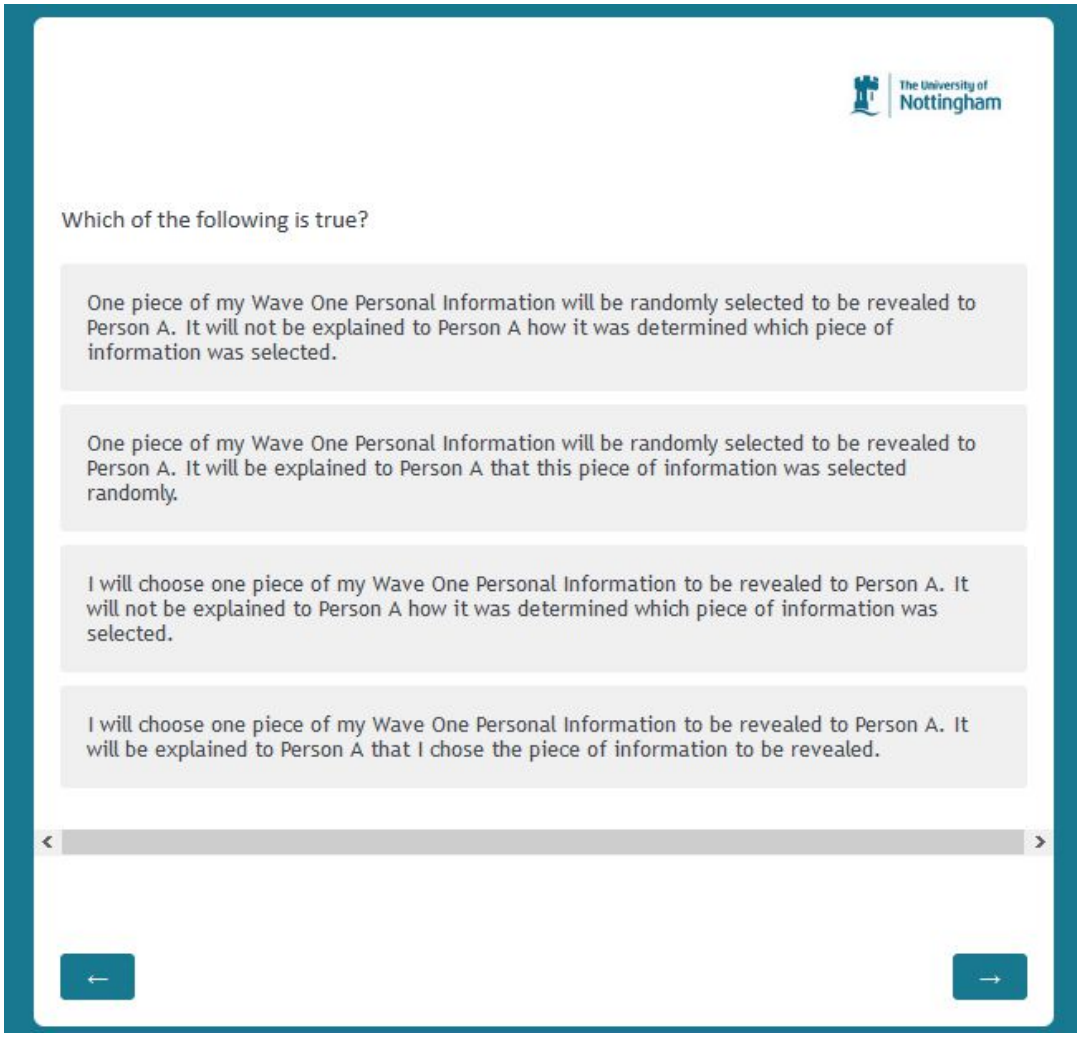
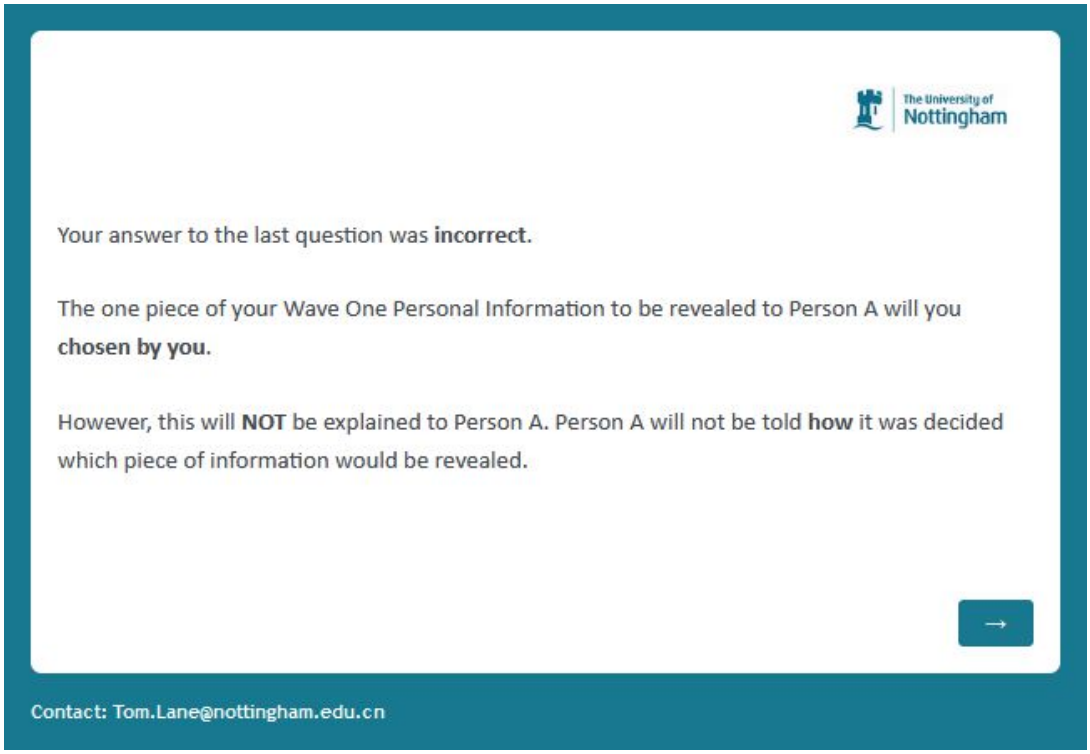
Contact: Tom.Lane@nottingham.edu.cn




Note: the screen above appeared only if the previous question was answered incorrectly.


The University of Nottingham
Which of the following is true?
One piece of my Wave One Personal Information will be randomly selected to be revealed to Person A. It will not be explained to Person A how it was determined which piece of information was selected.
One piece of my Wave One Personal Information will be randomly selected to be revealed to Person A. It will be explained to Person A that this piece of information was selected randomly.
I will choose one piece of my Wave One Personal Information to be revealed to Person A. It will not be explained to Person A how it was determined which piece of information was selected.
I will choose one piece of my Wave One Personal Information to be revealed to Person A. It will be explained to Person A that I chose the piece of information to be revealed.
←
→



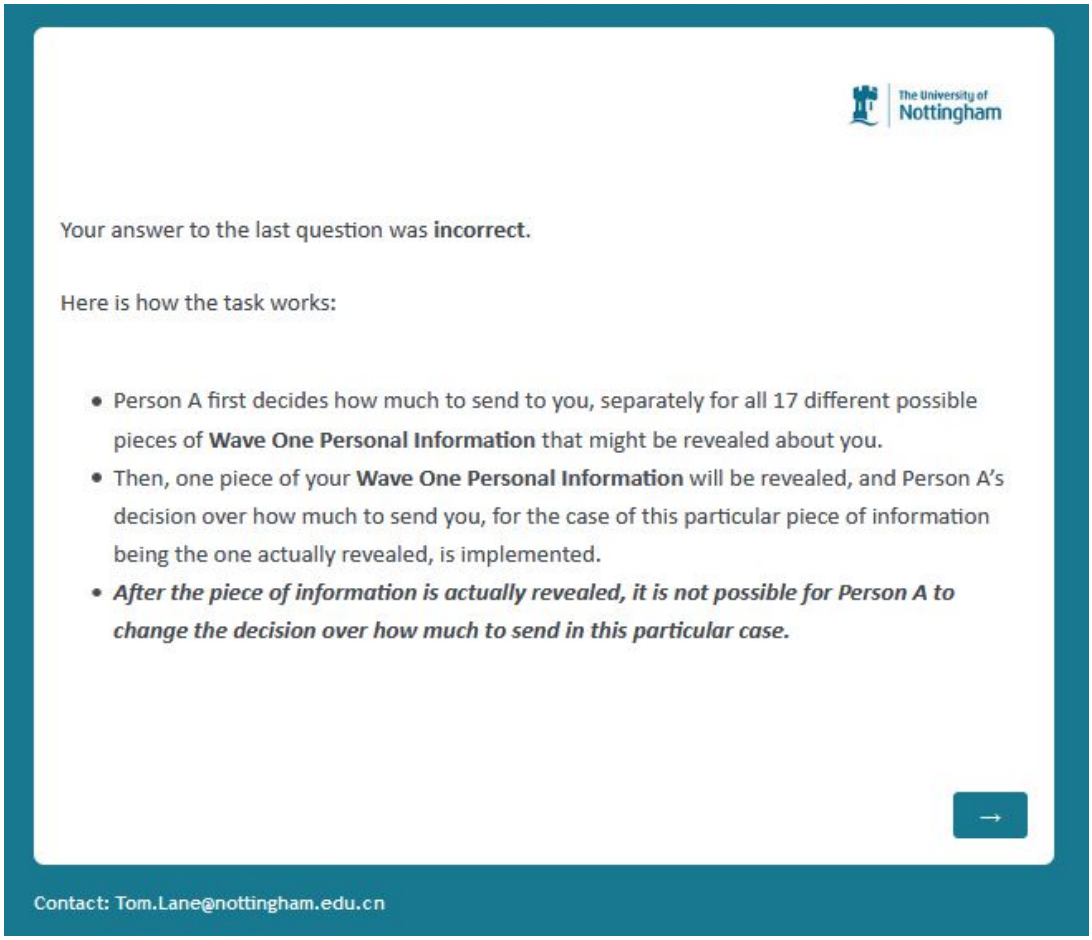

Note: the screen above appeared only if the previous question was answered incorrectly.

Which of the following accurately describes the process of the task?

One piece of my Wave One Personal Information will first be revealed, and then Person A decides how much to send to me.

Person A first decides how much to send to me, separately for all 17 different possible pieces of Wave One Personal Information that might be revealed about me. Then, one piece of my Wave One Personal Information will be revealed, and Person A's decision over how much to send me, for the case of this particular piece of information being the one actually revealed, is implemented. After the piece of information is actually revealed, Person A has the chance to confirm or change the decision over how much to send in this particular case.

Person A first decides how much to send to me, separately for all 17 different possible pieces of Wave One Personal Information that might be revealed about me. Then, one piece of my Wave One Personal Information will be revealed, and Person A's decision over how much to send me, for the case of this particular piece of information being the one actually revealed, is implemented. After the piece of information is actually revealed, it is not possible for Person A to change the decision over how much to send in this particular case.

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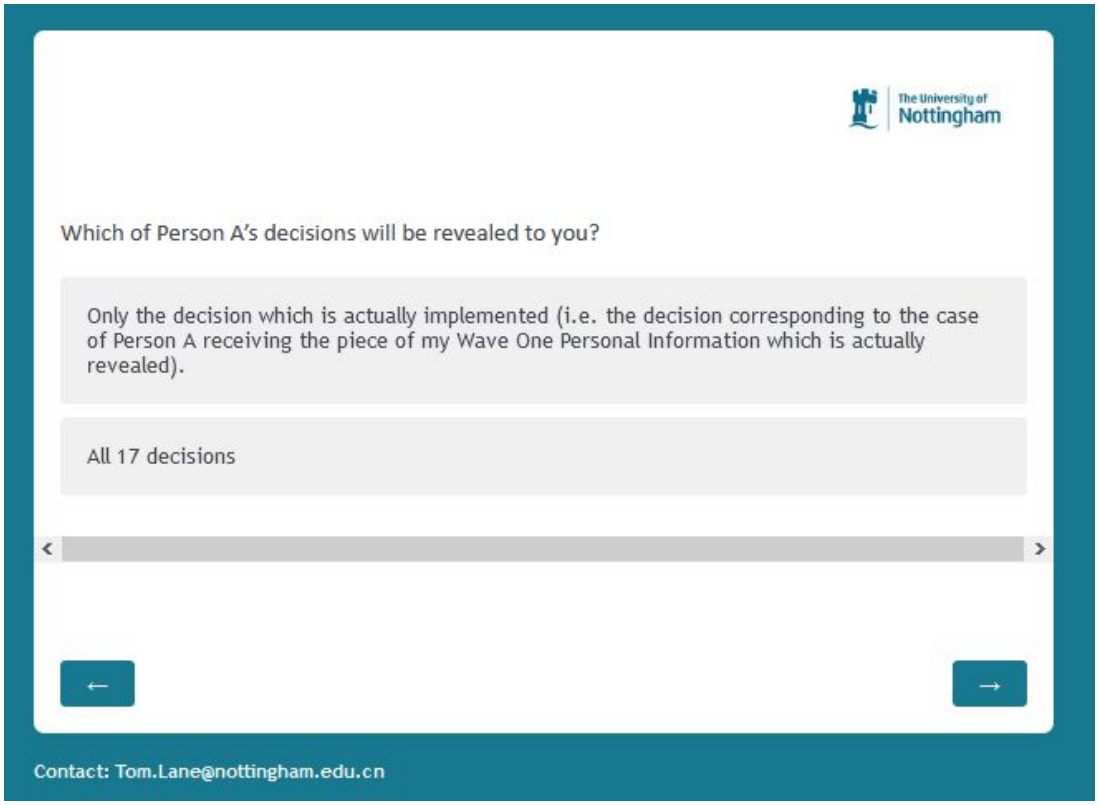


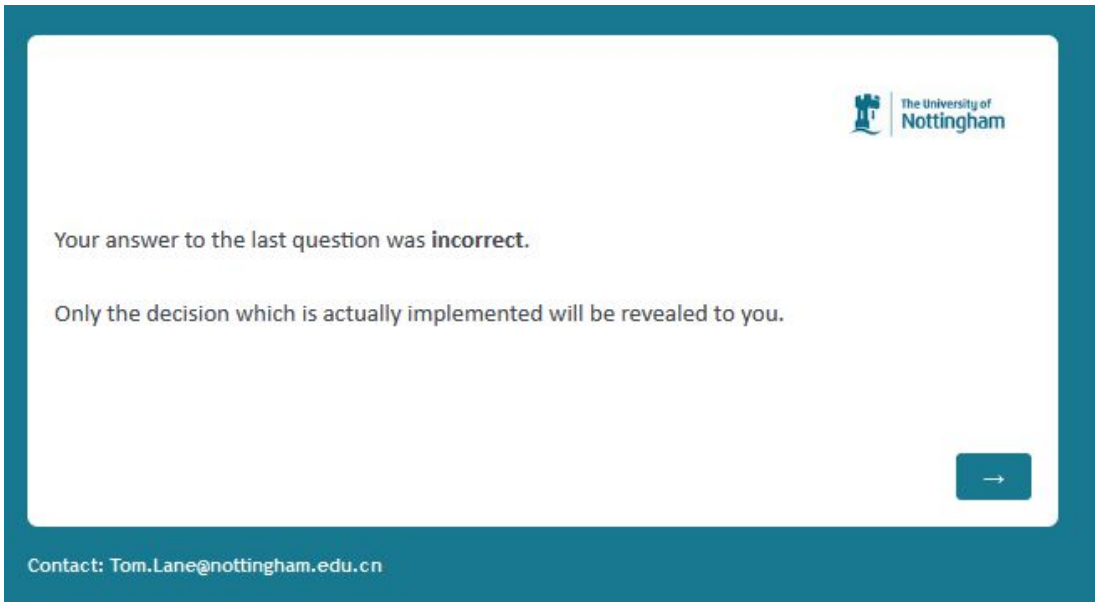


Note: the screen above appeared only if the previous question was answered incorrectly.

Suppose that instead of the 5 questions we actually asked, the **Wave One Personal Information** we collected instead consisted of answers to the following two questions: "Do you prefer baseball or football?" and "Is your height above or below 6 foot?" Suppose that your answers were "football" and "below 6 foot", and the piece of information you chose to reveal was that you are below 6 foot.

Suppose that Person A had chosen:

- To send "Amount A" in the case that you were revealed to prefer **baseball**
- To send "Amount B" in the case that you were revealed to prefer **football**
- To send "Amount C" in the case that you were revealed to be **above 6 foot**
- To send "Amount D" in the case that you were revealed to be **below 6 foot**

In this example, what amount would Person A send to you?

Amount A

Amount B

Amount C

Amount D

Your answer to the last question was **incorrect**.

In this example, the **Wave One Personal Information** consisted of answers to the questions: "Do you prefer baseball or football?" and "Is your height above or below 6 foot?"

Your answers were "football" and "below 6 foot". The piece of information you chose to reveal was the second of these two answers: that you are below 6 foot.

Person A's decisions were:

- To send "Amount A" in the case that you were revealed to prefer **baseball**
- To send "Amount B" in the case that you were revealed to prefer **football**
- To send "Amount C" in the case that you were revealed to be **above 6 foot**
- To send "Amount D" in the case that you were revealed to be **below 6 foot**

Therefore, because the one piece of information revealed is that you are below 6 foot, the decision implemented is Person A's decision **to send "Amount D" in the case that you are revealed to be below 6 foot**.

Person A's decision to send "Amount B" in the case that you are revealed to prefer football **would not be implemented**, because – although it is actually true that you prefer football – this piece of information is **not revealed** to Person A.

Note: the screen above appeared only if the previous question was answered incorrectly.

The University of Nottingham

Before you decide which piece of your **Wave One Personal Information** we will reveal to Person A, we ask you first to make a set of predictions. We ask you to predict all 17 of Person A's decisions over amounts to send. That is, we ask you to predict how much the Person A with whom you are matched will commit to sending, for every different possible piece of **Wave One Personal Information** that could be revealed about you.

Please note that these predictions are confidential. They will **NOT** be revealed to Person A or any other participant.

For each prediction, select the amount (£) you predict Person A will send by adjusting the sliders below.

**Remember:**
At the start of this stage of the task, each person's account has £5.
Any amount Person A sends will be subtracted from Person A's account, **multiplied by 3**, and added to your account.
In Stage Two, you can choose an amount to send to Person A.

Reminder: Person A's **Wave One Personal Information:**
Ethnic Group: Other ethnic group
Gender: Neither Female nor Male

Opinion about Brexit: Brexit was wrong
Faculty: Faculty of Social Sciences
Painting Preference: Kandinsky

**My predictions (make each prediction by adjusting the slider BELOW the relevant piece of information)**

Amount (£) I predict Person A will commit to sending me in Stage One, if...

0 1 2 3 4 5

- My U.K. Census ethnic group is revealed to be White
- My U.K. Census ethnic group is revealed to be Mixed or Multiple ethnic groups
- My U.K. Census ethnic group is revealed to be Asian or Asian British
- My U.K. Census ethnic group is revealed to be Black, Black British, Caribbean or African
- My U.K. Census ethnic group is revealed to be Other ethnic group
- I am revealed to be Female
- I am revealed to be Male


• I am revealed to be Neither Female nor Male
• I am revealed to believe Brexit was right
• I am revealed to believe Brexit was wrong
• I am revealed to study in the Faculty of Arts
• I am revealed to study in the Faculty of Engineering
• I am revealed to study in the Faculty of Medicine and Health Sciences
• I am revealed to study in the Faculty of Science
• I am revealed to study in the Faculty of Social Sciences
• I am revealed to prefer the Klee painting over the Kandinsky painting
• I am revealed to prefer the Kandinsky painting over the Klee painting

The University of Nottingham

Now, please make your choice over which piece of your **Wave One Personal Information** we will reveal to Person A.

**Remember:**
At the start of this stage of the task, each person's account has £5.
Any amount Person A sends will be subtracted from Person A's account, **multiplied by 3**, and added to your account.
In Stage Two, you can choose an amount to send to Person A.

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Reminder: Person A's **Wave One Personal Information:**
Ethnic Group: Other ethnic group
Gender: Neither Female nor Male
Opinion about Brexit: Brexit was wrong
Faculty: Faculty of Social Sciences
Painting Preference: Kandinsky

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**Make your choice by clicking one of the items below.**

My decision: reveal to Person A that...

My ethnic group is Black, Black British, Caribbean or African

My gender is Male

My opinion is that Brexit was right

My faculty is Faculty of Science

My painting preference is Klee

→

Contact: Tom.Lane@nottingham.edu.cn

The University of Nottingham

**Task 2**

In this task, you will interact with one other participant. This will be a **different** participant from the one you interacted with in Task 1.

You are given the role of Person Y and the other participant is given the role of Person X. The task has only one stage: Person X will make a decision. The earnings from the task for yourself and Person X are determined by this decision.

→

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The University of Nottingham

**How the task works**

Person X starts the task with an account of **£14**. You start the task with an account of **£0**. Each person's earnings from the task will be equal to the amount held in that person's account at the end of the task.

**The decision:**

Person X's decision is to choose an amount of money to send to you. Person X can choose any amount between **£0** and **£14**. Any money that Person X chooses to send will be subtracted from Person X's account and added to your account. The task then ends, and each person's earnings from the task are given by the amount of money held in that person's account at this point.

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Let's go through two examples to make it clear how the task works.

**Example 1**

- At the start of the task, Person X's account has **£14** and your account has **£0**.
- Person X decides to send **£13** to you.
- At the end of the task, Person X's account has **£14 – 13 = £1**. Your account has **£0 + 13 = £13**.
- Therefore, Person X's earnings from the task are **£1**; your earnings from the task are **£13**.

**Example 2**

- At the start of the task, Person X's account has **£14** and your account has **£0**.
- Person X decides to send **£2** to you.
- At the end of the task, Person X's account has **£14 – 2 = £12**. Your account has **£0 + 2 = £2**.
- Therefore, Person X's earnings from the task are **£12**; your earnings from the task are **£2**.

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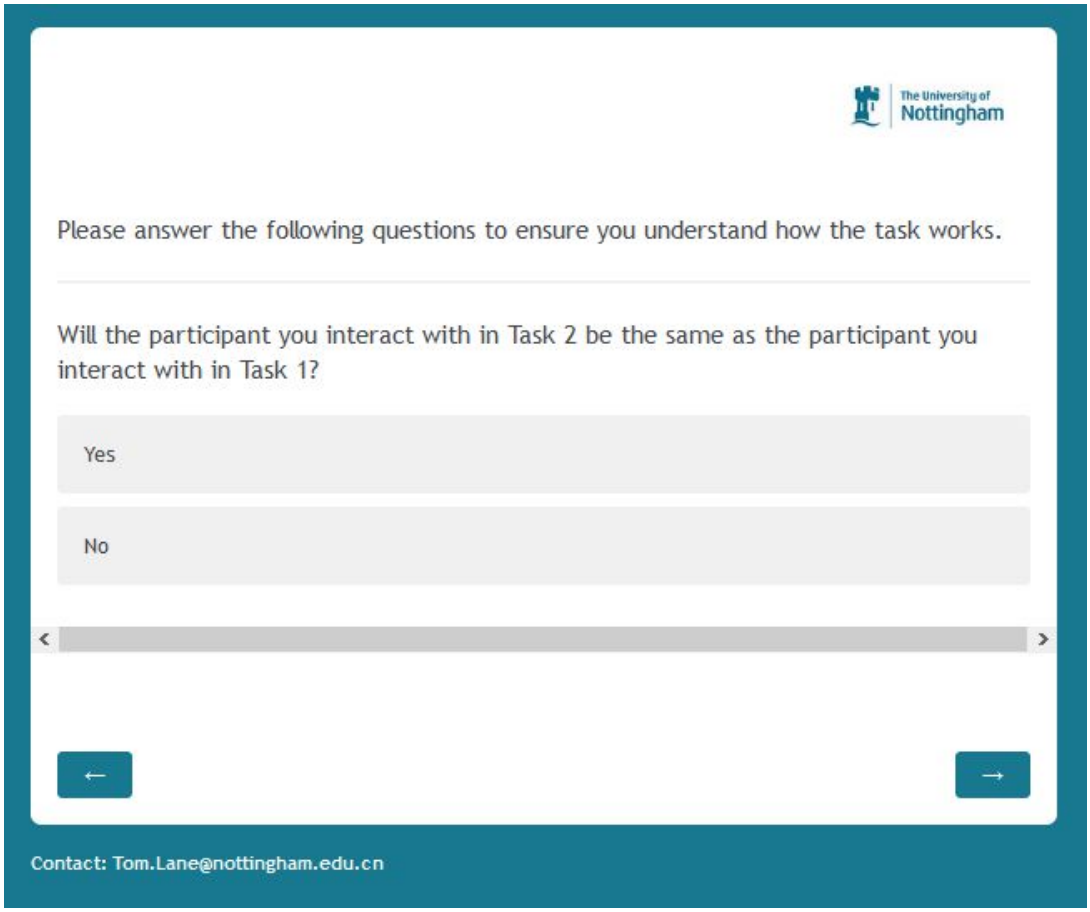


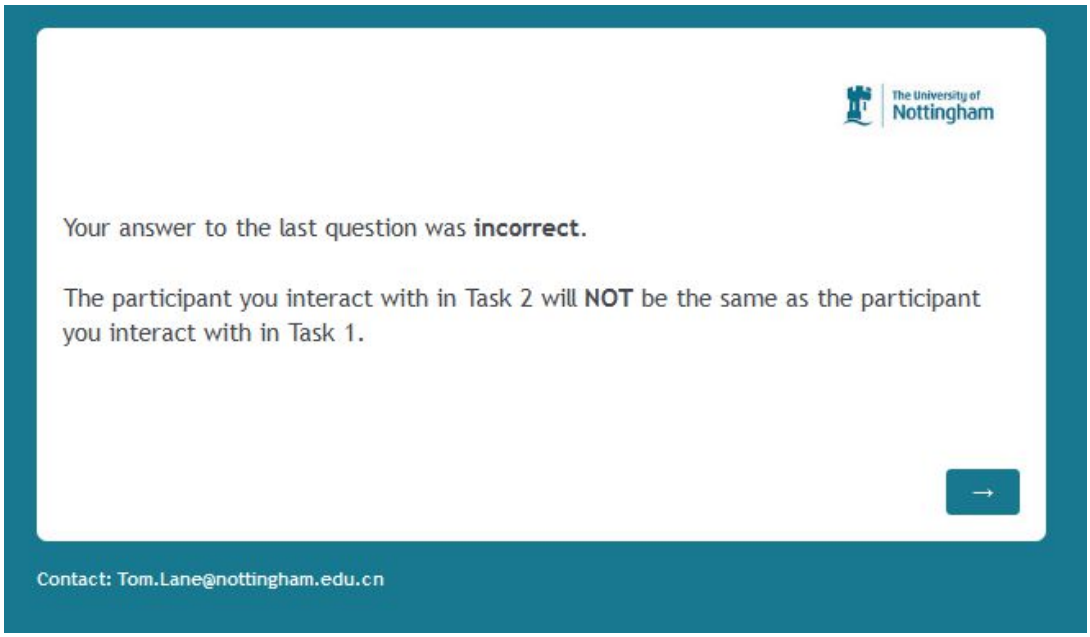


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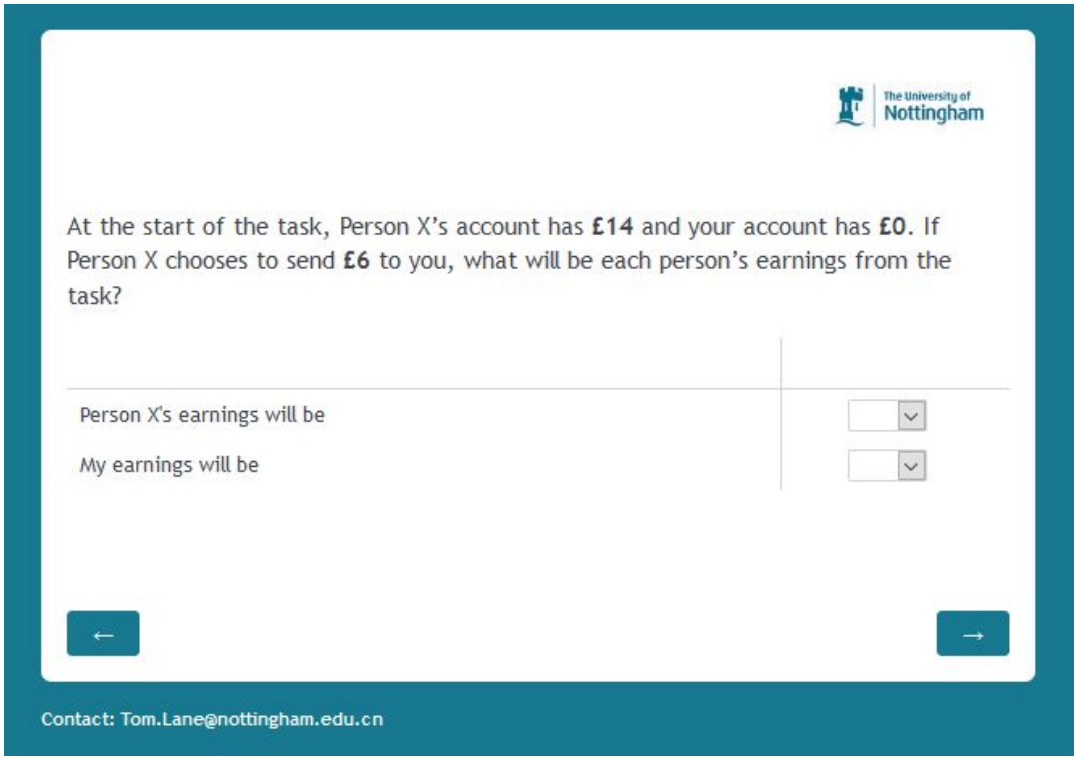


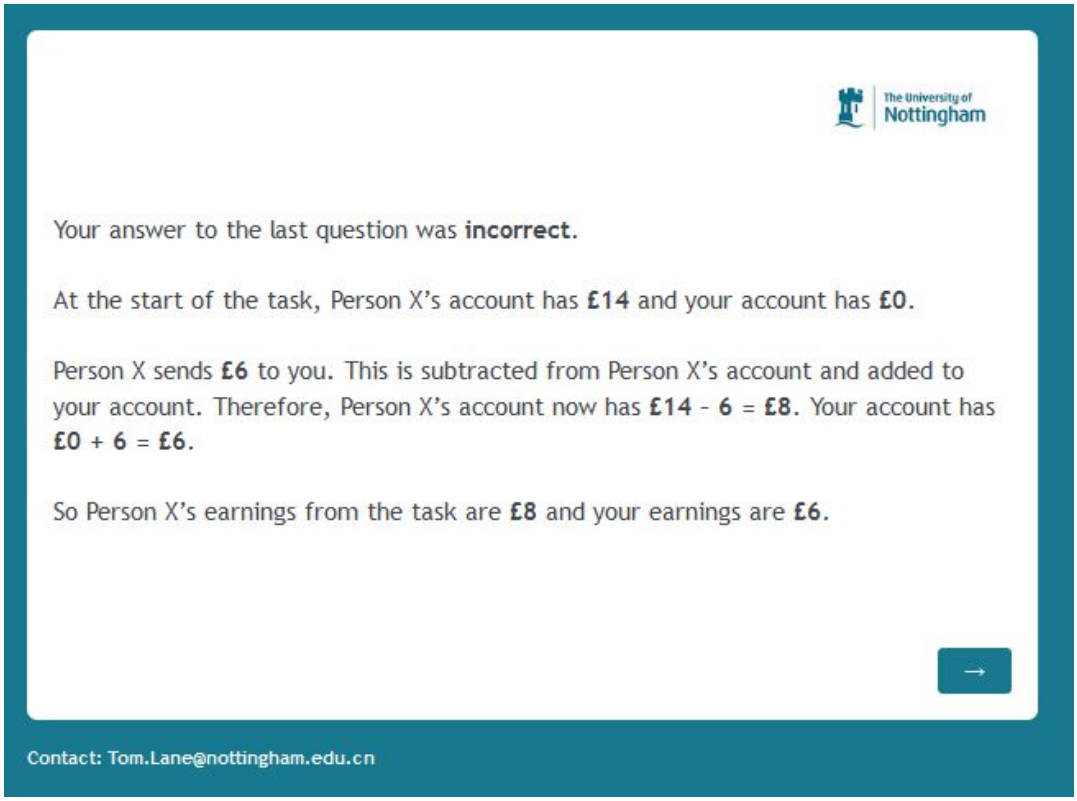


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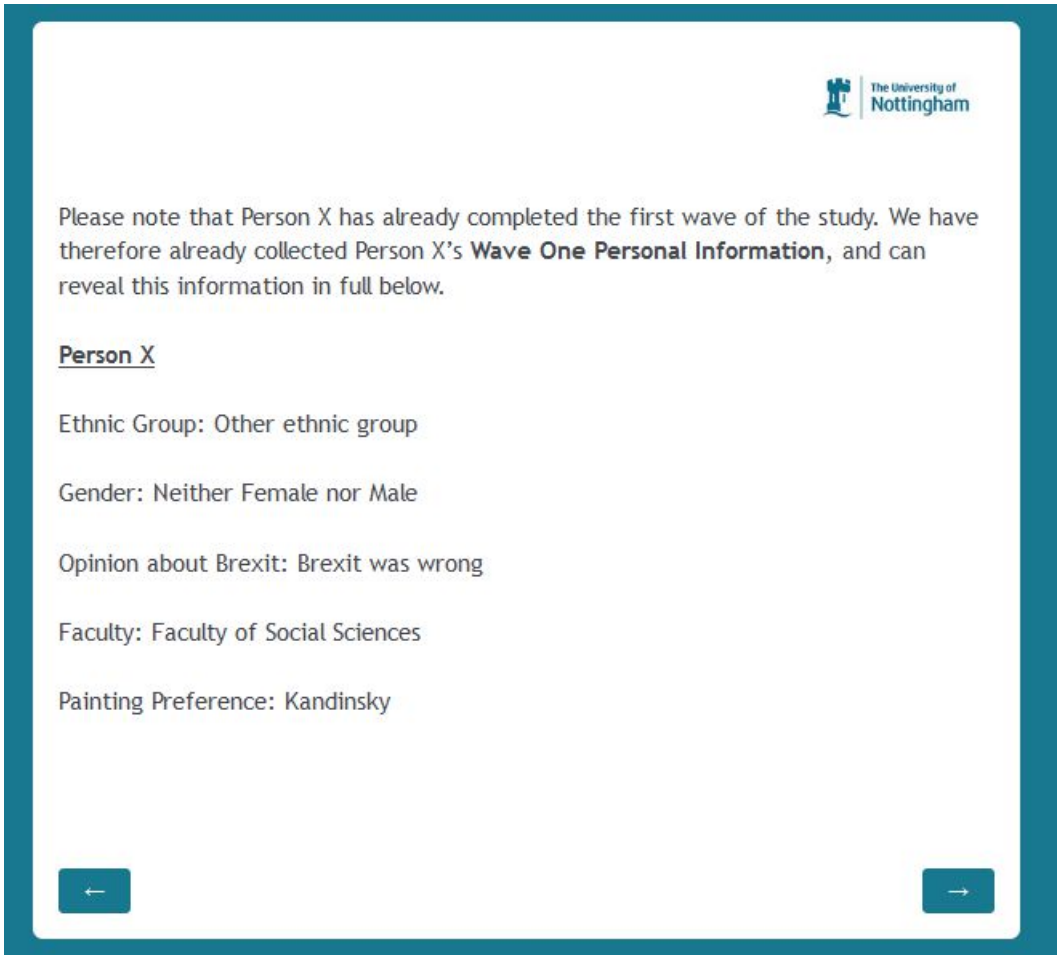
The University of Nottingham
Please note that Person X has already completed the first wave of the study. We have therefore already collected Person X's **Wave One Personal Information**, and can reveal this information in full below.
Person X
Ethnic Group: Other ethnic group
Gender: Neither Female nor Male
Opinion about Brexit: Brexit was wrong
Faculty: Faculty of Social Sciences
Painting Preference: Kandinsky
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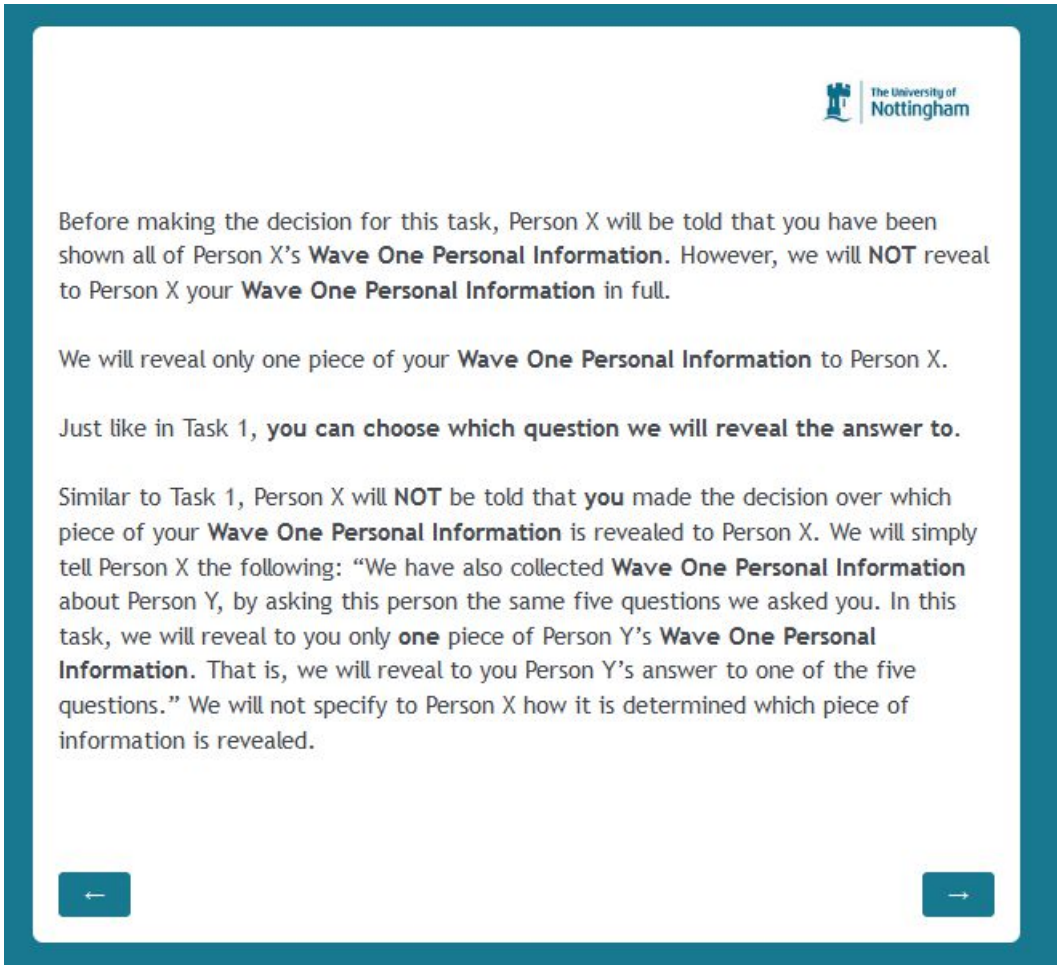
The University of Nottingham
Before making the decision for this task, Person X will be told that you have been shown all of Person X's **Wave One Personal Information**. However, we will **NOT** reveal to Person X your **Wave One Personal Information** in full.
We will reveal only one piece of your **Wave One Personal Information** to Person X.
Just like in Task 1, **you can choose which question we will reveal the answer to**.
Similar to Task 1, Person X will **NOT** be told that **you** made the decision over which piece of your **Wave One Personal Information** is revealed to Person X. We will simply tell Person X the following: "We have also collected **Wave One Personal Information** about Person Y, by asking this person the same five questions we asked you. In this task, we will reveal to you only **one** piece of Person Y's **Wave One Personal Information**. That is, we will reveal to you Person Y's answer to one of the five questions." We will not specify to Person X how it is determined which piece of information is revealed.
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The University of Nottingham

To further clarify the process of the experiment, we will now explain the exact process through which Person X will make the decision over how much money to send you. Note that this is similar to the decision-making process for Person A in Task 1 that we explained earlier.

- First, we will explain to Person X the rules of the task, in the same way we have just explained them to you (including through use of the same numerical examples).

- Then, we will explain to Person X that all of Person X's **Wave One Personal Information** is visible to you, but that only one piece of your **Wave One Personal Information** will be revealed to Person X.

- Then, before the one piece of your **Wave One Personal Information** is revealed, Person X is asked to **commit** to a set of decisions over how much to send you, **by making one separate decision for EVERY possible piece of information that *might* be revealed about you**.

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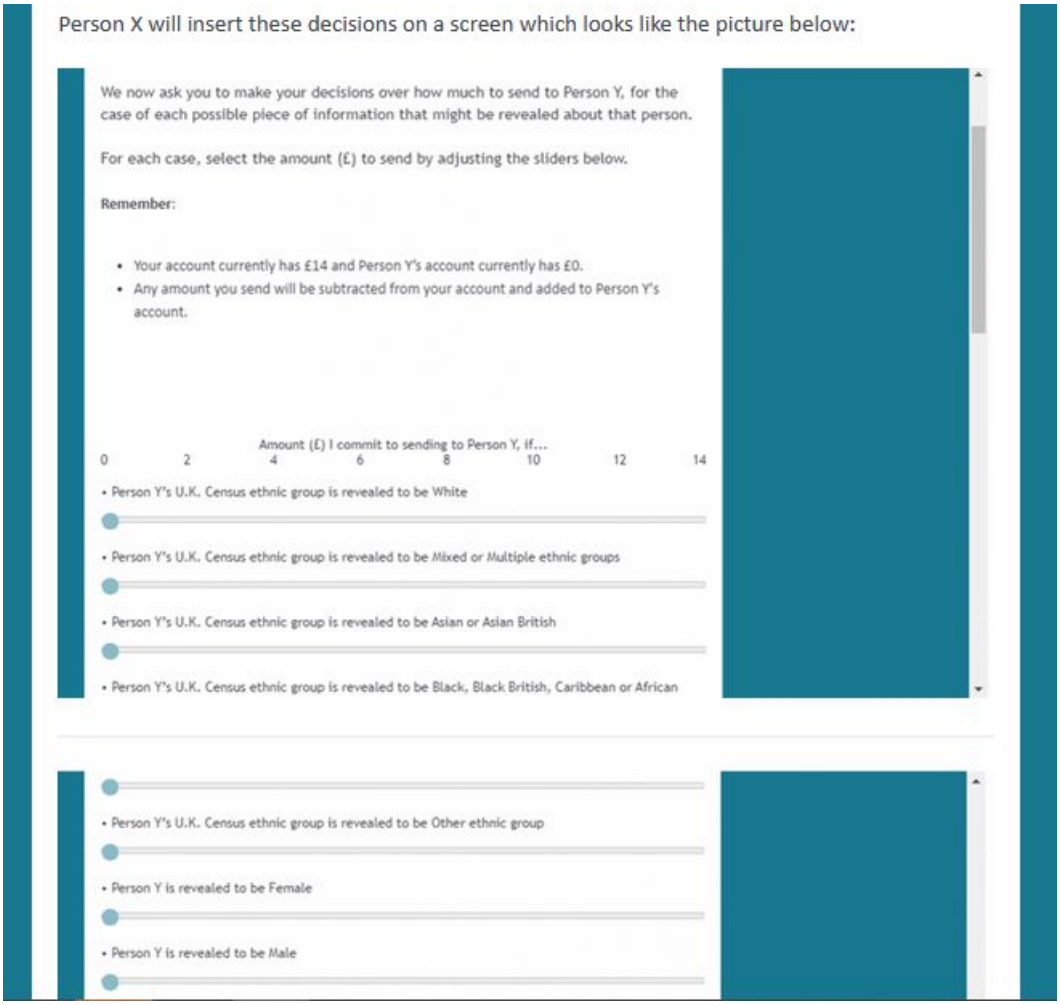
The University of Nottingham

In other words, Person X is asked to commit to 17 separate decisions over how much to send you, for every possible case of one of the following pieces of information being revealed to be true about you:

- Your U.K. Census ethnic group is revealed to be **White**
- Your U.K. Census ethnic group is revealed to be **Mixed or Multiple ethnic groups**
- Your U.K. Census ethnic group is revealed to be **Asian or Asian British**
- Your U.K. Census ethnic group is revealed to be **Black, Black British, Caribbean or African**
- Your U.K. Census ethnic group is revealed to be **Other ethnic group**
- You are revealed to be **Female**
- You are revealed to be **Male**
- You are revealed to be **Neither Female nor Male**
- You are revealed to believe **Brexit was right**
- You are revealed to believe **Brexit was wrong**
- You are revealed to study in the **Faculty of Arts**.
- You are revealed to study in the **Faculty of Engineering**.
- You are revealed to study in the **Faculty of Medicine and Health Sciences**.
- You are revealed to study in the **Faculty of Science**.
- You are revealed to study in the **Faculty of Social Sciences**.
- You are revealed to prefer the **Klee** painting over the Kandinsky painting
- You are revealed to prefer the **Kandinsky** painting over the Klee painting

Person X will insert these decisions on a screen which looks like the picture below:




• Person Y is revealed to be Neither Female nor Male
• Person Y is revealed to believe Brexit was right
• Person Y is revealed to believe Brexit was wrong
• Person Y is revealed to study in the Faculty of Arts
• Person Y is revealed to study in the Faculty of Engineering
• Person Y is revealed to study in the Faculty of Medicine and Health Sciences
• Person Y is revealed to study in the Faculty of Science
• Person Y is revealed to study in the Faculty of Social Sciences
• Person Y is revealed to prefer the Klee painting over the Kandinsky painting
• Person Y is revealed to prefer the Kandinsky painting over the Klee painting
→
Powered by Qualtrics

The University of Nottingham

- Then, your actual piece of **Wave One Personal Information** will be revealed. This will be the piece of information that you have chosen to reveal (although Person X will **NOT** be told that **you** made the decision over which piece of information would be revealed).

- At this point, the one decision Person X **committed to** over how much to send you, for the case of receiving the particular piece of your **Wave One Personal Information** that is actually revealed, will be implemented. Person X's other 16 decisions will not be implemented and will not count toward determining the outcome of the task.

- Upon discovering which piece of information is actually revealed, Person X is not allowed to change the decision already committed to about the amount to send you. Therefore, we emphasize to Person X that although only 1 out of the 17 decisions will turn out to be for real, all decisions should be made carefully.

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Again, note that Person X will not be told how it is determined which piece of your **Wave One Personal Information** is revealed. However, it will be made clear that this is **NOT** determined by the decisions made by Person X over how much money to send under any of the 17 different circumstances. The following will be explained to Person X:

"Note that your decisions over how much to send will **NOT** affect which piece of information is revealed to you. In fact, this has already been determined. We ask you to commit to all 17 decisions *before* we reveal the piece of information for the simple reason that we want to learn what decision you *would* make under all 17 different circumstances."

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Contact: Tom.Lane@nottingham.edu.cn

The University of Nottingham

As in Task 1, we want to emphasize the important point that, although 5 of the decisions Person X will make will correspond to cases of receiving pieces of information about you that are true (those cases corresponding to each of your true answers to the 5 questions), ***only*** the one decision Person X makes, which corresponds to the case of receiving the piece of information **that is actually revealed**, will be implemented.

In the second wave of this study, Person X's one implemented decision will be transmitted to you. This will reveal the earnings for both you and Person X from this task.

We will only reveal to you the one decision Person X makes which is actually implemented; the 16 other decisions, which are not implemented and do not count toward determining the task's outcome, will not be revealed to you. This will also be explained to Person X.

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Before you decide which piece of your **Wave One Personal Information** we will reveal to Person X, we ask you first to make a set of predictions. We ask you to predict all 17 of Person X's decisions over amounts to send. That is, we ask you to predict how much the Person X with whom you are matched will commit to sending, for every different possible piece of **Wave One Personal Information** that could be revealed about you.

Please note that these predictions are confidential. They will **NOT** be revealed to Person X or any other participant.

For each prediction, select the amount (£) you predict Person X will send by adjusting the sliders below.

**Remember:**
Person X's account currently has £14 and your account currently has £0.
Any amount Person X sends will be subtracted from Person X's account and added to your account.

Reminder: Person X's **Wave One Personal Information:**
Ethnic Group: Other ethnic group
Gender: Neither Female nor Male
Opinion about Brexit: Brexit was wrong

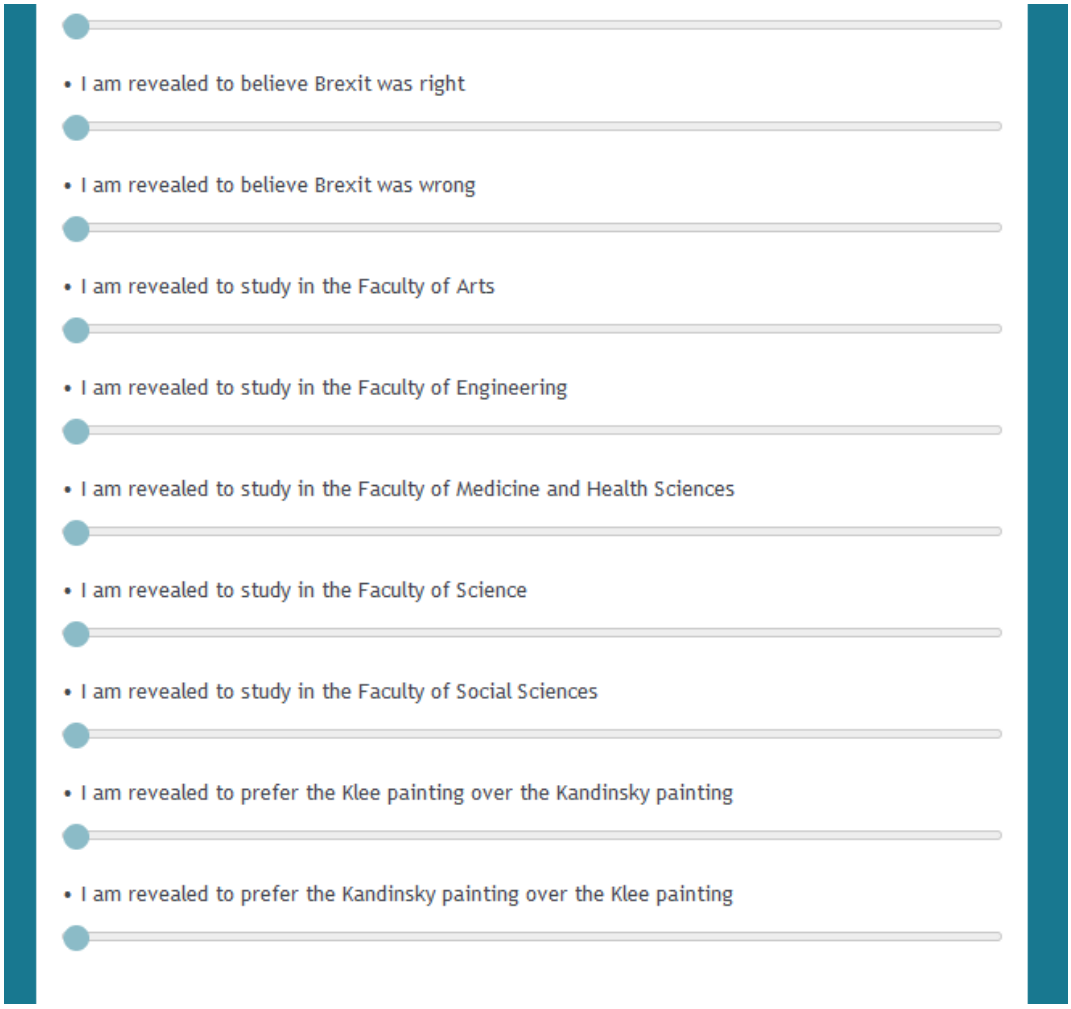
Faculty: Faculty of Social Sciences
Painting Preference: Kandinsky

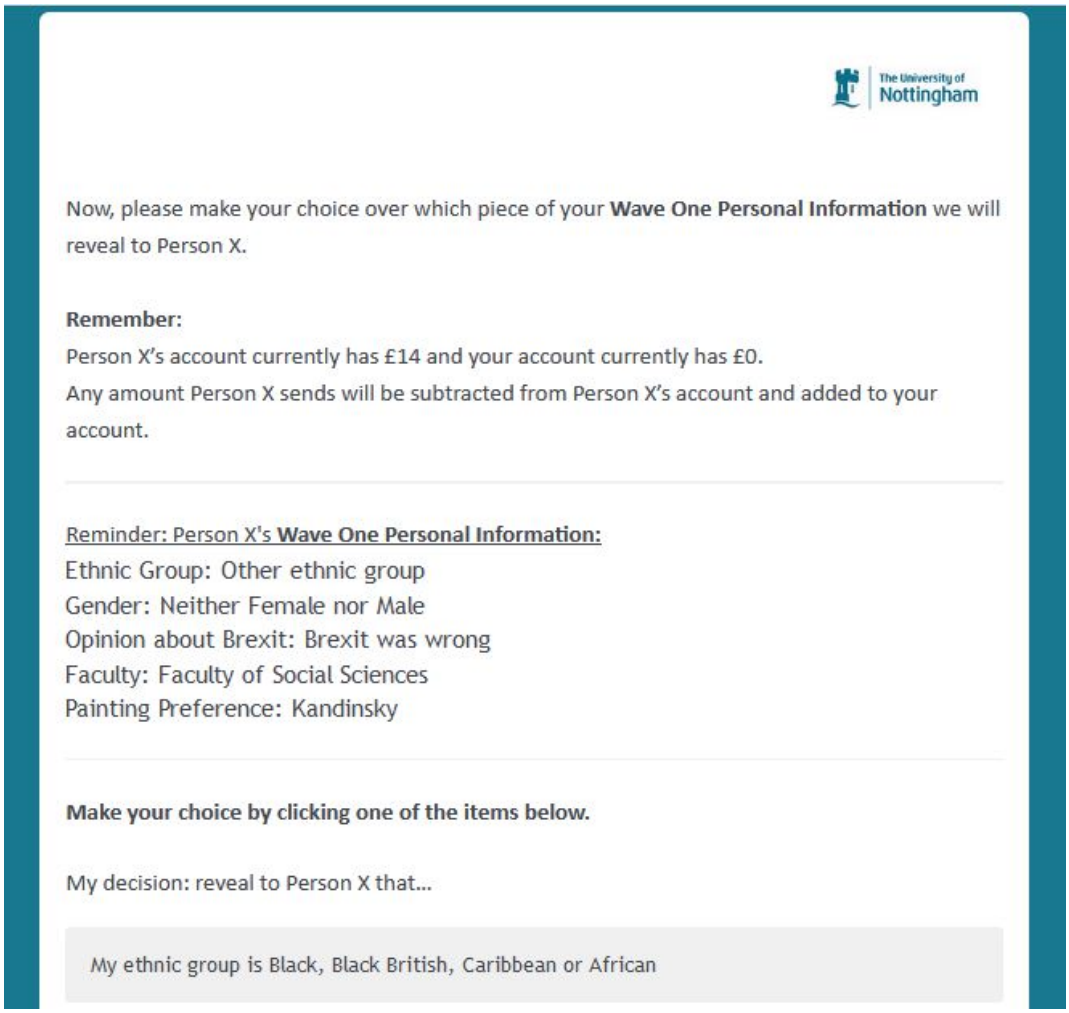
**My predictions (make each prediction by adjusting the slider BELOW the relevant piece of information)**

Amount (£) I predict Person X will commit to sending me, if...

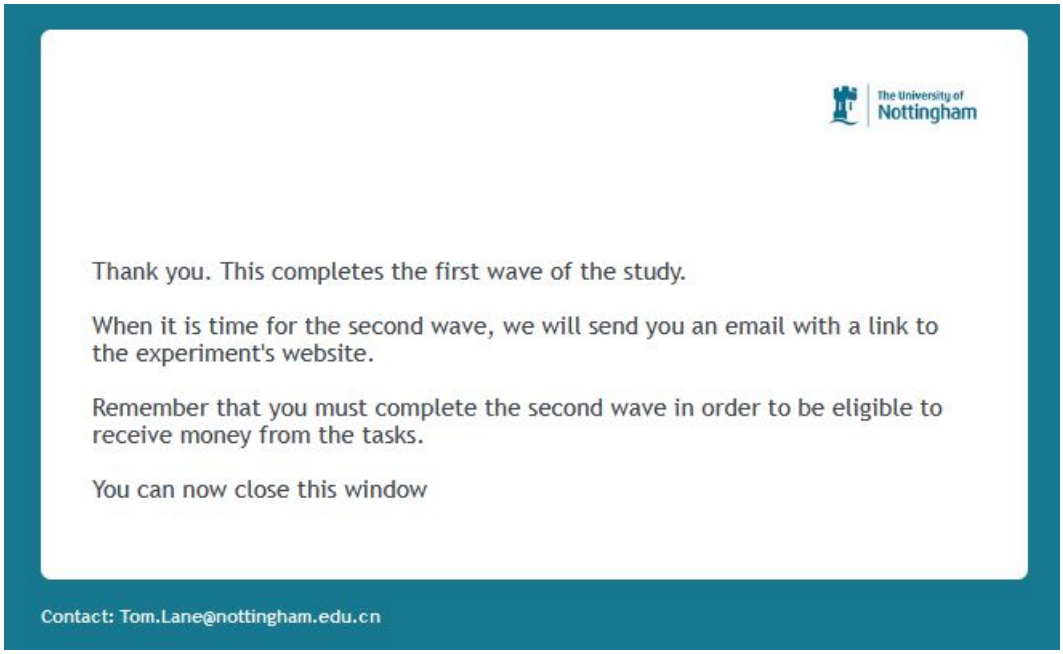
0 2 4 6 8 10 12 14

- My U.K. Census ethnic group is revealed to be White
- My U.K. Census ethnic group is revealed to be Mixed or Multiple ethnic groups
- My U.K. Census ethnic group is revealed to be Asian or Asian British
- My U.K. Census ethnic group is revealed to be Black, Black British, Caribbean or African
- My U.K. Census ethnic group is revealed to be Other ethnic group
- I am revealed to be Female
- I am revealed to be Male
- I am revealed to be Neither Female nor Male

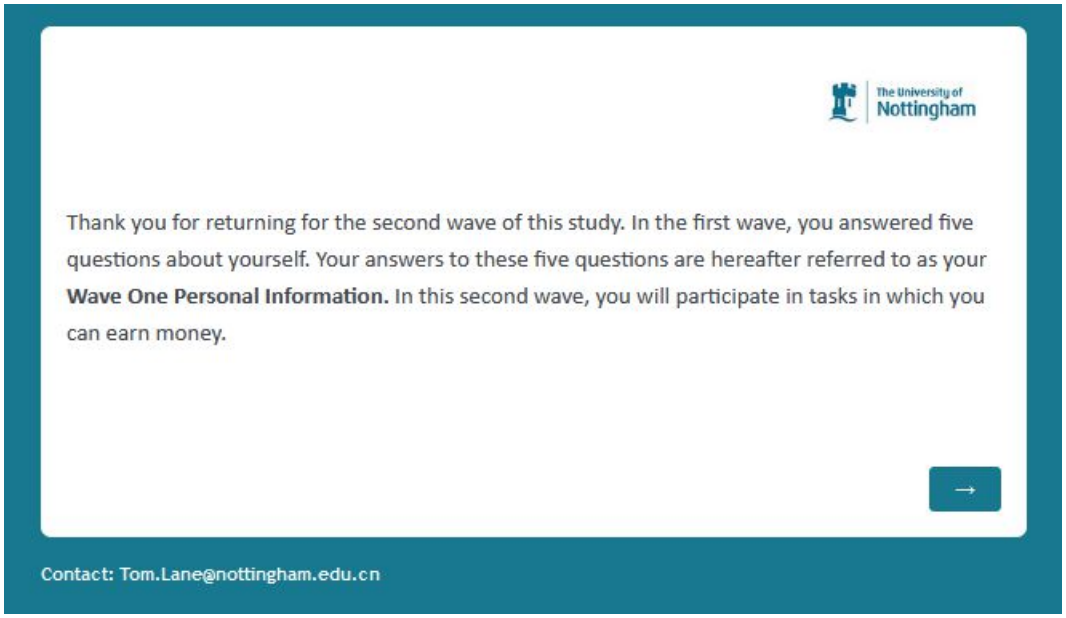

• I am revealed to believe Brexit was right
• I am revealed to believe Brexit was wrong
• I am revealed to study in the Faculty of Arts
• I am revealed to study in the Faculty of Engineering
• I am revealed to study in the Faculty of Medicine and Health Sciences
• I am revealed to study in the Faculty of Science
• I am revealed to study in the Faculty of Social Sciences
• I am revealed to prefer the Klee painting over the Kandinsky painting
• I am revealed to prefer the Kandinsky painting over the Klee painting

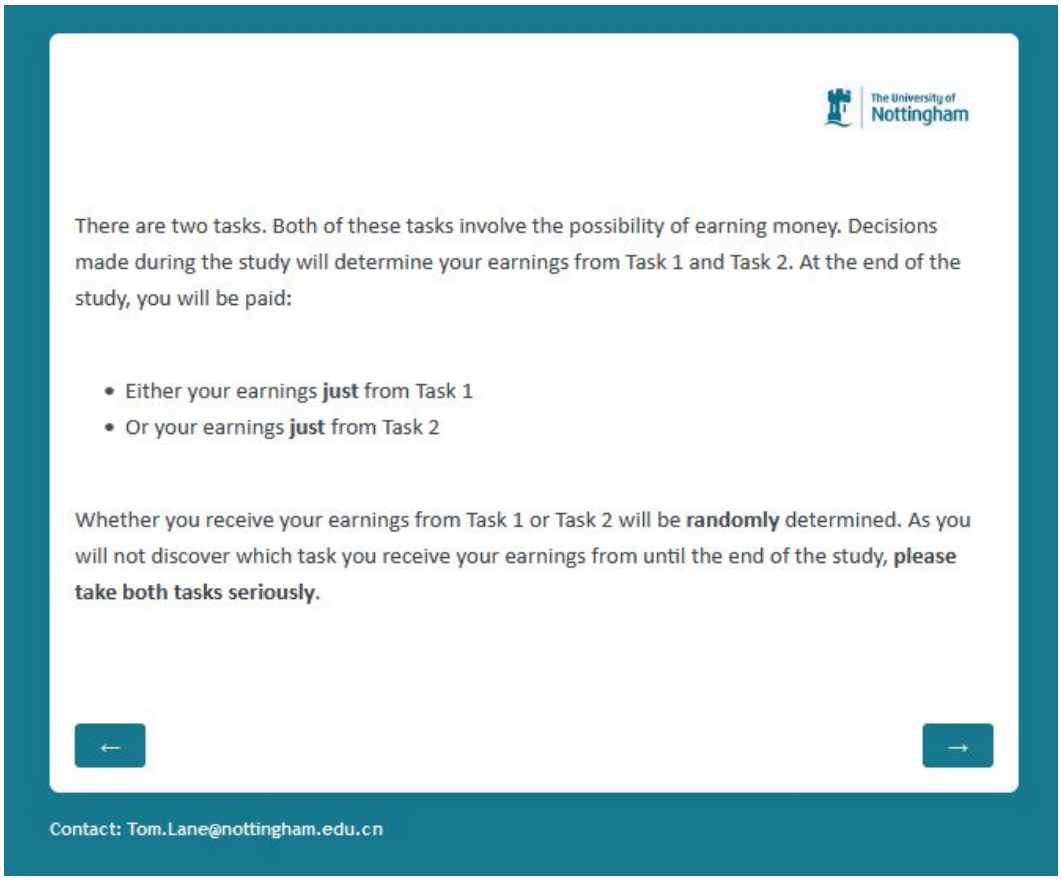

The University of Nottingham
Now, please make your choice over which piece of your **Wave One Personal Information** we will reveal to Person X.
**Remember:**
Person X's account currently has £14 and your account currently has £0.
Any amount Person X sends will be subtracted from Person X's account and added to your account.
Reminder: Person X's **Wave One Personal Information:**
Ethnic Group: Other ethnic group
Gender: Neither Female nor Male
Opinion about Brexit: Brexit was wrong
Faculty: Faculty of Social Sciences
Painting Preference: Kandinsky
**Make your choice by clicking one of the items below.**
My decision: reveal to Person X that...
My ethnic group is Black, Black British, Caribbean or African

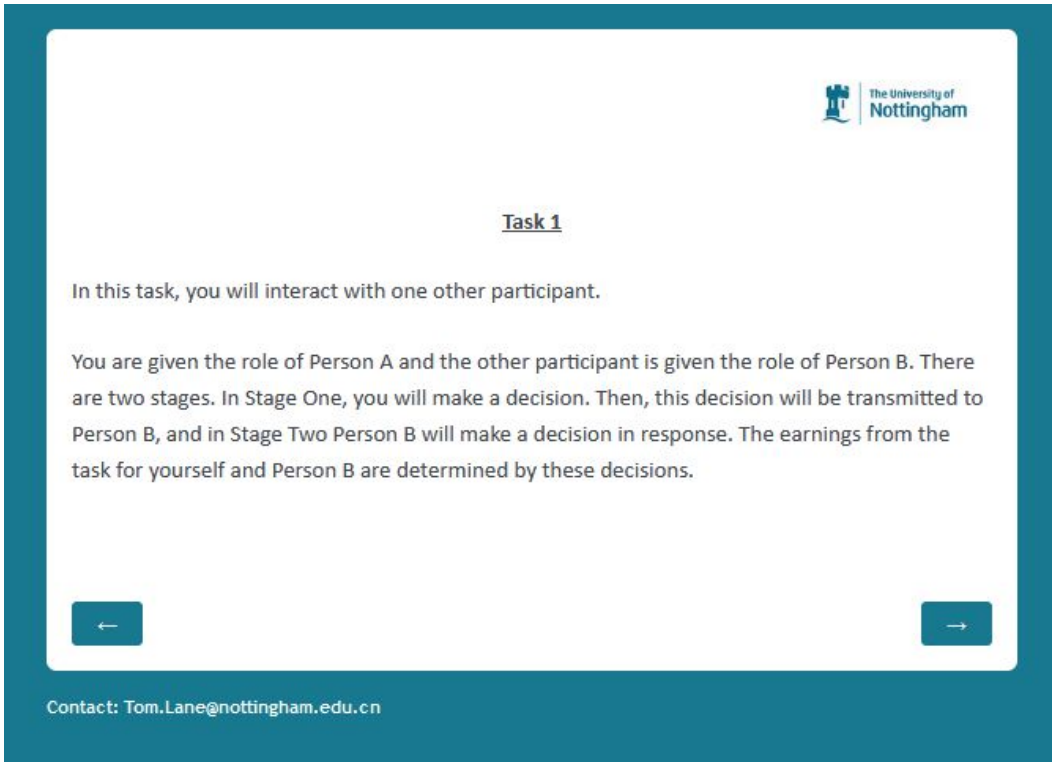

My gender is Male
My opinion is that Brexit was right
My faculty is Faculty of Science
My painting preference is Klee
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Thank you. This completes the first wave of the study.
When it is time for the second wave, we will send you an email with a link to the experiment's website.
Remember that you must complete the second wave in order to be eligible to receive money from the tasks.
You can now close this window
Contact: Tom.Lane@nottingham.edu.cn

**First movers – Wave 2**




The University of Nottingham
Task 1
In this task, you will interact with one other participant.
You are given the role of Person A and the other participant is given the role of Person B. There are two stages. In Stage One, you will make a decision. Then, this decision will be transmitted to Person B, and in Stage Two Person B will make a decision in response. The earnings from the task for yourself and Person B are determined by these decisions.
←
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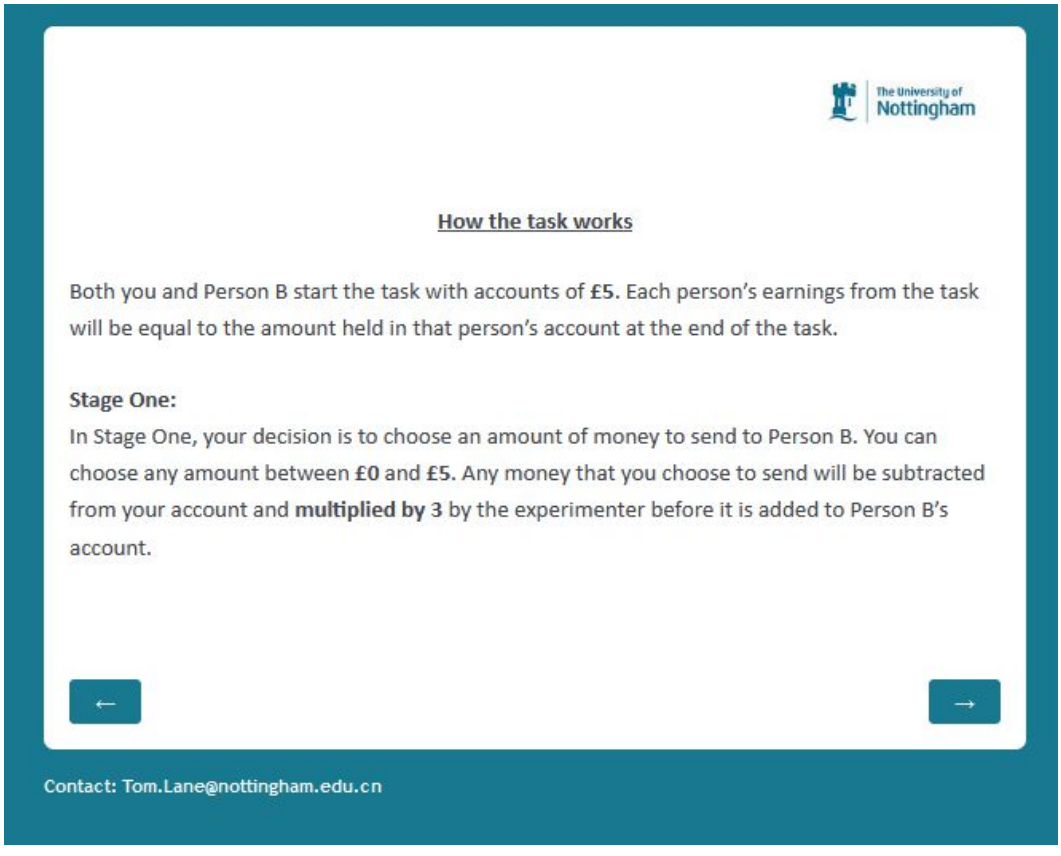
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
How the task works
Both you and Person B start the task with accounts of £5. Each person's earnings from the task will be equal to the amount held in that person's account at the end of the task.
Stage One:
In Stage One, your decision is to choose an amount of money to send to Person B. You can choose any amount between £0 and £5. Any money that you choose to send will be subtracted from your account and multiplied by 3 by the experimenter before it is added to Person B's account.
←
→
Contact: Tom.Lane@nottingham.edu.cn

The University of Nottingham

Let's go through two examples to make it clear how Stage One works.

**Example 1**

- You and Person B both have **£5** in your starting accounts.
- You decide to send **£4** to Person B. This amount is **multiplied by 3** by the experimenter. The amount received by Person B is **3 x £4 = £12**.
- At the end of Stage One, your account has **£5 – 4 = £1**. Person B's account has **£5 + 12 = £17**.

**Example 2**

- You and Person B both have **£5** in your starting accounts.
- You decide to send £1 to Person B. This amount is multiplied by 3 by the experimenter. The amount received by Person B is **3 x £1 = £3**.
- At the end of Stage One, your account has **£5 – 1 = £4**. Person B's account has **£5 + 3 = £8**.

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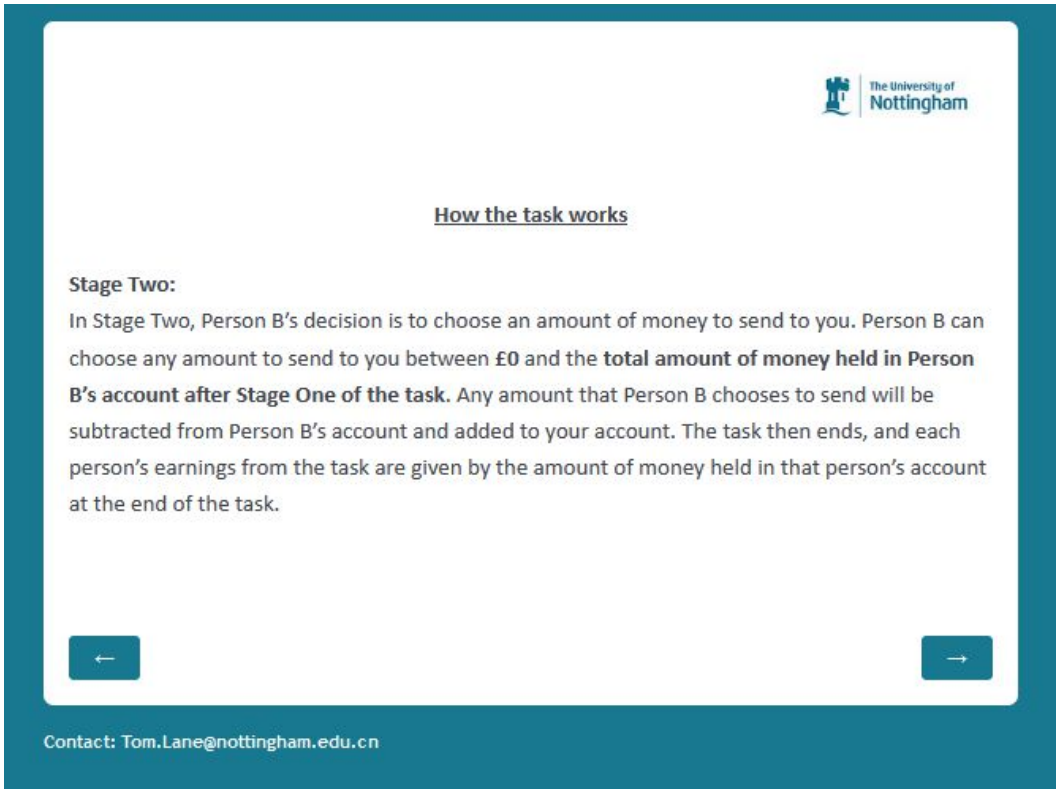
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How the task works
Stage Two:
In Stage Two, Person B's decision is to choose an amount of money to send to you. Person B can choose any amount to send to you between £0 and the total amount of money held in Person B's account after Stage One of the task. Any amount that Person B chooses to send will be subtracted from Person B's account and added to your account. The task then ends, and each person's earnings from the task are given by the amount of money held in that person's account at the end of the task.
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Let's go through two examples to make it clear how Stage Two works.

**Example 1**

- Suppose that after Stage One, Person B's account has **£14** and your account has **£2**.
- Person B decides to send **£13** to you.
- At the end of Stage Two, Person B's account has **£14 – 13 = £1**. Your account has **£2 + 13 = £15**.
- Therefore, your earnings from the task are **£15**; Person B's earnings from the task are **£1**.

**Example 2**

- Suppose that after Stage One, Person B's account has **£11** and your account has **£3**.
- Person B decides to send **£1** to you.
- At the end of Stage Two, Person B's account has **£11 – 1 = £10**. Your account has **£3 + 1 = £4**.
- Therefore, your earnings from the task are **£4**; Person B's earnings from the task are **£10**.

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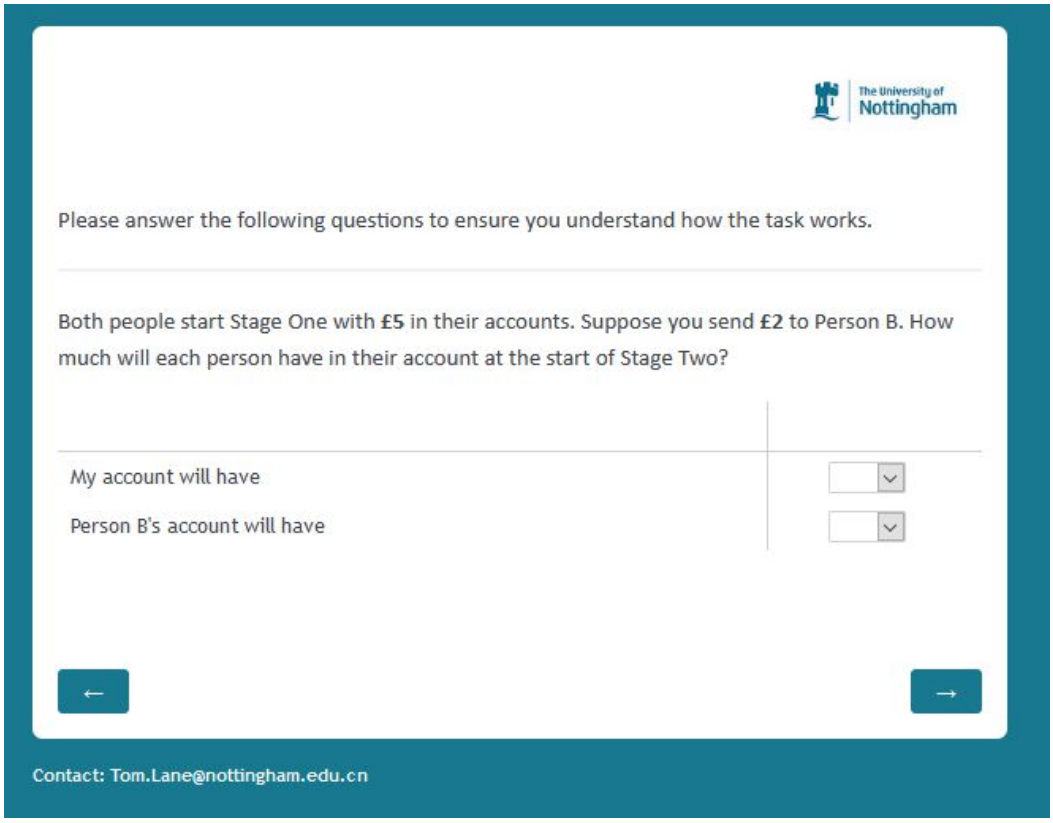


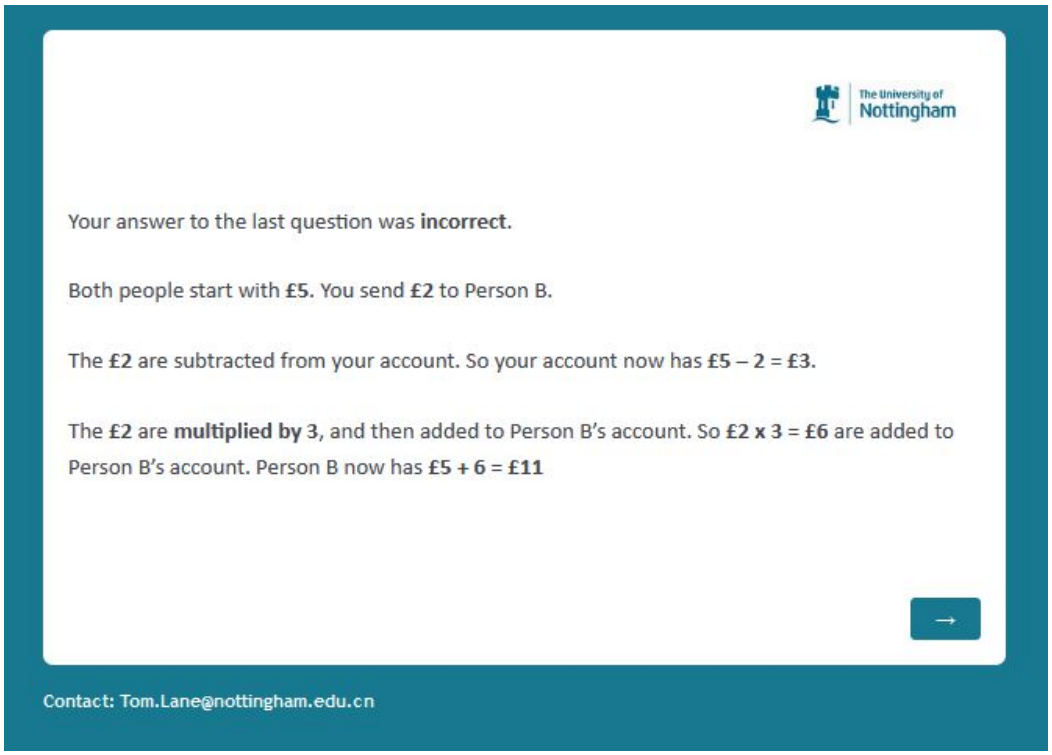


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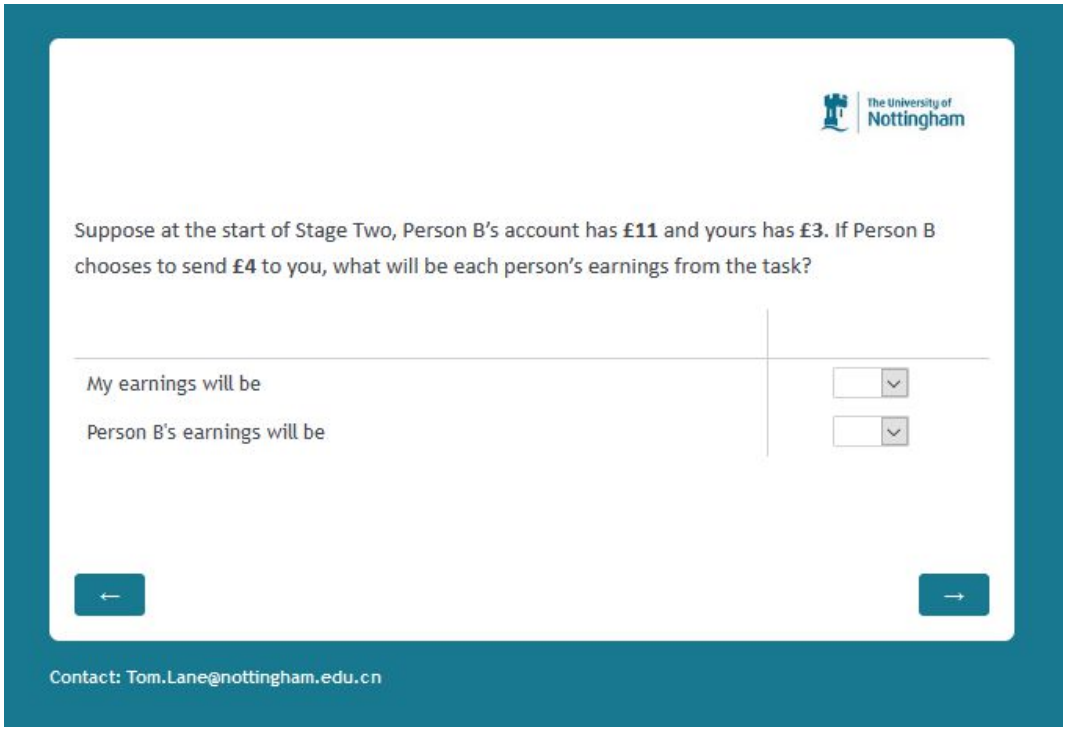


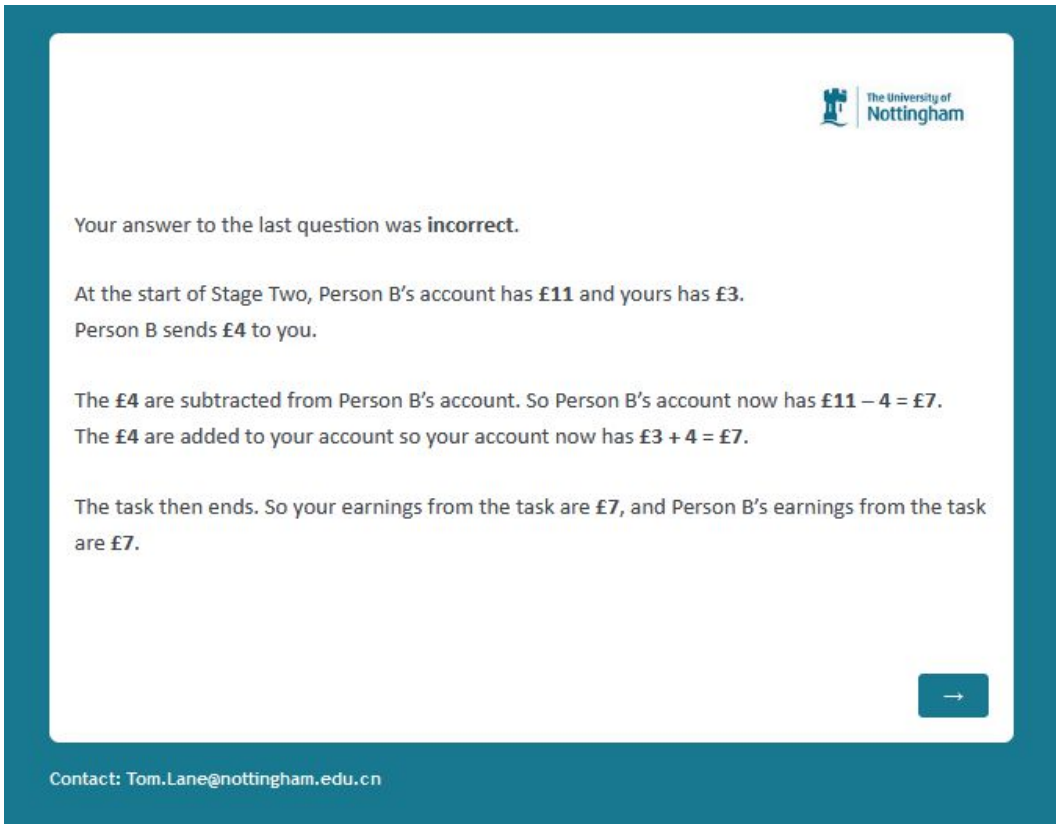


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In this task, the **Wave One Personal Information** that we collected about you last time is revealed in full to Person B. Here is a reminder of your **Wave One Personal Information**, as provided by your answers to the five questions we asked. Person B can see your answers to all of these questions.

**Your Wave One Personal Information**

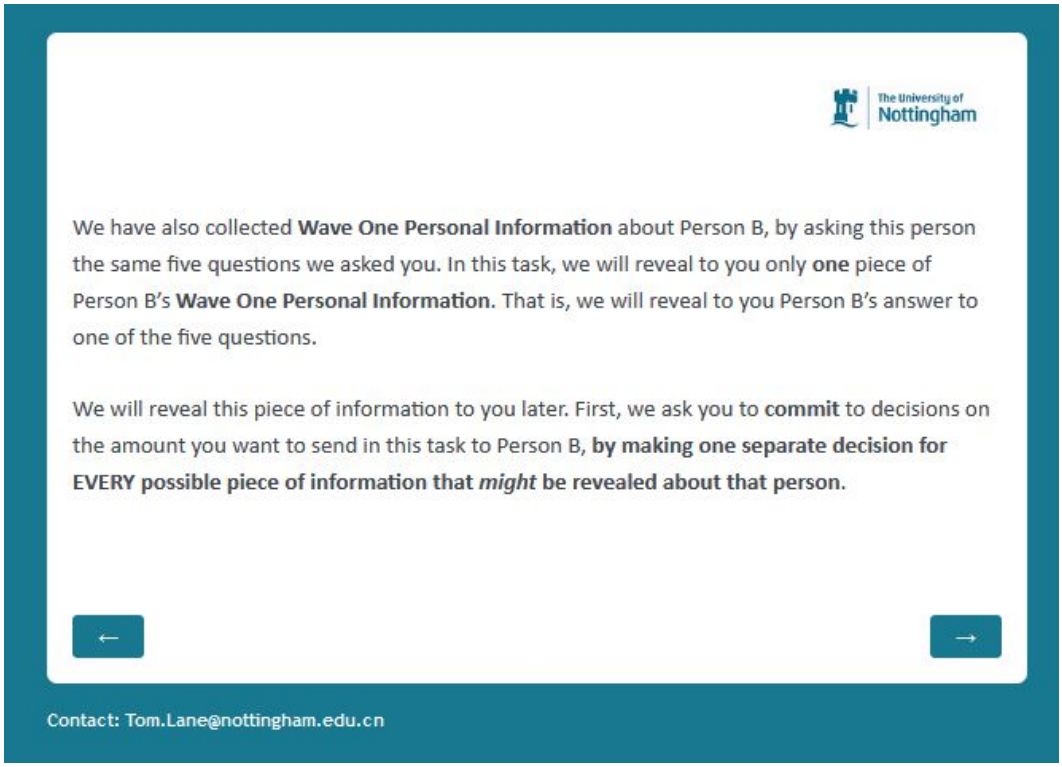
Ethnic Group: Other ethnic group
(Possible answers: White; Mixed or Multiple ethnic groups; Asian or Asian British; Black, Black British, Caribbean or African; Other ethnic group)

Gender: Neither Female nor Male
(Possible answers: Female; Male; Neither Female nor Male)

Opinion about Brexit: Brexit was wrong
(Possible answers: Brexit was right; Brexit was wrong)

Faculty: Faculty of Social Sciences
(Possible answers: Faculty of Arts; Faculty of Engineering; Faculty of Medicine and Health Sciences; Faculty of Science; Faculty of Social Sciences)

Painting Preference: Kandinsky
(Possible answers: Klee; Kandinsky)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We have also collected **Wave One Personal Information** about Person B, by asking this person the same five questions we asked you. In this task, we will reveal to you only **one** piece of Person B's **Wave One Personal Information**. That is, we will reveal to you Person B's answer to one of the five questions.
We will reveal this piece of information to you later. First, we ask you to **commit** to decisions on the amount you want to send in this task to Person B, **by making one separate decision for EVERY possible piece of information that *might* be revealed about that person.**
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Let us explain this point more precisely. All participants in the study have answered five questions about themselves, providing five pieces of **Wave One Personal Information**. However, there were a total of 17 possible answers to the five questions (5 possible answers to the **Ethnic Group** question, 3 possible answers to the **Gender** question, 2 possible answers to the **Brexit** question, 5 possible answers to the **Faculty** question, and 2 possible answers to the **Painting Preference** question). Each possible answer to each of the questions is one possible piece of **Wave One Personal Information** that might be true for some participant in this study.

As you do not currently know anything about Person B, any of these 17 pieces of information *might* be true about Person B (even though, in fact, only five of them are true). You are asked to commit to 17 separate decisions over how much to send Person B, for every possible case of one of the following pieces of information being revealed to be true about that person:

- Person B's U.K. Census ethnic group is revealed to be **White**
- Person B's U.K. Census ethnic group is revealed to be **Mixed or Multiple ethnic groups**
- Person B's U.K. Census ethnic group is revealed to be **Asian or Asian British**
- Person B's U.K. Census ethnic group is revealed to be **Black, Black British, Caribbean or African**
- Person B's U.K. Census ethnic group is revealed to be **Other ethnic group**
- Person B is revealed to be **Female**
- Person B is revealed to be **Male**
- Person B is revealed to be **Neither Female nor Male**
- Person B is revealed to believe **Brexit was right**
- Person B is revealed to believe **Brexit was wrong**
- Person B is revealed to study in the **Faculty of Arts**
- Person B is revealed to study in the **Faculty of Engineering**
- Person B is revealed to study in the **Faculty of Medicine and Health Sciences**
- Person B is revealed to study in the **Faculty of Science**
- Person B is revealed to study in the **Faculty of Social Sciences**
- Person B is revealed to prefer the **Klee** painting over the Kandinsky painting
- Person B is revealed to prefer the **Kandinsky** painting over the Klee painting

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Later, we will truthfully reveal one piece of Person B's **Wave One Personal Information**, and the one decision you committed to over how much to send, in the case that this particular piece of information was the one actually revealed, will be automatically implemented. Your other 16 decisions will not be implemented and will not count toward determining the outcome of the task.

Upon discovering the revealed piece of information, you are not allowed to change the decision you have already committed to about the amount to send Person B. So, as you will not know which of the 17 decisions you make will be for real at the time you are committing to them, please consider all decisions carefully.

Note that your decisions over how much to send will **NOT** affect which piece of information is revealed to you. In fact, this has already been determined. We ask you to commit to all 17 decisions *before* we reveal the piece of information for the simple reason that we want to learn what decision you *would* make under all 17 different circumstances.

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To avoid any confusion, we want to emphasize one important point. Of the 17 decisions you make, 5 will correspond to pieces of information which are actually true about Person B (i.e. Person B provided 5 true pieces of information in response to the 5 questions asked). However, it is ***only*** the one decision you make, corresponding to the case of receiving the piece of information **that is actually revealed**, that will be implemented. The other 4 decisions you make corresponding to the cases of receiving pieces of information which are in fact true about Person B, but not revealed to you as true, will **NOT** be implemented – nor will the 12 decisions made corresponding to the cases of receiving pieces of information which are in fact untrue about Person B. Decisions that are not implemented will not count toward determining the outcome of the task.

To illustrate this with an example, suppose that instead of the 5 questions we actually asked, the **Wave One Personal Information** we collected instead consisted of answers to the following two questions: "Do you prefer baseball or football?" and "Is your height above or below 6 foot?" Suppose that Person B's answers were "baseball" and "above 6 foot", and the piece of information actually revealed to you was that Person B prefers baseball to football.

Suppose that you had chosen:

- To send "Amount A" in the case that Person B was revealed to prefer **baseball**
- To send "Amount B" in the case that Person B was revealed to prefer **football**
- To send "Amount C" in the case that Person B was revealed to be **above 6 foot**
- To send "Amount D" in the case that Person B was revealed to be **below 6 foot**

In this example, the amount you would send to Person B would be "Amount A", because it was revealed to you that Person B preferred baseball. "Amount C" would not be sent to Person B, even though it was true that Person B was above 6 foot, because this was not the piece of information revealed to you.

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The one decision that is implemented will be transmitted to Person B, who in Stage Two of the task will choose how much money to send back to you.

We will only reveal to Person B the one decision you make which is actually implemented; the 16 other decisions, which are not implemented and do not count toward determining the task's outcome, will not be revealed to Person B.

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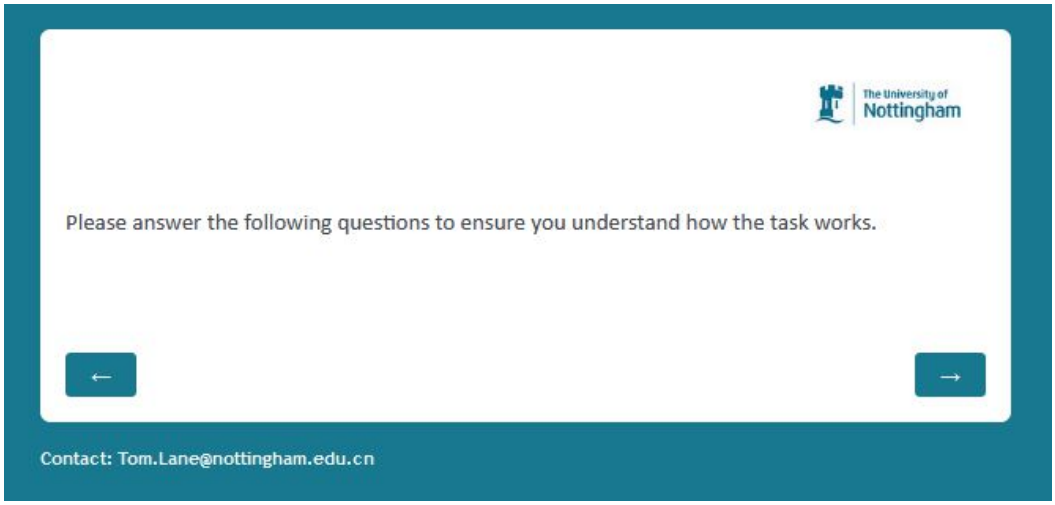

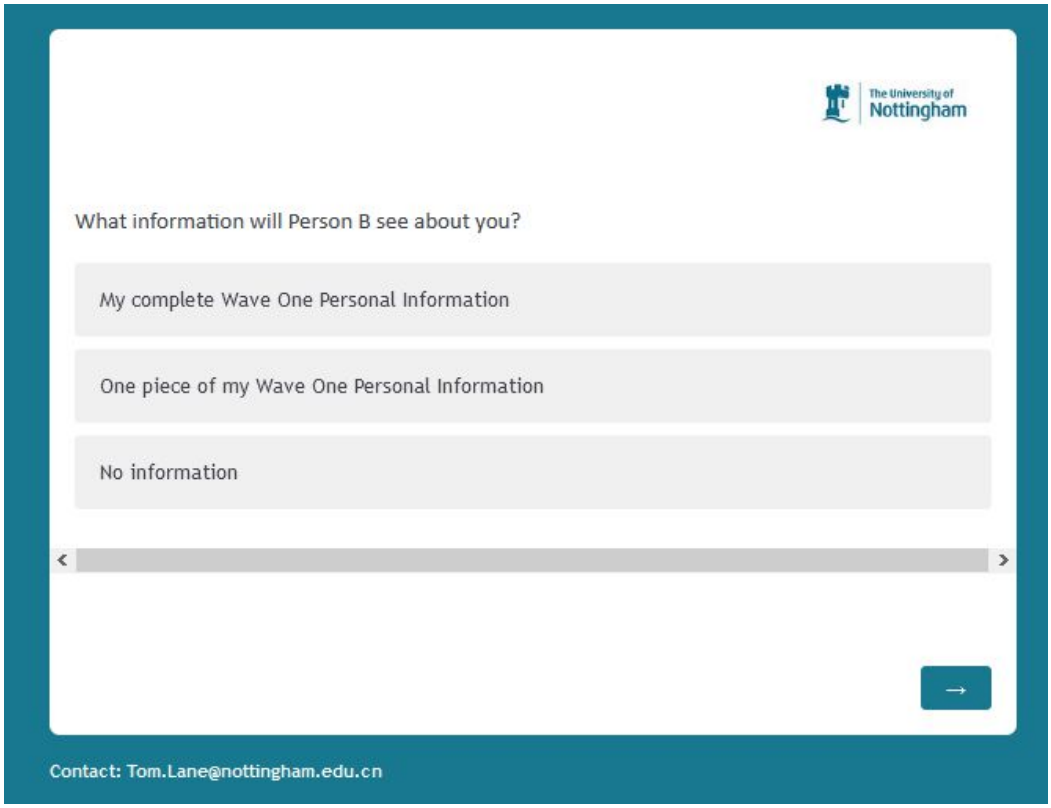


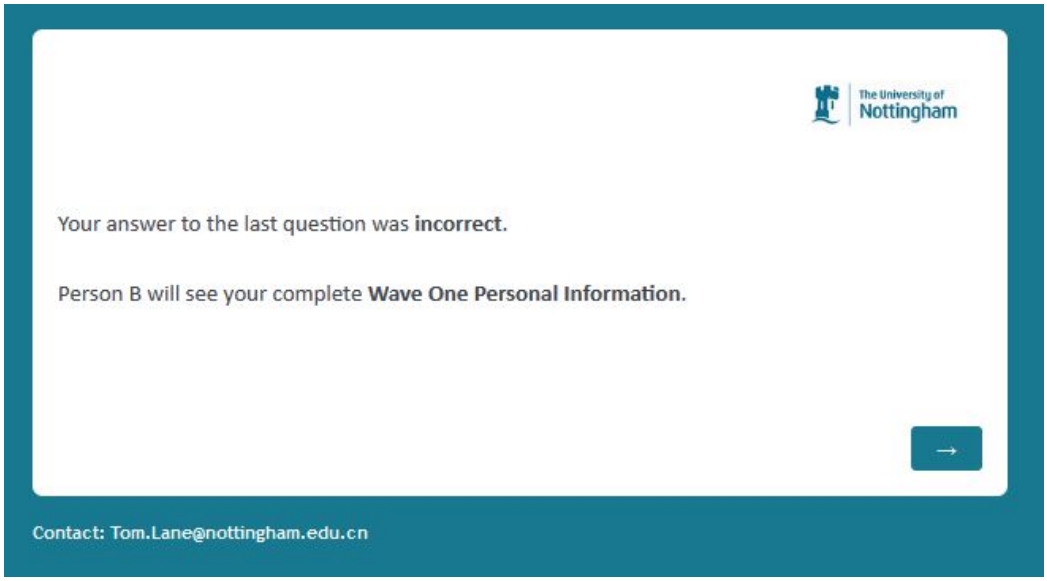


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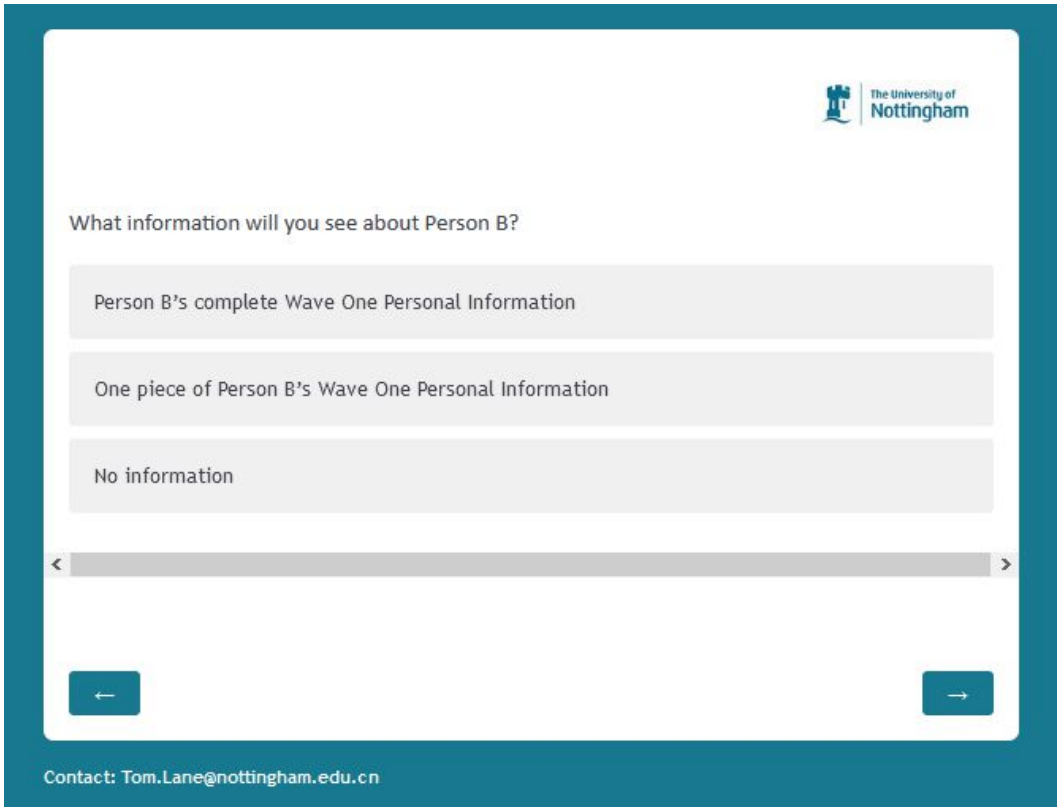


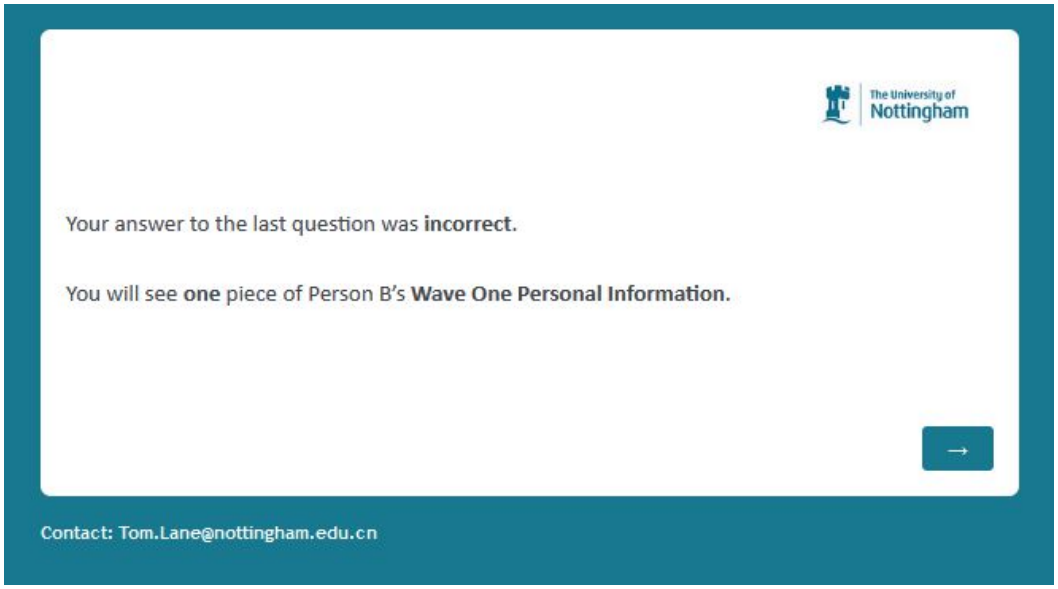


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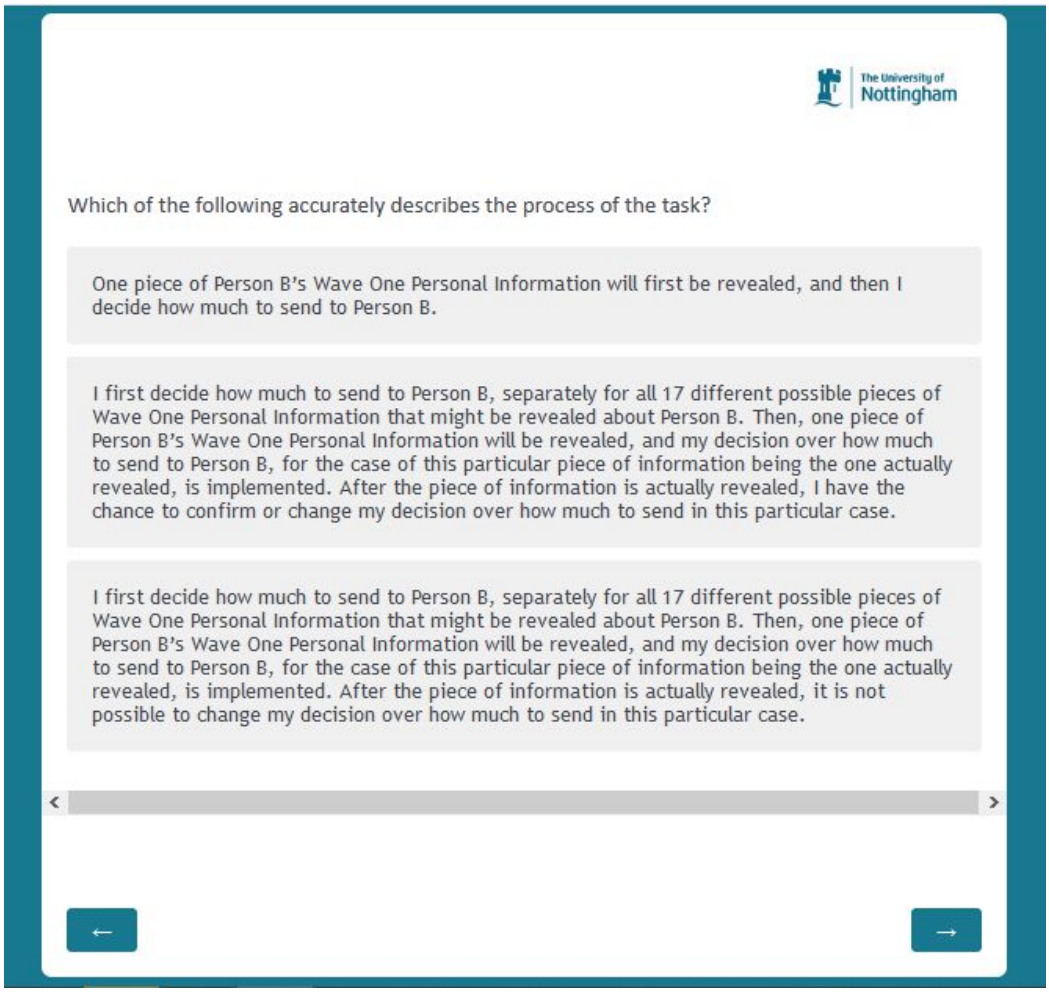
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Which of the following accurately describes the process of the task?
One piece of Person B's Wave One Personal Information will first be revealed, and then I decide how much to send to Person B.
I first decide how much to send to Person B, separately for all 17 different possible pieces of Wave One Personal Information that might be revealed about Person B. Then, one piece of Person B's Wave One Personal Information will be revealed, and my decision over how much to send to Person B, for the case of this particular piece of information being the one actually revealed, is implemented. After the piece of information is actually revealed, I have the chance to confirm or change my decision over how much to send in this particular case.
I first decide how much to send to Person B, separately for all 17 different possible pieces of Wave One Personal Information that might be revealed about Person B. Then, one piece of Person B's Wave One Personal Information will be revealed, and my decision over how much to send to Person B, for the case of this particular piece of information being the one actually revealed, is implemented. After the piece of information is actually revealed, it is not possible to change my decision over how much to send in this particular case.
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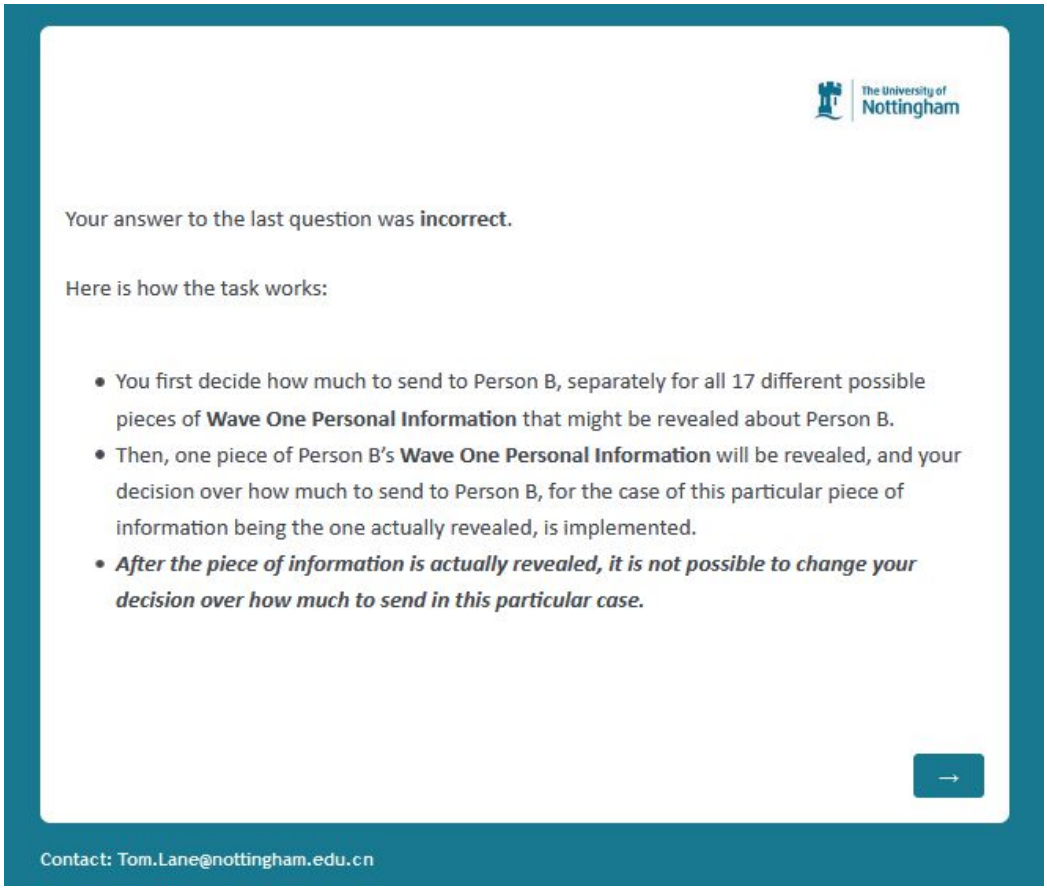


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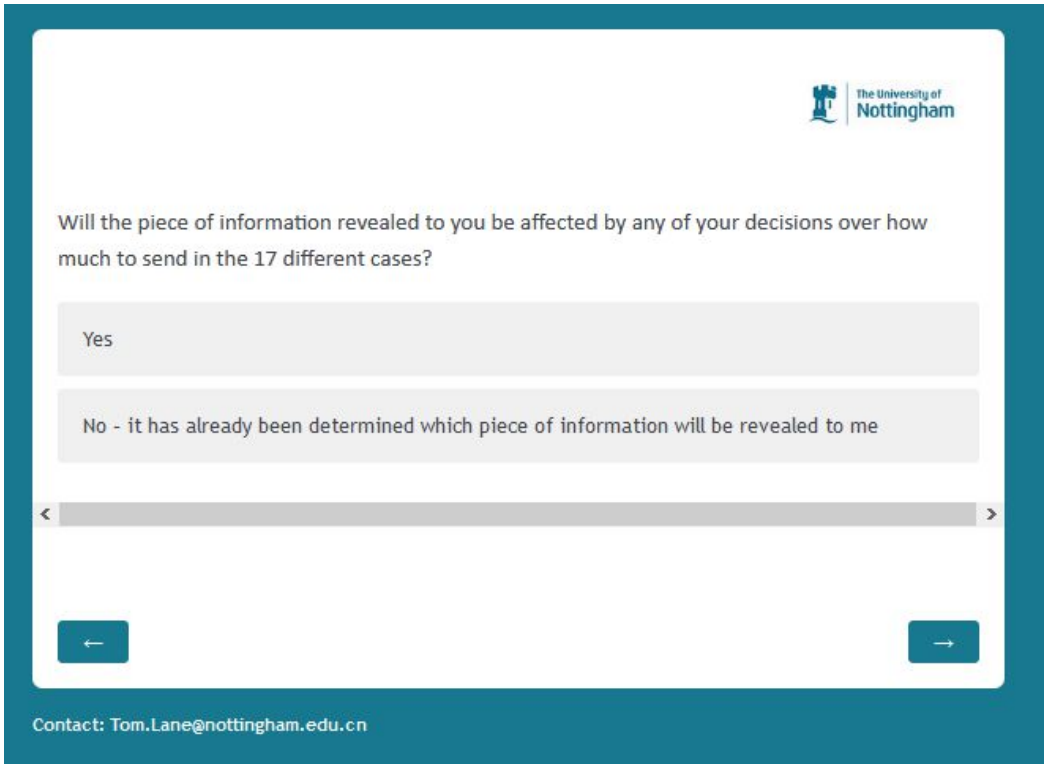


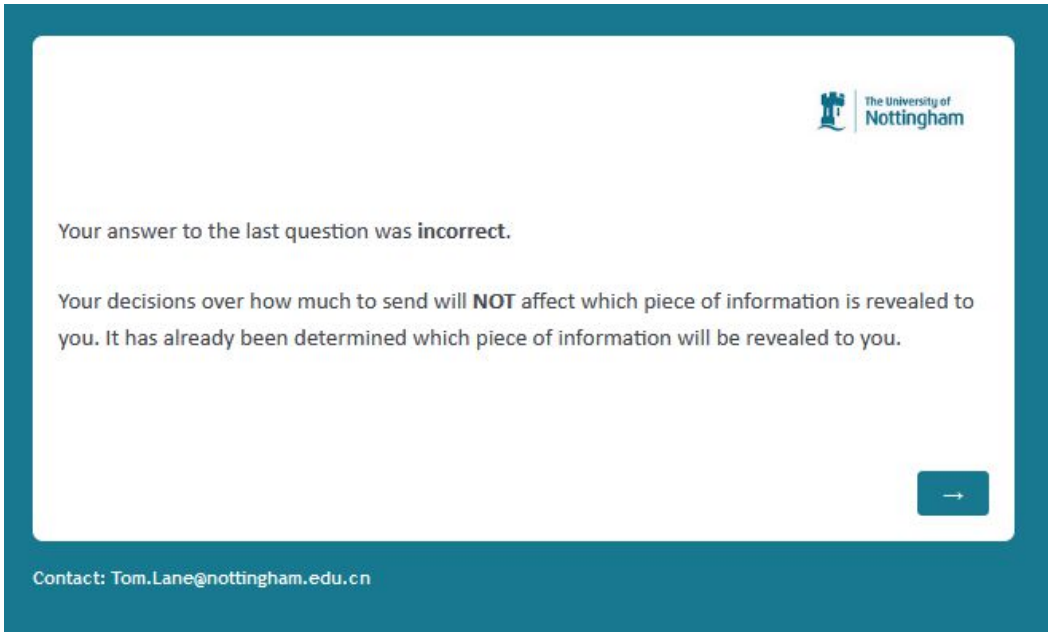


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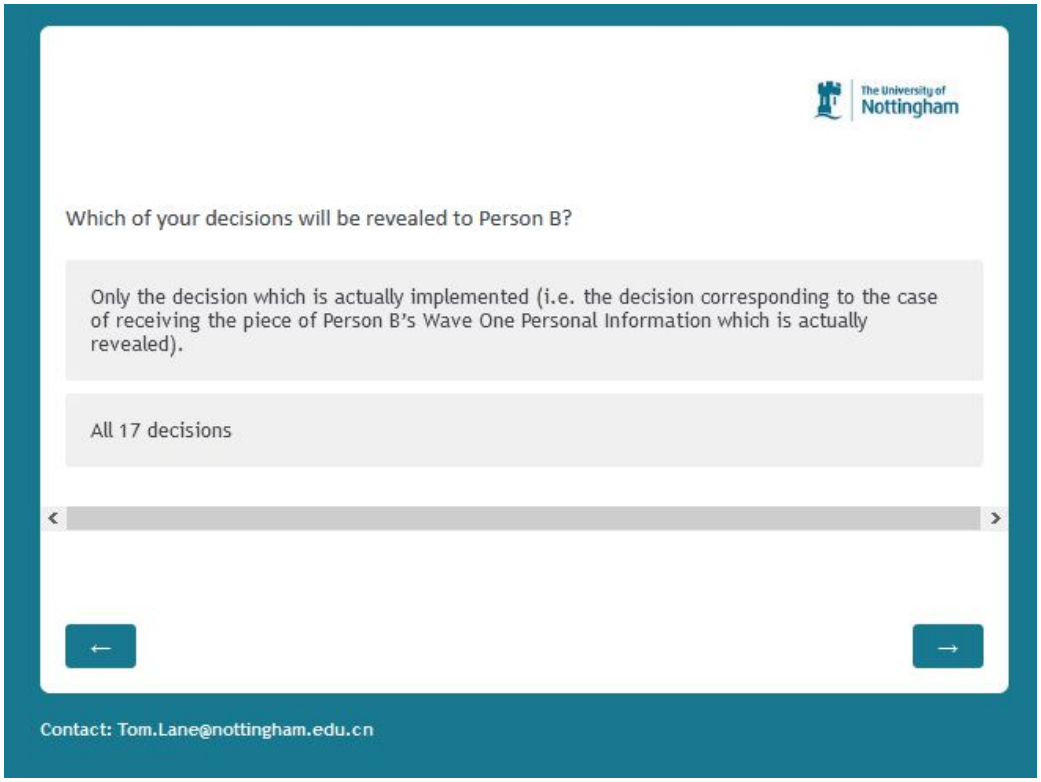


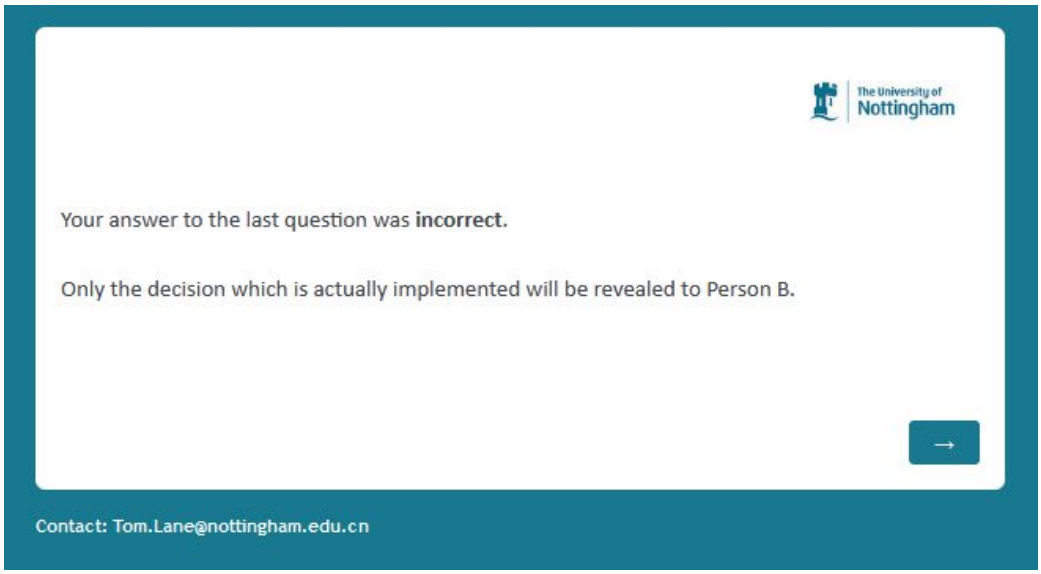


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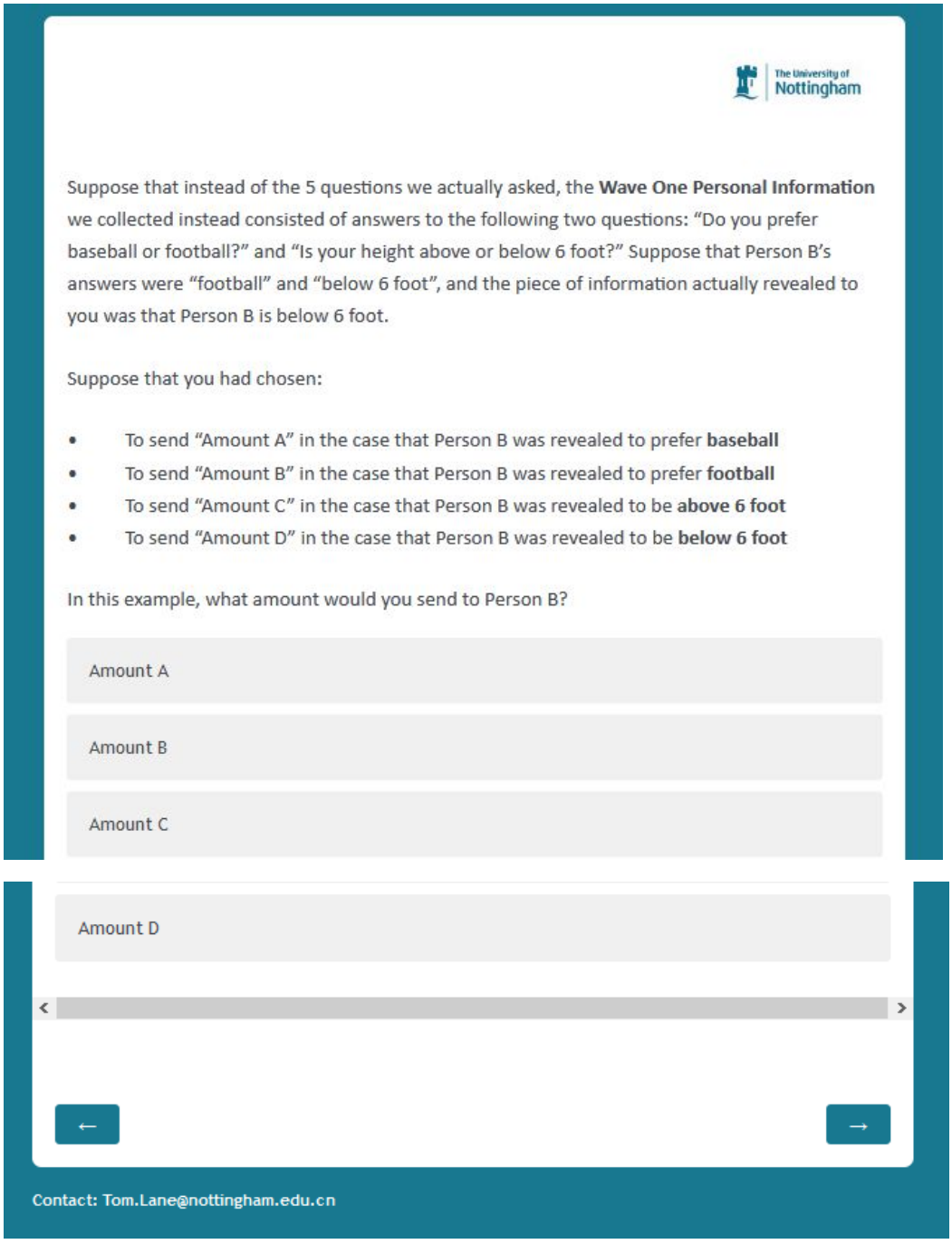
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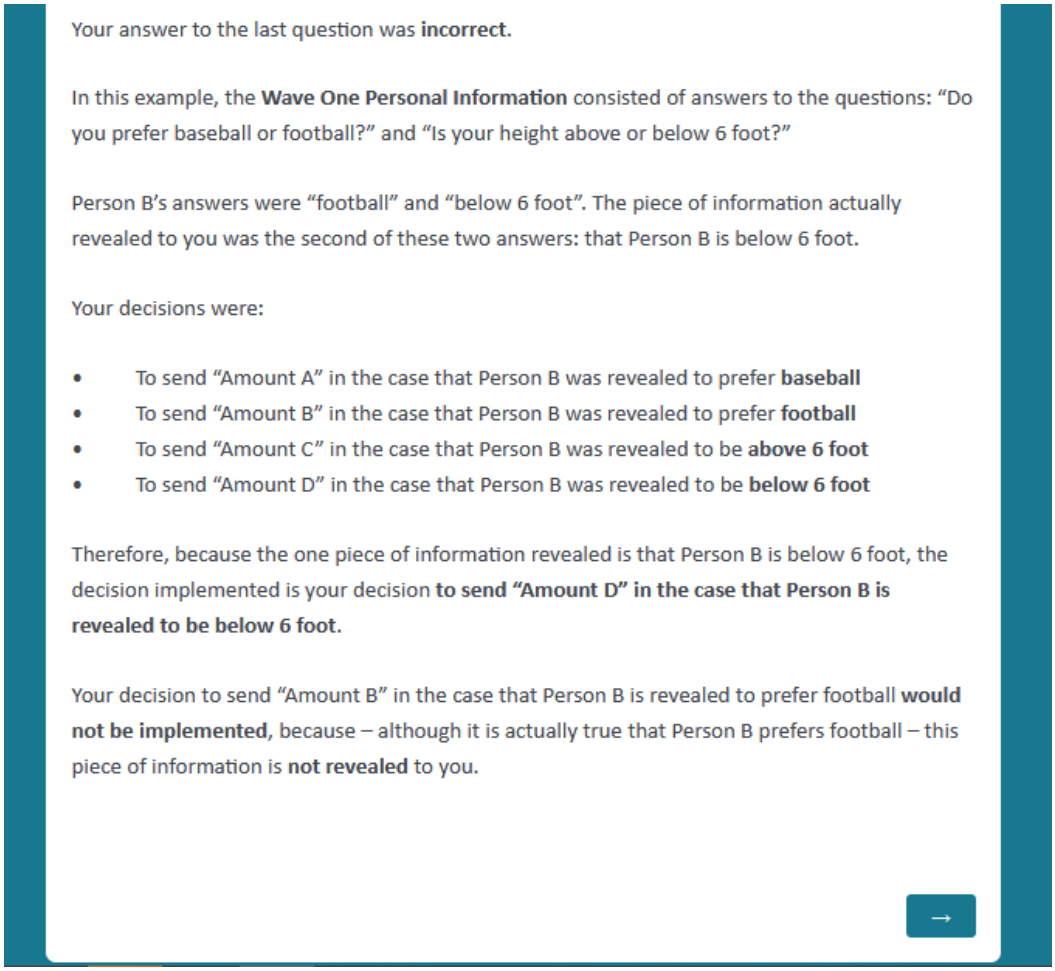
Suppose that instead of the 5 questions we actually asked, the Wave One Personal Information we collected instead consisted of answers to the following two questions: "Do you prefer baseball or football?" and "Is your height above or below 6 foot?" Suppose that Person B's answers were "football" and "below 6 foot", and the piece of information actually revealed to you was that Person B is below 6 foot.
Suppose that you had chosen:
To send "Amount A" in the case that Person B was revealed to prefer baseball
To send "Amount B" in the case that Person B was revealed to prefer football
To send "Amount C" in the case that Person B was revealed to be above 6 foot
To send "Amount D" in the case that Person B was revealed to be below 6 foot
In this example, what amount would you send to Person B?
Amount A
Amount B
Amount C
Amount D
←
→
Contact: Tom.Lane@nottingham.edu.cn

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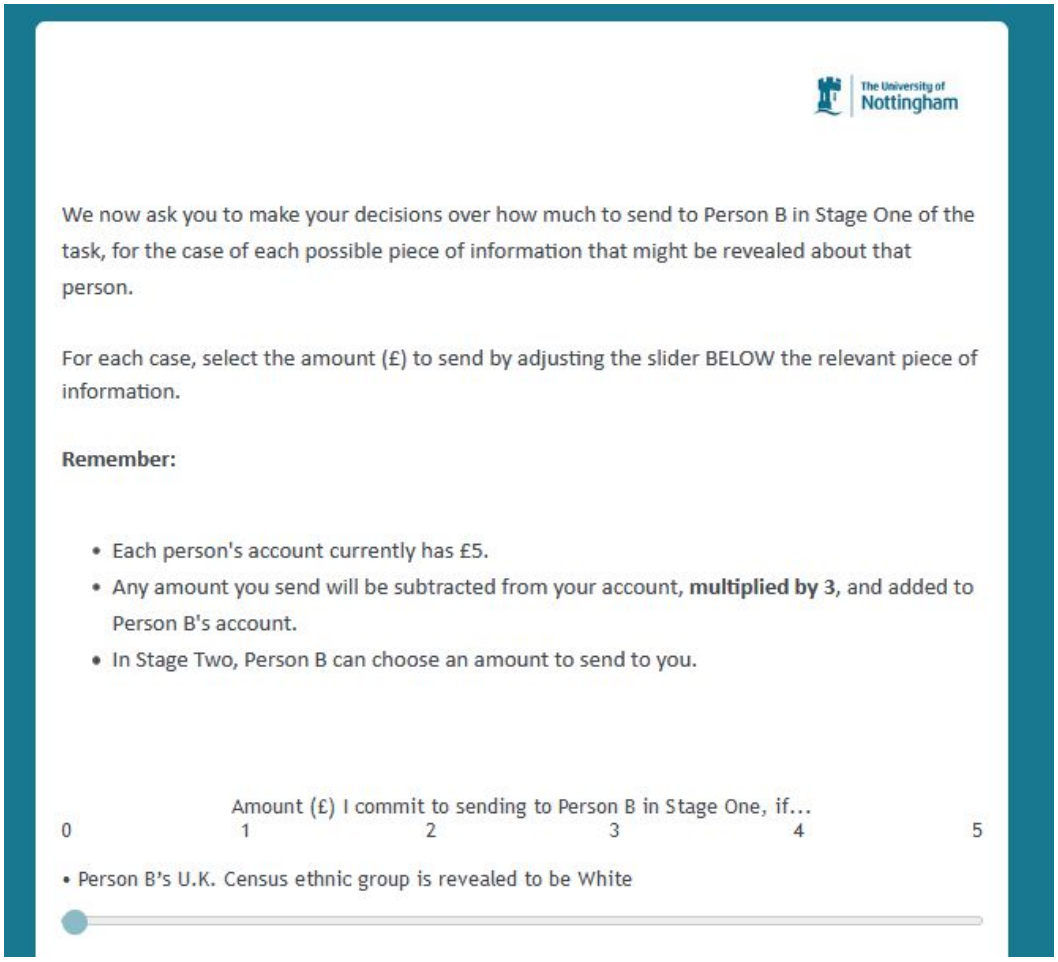
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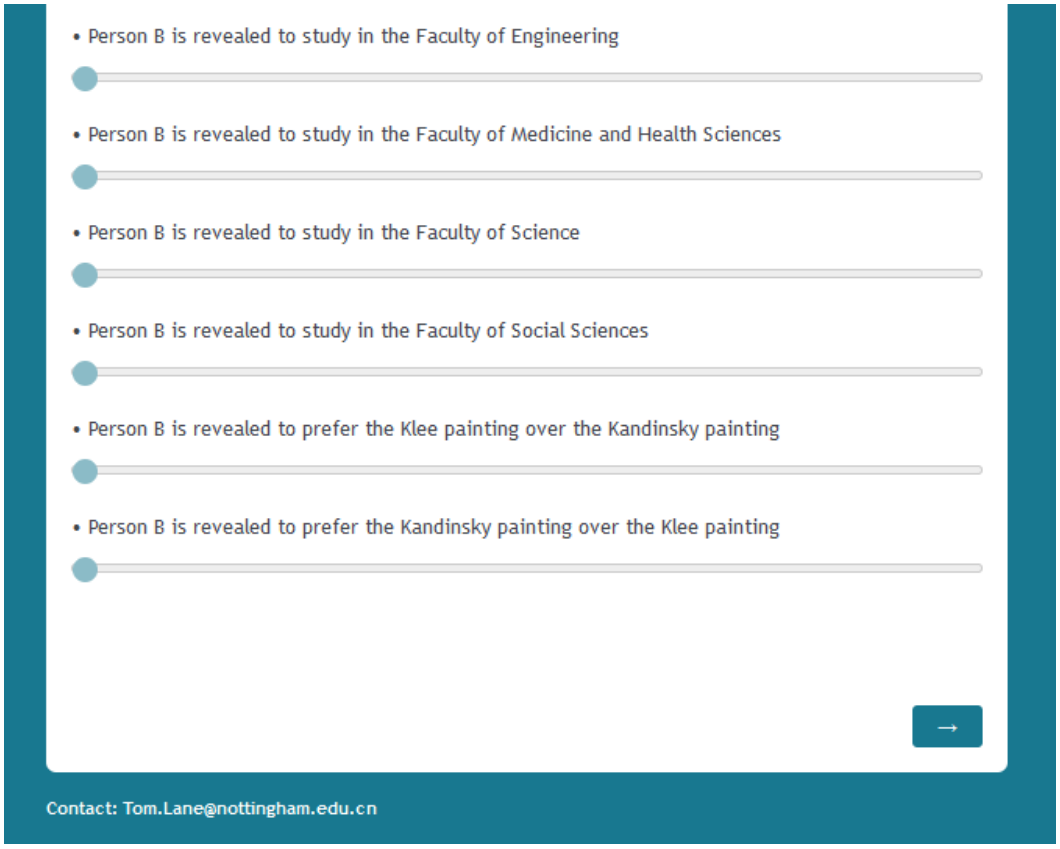
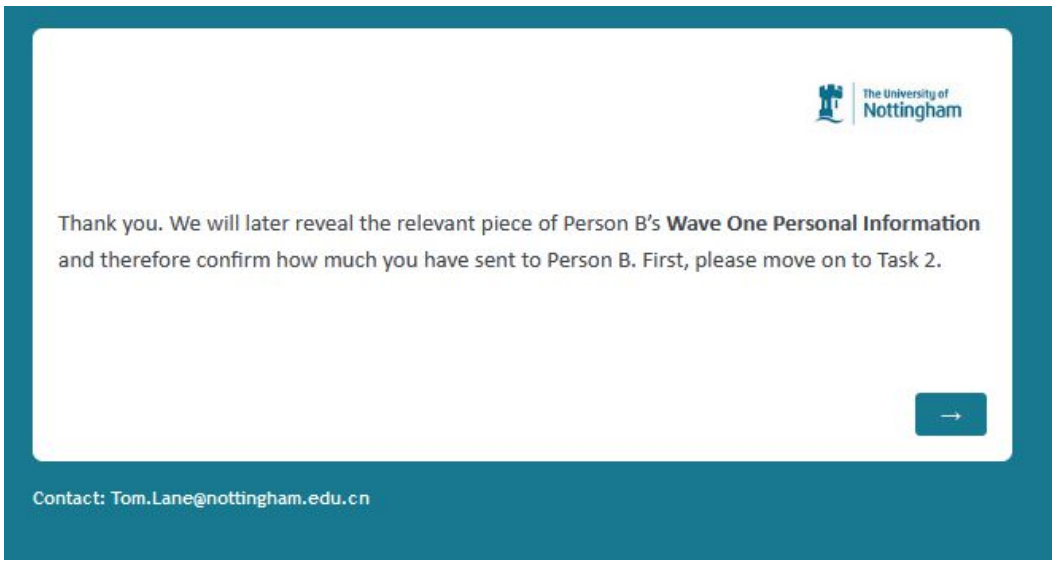
We now ask you to make your decisions over how much to send to Person B in Stage One of the task, for the case of each possible piece of information that might be revealed about that person.
For each case, select the amount (£) to send by adjusting the slider BELOW the relevant piece of information.
Remember:
• Each person's account currently has £5.
• Any amount you send will be subtracted from your account, multiplied by 3, and added to Person B's account.
• In Stage Two, Person B can choose an amount to send to you.
Amount (£) I commit to sending to Person B in Stage One, if...
0 1 2 3 4 5
• Person B's U.K. Census ethnic group is revealed to be White

- Person B's U.K. Census ethnic group is revealed to be Mixed or Multiple ethnic groups
- Person B's U.K. Census ethnic group is revealed to be Asian or Asian British
- Person B's U.K. Census ethnic group is revealed to be Black, Black British, Caribbean or African
- Person B's U.K. Census ethnic group is revealed to be Other ethnic group
- Person B is revealed to be Female
- Person B is revealed to be Male
- Person B is revealed to be Neither Female nor Male
- Person B is revealed to believe Brexit was right
- Person B is revealed to believe Brexit was wrong
- Person B is revealed to study in the Faculty of Arts


• Person B is revealed to study in the Faculty of Engineering
• Person B is revealed to study in the Faculty of Medicine and Health Sciences
• Person B is revealed to study in the Faculty of Science
• Person B is revealed to study in the Faculty of Social Sciences
• Person B is revealed to prefer the Klee painting over the Kandinsky painting
• Person B is revealed to prefer the Kandinsky painting over the Klee painting
→
Contact: Tom.Lane@nottingham.edu.cn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Thank you. We will later reveal the relevant piece of Person B's **Wave One Personal Information** and therefore confirm how much you have sent to Person B. First, please move on to Task 2.
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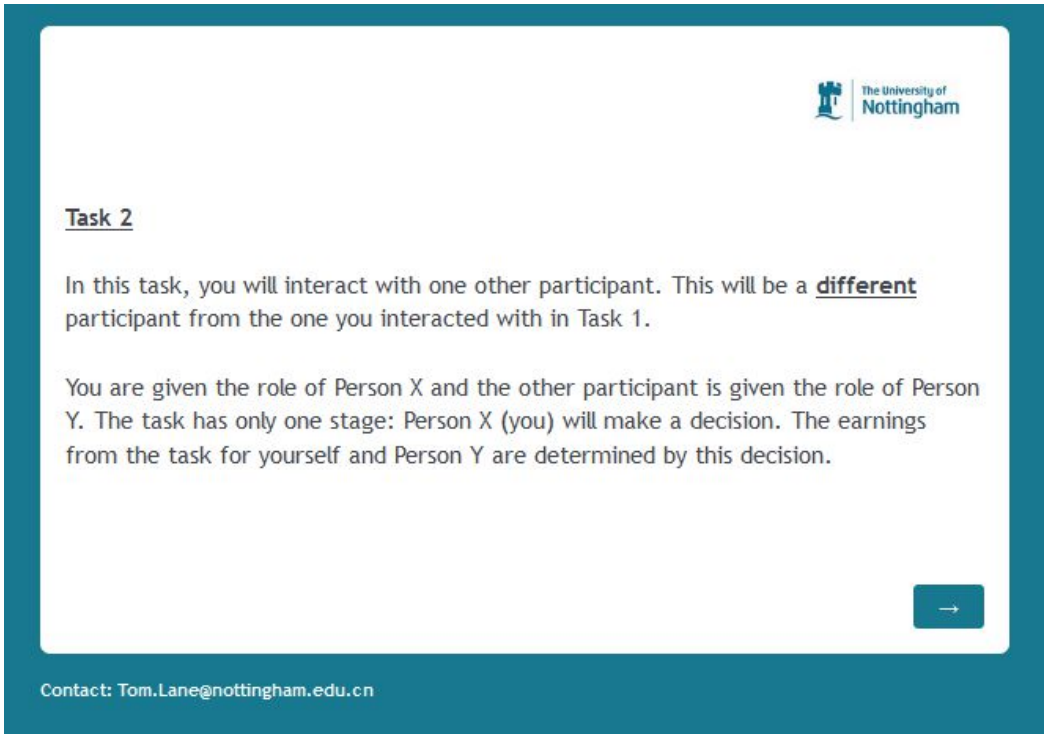
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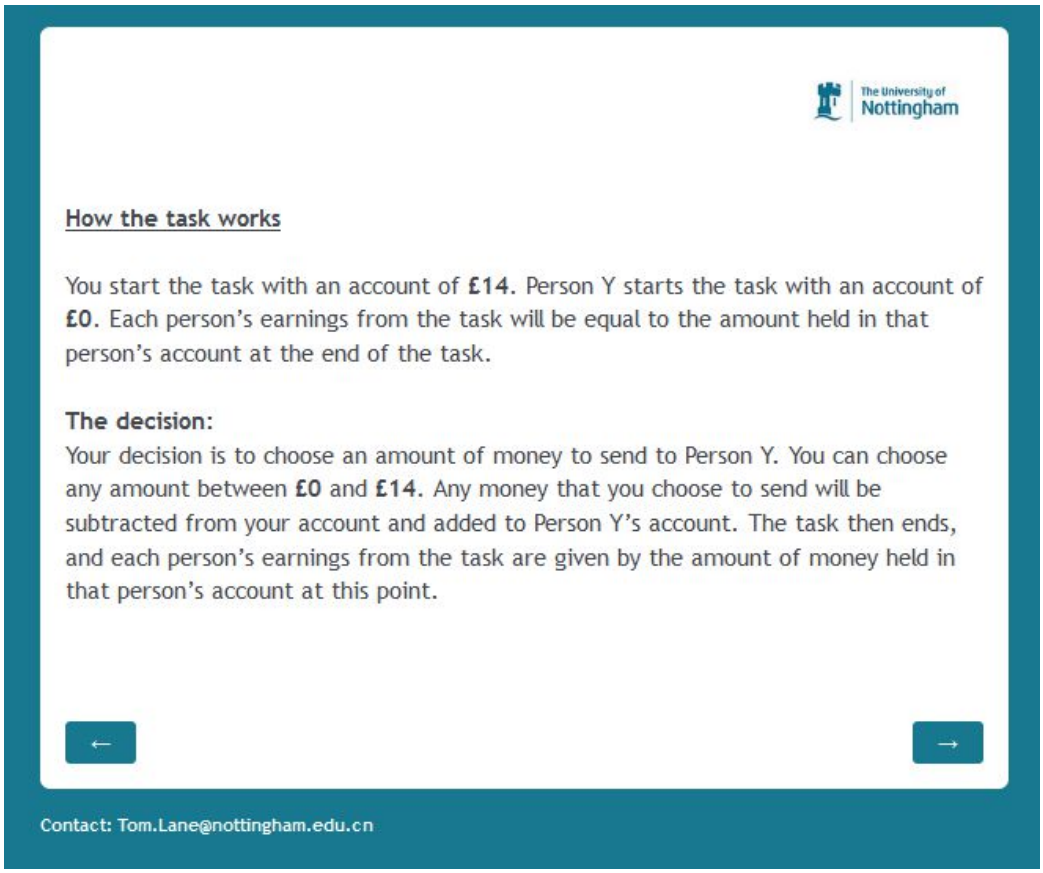
Task 2
In this task, you will interact with one other participant. This will be a different participant from the one you interacted with in Task 1.
You are given the role of Person X and the other participant is given the role of Person Y. The task has only one stage: Person X (you) will make a decision. The earnings from the task for yourself and Person Y are determined by this decision.
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
How the task works
You start the task with an account of £14. Person Y starts the task with an account of £0. Each person's earnings from the task will be equal to the amount held in that person's account at the end of the task.
The decision:
Your decision is to choose an amount of money to send to Person Y. You can choose any amount between £0 and £14. Any money that you choose to send will be subtracted from your account and added to Person Y's account. The task then ends, and each person's earnings from the task are given by the amount of money held in that person's account at this point.
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Contact: Tom.Lane@nottingham.edu.cn

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Let's go through two examples to make it clear how the task works.

**Example 1**

- At the start of the task, your account has **£14** and Person Y's account has **£0**.
- You decide to send **£13** to Person Y.
- At the end of the task, your account has **£14 - 13 = £1**. Person Y's account has **£0 + 13 = £13**.
- Therefore, your earnings from the task are **£1**; Person Y's earnings from the task are **£13**.

**Example 2**

- At the start of the task, your account has **£14** and Person Y's account has **£0**.
- You decide to send **£2** to Person Y.
- At the end of the task, your account has **£14 - 2 = £12**. Person Y's account has **£0 + 2 = £2**.
- Therefore, your earnings from the task are **£12**; Person Y's earnings from the task are **£2**.

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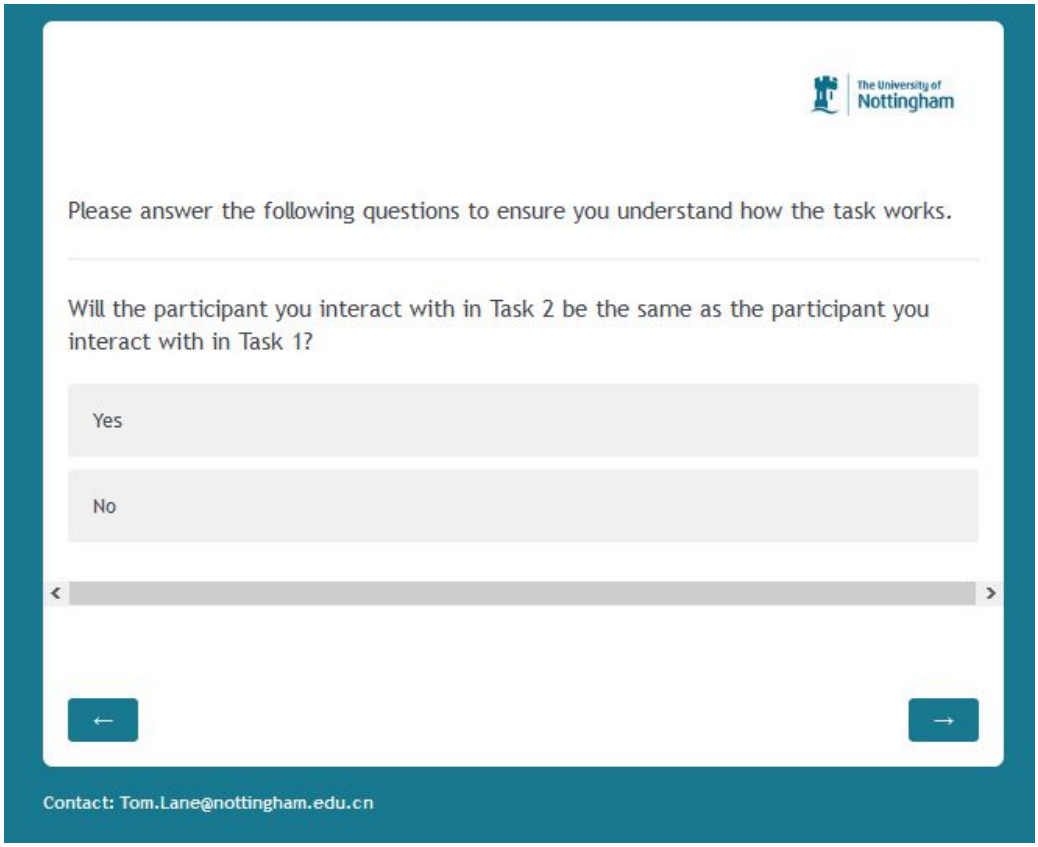


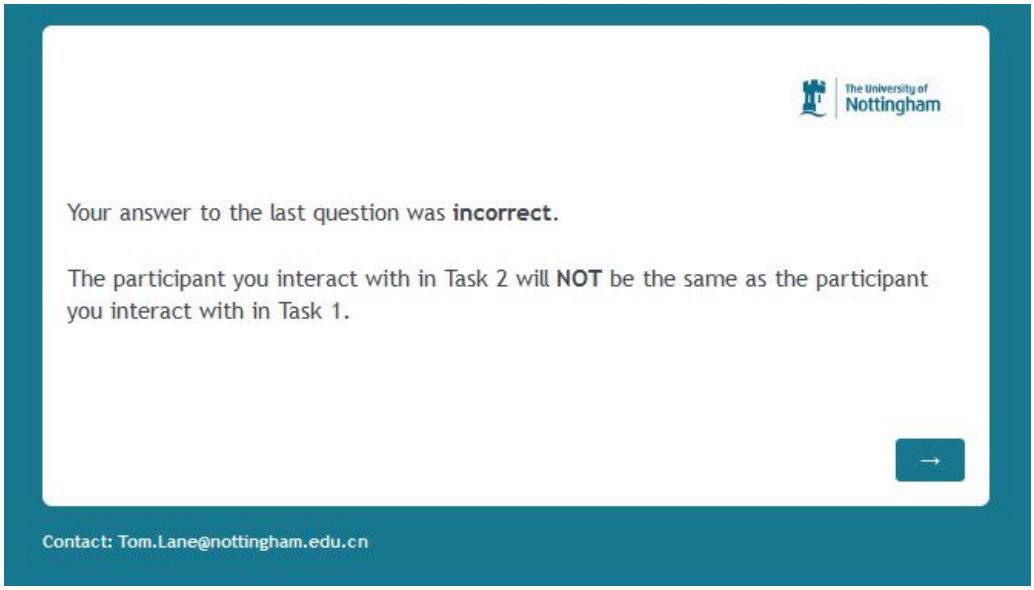


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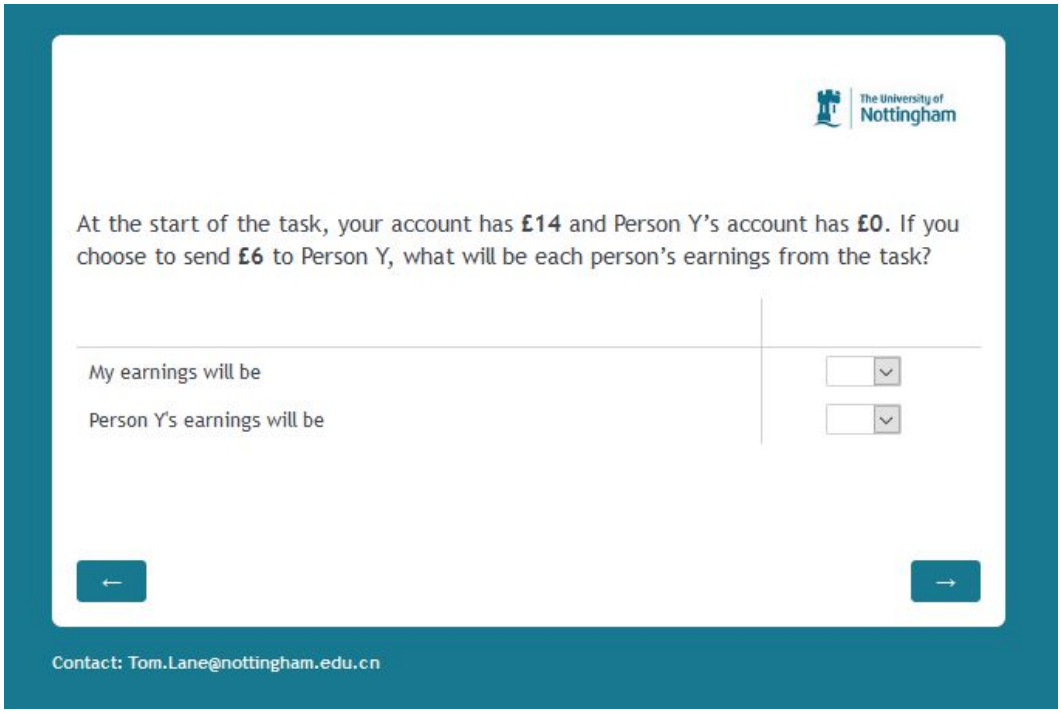


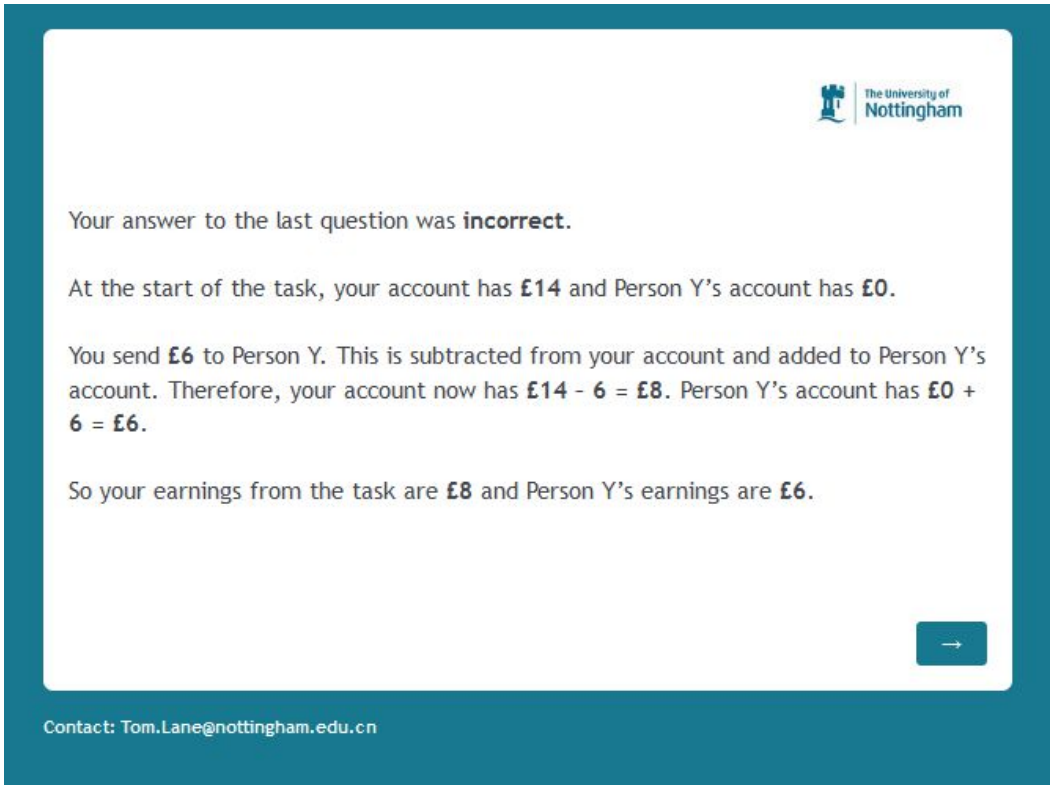


Note: the screen above appeared only if the previous question was answered incorrectly.

In this task, the **Wave One Personal Information** that we collected about you last time is revealed in full to Person Y. Here is a reminder of your **Wave One Personal Information**, as provided by your answers to the five questions we asked. Person Y can see your answers to all of these questions.

**Your Wave One Personal Information**

Ethnic Group: Other ethnic group
(Possible answers: White; Mixed or Multiple ethnic groups; Asian or Asian British; Black, Black British, Caribbean or African; Other ethnic group)

Gender: Neither Female nor Male
(Possible answers: Female; Male; Neither Female nor Male)

Opinion about Brexit: Brexit was wrong
(Possible answers: Brexit was right; Brexit was wrong)

Faculty: Faculty of Social Sciences
(Possible answers: Faculty of Arts; Faculty of Engineering; Faculty of Medicine and Health Sciences; Faculty of Science; Faculty of Social Sciences)

Painting Preference: Kandinsky
(Possible answers: Klee; Kandinsky)

←

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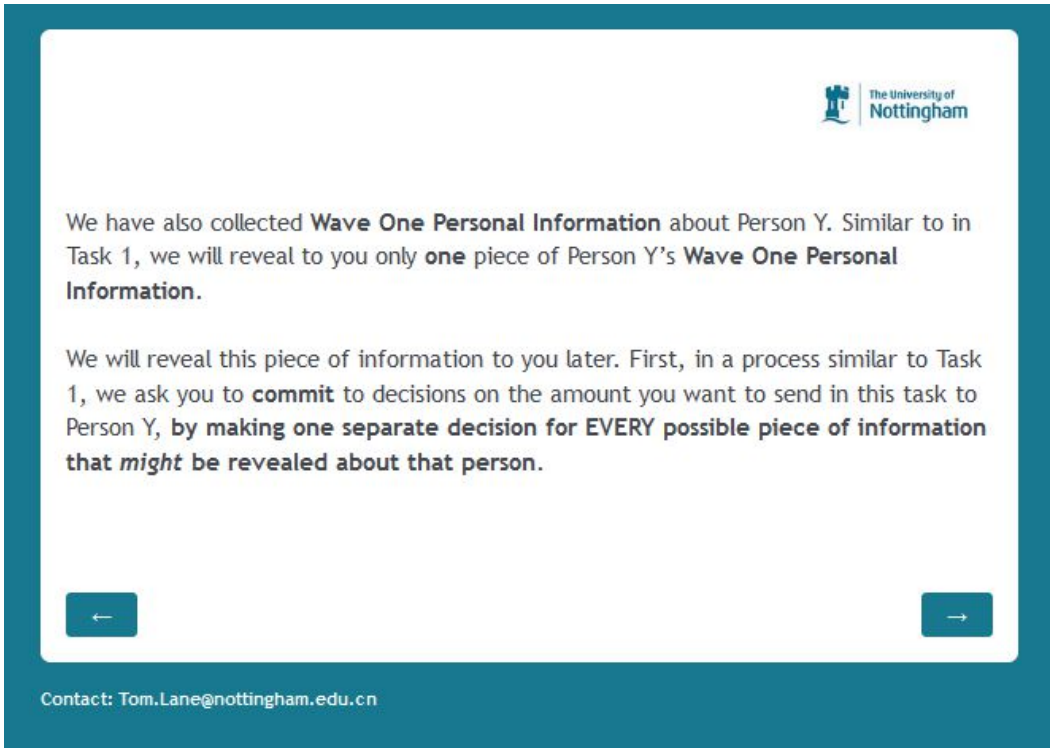
The University of Nottingham
We have also collected **Wave One Personal Information** about Person Y. Similar to in Task 1, we will reveal to you only **one** piece of Person Y's **Wave One Personal Information**.
We will reveal this piece of information to you later. First, in a process similar to Task 1, we ask you to **commit** to decisions on the amount you want to send in this task to Person Y, **by making one separate decision for EVERY possible piece of information that *might* be revealed about that person**.
←
→
Contact: Tom.Lane@nottingham.edu.cn

In other words, you are asked to commit to 17 separate decisions over how much to send Person Y, for every possible case of one of the following pieces of information being revealed to be true about that person:

- Person Y's U.K. Census ethnic group is revealed to be **White**
- Person Y's U.K. Census ethnic group is revealed to be **Mixed or Multiple ethnic groups**
- Person Y's U.K. Census ethnic group is revealed to be **Asian or Asian British**
- Person Y's U.K. Census ethnic group is revealed to be **Black, Black British, Caribbean or African**
- Person Y's U.K. Census ethnic group is revealed to be **Other ethnic group**
- Person Y is revealed to be **Female**
- Person Y is revealed to be **Male**
- Person Y is revealed to be **Neither Female nor Male**
- Person Y is revealed to believe **Brexit was right**
- Person Y is revealed to believe **Brexit was wrong**
- Person Y is revealed to study in the **Faculty of Arts**
- Person Y is revealed to study in the **Faculty of Engineering**
- Person Y is revealed to study in the **Faculty of Medicine and Health Sciences**
- Person Y is revealed to study in the **Faculty of Science**
- Person Y is revealed to study in the **Faculty of Social Sciences**
- Person Y is revealed to prefer the **Klee** painting over the Kandinsky painting
- Person Y is revealed to prefer the **Kandinsky** painting over the Klee painting

←

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The University of Nottingham

Later, we will truthfully reveal one piece of Person Y's **Wave One Personal Information**, and the one decision you committed to over how much to send, in the case that this particular piece of information was the one actually revealed, will be automatically implemented. Your other 16 decisions will not be implemented and will not count toward determining the outcome of the task.

Upon discovering the revealed piece of information, you are not allowed to change the decision you have already committed to about the amount to send Person Y. So, as you will not know which of the 17 decisions you make will be for real at the time you are committing to them, please consider all decisions carefully.

Note that your decisions over how much to send will **NOT** affect which piece of information is revealed to you. In fact, this has already been determined. We ask you to commit to all 17 decisions *before* we reveal the piece of information for the simple reason that we want to learn what decision you *would* make under all 17 different circumstances.

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The University of Nottingham

As in Task 1, we want to emphasize the important point that, although 5 of the decisions you will make will correspond to cases of receiving pieces of information about Person Y that are true (those cases corresponding to each of Person Y's true answers to the 5 questions), ***only*** the one decision you make, which corresponds to the case of receiving the piece of information **that is actually revealed**, will be implemented.

The one decision that is implemented will determine the earnings for both you and Person Y from this task. We will only reveal to Person Y the one decision you make which is actually implemented; the 16 other decisions, which are not implemented and do not count toward determining the task's outcome, will not be revealed to Person Y.

←

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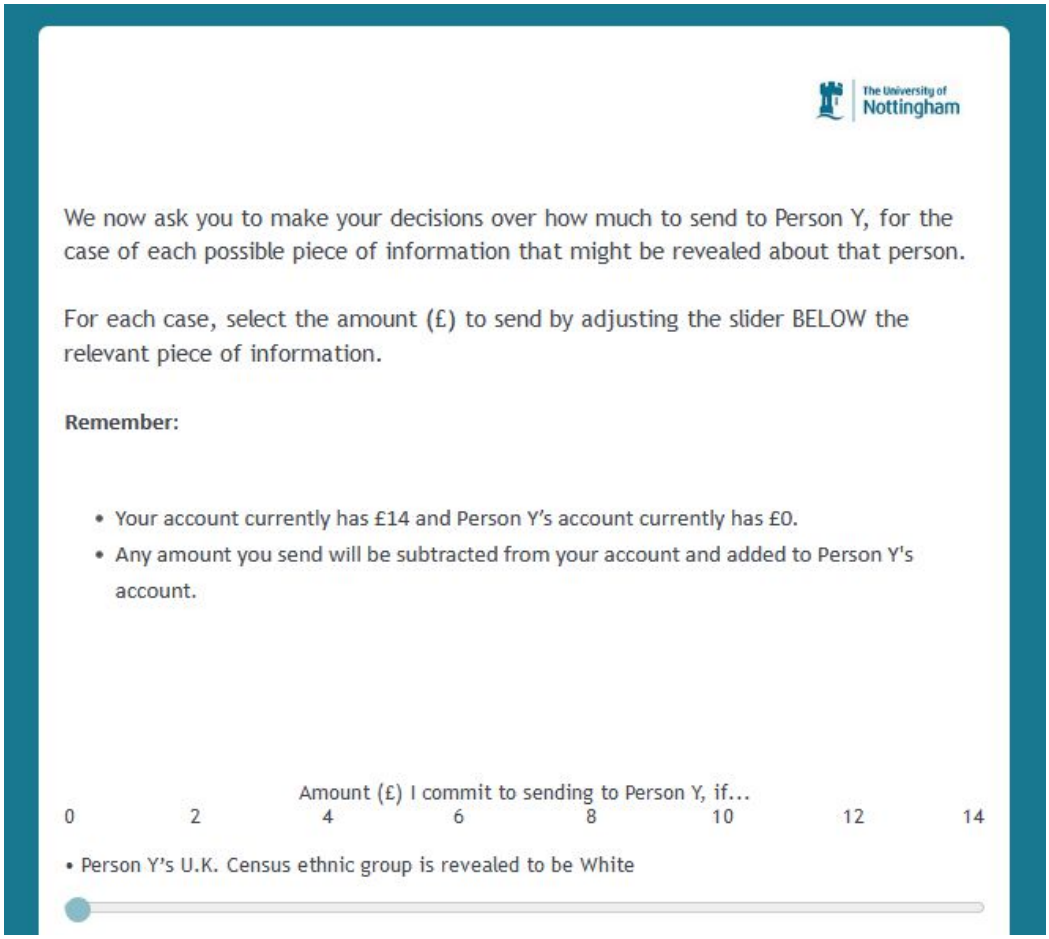
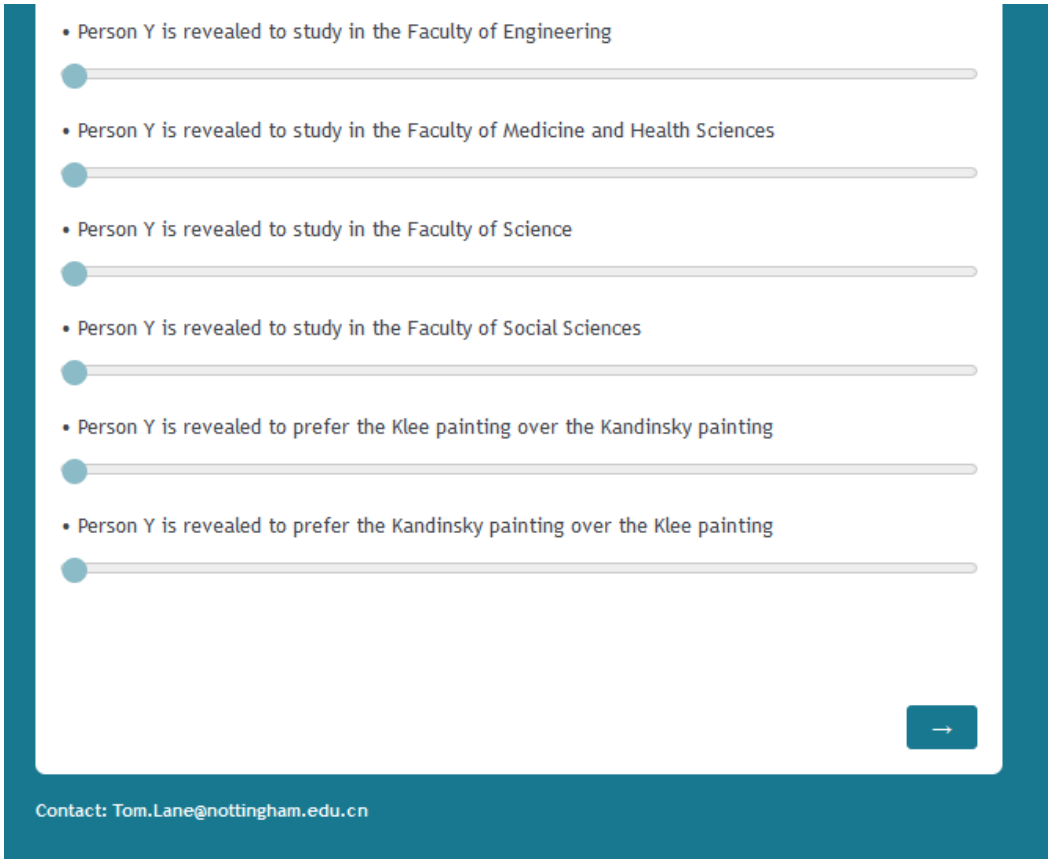
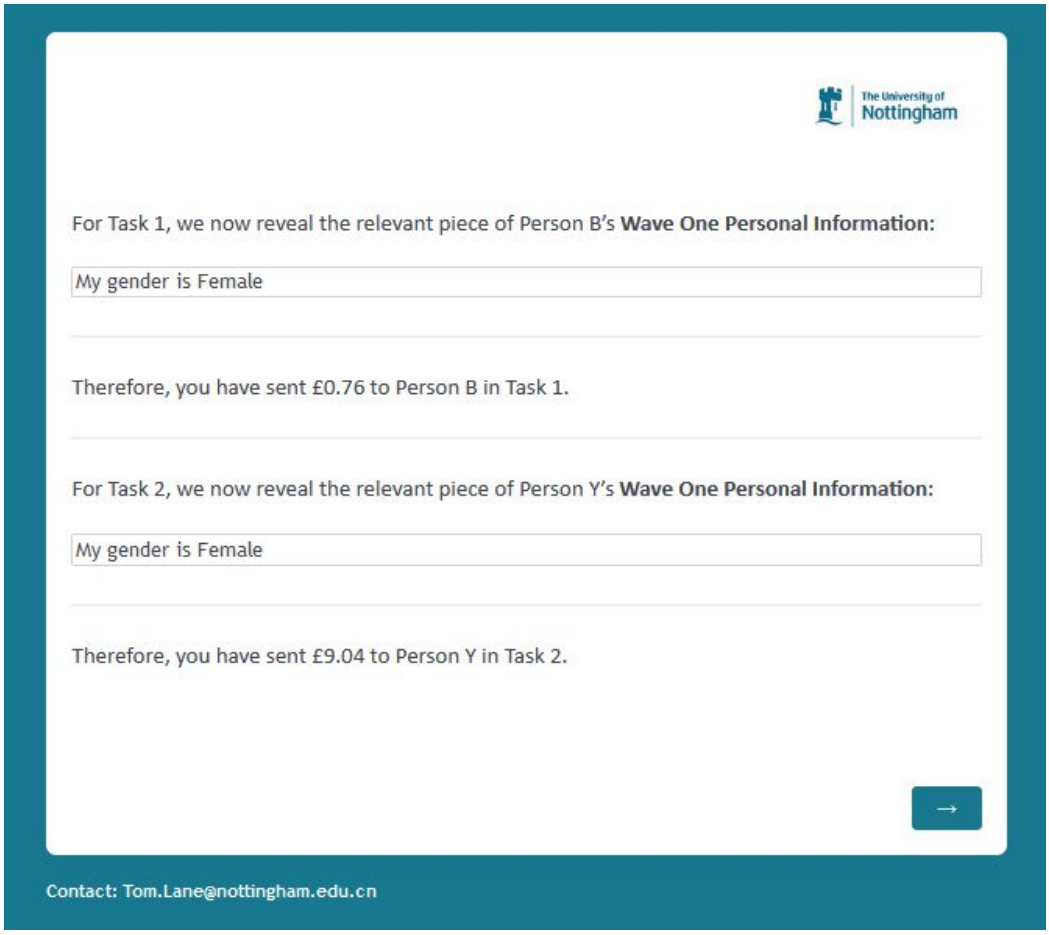
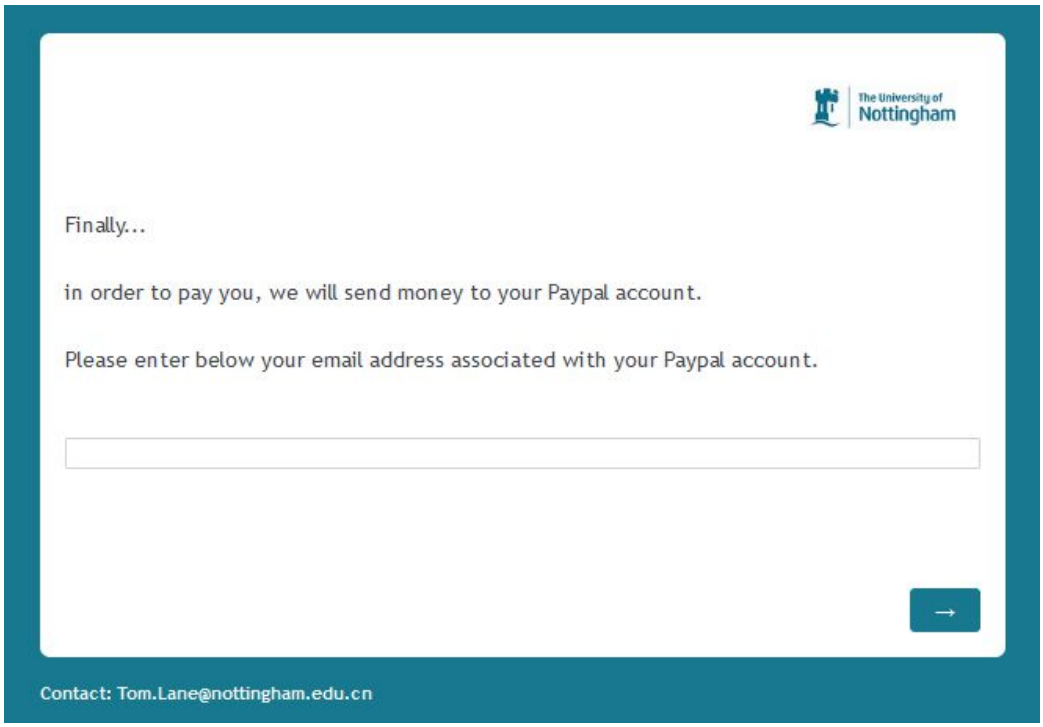
Contact: Tom.Lane@nottingham.edu.cn

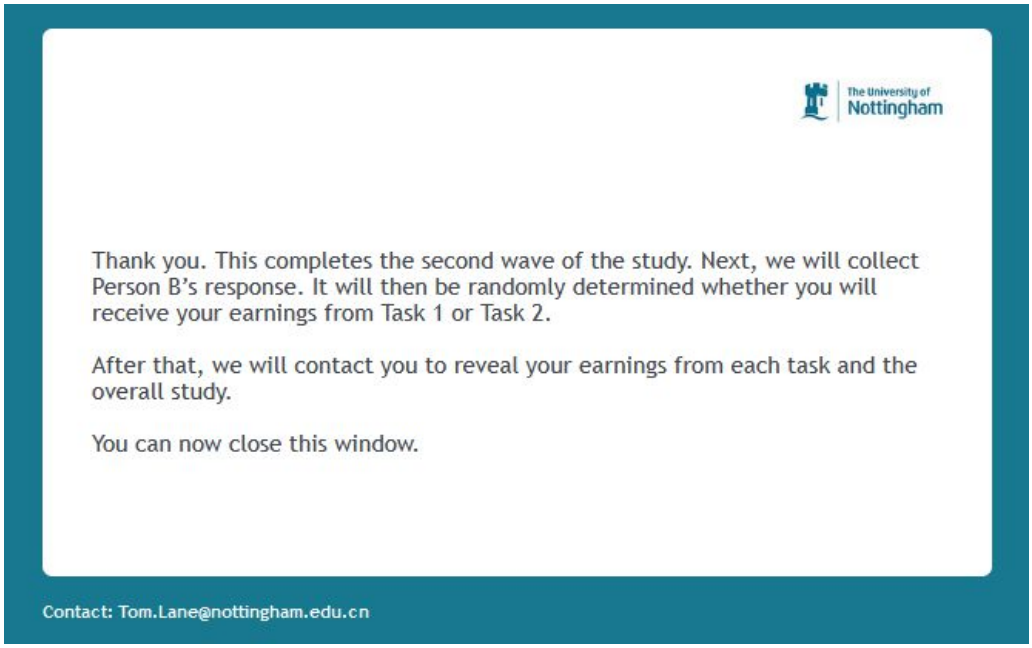

The University of Nottingham
We now ask you to make your decisions over how much to send to Person Y, for the case of each possible piece of information that might be revealed about that person.
For each case, select the amount (£) to send by adjusting the slider BELOW the relevant piece of information.
Remember:
• Your account currently has £14 and Person Y's account currently has £0.
• Any amount you send will be subtracted from your account and added to Person Y's account.
Amount (£) I commit to sending to Person Y, if...
0 2 4 6 8 10 12 14
• Person Y's U.K. Census ethnic group is revealed to be White

- Person Y's U.K. Census ethnic group is revealed to be Mixed or Multiple ethnic groups
- Person Y's U.K. Census ethnic group is revealed to be Asian or Asian British
- Person Y's U.K. Census ethnic group is revealed to be Black, Black British, Caribbean or African
- Person Y's U.K. Census ethnic group is revealed to be Other ethnic group
- Person Y is revealed to be Female
- Person Y is revealed to be Male
- Person Y is revealed to be Neither Female nor Male
- Person Y is revealed to believe Brexit was right
- Person Y is revealed to believe Brexit was wrong
- Person Y is revealed to study in the Faculty of Arts

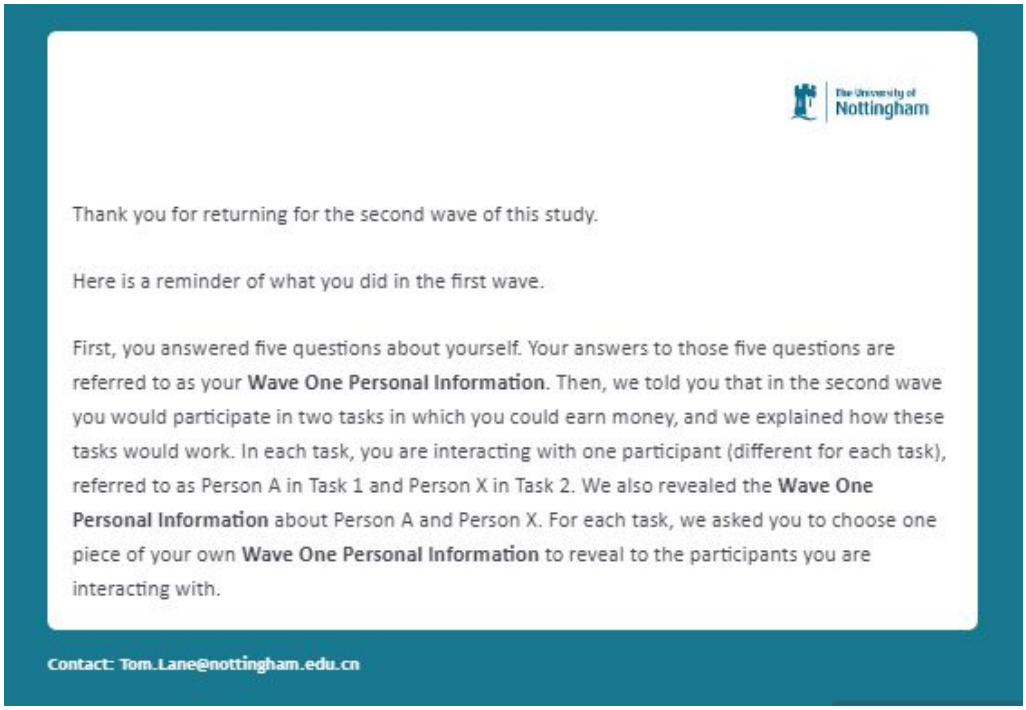

• Person Y is revealed to study in the Faculty of Engineering
• Person Y is revealed to study in the Faculty of Medicine and Health Sciences
• Person Y is revealed to study in the Faculty of Science
• Person Y is revealed to study in the Faculty of Social Sciences
• Person Y is revealed to prefer the Klee painting over the Kandinsky painting
• Person Y is revealed to prefer the Kandinsky painting over the Klee painting
→
Contact: Tom.Lane@nottingham.edu.cn

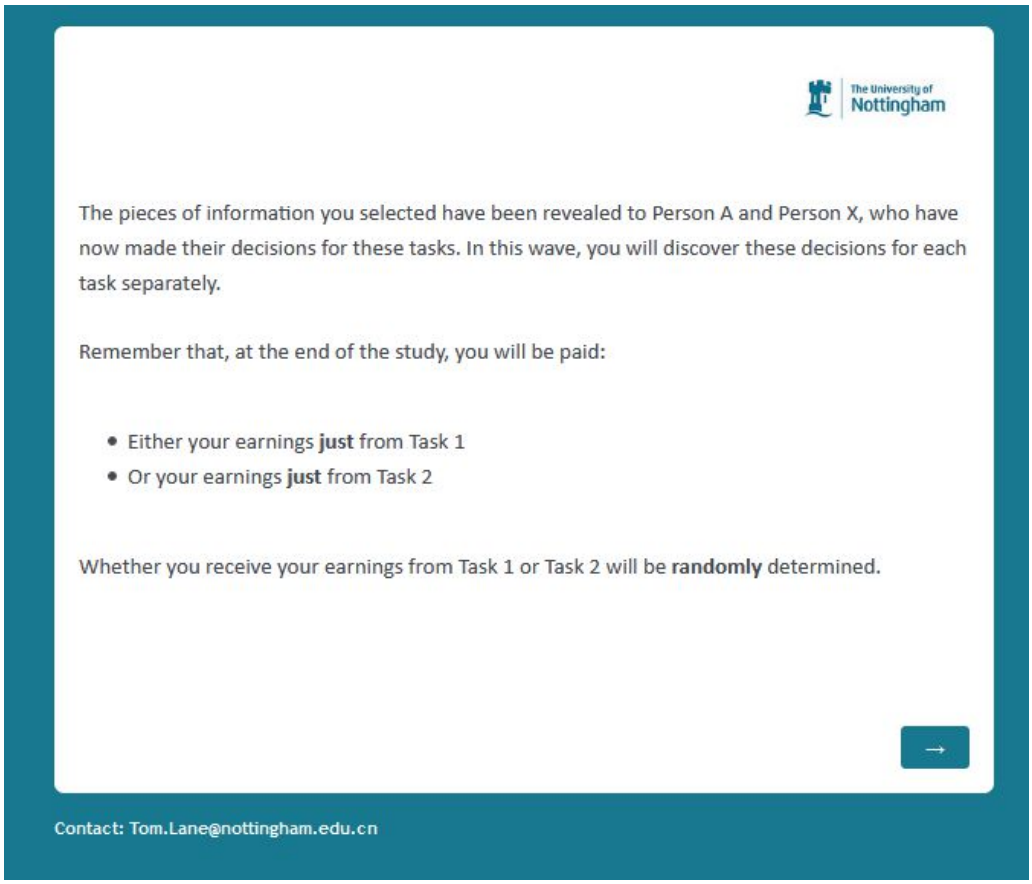

The University of Nottingham
For Task 1, we now reveal the relevant piece of Person B's **Wave One Personal Information:**
My gender is Female
Therefore, you have sent £0.76 to Person B in Task 1.
For Task 2, we now reveal the relevant piece of Person Y's **Wave One Personal Information:**
My gender is Female
Therefore, you have sent £9.04 to Person Y in Task 2.
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Finally...
in order to pay you, we will send money to your Paypal account.
Please enter below your email address associated with your Paypal account.
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Thank you. This completes the second wave of the study. Next, we will collect Person B's response. It will then be randomly determined whether you will receive your earnings from Task 1 or Task 2.
After that, we will contact you to reveal your earnings from each task and the overall study.
You can now close this window.
Contact: Tom.Lane@nottingham.edu.cn

**Second movers – Wave 2**



**Task 1**

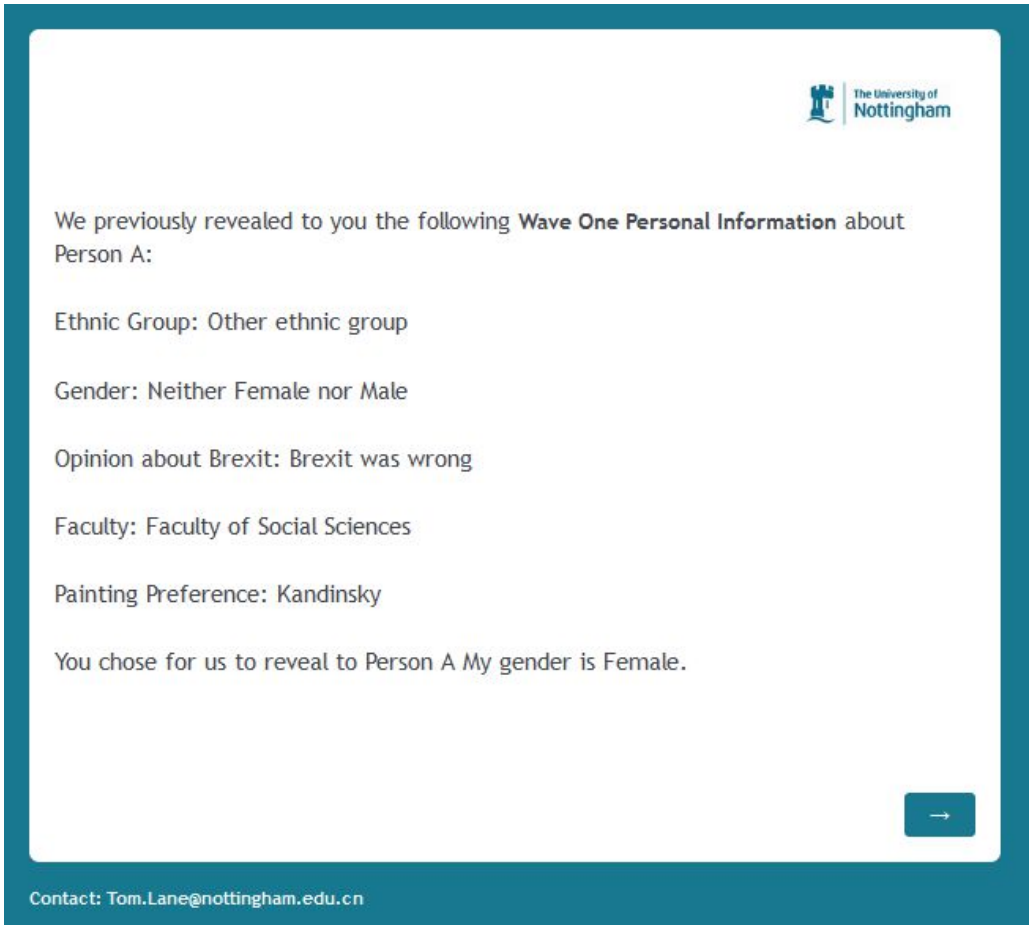
First, here's a reminder of how the task works:

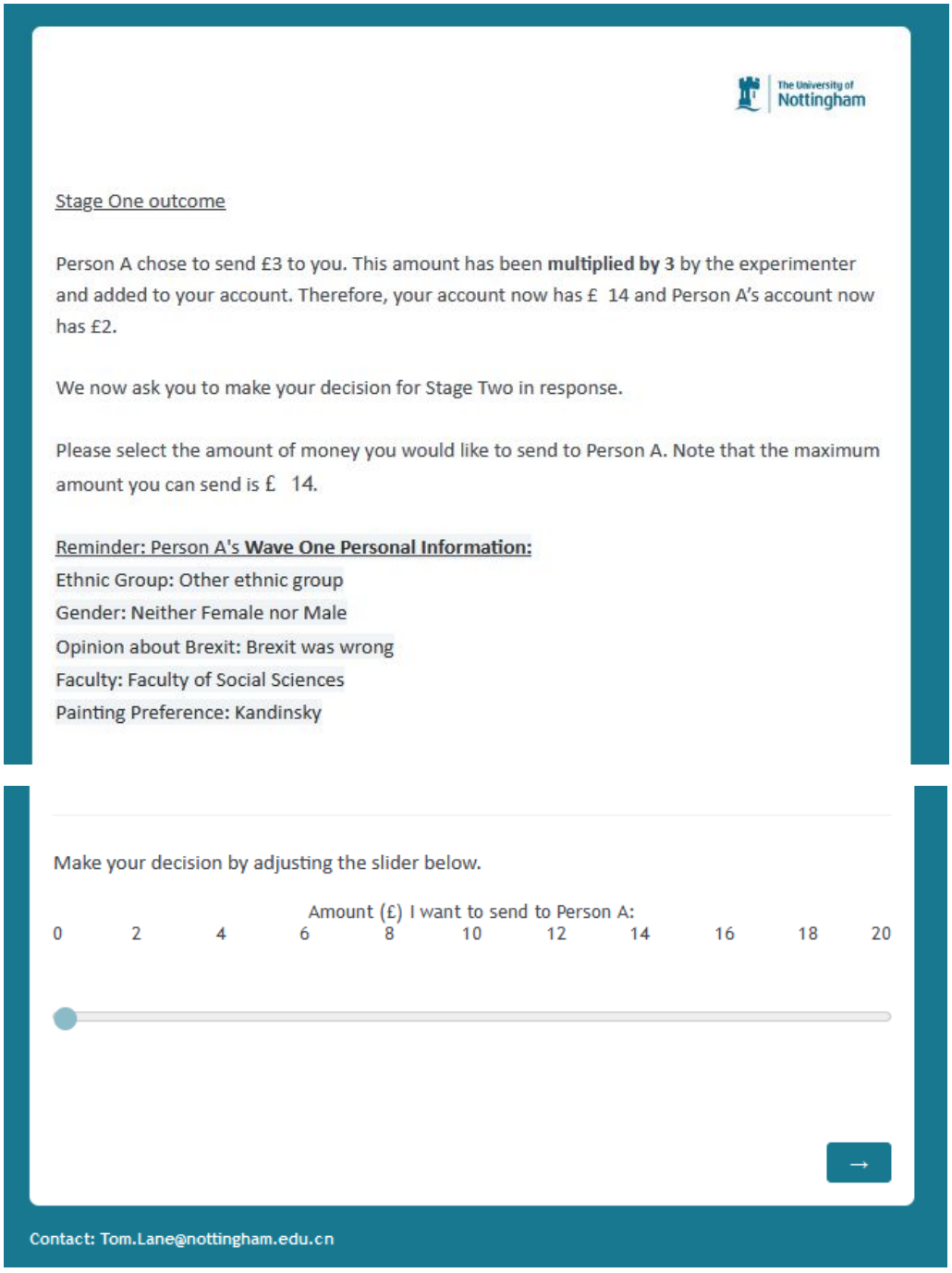
Both Person A and you started the task with accounts of **£5**. Each person's earnings from the task will be equal to the amount held in that person's account at the end of the task.

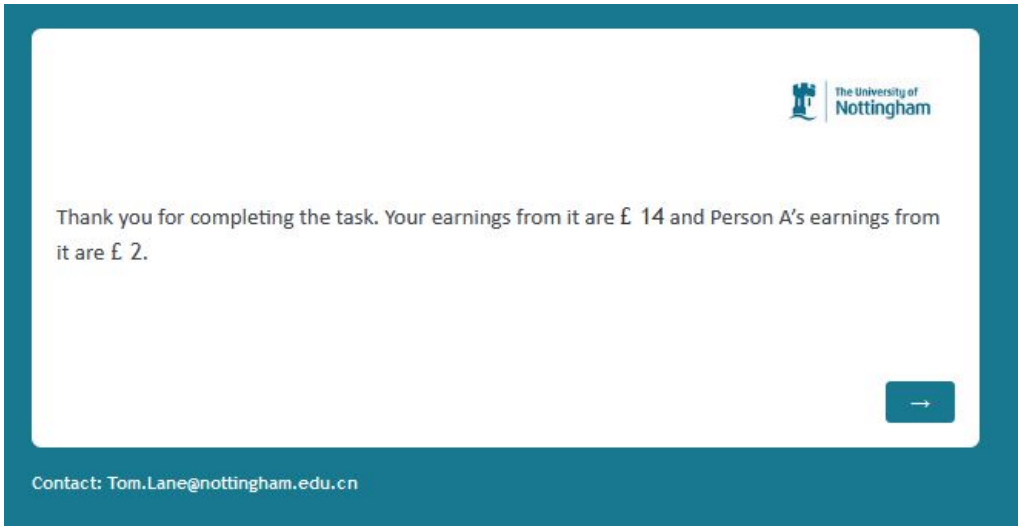
**Stage One:**
In Stage One, Person A's decision was to choose an amount of money to send to you. Person A could choose any amount between **£0** and **£5**. Any money that Person A has chosen to send will be subtracted from Person A's account and **multiplied by 3** by the experimenter before it is added to your account.

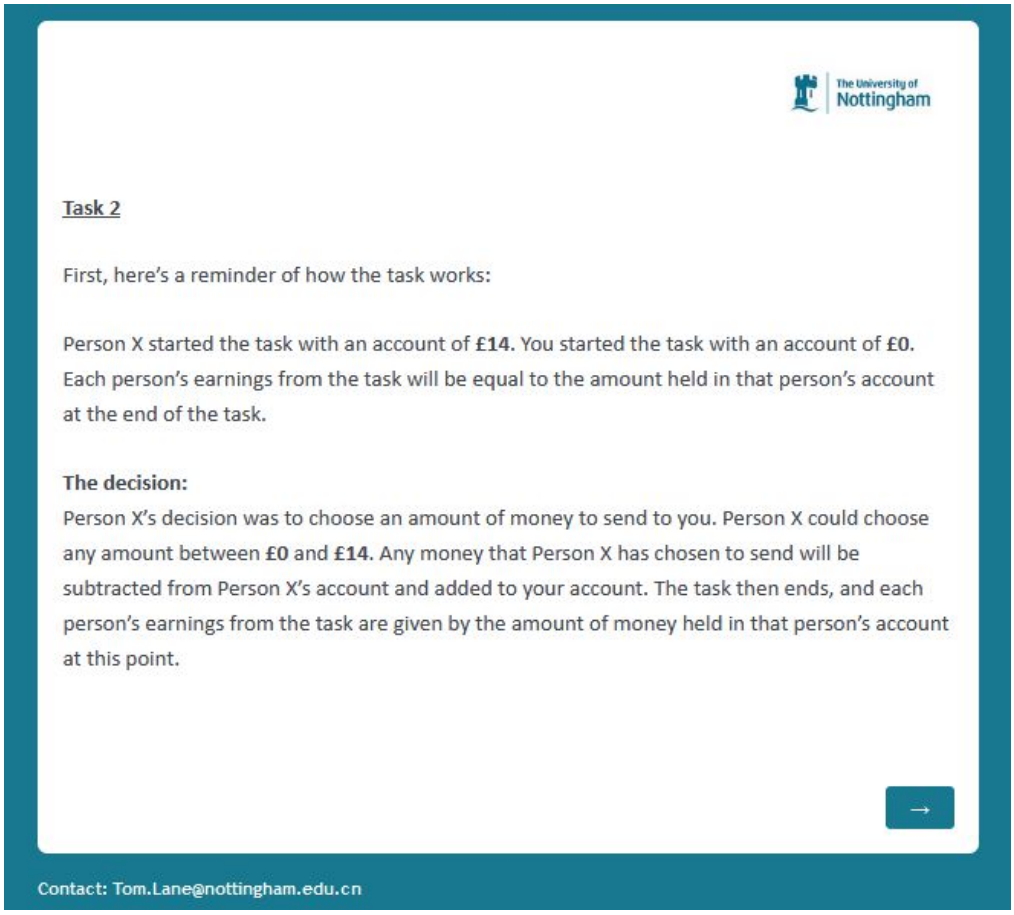
**Stage Two:**
In Stage Two, your decision is to choose an amount of money to send to Person A. You can choose any amount to send to Person A between **£0** and the **total amount of money held in your account after Stage One of the task**. Any amount that you choose to send will be subtracted from your account and added to Person A's account. The task then ends, and each person's earnings from the task are given by the amount of money held in that person's account at the end of the task.

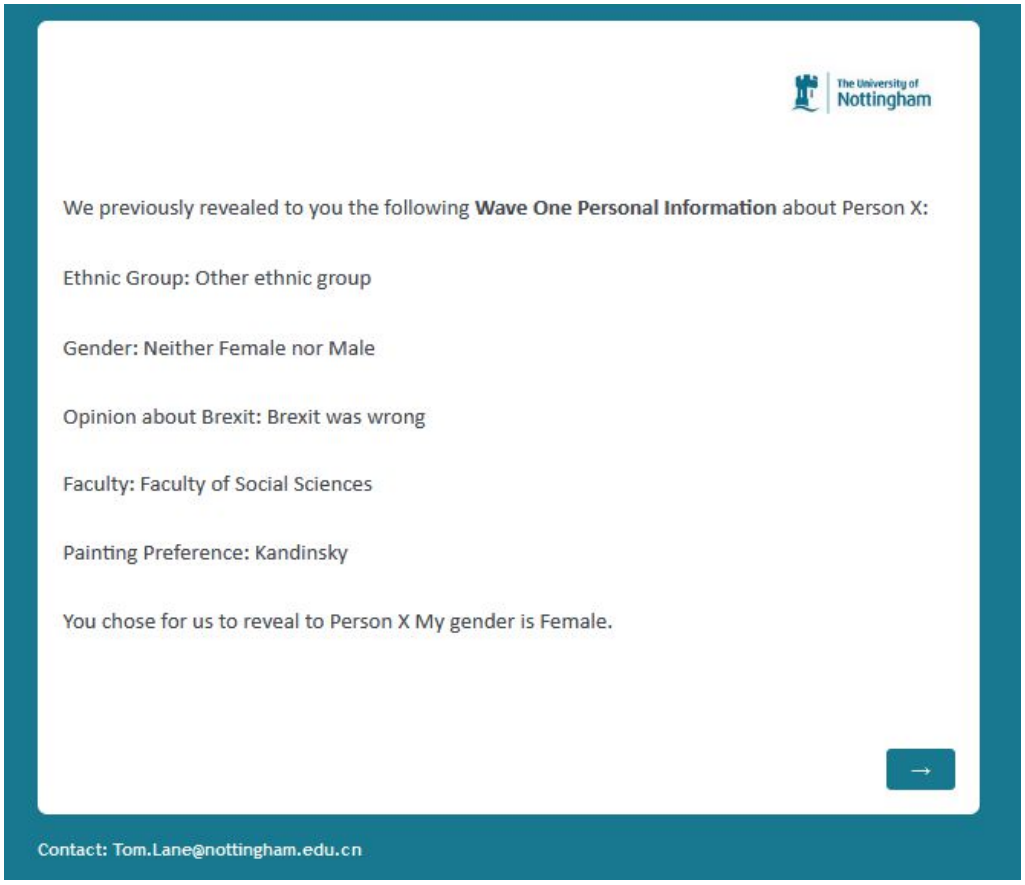
→

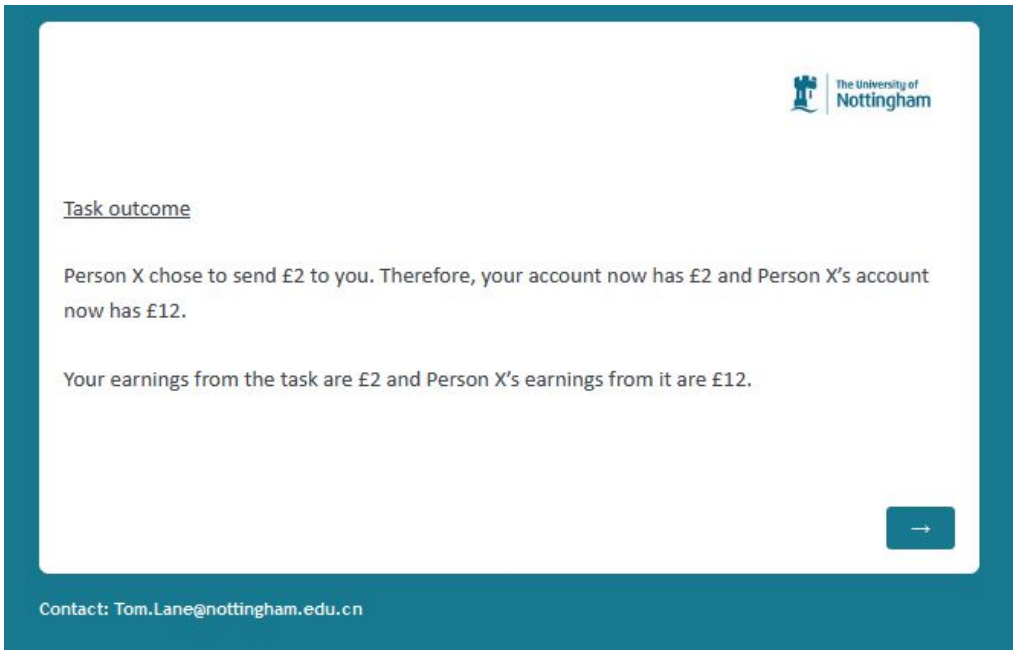

The University of Nottingham
We previously revealed to you the following **Wave One Personal Information** about Person A:
Ethnic Group: Other ethnic group
Gender: Neither Female nor Male
Opinion about Brexit: Brexit was wrong
Faculty: Faculty of Social Sciences
Painting Preference: Kandinsky
You chose for us to reveal to Person A My gender is Female.
→
Contact: Tom.Lane@nottingham.edu.cn

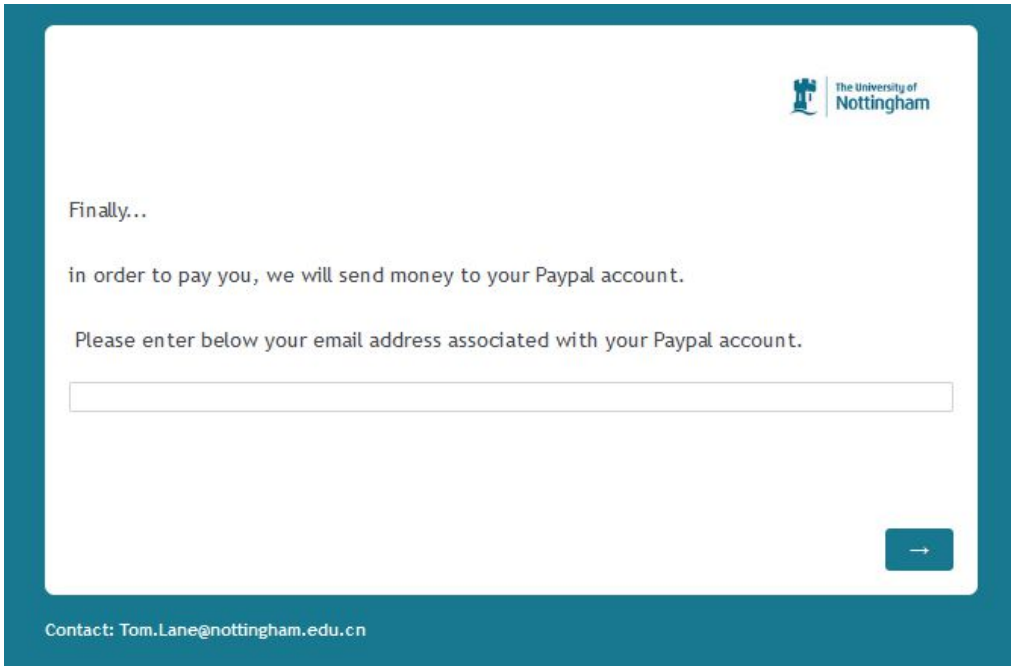

The University of Nottingham
Stage One outcome
Person A chose to send £3 to you. This amount has been multiplied by 3 by the experimenter and added to your account. Therefore, your account now has £ 14 and Person A's account now has £2.
We now ask you to make your decision for Stage Two in response.
Please select the amount of money you would like to send to Person A. Note that the maximum amount you can send is £ 14.
Reminder: Person A's Wave One Personal Information:
Ethnic Group: Other ethnic group
Gender: Neither Female nor Male
Opinion about Brexit: Brexit was wrong
Faculty: Faculty of Social Sciences
Painting Preference: Kandinsky
Make your decision by adjusting the slider below.
Amount (£) I want to send to Person A:
0 2 4 6 8 10 12 14 16 18 20
→
Contact: Tom.Lane@nottingham.edu.cn

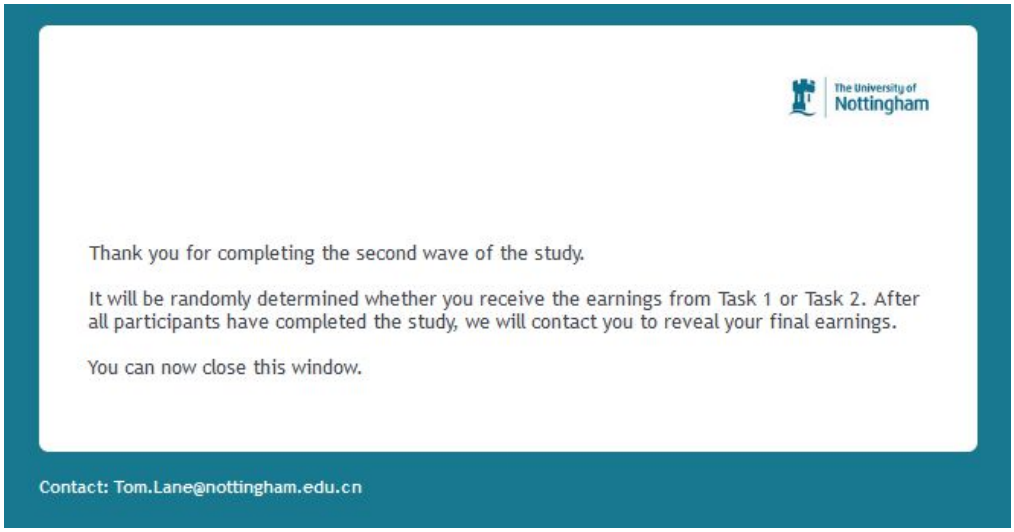

The University of Nottingham
Thank you for completing the task. Your earnings from it are £ 14 and Person A's earnings from it are £ 2.
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Task 2
First, here's a reminder of how the task works:
Person X started the task with an account of £14. You started the task with an account of £0. Each person's earnings from the task will be equal to the amount held in that person's account at the end of the task.
The decision:
Person X's decision was to choose an amount of money to send to you. Person X could choose any amount between £0 and £14. Any money that Person X has chosen to send will be subtracted from Person X's account and added to your account. The task then ends, and each person's earnings from the task are given by the amount of money held in that person's account at this point.
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
We previously revealed to you the following **Wave One Personal Information** about Person X:
Ethnic Group: Other ethnic group
Gender: Neither Female nor Male
Opinion about Brexit: Brexit was wrong
Faculty: Faculty of Social Sciences
Painting Preference: Kandinsky
You chose for us to reveal to Person X My gender is Female.
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Task outcome
Person X chose to send £2 to you. Therefore, your account now has £2 and Person X's account now has £12.
Your earnings from the task are £2 and Person X's earnings from it are £12.
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Finally...
in order to pay you, we will send money to your Paypal account.
Please enter below your email address associated with your Paypal account.
→
Contact: Tom.Lane@nottingham.edu.cn


The University of Nottingham
Thank you for completing the second wave of the study.
It will be randomly determined whether you receive the earnings from Task 1 or Task 2. After all participants have completed the study, we will contact you to reveal your final earnings.
You can now close this window.
Contact: Tom.Lane@nottingham.edu.cn

## Appendix B: Further Data and Analysis

### Table B1: Social identity characteristics of experimental subjects

| | | | | | |
|---|---|---|---|---|---|
| **Senders (N=213)** | | | | | |
| Gender | Female 60.1% | | Male 37.6% | | Non-binary 2.4% |
| Ethnicity | White 47.0% | Mixed 4.2% | Asian 33.8% | Black 10.8% | Other 4.2% |
| Painting Preference | Kandinsky 81.2% | | Klee 18.8% | | |
| Faculty | Arts 4.7% | Engineering 16.4% | Medicine/Health Sciences 12.7% | Science 29.1% | Social Sciences 37.1% |
| Politics | Anti-Brexit 86.9% | | Pro-Brexit 13.2% | | |
| **Receivers (N=213)** | | | | | |
| Gender | Female 64.3% | | Male 34.7% | | Non-binary 0.9% |
| Ethnicity | White 45.5% | Mixed 7.5% | Asian 36.2% | Black 5.2% | Other 5.6% |
| Painting Preference | Kandinsky 79.3% | | Klee 20.7% | | |
| Faculty | Arts 7.5% | Engineering 9.4% | Medicine/Health Sciences 19.3% | Science 21.6% | Social Sciences 42.3% |
| Politics | Anti-Brexit 86.9% | | Pro-Brexit 13.2% | | |

Note: One sender, due to a software glitch, completed the first wave twice and was initially paired with two receivers in each game. They were only invited to complete the second wave once and this table does not include the responses from their second participation in the first wave.

**Table B2: Significance tests on discrimination, predicted discrimination and actual vs predicted discrimination along gender dimension in dictator game**

| **Actual Discrimination** | | |
|---|---|---|
| | Sender gender | |
| | Female (N=121) | Male (N=77) |
| Female vs male | +*** | - |
| Female vs non-binary | +*** | + |
| Male vs non-binary | - | + |
| Ingroup vs average outgroup | +*** | + |
| **Predicted Discrimination** | | |
| | Sender gender | |
| | Female (N=127) | Male (N=81) |
| Female vs male | +*** | + |
| Female vs non-binary | +*** | +*** |
| Male vs non-binary | - | +*** |
| Ingroup vs average outgroup | +*** | +*** |
| **Actual vs Predicted Discrimination** | | |
| | Sender gender | |
| | Female (N=121) | Male (N=77) |
| Female vs male | -*** | - |
| Female vs non-binary | -*** | -*** |
| Male vs non-binary | + | -** |
| Ingroup vs average outgroup | -*** | - |

*Note: The top panel presents the direction and significance of average discrimination by senders of the identity type indicated at the column head when interacting with the two identity types indicated in the left-hand column. + indicates more sent to the identity type listed first; - indicates the reverse. The middle panel presents the equivalent analysis for the amounts sent predicted by the receivers matched with these senders. The bottom panel presents the direction and significance of the difference between actual and predicted discrimination; + indicates the type listed first is more favoured (or less disfavoured) relative to the type listed second in reality than is predicted. All tests are matched pairs t-tests. No tests conducted for non-binary senders (N=5). *p<0.1, **p<0.05, ***p<0.01.*

**Table B3: Significance tests on discrimination, predicted discrimination and actual vs predicted discrimination along gender dimension in trust game**

| **Actual Discrimination** | | |
|---|---|---|
| | Sender gender | |
| | Female (N=121) | Male (N=77) |
| Female vs male | +*** | + |
| Female vs non-binary | +*** | + |
| Male vs non-binary | -*** | + |
| Ingroup vs average outgroup | +*** | + |
| **Predicted Discrimination** | | |
| | Sender gender | |
| | Female (N=127) | Male (N=81) |
| Female vs male | +*** | - |
| Female vs non-binary | +*** | +*** |
| Male vs non-binary | -*** | +*** |
| Ingroup vs average outgroup | +*** | +*** |
| **Actual vs Predicted Discrimination** | | |
| | Sender gender | |
| | Female (N=121) | Male (N=77) |
| Female vs male | -*** | + |
| Female vs non-binary | -*** | + |
| Male vs non-binary | -*** | -*** |
| Ingroup vs average outgroup | +** | -*** |

*Note: The top panel presents the direction and significance of average discrimination by senders of the identity type indicated at the column head when interacting with the two identity types indicated in the left-hand column. + indicates more sent to the identity type listed first; - indicates the reverse. The middle panel presents the equivalent analysis for the amounts sent predicted by the receivers matched with these senders. The bottom panel presents the direction and significance of the difference between actual and predicted discrimination; + indicates the type listed first is more favoured (or less disfavoured) relative to the type listed second in reality than is predicted. All tests are matched pairs t-tests. No tests conducted for non-binary senders (N=5). *p<0.1, **p<0.05, ***p<0.01.*

**Table B4: Significance tests on discrimination, predicted discrimination and actual vs predicted discrimination along ethnic dimension in dictator game**

| **Actual Discrimination** | | | | | |
|---|---|---|---|---|---|
| | Sender ethnicity | | | | |
| | White (N=95) | Mixed (N=8) | Asian (N=70) | Black (N=22) | Other (N=8) |
| White vs Mixed | - | -** | -** | -*** | - |
| White vs Asian | - | -* | -*** | -*** | - |
| White vs Black | -* | - | -** | -*** | - |
| White vs Other | - | - | - | -*** | - |
| Mixed vs Asian | + | - | - | + | + |
| Mixed vs Black | - | + | + | -*** | - |
| Mixed vs Other | + | + | + | - | + |
| Asian vs Black | - | + | +** | -*** | - |
| Asian vs Other | - | + | +* | - | 0 |
| Black vs Other | + | + | + | +*** | 0 |
| Ingroup vs average outgroup | - | + | +** | +*** | + |
| **Predicted Discrimination** | | | | | |
| | Sender ethnicity | | | | |
| | White (N=100) | Mixed (N=9) | Asian (N=72) | Black (N=23) | Other (N=9) |
| White vs Mixed | +** | -*** | -** | -* | -** |
| White vs Asian | + | -* | -*** | -** | - |
| White vs Black | + | -** | -*** | -*** | -** |
| White vs Other | +** | -*** | - | - | -* |
| Mixed vs Asian | - | +*** | -*** | + | - |
| Mixed vs Black | - | - | - | -*** | - |
| Mixed vs Other | +* | - | + | +* | - |
| Asian vs Black | + | -** | +*** | -*** | - |
| Asian vs Other | +* | -*** | +*** | +* | - |
| Black vs Other | +** | - | +** | +*** | - |
| Ingroup vs average outgroup | +* | +* | +*** | +*** | + |
| **Actual vs Predicted Discrimination** | | | | | |
| | Sender ethnicity | | | | |
| | White (N=95) | Mixed (N=8) | Asian (N=70) | Black (N=22) | Other (N=8) |
| White vs Mixed | -** | +** | + | + | + |
| White vs Asian | -* | + | +*** | + | + |
| White vs Black | -** | + | +* | + | + |
| White vs Other | -** | +** | + | - | + |
| Mixed vs Asian | + | -* | +*** | - | + |
| Mixed vs Black | + | - | + | + | + |
| Mixed vs Other | - | 0 | + | - | + |
| Asian vs Black | - | +* | -*** | + | - |
| Asian vs Other | -* | +*** | -*** | - | + |
| Black vs Other | - | + | - | -* | + |
| Ingroup vs average outgroup | -** | - | -*** | - | - |

*Note: The top panel presents the direction and significance of average discrimination by senders of the identity type indicated at the column head when interacting with the two identity types indicated in the left-hand column. + indicates more sent to the identity type listed first; - indicates the reverse. The middle panel presents the equivalent analysis for the amounts sent predicted by the receivers matched with these senders. The bottom panel presents the direction and significance of the difference between actual and predicted discrimination; + indicates the type listed first is more favoured (or less disfavoured) relative to the type listed second in reality than is predicted. Black text indicates tests are matched pairs t-tests; red indicates they are Wilcoxon signed-rank tests. No tests conducted for mixed or other senders (both N=9). *p<0.1, **p<0.05, ***p<0.01.*

**Table B5: Significance tests on discrimination, predicted discrimination and actual vs predicted discrimination along ethnic dimension in trust game**

| **Actual Discrimination** | | | | | |
|---|---|---|---|---|---|
| | Sender ethnicity | | | | |
| | White (N=95) | Mixed (N=8) | Asian (N=70) | Black (N=22) | Other (N=8) |
| White vs Mixed | -** | + | - | -*** | - |
| White vs Asian | -** | + | -** | -*** | - |
| White vs Black | -* | + | + | -*** | - |
| White vs Other | -* | + | +* | -*** | - |
| Mixed vs Asian | - | - | -* | - | - |
| Mixed vs Black | + | + | + | -*** | + |
| Mixed vs Other | - | - | +** | -** | + |
| Asian vs Black | + | 0 | +*** | -*** | 0 |
| Asian vs Other | + | 0 | +*** | - | + |
| Black vs Other | - | - | + | +*** | + |
| Ingroup vs average outgroup | -*** | + | +*** | +*** | - |
| **Predicted Discrimination** | | | | | |
| | Sender ethnicity | | | | |
| | White (N=100) | Mixed (N=9) | Asian (N=72) | Black (N=23) | Other (N=9) |
| White vs Mixed | +** | -* | -*** | -*** | - |
| White vs Asian | +** | -** | -*** | -*** | - |
| White vs Black | +** | -* | -*** | -*** | - |
| White vs Other | +*** | -** | -** | -** | - |
| Mixed vs Asian | + | + | -*** | - | - |
| Mixed vs Black | + | + | - | -*** | - |
| Mixed vs Other | + | + | +** | + | - |
| Asian vs Black | - | + | +*** | -*** | - |
| Asian vs Other | + | - | +*** | - | - |
| Black vs Other | + | - | +*** | +*** | - |
| Ingroup vs average outgroup | +** | +* | +*** | +*** | + |
| **Actual vs Predicted Discrimination** | | | | | |
| | Sender ethnicity | | | | |
| | White (N=95) | Mixed (N=8) | Asian (N=70) | Black (N=22) | Other (N=8) |
| White vs Mixed | -*** | +** | +** | + | + |
| White vs Asian | -*** | +** | +*** | + | - |
| White vs Black | -** | +* | +*** | + | + |
| White vs Other | -*** | +** | +** | + | +** |
| Mixed vs Asian | - | -** | +*** | - | - |
| Mixed vs Black | - | - | +* | + | + |
| Mixed vs Other | - | - | - | - | +** |
| Asian vs Black | + | - | -** | + | + |
| Asian vs Other | - | +** | -*** | - | +*** |
| Black vs Other | - | + | -*** | -** | +** |
| Ingroup vs average outgroup | -*** | -** | -*** | - | -*** |

*Note: The top panel presents the direction and significance of average discrimination by senders of the identity type indicated at the column head when interacting with the two identity types indicated in the left-hand column. + indicates more sent to the identity type listed first; - indicates the reverse. The middle panel presents the equivalent analysis for the amounts sent predicted by the receivers matched with these senders. The bottom panel presents the direction and significance of the difference between actual and predicted discrimination; + indicates the type listed first is more favoured (or less disfavoured) relative to the type listed second in reality than is predicted. Black text indicates tests are matched pairs t-tests; red indicates they are Wilcoxon signed-rank tests. No tests conducted for mixed or other senders (both N=9). *p<0.1, **p<0.05, ***p<0.01.*

**Table B6: Significance tests on discrimination, predicted discrimination and actual vs predicted discrimination along artificial identity dimension in dictator game**

| **Actual Discrimination** | | |
|---|---|---|
| | Sender Painting preference | |
| | Kandinsky (N=166) | Klee (N=37) |
| Kandinsky vs Klee | +* | - |
| **Predicted Discrimination** | | |
| | Sender Painting preference | |
| | Kandinsky (N=172) | Klee (N=41) |
| Kandinsky vs Klee | +*** | -** |
| **Actual vs Predicted Discrimination** | | |
| | Sender Painting preference | |
| | Kandinsky (N=166) | Klee (N=37) |
| Kandinsky vs Klee | -*** | + |

*Note: The top panel presents the direction and significance of average discrimination by senders of the identity type indicated at the column head when interacting with Kandinsky-preferring and Klee-preferring receivers. + indicates more sent to Kandinsky-preferring receivers; - indicates the reverse. The middle panel presents the equivalent analysis for the amounts sent predicted by the receivers matched with these senders. The bottom panel presents the direction and significance of the difference between actual and predicted discrimination; + indicates Kandinsky-preferring receivers are more favoured (or less disfavoured) relative to Klee-preferring receivers in reality than is predicted. All tests are matched pairs t-tests. *p<0.1, **p<0.05, ***p<0.01.*

**Table B7: Significance tests on discrimination, predicted discrimination and actual vs predicted discrimination along artificial identity dimension in trust game**

| **Actual Discrimination** | | |
|---|---|---|
| | Sender Painting preference | |
| | Kandinsky (N=166) | Klee (N=37) |
| Kandinsky vs Klee | + | - |
| **Predicted Discrimination** | | |
| | Sender Painting preference | |
| | Kandinsky (N=172) | Klee (N=41) |
| Kandinsky vs Klee | +*** | -*** |
| **Actual vs Predicted Discrimination** | | |
| | Sender Painting preference | |
| | Kandinsky (N=166) | Klee (N=37) |
| Kandinsky vs Klee | -*** | +*** |

*Note: The top panel presents the direction and significance of average discrimination by senders of the identity type indicated at the column head when interacting with Kandinsky-preferring and Klee-preferring receivers. + indicates more sent to Kandinsky-preferring receivers; - indicates the reverse. The middle panel presents the equivalent analysis for the amounts sent predicted by the receivers matched with these senders. The bottom panel presents the direction and significance of the difference between actual and predicted discrimination; + indicates Kandinsky-preferring receivers are more favoured (or less disfavoured) relative to Klee-preferring receivers in reality than is predicted. All tests are matched pairs t-tests. *p<0.1, **p<0.05, ***p<0.01.*

**Table B8: Significance tests on discrimination, predicted discrimination and actual vs predicted discrimination along faculty dimension in dictator game**

| **Actual Discrimination** | | | | | |
|---|---|---|---|---|---|
| | Sender Faculty | | | | |
| | Arts (N=10) | Engineering (N=32) | Medicine (N=26) | Science (N=61) | Social Science (N=74) |
| Arts vs Engineering | +* | -** | - | -* | + |
| Arts vs Medicine | - | - | -** | -** | -*** |
| Arts vs Science | +* | -* | -* | -*** | -* |
| Arts vs Social Science | + | - | - | - | -*** |
| Engineering vs Medicine | -** | + | - | - | -*** |
| Engineering vs Science | + | + | - | -*** | -** |
| Engineering vs Social Science | + | +** | - | + | -*** |
| Medicine vs Science | +** | - | + | - | + |
| Medicine vs Social Science | + | +* | + | +** | -* |
| Science vs Social Science | - | +* | + | +*** | -** |
| Ingroup vs average outgroup | + | +* | +* | +*** | +*** |
| **Predicted Discrimination** | | | | | |
| | Sender Faculty | | | | |
| | Arts (N=10) | Engineering (N=36) | Medicine (N=26) | Science (N=62) | Social Science (N=79) |
| Arts vs Engineering | + | -*** | -* | -** | + |
| Arts vs Medicine | +* | -*** | -*** | -*** | -*** |
| Arts vs Science | + | -*** | -*** | -*** | -* |
| Arts vs Social Science | + | -** | -*** | -*** | -*** |
| Engineering vs Medicine | - | +*** | -*** | -*** | -*** |
| Engineering vs Science | -* | +*** | -*** | -*** | -* |
| Engineering vs Social Science | - | +*** | - | + | -*** |
| Medicine vs Science | + | - | +** | -*** | + |
| Medicine vs Social Science | - | +* | +*** | +*** | -*** |
| Science vs Social Science | - | +* | +* | +*** | -*** |
| Ingroup vs average outgroup | + | +*** | +*** | +*** | +*** |
| **Actual vs Predicted Discrimination** | | | | | |
| | Sender Faculty | | | | |
| | Arts (N=10) | Engineering (N=32) | Medicine (N=26) | Science (N=61) | Social Science (N=74) |
| Arts vs Engineering | - | +*** | + | + | + |
| Arts vs Medicine | -* | +** | +** | +*** | + |
| Arts vs Science | - | +** | +* | +*** | + |
| Arts vs Social Science | - | + | +** | +** | +*** |
| Engineering vs Medicine | - | -** | +*** | + | +* |
| Engineering vs Science | + | -*** | +* | +*** | + |
| Engineering vs Social Science | + | -*** | + | + | +*** |
| Medicine vs Science | +* | + | -* | +** | - |
| Medicine vs Social Science | + | - | -* | - | +** |
| Science vs Social Science | + | - | - | -*** | +** |
| Ingroup vs average outgroup | - | -*** | -** | -*** | -*** |

*Note: The top panel presents the direction and significance of average discrimination by senders of the identity type indicated at the column head when interacting with the two identity types indicated in the left-hand column. + indicates more sent to the identity type listed first; - indicates the reverse. The middle panel presents the equivalent analysis for the amounts sent predicted by the receivers matched with these senders. The bottom panel presents the direction and significance of the difference between actual and predicted discrimination; + indicates the type listed first is more favoured (or less disfavoured) relative to the type listed second in reality than is predicted. Black text indicates tests are matched pairs t-tests; red indicates they are Wilcoxon signed-rank tests. *p<0.1, **p<0.05, ***p<0.01.*

**Table B9: Significance tests on discrimination, predicted discrimination and actual vs predicted discrimination along faculty dimension in trust game**

| **Actual Discrimination** | | | | | |
|---|---|---|---|---|---|
| | Sender Faculty | | | | |
| | Arts (N=10) | Engineering (N=32) | Medicine (N=26) | Science (N=61) | Social Science (N=74) |
| Arts vs Engineering | +** | -*** | - | -* | + |
| Arts vs Medicine | - | -* | -*** | -*** | -** |
| Arts vs Science | + | - | -*** | -*** | - |
| Arts vs Social Science | + | - | - | - | - |
| Engineering vs Medicine | -* | +** | -*** | -* | -*** |
| Engineering vs Science | -** | +** | -** | -*** | -** |
| Engineering vs Social Science | - | +** | -* | + | -** |
| Medicine vs Science | + | + | + | - | +* |
| Medicine vs Social Science | + | + | +** | +** | + |
| Science vs Social Science | + | + | +** | +** | - |
| Ingroup vs average outgroup | + | +*** | +*** | +** | + |
| **Predicted Discrimination** | | | | | |
| | Sender Faculty | | | | |
| | Arts (N=10) | Engineering (N=36) | Medicine (N=26) | Science (N=62) | Social Science (N=79) |
| Arts vs Engineering | +*** | -*** | -** | -** | -** |
| Arts vs Medicine | +*** | -*** | -*** | -*** | -*** |
| Arts vs Science | +*** | -*** | -*** | -*** | -*** |
| Arts vs Social Science | +*** | - | - | -** | -*** |
| Engineering vs Medicine | - | +*** | -*** | -* | -*** |
| Engineering vs Science | - | +*** | -*** | -*** | -*** |
| Engineering vs Social Science | - | +*** | + | + | -*** |
| Medicine vs Science | + | - | +*** | -*** | + |
| Medicine vs Social Science | - | +** | +*** | + | -*** |
| Science vs Social Science | - | +*** | +** | +*** | -*** |
| Ingroup vs average outgroup | +*** | +*** | +*** | +*** | +*** |
| **Actual vs Predicted Discrimination** | | | | | |
| | Sender Faculty | | | | |
| | Arts (N=10) | Engineering (N=32) | Medicine (N=26) | Science (N=61) | Social Science (N=74) |
| Arts vs Engineering | -** | +*** | + | + | +*** |
| Arts vs Medicine | -*** | + | +*** | + | +*** |
| Arts vs Science | -** | +** | + | +*** | +*** |
| Arts vs Social Science | -** | + | + | + | +*** |
| Engineering vs Medicine | - | -** | +*** | + | + |
| Engineering vs Science | - | - | + | +*** | + |
| Engineering vs Social Science | + | -*** | - | + | +*** |
| Medicine vs Science | 0 | + | -*** | +*** | + |
| Medicine vs Social Science | +* | - | -*** | - | +*** |
| Science vs Social Science | +* | -** | - | -*** | +*** |
| Ingroup vs average outgroup | -*** | -** | -*** | -*** | -*** |

*Note: The top panel presents the direction and significance of average discrimination by senders of the identity type indicated at the column head when interacting with the two identity types indicated in the left-hand column. + indicates more sent to the identity type listed first; - indicates the reverse. The middle panel presents the equivalent analysis for the amounts sent predicted by the receivers matched with these senders. The bottom panel presents the direction and significance of the difference between actual and predicted discrimination; + indicates the type listed first is more favoured (or less disfavoured) relative to the type listed second in reality than is predicted. Black text indicates tests are matched pairs t-tests; red indicates they are Wilcoxon signed-rank tests. *p<0.1, **p<0.05, ***p<0.01.*

**Table B10: Significance tests on discrimination, predicted discrimination and actual vs predicted discrimination along political dimension in dictator game**

| **Actual Discrimination** | | |
|---|---|---|
| | Sender politics | |
| | Anti-Brexit (N=176) | Pro-Brexit (N=27) |
| Anti-Brexit vs Pro-Brexit | +*** | - |
| **Predicted Discrimination** | | |
| | Sender politics | |
| | Anti-Brexit (N=185) | Pro-Brexit (N=185) |
| Anti-Brexit vs Pro-Brexit | +*** | -*** |
| **Actual vs Predicted Discrimination** | | |
| | Sender politics | |
| | Anti-Brexit (N=176) | Pro-Brexit (N=27) |
| Anti-Brexit vs Pro-Brexit | -*** | +** |

*Note: The top panel presents the direction and significance of average discrimination by senders of the identity type indicated at the column head when interacting with anti-Brexit and pro-Brexit receivers. + indicates more sent to anti-Brexit receivers; - indicates the reverse. The middle panel presents the equivalent analysis for the amounts sent predicted by the receivers matched with these senders. The bottom panel presents the direction and significance of the difference between actual and predicted discrimination; + indicates anti-Brexit receivers are more favoured (or less disfavoured) relative to pro-Brexit receivers in reality than is predicted. Black text indicates tests are matched pairs t-tests; red indicates they are Wilcoxon signed-rank tests. *p<0.1, **p<0.05, ***p<0.01.*

**Table B11: Significance tests on discrimination, predicted discrimination and actual vs predicted discrimination along political dimension in trust game**

| **Actual Discrimination** | | |
|---|---|---|
| | Sender politics | |
| | Anti-Brexit (N=176) | Pro-Brexit (N=27) |
| Anti-Brexit vs Pro-Brexit | +*** | - |
| **Predicted Discrimination** | | |
| | Sender politics | |
| | Anti-Brexit (N=185) | Pro-Brexit (N=28) |
| Anti-Brexit vs Pro-Brexit | +*** | -** |
| **Actual vs Predicted Discrimination** | | |
| | Sender politics | |
| | Anti-Brexit (N=176) | Pro-Brexit (N=27) |
| Anti-Brexit vs Pro-Brexit | -*** | + |

*Note: The top panel presents the direction and significance of average discrimination by senders of the identity type indicated at the column head when interacting with anti-Brexit and pro-Brexit receivers. + indicates more sent to anti-Brexit receivers; - indicates the reverse. The middle panel presents the equivalent analysis for the amounts sent predicted by the receivers matched with these senders. The bottom panel presents the direction and significance of the difference between actual and predicted discrimination; + indicates anti-Brexit receivers are more favoured (or less disfavoured) relative to pro-Brexit receivers in reality than is predicted. Black text indicates tests are matched pairs t-tests; red indicates they are Wilcoxon signed-rank tests. *p<0.1, **p<0.05, ***p<0.01.*

**Table B12: Determinants of predicted in-group favouritism (dictator game) – OLS regressions**

| | Gender | Ethnicity | Artificial | Faculty | Politics |
|---|---|---|---|---|---|
| Female Sender | 0.400 | 0.618 | 0.183 | 0.497 | 1.848 |
| | (1.10) | (1.04) | (1.25) | (0.94) | (1.66) |
| Male Sender | -0.870 | 0.790 | -0.375 | 0.243 | 1.826 |
| | (1.10) | (1.06) | (1.27) | (0.95) | (1.68) |
| Asian Sender | 0.304 | 1.481*** | 0.902* | 0.291 | 1.064* |
| | (0.40) | (0.39) | (0.47) | (0.35) | (0.62) |
| Black Sender | -0.162 | 1.062* | -0.031 | -0.192 | -1.144 |
| | (0.56) | (0.57) | (0.65) | (0.48) | (0.86) |
| Mixed Sender | -1.116 | 0.436 | 1.500 | -0.370 | -0.471 |
| | (0.83) | (0.81) | (0.96) | (0.71) | (1.27) |
| Other Sender | -0.078 | -0.037 | 0.378 | -0.467 | -0.822 |
| | (0.84) | (0.82) | (0.97) | (0.72) | (1.29) |
| Klee Sender | 0.918** | 0.185 | -0.452 | 0.264 | -0.185 |
| | (0.43) | (0.41) | (0.57) | (0.37) | (0.66) |
| Arts Sender | -1.512* | -0.454 | 1.171 | -0.077 | 0.787 |
| | (0.83) | (0.81) | (0.97) | (0.74) | (1.28) |
| Engineering Sender | 0.622 | -0.229 | -0.226 | 0.359 | -1.547** |
| | (0.50) | (0.48) | (0.58) | (0.45) | (0.77) |
| Medicine Sender | -0.436 | -0.743 | -0.356 | -0.021 | -2.686*** |
| | (0.57) | (0.56) | (0.67) | (0.50) | (0.89) |
| Science Sender | -0.012 | -0.287 | 0.686 | -0.133 | -0.298 |
| | (0.42) | (0.41) | (0.48) | (0.38) | (0.64) |
| Pro-Brexit Sender | 0.099 | 0.269 | -1.022* | -0.920** | -1.501 |
| | (0.52) | (0.50) | (0.60) | (0.45) | (0.91) |
| Female Receiver | -3.048 | -0.656 | 2.530 | 0.948 | -3.830 |
| | (1.84) | (1.79) | (2.13) | (1.59) | (2.82) |
| Male Receiver | -3.307* | -1.478 | 2.006 | 0.180 | -4.064 |
| | (1.88) | (1.83) | (2.18) | (1.62) | (2.88) |
| Asian Receiver | 0.369 | 0.645* | 0.236 | 0.182 | -0.433 |
| | (0.38) | (0.37) | (0.44) | (0.33) | (0.59) |
| Black Receiver | 0.201 | 3.569*** | 3.179*** | 0.723 | 0.728 |
| | (0.80) | (0.79) | (0.91) | (0.68) | (1.21) |
| Mixed Receiver | -0.061 | 1.027 | 1.143 | 0.383 | 1.030 |
| | (0.65) | (0.65) | (0.76) | (0.56) | (1.00) |
| Other Receiver | -0.681 | -1.515** | 0.273 | -0.902 | -1.902* |
| | (0.74) | (0.73) | (0.87) | (0.64) | (1.14) |
| Klee Receiver | 0.303 | 0.060 | 0.222 | -0.120 | 0.152 |
| | (0.41) | (0.39) | (0.56) | (0.35) | (0.62) |
| Arts Receiver | 0.901 | -0.041 | 1.083 | 0.319 | -0.815 |
| | (0.70) | (0.68) | (0.81) | (0.63) | (1.07) |
| Engineering Receiver | 0.850 | 0.652 | -0.689 | 0.637 | -1.850** |
| | (0.61) | (0.59) | (0.70) | (0.53) | (0.93) |
| Medicine Receiver | 0.467 | 0.450 | -1.148** | -0.005 | 0.992 |
| | (0.49) | (0.47) | (0.56) | (0.42) | (0.76) |
| Science Receiver | 0.076 | -0.095 | -1.160** | -0.136 | -0.767 |
| | (0.44) | (0.42) | (0.51) | (0.38) | (0.68) |
| Pro-Brexit Receiver | 0.679 | -0.657 | 0.839 | 0.640 | -0.923 |
| | (0.52) | (0.50) | (0.60) | (0.45) | (0.90) |
| In-group Receiver | 0.286 | -0.175 | 0.988* | -0.135 | 0.470 |
| | (0.36) | (0.38) | (0.56) | (0.35) | (0.89) |
| Constant | 3.812* | 0.546 | -1.738 | 0.347 | 6.635* |
| | (2.19) | (2.11) | (2.56) | (1.89) | (3.43) |
| N | 213 | 213 | 213 | 213 | 213 |
| r2 | 0.201 | 0.267 | 0.220 | 0.117 | 0.195 |

Notes: Dependent variable is predicted in-group favouritism along dimension indicated at column head, estimated by difference between predicted amount sender will send to in-group receivers and (average) predicted amount they will send to out-group receivers. Dummy *In-group receiver* = 1 if receiver belongs to same group as sender for dimension of identity predicted in-group favouritism measured along. Omitted variable categories: *Non-binary Sender*, *White Sender*, *Kandinsky Sender*, *Social Sciences Sender*, *Anti-Brexit Sender*, *Non-binary Sender*, *White Sender*, *Kandinsky Sender*, *Social Sciences Sender* and *Anti-Brexit Sender*. Standard errors in parentheses. $^{*}p<0.1$, $^{**}p<0.05$, $^{***}p<0.01$

**Table B13: Determinants of predicted in-group favouritism (trust game) – OLS regressions**

| | Gender | Ethnicity | Artificial | Faculty | Politics |
|---|---|---|---|---|---|
| Female Sender | -0.028 | 0.274 | 0.529 | 0.616 | 1.221 |
| | (0.50) | (0.45) | (0.55) | (0.41) | (0.79) |
| Male Sender | -0.339 | 0.231 | 0.510 | 0.601 | 1.032 |
| | (0.49) | (0.46) | (0.56) | (0.41) | (0.79) |
| Asian Sender | 0.100 | 0.552*** | -0.260 | 0.059 | 0.133 |
| | (0.18) | (0.17) | (0.21) | (0.15) | (0.30) |
| Black Sender | 0.308 | 0.614** | -0.414 | -0.161 | -0.527 |
| | (0.26) | (0.26) | (0.29) | (0.22) | (0.42) |
| Mixed Sender | -0.309 | 0.023 | -0.382 | -0.179 | -0.210 |
| | (0.38) | (0.36) | (0.44) | (0.32) | (0.62) |
| Other Sender | 0.009 | -0.042 | -0.212 | -0.112 | -0.174 |
| | (0.37) | (0.35) | (0.42) | (0.31) | (0.60) |
| Klee Sender | 0.161 | 0.185 | 0.247 | 0.301* | 0.505 |
| | (0.19) | (0.18) | (0.28) | (0.16) | (0.31) |
| Arts Sender | -0.016 | 0.125 | 0.434 | 1.029*** | 0.477 |
| | (0.37) | (0.34) | (0.42) | (0.31) | (0.60) |
| Engineering Sender | -0.365* | 0.127 | 0.570** | 0.481** | -0.061 |
| | (0.22) | (0.20) | (0.25) | (0.19) | (0.36) |
| Medicine Sender | -0.338 | 0.094 | -0.062 | 0.414** | 0.031 |
| | (0.24) | (0.22) | (0.28) | (0.20) | (0.39) |
| Science Sender | -0.102 | 0.288* | 0.186 | 0.125 | 0.318 |
| | (0.18) | (0.17) | (0.21) | (0.16) | (0.30) |
| Pro-Brexit Sender | -0.003 | 0.042 | 0.254 | 0.180 | -0.810 |
| | (0.24) | (0.22) | (0.27) | (0.20) | (0.68) |
| Female Receiver | -1.014 | 0.177 | 0.304 | 0.267 | 0.306 |
| | (0.85) | (0.78) | (0.97) | (0.71) | (1.37) |
| Male Receiver | -1.045 | 0.036 | 0.363 | -0.004 | -0.115 |
| | (0.85) | (0.79) | (0.97) | (0.71) | (1.38) |
| Asian Receiver | -0.083 | 0.439*** | 0.054 | 0.063 | -0.402 |
| | (0.17) | (0.16) | (0.20) | (0.14) | (0.28) |
| Black Receiver | 0.106 | 0.698** | 0.102 | 0.739** | -0.124 |
| | (0.35) | (0.33) | (0.39) | (0.29) | (0.56) |
| Mixed Receiver | 0.374 | 0.539* | 0.390 | 0.379 | 0.216 |
| | (0.29) | (0.28) | (0.33) | (0.24) | (0.47) |
| Other Receiver | 0.016 | 0.292 | -0.069 | -0.247 | -0.494 |
| | (0.34) | (0.32) | (0.38) | (0.28) | (0.55) |
| Klee Receiver | 0.025 | 0.024 | 0.058 | -0.145 | -0.490* |
| | (0.18) | (0.17) | (0.27) | (0.15) | (0.29) |
| Arts Receiver | -0.040 | -0.027 | 0.133 | 0.030 | 0.089 |
| | (0.31) | (0.29) | (0.36) | (0.27) | (0.52) |
| Engineering Receiver | -0.010 | -0.013 | 0.053 | 0.390* | -0.689 |
| | (0.27) | (0.25) | (0.30) | (0.23) | (0.43) |
| Medicine Receiver | -0.078 | 0.066 | 0.059 | 0.082 | 0.107 |
| | (0.21) | (0.20) | (0.24) | (0.18) | (0.34) |
| Science Receiver | -0.061 | 0.006 | 0.185 | 0.001 | -0.018 |
| | (0.20) | (0.18) | (0.22) | (0.17) | (0.32) |
| Pro-Brexit Receiver | -0.154 | -0.006 | 0.206 | 0.145 | 0.112 |
| | (0.23) | (0.22) | (0.26) | (0.19) | (0.70) |
| In-group Receiver | 0.260 | -0.061 | 0.288 | 0.272* | 0.395 |
| | (0.17) | (0.16) | (0.28) | (0.15) | (0.69) |
| Constant | 1.731* | -0.501 | -0.655 | -0.441 | 0.339 |
| | (0.99) | (0.93) | (1.18) | (0.83) | (1.72) |
| N | 213.000 | 213.000 | 213.000 | 213.000 | 213.000 |
| r2 | 0.105 | 0.178 | 0.090 | 0.199 | 0.142 |

Notes: Dependent variable is predicted in-group favouritism along dimension indicated at column head, estimated by difference between predicted amount sender will send to in-group receivers and (average) predicted amount they will send to out-group receivers. Dummy *In-group receiver* = 1 if receiver belongs to same group as sender for dimension of identity predicted in-group favouritism measured along. Omitted variable categories: *Non-binary Sender*, *White Sender*, *Kandinsky Sender*, *Social Sciences Sender*, *Anti-Brexit Sender*, *Non-binary Sender*, *White Sender*, *Kandinsky Sender*, *Social Sciences Sender* and *Anti-Brexit Sender*. Standard errors in parentheses. $^{*}p<0.1$, $^{**}p<0.05$, $^{***}p<0.01$

**Table B14: List effects on amount sent in dictator game**

| Dependent Variable = Amount sent on identity dimension | | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| | Gender | Faculty | Ethnicity | Artificial | Politics |
| Dimension presented 2nd | -0.283 | 0.757 | -0.779 | 1.005 | -0.135 |
| | (0.68) | (0.70) | (0.60) | (0.64) | (0.68) |
| Dimension presented 3rd | 0.263 | 0.948 | -0.172 | -0.205 | 0.038 |
| | (0.66) | (0.66) | (0.66) | (0.62) | (0.71) |
| Dimension presented 4th | -0.431 | 0.460 | -0.652 | 0.207 | 1.172* |
| | (0.68) | (0.73) | (0.59) | (0.64) | (0.67) |
| Dimension presented 5th | 0.334 | 0.797 | -0.604 | 0.134 | -0.141 |
| | (0.70) | (0.66) | (0.61) | (0.62) | (0.71) |
| Constant | 3.355*** | 2.758*** | 3.603*** | 2.989*** | 3.302*** |
| | (0.49) | (0.48) | (0.44) | (0.43) | (0.49) |
| N | 203 | 203 | 203 | 203 | 203 |
| r2 | 0.010 | 0.013 | 0.012 | 0.020 | 0.028 |

Notes: the dependent variable is the amount sent to receiver's actual identity type for gender (model 1), faculty (model 2), ethnicity (model 3), artificial identity (model 4) and political identity (model 5). The independent variables are dummies representing the order on decision screen that the relevant identity dimension was listed; the omitted category is dimension presented 1st. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

**Table B15: List effects on amount sent in trust game**

| Dependent Variable = Amount sent on identity dimension | | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| | Gender | Faculty | Ethnicity | Artificial | Politics |
| Dimension presented 2nd | 0.066 | -0.338 | -0.219 | 0.200 | -0.153 |
| | (0.33) | (0.34) | (0.33) | (0.34) | (0.34) |
| Dimension presented 3rd | 0.377 | -0.117 | -0.307 | -0.010 | -0.009 |
| | (0.33) | (0.32) | (0.36) | (0.33) | (0.35) |
| Dimension presented 4th | 0.231 | -0.002 | -0.414 | -0.071 | 0.179 |
| | (0.34) | (0.35) | (0.33) | (0.34) | (0.34) |
| Dimension presented 5th | 0.546 | -0.138 | -0.289 | 0.009 | -0.382 |
| | (0.34) | (0.32) | (0.33) | (0.33) | (0.36) |
| Constant | 1.486*** | 1.830*** | 1.971*** | 1.635*** | 1.768*** |
| | (0.24) | (0.23) | (0.24) | (0.23) | (0.25) |
| N | 203 | 203 | 203 | 203 | 203 |
| r2 | 0.017 | 0.006 | 0.009 | 0.003 | 0.014 |

Notes: the dependent variable is the amount sent to receiver's actual identity type for gender (model 1), faculty (model 2), ethnicity (model 3), artificial identity (model 4) and political identity (model 5). The independent variables are dummies representing the order on decision screen that the relevant identity dimension was listed; the omitted category is dimension presented 1st. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

**Table B16: List effects on in-group favouritism in dictator game**

| Dependent Variable = In-group favouritism for identity dimension | | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| | Gender | Faculty | Ethnicity | Artificial | Politics |
| Dimension presented 2nd | -0.246 | 0.253 | 0.185 | 0.146 | 0.233 |
| | (0.35) | (0.29) | (0.28) | (0.27) | (0.58) |
| Dimension presented 3rd | 0.705** | -0.256 | -0.041 | 0.165 | -0.215 |
| | (0.35) | (0.27) | (0.31) | (0.26) | (0.61) |
| Dimension presented 4th | 0.168 | -0.046 | -0.040 | 0.169 | -0.066 |
| | (0.36) | (0.30) | (0.28) | (0.27) | (0.58) |
| Dimension presented 5th | 0.600 | -0.032 | -0.096 | 0.101 | -1.156* |
| | (0.36) | (0.27) | (0.28) | (0.26) | (0.61) |
| Constant | 0.258 | 0.494** | 0.255 | 0.076 | 1.944*** |
| | (0.26) | (0.20) | (0.20) | (0.18) | (0.42) |
| N | 203 | 203 | 203 | 203 | 203 |
| r2 | 0.052 | 0.016 | 0.006 | 0.003 | 0.030 |

Notes: the dependent variable is the sender's level of in-group favouritism for gender (model 1), faculty (model 2), ethnicity (model 3), artificial identity (model 4) and political identity (model 5), measured as amount sent to in-group receiver minus mean amount sent to out-group receivers. The independent variables are dummies representing the order on decision screen that the relevant identity dimension was listed; the omitted category is dimension presented 1st. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

**Table B17: List effects on in-group favouritism in trust game**

| Dependent Variable = In-group favouritism for identity dimension | | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| | Gender | Faculty | Ethnicity | Artificial | Politics |
| Dimension presented 2nd | 0.033 | -0.042 | 0.235** | -0.009 | 0.021 |
| | (0.13) | (0.14) | (0.12) | (0.13) | (0.30) |
| Dimension presented 3rd | 0.432*** | 0.019 | 0.133 | 0.037 | -0.031 |
| | (0.13) | (0.13) | (0.13) | (0.12) | (0.31) |
| Dimension presented 4th | 0.047 | 0.041 | -0.112 | 0.094 | 0.145 |
| | (0.13) | (0.14) | (0.11) | (0.13) | (0.29) |
| Dimension presented 5th | 0.026 | 0.045 | 0.227* | -0.083 | 0.007 |
| | (0.14) | (0.13) | (0.12) | (0.12) | (0.31) |
| Constant | 0.059 | 0.172* | 0.035 | 0.052 | 0.722*** |
| | (0.10) | (0.09) | (0.08) | (0.09) | (0.22) |
| N | 203 | 203 | 203 | 203 | 203 |
| r2 | 0.077 | 0.003 | 0.068 | 0.011 | 0.002 |

Notes: the dependent variable is the sender's level of in-group favouritism for gender (model 1), faculty (model 2), ethnicity (model 3), artificial identity (model 4) and political identity (model 5), measured as amount sent to in-group receiver minus mean amount sent to out-group receivers. The independent variables are dummies representing the order on decision screen that the relevant identity dimension was listed; the omitted category is dimension presented 1st. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

**Table B18: List effects on predicted amount sent in dictator game**

| Dependent Variable = Predicted amount sent on identity dimension | | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| | Gender | Faculty | Ethnicity | Artificial | Politics |
| Dimension presented 2nd | -0.366 | 1.034* | -0.204 | -0.534 | 1.222* |
| | (0.62) | (0.61) | (0.64) | (0.67) | (0.69) |
| Dimension presented 3rd | -0.145 | 0.550 | -0.466 | 0.068 | 2.117*** |
| | (0.60) | (0.57) | (0.69) | (0.64) | (0.73) |
| Dimension presented 4th | 0.242 | -0.546 | -0.490 | -0.247 | 1.989*** |
| | (0.62) | (0.63) | (0.64) | (0.66) | (0.68) |
| Dimension presented 5th | -0.015 | 0.208 | 0.424 | 0.343 | 1.338* |
| | (0.63) | (0.57) | (0.65) | (0.65) | (0.71) |
| Constant | 4.852*** | 4.266*** | 4.308*** | 4.770*** | 3.969*** |
| | (0.44) | (0.41) | (0.47) | (0.45) | (0.50) |
| N | 213 | 213 | 213 | 213 | 213 |
| r2 | 0.005 | 0.032 | 0.013 | 0.009 | 0.052 |

Notes: the dependent variable is the predicted amount sent to receiver's actual identity type for gender (model 1), faculty (model 2), ethnicity (model 3), artificial identity (model 4) and political identity (model 5). The independent variables are dummies representing the order on decision screen that the relevant identity dimension was listed; the omitted category is dimension presented 1st. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

**Table B19: List effects on predicted amount sent in trust game**

| Dependent Variable = Predicted amount sent on identity dimension | | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| | Gender | Faculty | Ethnicity | Artificial | Politics |
| Dimension presented 2nd | 0.140 | 0.247 | -0.400 | 0.130 | 0.210 |
| | (0.29) | (0.30) | (0.29) | (0.28) | (0.31) |
| Dimension presented 3rd | -0.005 | 0.140 | -0.297 | 0.390 | 0.570* |
| | (0.28) | (0.28) | (0.31) | (0.27) | (0.32) |
| Dimension presented 4th | -0.053 | 0.188 | -0.133 | 0.275 | 0.093 |
| | (0.29) | (0.31) | (0.29) | (0.28) | (0.30) |
| Dimension presented 5th | -0.041 | -0.031 | -0.256 | 0.466* | 0.382 |
| | (0.29) | (0.28) | (0.29) | (0.28) | (0.32) |
| Constant | 2.140*** | 1.997*** | 2.148*** | 1.723*** | 2.013*** |
| | (0.21) | (0.20) | (0.21) | (0.19) | (0.22) |
| N | 213 | 213 | 213 | 213 | 213 |
| r2 | 0.003 | 0.006 | 0.011 | 0.018 | 0.019 |

Notes: the dependent variable is the predicted amount sent to receiver's actual identity type for gender (model 1), faculty (model 2), ethnicity (model 3), artificial identity (model 4) and political identity (model 5). The independent variables are dummies representing the order on decision screen that the relevant identity dimension was listed; the omitted category is dimension presented 1st. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

**Table B20: List effects on predicted in-group favouritism in dictator game**

| Dependent Variable = Predicted in-group favouritism for identity dimension | | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| | Gender | Faculty | Ethnicity | Artificial | Politics |
| Dimension presented 2nd | -0.681 | 0.502 | 0.681 | -0.713 | -0.402 |
| | (0.53) | (0.44) | (0.53) | (0.63) | (0.80) |
| Dimension presented 3rd | -0.372 | -0.304 | 0.254 | -0.289 | 0.935 |
| | (0.52) | (0.41) | (0.58) | (0.61) | (0.84) |
| Dimension presented 4th | -0.060 | -0.191 | 0.111 | -0.211 | 0.820 |
| | (0.53) | (0.46) | (0.53) | (0.62) | (0.79) |
| Dimension presented 5th | -0.096 | 0.019 | -0.072 | -0.366 | -0.291 |
| | (0.54) | (0.41) | (0.54) | (0.62) | (0.83) |
| Constant | 1.698*** | 1.553*** | 0.932** | 1.947*** | 3.577*** |
| | (0.38) | (0.30) | (0.39) | (0.43) | (0.58) |
| N | 213 | 213 | 213 | 213 | 213 |
| r2 | 0.011 | 0.018 | 0.013 | 0.006 | 0.023 |

Notes: the dependent variable is the sender's predicted level of in-group favouritism for gender (model 1), faculty (model 2), ethnicity (model 3), artificial identity (model 4) and political identity (model 5), measured as predicted amount sent to in-group receiver minus mean predicted amount sent to out-group receivers. The independent variables are dummies representing the order on decision screen that the relevant identity dimension was listed; the omitted category is dimension presented 1st. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

**Table B21: List effects on predicted in-group favouritism in trust game**

| Dependent Variable = Predicted in-group favouritism for identity dimension | | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| | Gender | Faculty | Ethnicity | Artificial | Politics |
| Dimension presented 2nd | -0.162 | -0.099 | -0.036 | 0.137 | 0.053 |
| | (0.23) | (0.20) | (0.22) | (0.25) | (0.36) |
| Dimension presented 3rd | -0.050 | -0.325* | -0.322 | 0.471* | 0.210 |
| | (0.22) | (0.19) | (0.23) | (0.25) | (0.38) |
| Dimension presented 4th | -0.098 | -0.134 | -0.178 | 0.320 | 0.150 |
| | (0.23) | (0.21) | (0.21) | (0.25) | (0.36) |
| Dimension presented 5th | -0.141 | 0.067 | -0.028 | 0.318 | -0.568 |
| | (0.23) | (0.19) | (0.22) | (0.25) | (0.38) |
| Constant | 0.704*** | 0.904*** | 0.638*** | 0.360** | 1.726*** |
| | (0.16) | (0.14) | (0.16) | (0.17) | (0.26) |
| N | 213 | 213 | 213 | 213 | 213 |
| r2 | 0.003 | 0.024 | 0.013 | 0.021 | 0.025 |

Notes: the dependent variable is the sender's predicted level of in-group favouritism for gender (model 1), faculty (model 2), ethnicity (model 3), artificial identity (model 4) and political identity (model 5), measured as predicted amount sent to in-group receiver minus mean predicted amount sent to out-group receivers. The independent variables are dummies representing the order on decision screen that the relevant identity dimension was listed; the omitted category is dimension presented 1st. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$