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Effects of group bonding on conformity in antisocial behaviour

Investigating social influence in a computer game setup

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Effects of group bonding on conformity in antisocial behaviour:

Investigating social influence in a computer game setup

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Theoretical background & Previous Research

Social bonding, Similarity & Influence

Humans are evolutionarily and biologically hard-wired to live in small groups and therefore have a strong need to be connected and close to each other. Membership in a group facilitates survival by offering cooperation in difficult tasks, increased chances of detecting threats and opportunities, sharing of resources and protection against danger (Baumeister & Tice, 1990). A need to belong as well as a need to form and maintain at least a minimum quantity of interpersonal relationships is universal among all humans and can be seen as key motivation of people to form groups (Baumeister & Leary, 1995). Close social bonds are crucial in developing and maintaining a psychologically healthy and functioning individual (Hughes & Gove, 1981). The exclusion from groups leads to strong negative affect showing that social bonds are essential for human well-being and that social rejection can harm mental health in many ways (Morgan et al., 2007).

One subtle way that can generate social bonds is similarity. Previous research has shown that people tend to favour people who share an important attribute of their identity with them compared to people who differ from that attribute. Similarity in identity enhances more trust and reciprocity, reduces concerns about being taken advantage of and increases willingness to sacrifice (Ben-Ner et al., 2006).

Other studies have shown that people tend to prefer people who have the same economic status (Byrne et al., 1966), feel more attracted to people with similar personality characteristics (Byrne et al., 1967) and would rather share an office with a person that is similar to themselves (Ben-Ner et al., 2006). Furthermore it has been proposed that even the smallest degrees of similarity, like the same birthday, can create a sense of “belonging together” and make people behave more cooperatively in dictator games (Miller et al., 1998).

Former studies have shown that people use the behaviour of others who are similar to them as a social norm, even if that norm is in some form unethical. Cialdini et al. (1990) showed that college students who saw a fellow student subsequently littering in the environment littered more themselves. Leon Festinger’s theory of social comparison claims that if there is no

objective criteria, people tend to use other people as social comparison to establish social norms, thus ensuring that their beliefs adhere to social norms and give them cognitive clarity of the world (Festinger, 1954). Festinger also stated that social comparison decreases when differences between the comparison groups increase, implying that people only use similar people as reference groups (Bauman & Geher, 2002).

The false-consensus effect provides another good theoretical basis for such behaviour. This social judgement bias describes the tendency to overestimate the degree of which others share our attitudes and traits. People seem to have a tendency to act in ways consistent with their perceived norm. Previous studies have stated that adolescents who overestimated the prevalence of smoking in the community displayed an increased chance of being smokers themselves (Botvin et al., 1992). Moreover it was found that raised individual support for certain policies (e.g. teaching morality in schools, death penalty) leads to the impression that the perception of the general public is increased as well (Wojcieszak & Price, 2009). These findings suggest that perceptions of norms have a substantial influence on behaviour (Baumann & Geher, 2002).

Furthermore, the distinction between self and other, a sense of in-group and out-group, impacts social and economic behaviour (Ben-Ner et al., 2006). Any categorization assigning an individual as belonging to one social group as distinct from another can be sufficient to result in different attitudes toward the two groups. Attitudes towards the own group tend to become more positive, known as the intergroup bias, that has been well replicated in psychological research (Brewer, 1979).

Social Identity Theory (SIT) provides a solid theoretical model for such behaviour: the sense of self is not solely based on individual identity, but it is further shaped by the perception to belong to a certain social category. Individuals strive to achieve or maintain positive social identity and are therefore motivated to conform to norms that provide them with an in-group, rather than an out-group identity (Tajfel & Turner, 1979).

Conformity in Destructive Behaviour

The tendency of people to engage in unethical behaviour when observing an in-group member doing so and taking that behaviour as a norm, has been shown among others by Gino et al. (2009): People take the opportunity to cheat and show even higher rates of engagement in dishonesty when a respective social norm derived from an in-group member (Gino et al., 2009). With this study we aim to continue this line of research by investigating if this kind of engagement in unethical behaviour also appears, when a group displays it rather than one individual.

Similarly, obedience studies show that people also display destructive behaviour towards a third party contradicting their own moral standards, like delivering lethal electric shocks to a stranger, simply because they were required to do so by another stranger in the context of a trivial science project (Milgram, 1963; Reicher et al., 2012). Milgram assumed that those who act willingly destructively do so as a simple result of a natural tendency to conform and to obey the orders of authorities. Recent social psychological research has started to reconceptualise the conclusions from obedience to authority studies like the studies of Milgram (1963). Conversely, newer theories suggest a strong identification and a knowing embrace of the oppressive ideologies of the perpetrator to be the underlying concept of such destructive behaviour (Reicher et al., 2012). This new approach and emphasis on the strong influence identification seems to have on behaviour is a core element that this study tries to shed more light, especially regarding the impacts that the identification with a group of strangers can have on behaviour of an individual.

Identification seems to further alter people's perception of morality. People identifying with their group tend to feel that their group is good and moral. Moral standards and judgements seem to show fluctuations when taking in social functions. In interpersonal interactions the agreement of what is right and wrong has an identity defining function, helping people to define who they are, where they want to belong and how they are regarded by others. Within groups morality can have a group dynamic function. Subscribing to specific moral standards provides a consensual definition of right and wrong that guides individual behaviour and acknowledges them respected as a group member. Group morality can also have a function

for intergroup relations, as moral judgements can be related to the way people tend to communicate with and behave towards members of other groups that have different moral standards (Ellemers & van den Bos, 2012). In-group glorification, the belief that one's in-group is better and more worthy than other groups and the conviction that group members should adhere to the group's rule (Castano, 2008), is a common phenomenon in highly identifying individuals. In this study we want to find out how people behave when a group, especially if they identify with that group, starts to behave immorally.

Research questions

It has been shown that perceived psychological similarity with one group enhances the feelings of connectedness with that group and connectedness furthermore leads to stronger identification with the group. Another line of research suggests that when strongly identifying with a person, obedience occurs even with behaviour that goes against one's own moral standards. What remains puzzling is how little the degree of perceived group similarity has to be to alter people's behaviour. Also, people are social beings and constantly interact in different kinds of groups. Therefore it seems to be relevant to explore if the identification with a group, rather than one sole individual, will have as powerful impacts on one's own behaviour.

We want to combine these two research strands by investigating whether an induced feeling of similarity with a group of strangers will enhance conformity in destructive behaviour performed by this group against a third party.

This leads to the main research questions of this study:

- 1. Does group identification (induced by similarity) cause people to more readily conform to destructive behaviour towards an unknown third party expressed by their group members?**
- 2. Does group identification (induced by similarity) affect the degree to which people engage in effortful behaviour to increase group gains?**

Hypotheses

Following this argumentation and existing literature we formulated the following hypotheses:

1. Individuals with similar co-players will have higher clicking rates in gain trials than individuals with non-similar co-players.
2. Individuals with destructive co-players will have higher clicking rates in group subtraction trials than individuals with non-destructive co-players. (Manipulation check)
3. Individuals with similar, destructively behaving co-players will have higher clicking rates in group subtraction trials than individuals from the other conditions. (Interaction effect)

Specific predictions

Our experimental setting incorporating both main factors from the research questions, namely group similarity and behaviour of co-players, allowed us to measure participants' behaviour in controlled circumstances. More precisely, we controlled participants' perceived group similarity in the Similarity Induction Task and the behaviour by co-players in the Conformity Task. The clicking rates in the different trials reflect a measurement of participants' behaviour and served as the dependent variable in this study.

To summarise, a sense of group similarity is expected to increase identification with the group which further is expected to increase commitment to the group, which is why we expected participants with more similar co-players to be more motivated to maximize group gain and therefore show higher clicking rates in gain trials. On the other hand, norms within groups influence behaviour very strongly (Baumann & Geher, 2002), even if they are in some form unethical (Gino et al., 2009). This is why we expected the destructive behaviour of co-players to establish a social norm for clicks in subtraction trials, leading to higher clicking rates in these destructive subtraction trials.

Materials & Methods

Participants

We examined a total of 192 people (age 25.80 ± 5.45 , mean \pm standard deviation) over the time period of five months. The participants were recruited using ads promising a monetary reward for participating in a computer game study on Facebook and the cloud-based participant management software SONA of the University of Vienna, Austria. The pilot phase consisted of two different versions that were each tested by 4 groups of 4 participants, thus 16 participants per pilot version (32 participants in 8 groups, in total for piloting). These 32 pilot participants were excluded from the final sample, which only included participants that had been given the final version of the task. Furthermore, only male participants were included in the final sample as we decided during the pilot phase to only analyse males to ensure sample homogeneity as well as to avoid gender bias. Also we excluded participants who guessed the investigated research question correctly or who suspected a simulation behind the task. These factors were surveyed in the post-experimental questionnaire. Two participants were excluded because they were psychology students of the department and this could have biased their behaviour due to prior knowledge of social psychological theories and psychological research methods. Two participants were excluded because of technical problems during the task.

This led to a final sample size of $n=117$ (age 26.14 ± 6.07 , mean \pm standard deviation). All participants were over 18 years old, at least near-native German speakers and gave written informed consent. All participants knew their participation in the study would be compensated with 8 € and that there was a chance to win additional money depending on their performance in the task but not how much. As a matter of fact, everybody received 10€ (giving the participants the fictional information of having earned additional 8€ as a team of four, which makes a gain of 2€ for everybody).

Experimental procedures and design

The experiment consisted of two consecutive parts on the computer: the Similarity Induction Task and the Conformity Task. At the very end participants filled out a final paper-pencil post-experimental questionnaire. The total duration of a session was approximately one hour.

During all tasks, participants were led to believe that they were connected to each other by their computers and that the tasks were online interactions.

Cover Story

The participants were told that the aim of the study was to investigate the relationship between personal preferences and attitudes in life, the ability to assess those preferences and attitudes in others and the performance in a speed-based computer game. The task would consist of two parts: a “get-to-know-each-other”-task (Similarity Induction Task) to get an impression of the co-players and a “key-press-task” (Conformity Task) to earn money by fast pressing of a key. During the whole study the participants would be connected to each other online by their computers.

The experiment was always conducted in groups of four participants per session. After arrival at the lab the participants were immediately seated in the experiment room in separate computer cubicles to avoid social interaction before the experiment. Each cubicle was equipped with a PC, a keyboard, a pen and headphones. The participants read and signed the informed consent (Appendix B) and were then instructed by the experimenter about the experiment procedure.

The participants were asked to keep the headphones on throughout the whole experiment. From the headphones they heard neutral background noise that had been recorded in a flying airplane, to shield against the sounds from the co-players and all other environmental sounds in the room.

Design

The design was a 2 x 2 x 3 mixed-factorial design with the between-subjects factors “Similarity” (similar and non-similar co-players) and “Behaviour by co-players” (destructive and non-destructive co-players) and the within-subjects factor “Block” (Individual Block 1, Group Block and Individual Block 2).

Similarity Induction Task

The Similarity Induction Task was designed in a similar way as created by Majdandžić et al. (2016) to study how prefrontal involvement in mentalizing with similar or dissimilar others shaped empathy and prosocial behaviour.

The participant was presented with pairs of statements about general attitudes and personal views (e.g. *“I like to watch movies that make me laugh”* and *“I like to watch movies that make me think”*). In each trial two statements appeared left and right on the screen and the participant had to choose one of them. The participant was instructed to select the statement that applied to him in a spontaneous, immediate way. After having entered his preferred statement the choices of the three other participants appeared on the screen as well. The participant was asked to pay close attention to the statements selected by the others, since the goal of the task was to get to know each other (Majdandžić et al., 2016). In total our version of the task consisted of 24 such trials (Appendix C) and was pre-programmed. Either did the participant get the impression that the three other players chose frequently the same statement (in 83,33% of the trials 2 or 3 other players chose the same answer), giving the participant the impression of the other players to be similar to him. Or the participant got the impression that the other three players chose mainly the opposite statement (in 75% of the trials all other 3 chose the opposite statement), giving the participant the impression of the other players to be different to him. Depending on group number the computer assigned the participants to the Similar or Dissimilar experimental group. This pre-programming formed our first two conditions and groups to be compared: high or low group similarity. Figure 3 depicts the display version of the Similarity Task as the participants saw it.

After the 24 trials, the participant was asked to rate 4 additional statements in the same manner: first giving a guess which statement “the group” would choose and then which statement the participant himself chooses (Appendix C). This would give an impression of each participant’s self-perception of the group. These answers were calculated into a “similarity score” for our subsequent analysis: a score indicating how often the participant chose the same answer for him/herself and the group (maximum 4, minimum 0).

Similarity Debriefing

The last part was a short questionnaire, where the participant was asked how well he felt he knew the group, how connected he felt to the co-players, how likeable he found the co-players, how familiar he found the co-players, how similar (to oneself) he found the co-players and how much he felt that he or she had in common with the co-players.

All of the questions were answered with a 7-point-rating-scale-slider (-3 = not at all; 3 = very much) on the computer.

The last question was a digitalized form of the Inclusion of Other in Self (IOS) Scale. The IOS Scale is a single-item pictorial measure intended to capture people's perception of closeness with another. In the original version subjects select a picture that best illustrates their relationship from a set of Venn-like diagrams, each representing different overlaps of two circles labelled 'Self' and 'Other'. The figures are designed so that the degree of overlap decreases linearly and creates a 7-point-rating-scale (Aron et al., 1992). Figure 1 depicts the original version of the IOS. The IOS Scale has yielded high test-retest and alternate-form reliability (.85 and .92, respectively, for friendships) and convergent and discriminant validity with appropriately related measures (Aron et al., 1997). In our version we digitalized the IOS Scale and the participant could move two circles (indicating one circle as "Self" and the other circle as "The Group") on the screen with the arrow keys into the participant's desired overlap.

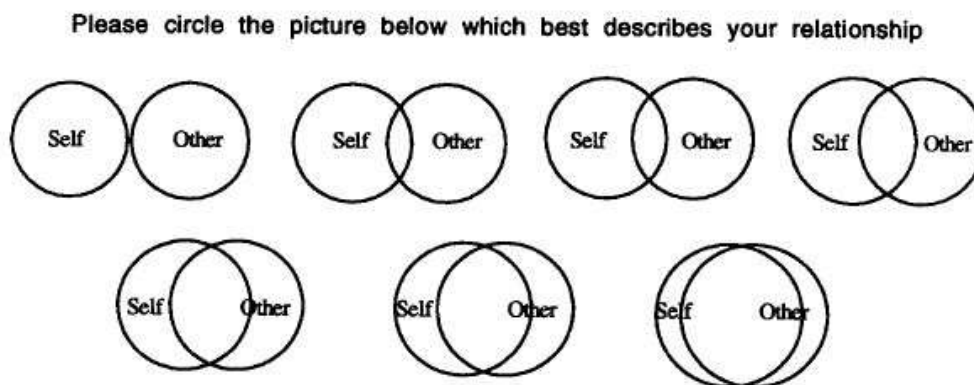


Figure 1: The original version of the Inclusion of Other in Self (IOS) Scale, a single-item pictorial measure of closeness. The subject selects from the 7 presented overlaps of two circles labelled 'Self' and 'Other' the one that describes best his relation.

This Similarity Debriefing provided a check to see if the manipulation had worked and if the participants in each experimental condition (Similar and Dissimilar) really evaluated their co-players differently.

When the participant had finished the task he was instructed by the computer to quietly wait for further instructions of the experimenter to ensure that all participants had finished the task before starting the second part.

Conformity Task

The participants were told that the experiment continued with the so-called “key-press game”: by fast clicking of a mouse button they could win additional money. All additional instructions were presented to them on the computers when the task started (Appendix D).

We created a game based on the “Point Subtraction Aggression Paradigm” (PSAP), a validated behavioural measure of aggression in response to provocation. In its original form the task is made for a single subject sitting behind a computer. The subject presses one button to gain points that will be converted to earned money and another button to subtract money from an opponent but without bringing any benefit (additional earnings) to the subject. The opponent is the computer program itself and is programmed to provoke the subject by stealing points from him. The subject further has the option to press a third button that protects his

earned points. The subject therefore has to choose between damaging the opponent's earnings or protecting his own earnings. The subtractions made by the subject are considered to represent aggression responses (Golomb et al., 2007).

For our study, we modified the original PSAP considerably:

Most importantly, we changed the original version of the PSAP by creating 3 types of trials:

1. *gain trials*: clicks in these trials counted as points and would be converted to money at the end of the experiment and paid equally to all four participants. (The participants got no information of a conversion rate between points and Euros).
2. *neutral trials*: clicks in these trials had no effect. Therefore clicks in neutral trials would neither be added to the total score, nor subtracted.
3. *subtraction trials*: clicks in these destructive trials would subtract points from the next team's final total score. It is important to underline that the subtracted points would NOT be added to the own group's total score, they would solely and only be subtracted from the next team's score and therefore bring no benefit to oneself and one's group. Also, the participants would only know at the end of the game whether the previous group of participants subtracted points from their final score or not.

Compared to the original version of the PSAP, we designed our task suitable for a team of players instead of a single player. Our game consisted of two individual blocks, where the participant only saw his own actions and one group block where also the fictitious results of the three other players were displayed.

First, the participant played an "individual series" (Individual block 1) of trials in which the subject only saw his own results (number of clicks) in each trial. The participant played 30 trials of a random selection of the trial types (neutral, gain and subtraction). Each trial lasted 6 seconds. The participant saw a yellow timer in form of a bar that shrunk with each second. The amount of clicks were displayed by another bar in the colour corresponding to the trial type (green, blue or red) and after the 6 seconds a total sum of clicks in the particular trial. This block of trials served as a baseline to investigate each participant's individual behaviour

and decision making in each trial type. Figure 4 depicts an individual block as the participant saw it.

Next, the main part of the task began which were the “group trials” (Group block). In the group trials, aside from his own results, the participant could simultaneously see 3 other results on the screen that he believed were the results of the co-players (indicated on the screen as players A, B and C to provide anonymity). These results were fictitious and produced by the computer. Figure 5 depicts a group gain trial as the participant saw it on the screen.

The results presented by the computer for gain trials were calculated on the average number of the subject’s own button presses in gain trials in Individual 1 block.

The presented behaviour by the other players in the subtraction trials was programmed in two different ways, forming again two experimental groups: either the clicking behaviour in subtraction trials was very high (around 70%-75% of the participant’s clicks in gain trials from the Individual 1 block) or low (very little or no clicking). The participants were again assigned to the two experimental groups (destructive or non-destructive other players) by the computer depending on group number. This created our second factor “Behaviour by co-players”, that was either “destructive” or “non-destructive”. Figure 6 depicts a group subtraction trial as the participant saw it on the screen.

The neutral trial results of the others were always low. The amount of clicks was calculated independently from the clicks from the Individual 1 block. The clicks of others were at 7-10 clicks on average and not all co-players were clicking, meaning that in some trials one co-player showed no clicking, whereas in some other he did.

The group part consisted of 60 trials of a random selection of the 3 trial types, each trial lasting 6 seconds. This block of trials served to investigate how behaviour and decision making would change when the participant could see his co-players’ behaviour also knowing the co-players would see his actions.

After the group series, another individual series (Individual Block 2) was played by the participant in the exact same manner as in the Individual 1 block. The participant played 30 trials of a random selection of the trial types, each trial lasting 6 seconds. This block of trials served as a comparison to the first individual series. This was to see how the behaviour would change behaviour when the other players were invisible and the participant played privately again. More precisely, the purpose was to see whether the behaviour would switch back to baseline behaviour or remain unchanged after the Group block.

The following figure (Figure 2) shows a graphical overview of the whole experiment.

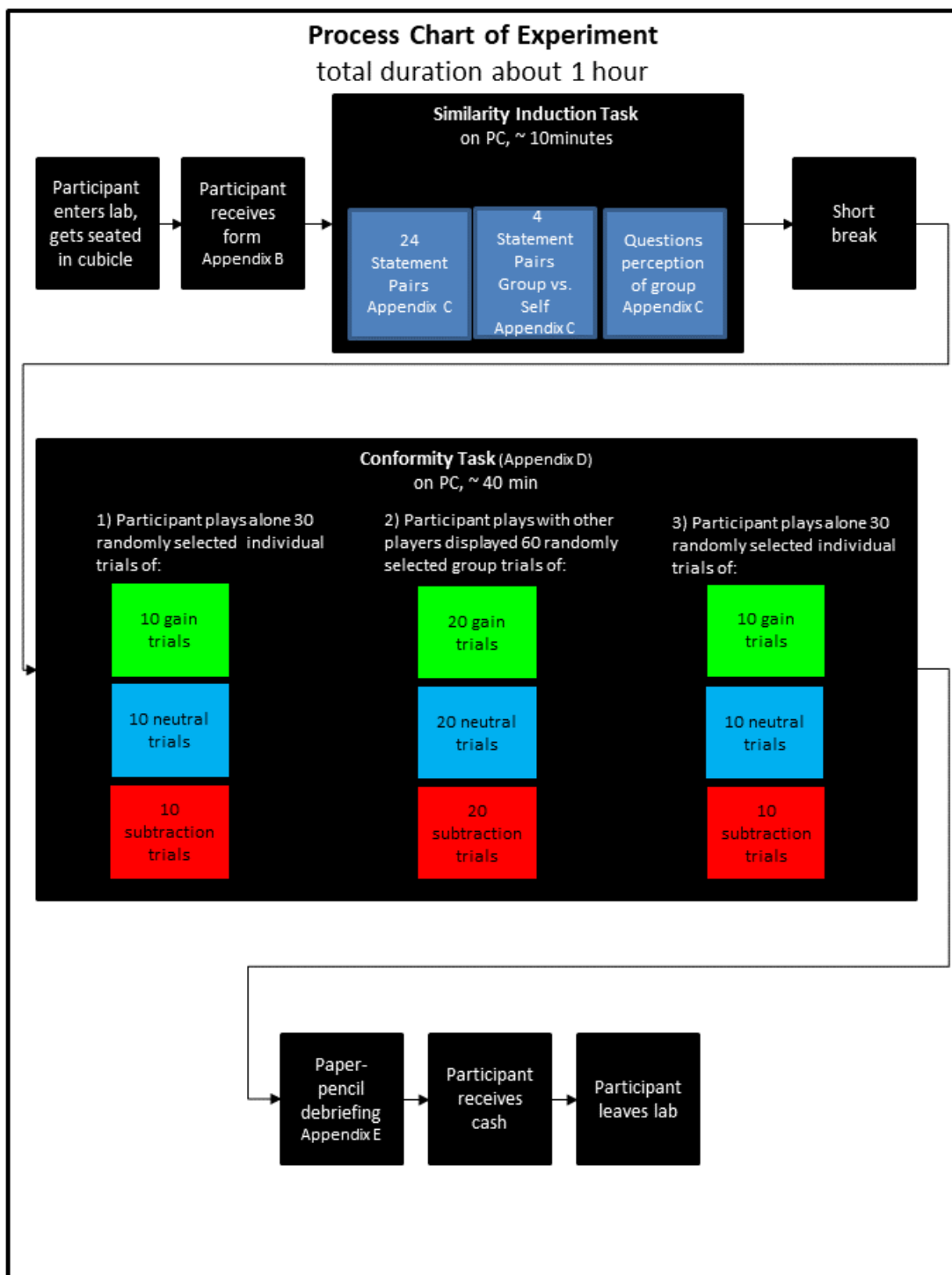


Figure 2: Process chart of the whole experiment

Post-experimental questionnaire

The final part of the study was a questionnaire on the computer about the task. The main purpose of this debriefing was to get feedback on the task, reasons for clicking in neutral and subtraction trials, motivation motifs and the participants' opinions on their moral considerations towards their own and the group's behaviour. All questions were answered with a 7-point-rating-scale as in Similarity Debriefing (-3 = not at all; 3 = very much).

After the computer part had ended, participants filled out a short paper-pencil debriefing questionnaire (Appendix E). The form consisted of 3 questions trying to investigate if the participants had realized the deception in the task:

1. "What do you think was the aim of this study? What do you think was the research question to be investigated?"
2. "We decided to use partition walls to provide same conditions for all participants. Do you think you would have behaved differently if everybody could have seen your operations?"
3. "Did the online-interaction ever feel unreal to you? If it did, how?"

After returning the debriefing sheets, participants received 10€ in cash and filled out a confirmation receipt of the pecuniary compensation and left the lab.

Data analysis

Behavioural data was analysed with the software package IBM© SPSS© 24.0. For the Similarity Task we used the answers of the Similarity Debriefing to see if the participants really evaluated their co-players differently depending on experimental condition (Similar or Non-Similar). These ratings were entered to several independent samples t-tests. The clicks during the Conformity Task served as a dependent variable for the analysis of this part. To look into differences between the two experimental groups (Similar and Non-Similar) in gain trials the clicks in gain trials were entered into a 2 x 3 repeated measures ANOVA with the factors Condition Similarity (Similar and Non-Similar) and Trial Block (Individual Block 1,

Group Block, Individual Block 2). The clicks in subtraction trials were decisive for our main research question. As we were interested to see if conformity behaviour occurred we wanted to specifically see how clicking behaviour in subtraction trials in the different blocks changed. The clicks in the Individual Block 1 served as a baseline for each participant. We then calculated with this baseline rates so-called “difference values” by subtracting the baseline number of clicks from

- Clicks in group trials (“Group versus Individual 1”-value). This created a value indicating how behaviour changed when the participant saw the other players and they saw him or her.
- Clicks in the second individual round of trials (“Individual 2 versus Individual 1”-value). This created a value indicating how the individual behaviour had changed compared to original baseline behaviour. This value made it possible to see if the behaviour only changed in the Group Block and went back to baseline behaviour in the Individual 2 block or if the change in behaviour from the Group Block also lasted in the Individual 2 block.

The size of these difference values was used to measure the extent of behavioural change that occurred when the participant saw the behaviour of his co-players (Destructive or Non-destructive) and entered into a 2x2 ANOVA with Similarity (Similar and Non-Similar) and Behaviour by co-players (Destructive and Non-Destructive) as between-subjects factors and the difference value as the dependent variable. Afterwards a post-hoc t-test was applied to assess the specific effects in detail.

Finally, the ratings of the questionnaire after the Conformity Task were analysed with several independent samples t-tests to look into differences between both experimental groups, Similarity and Behaviour by co-players.

Because clicks in neutral trials did in no way contribute to the verification of our hypotheses, we decided to abstain from the analysis of them.

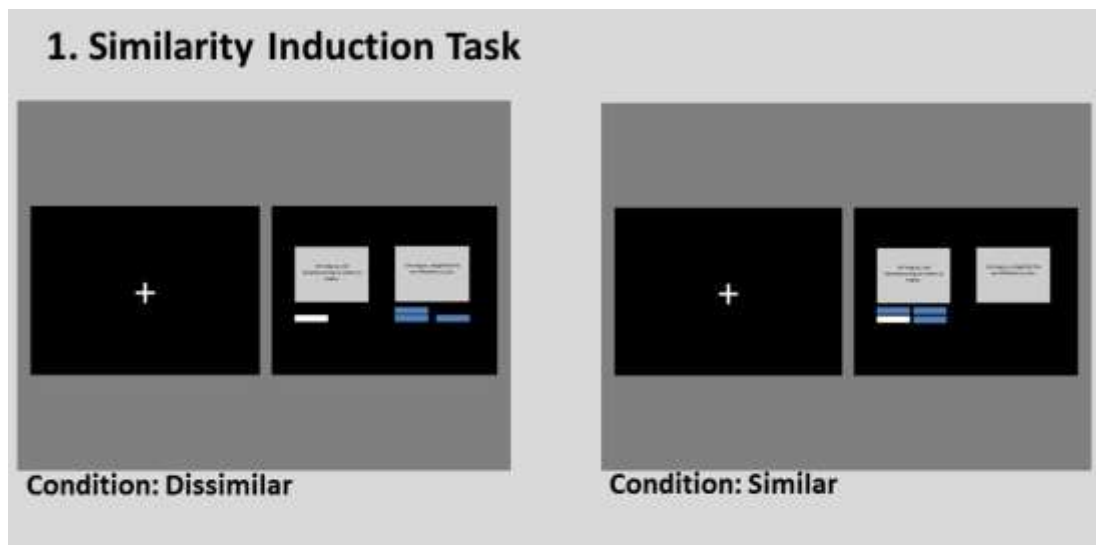


Figure 3: Similarity Induction Task: The participant was presented with two statements. With the arrow keys the participant (indicated with the white bar) selected his answer (left or right statement). After having entered his choice the other players' answers (indicated with the blue bars) got visible. Either the participant got the impression of having co-players with very similar attitudes (Condition Similar, right on image) or the participant got the impression of having co-players with very dissimilar attitudes (Condition: Dissimilar, left on the image).

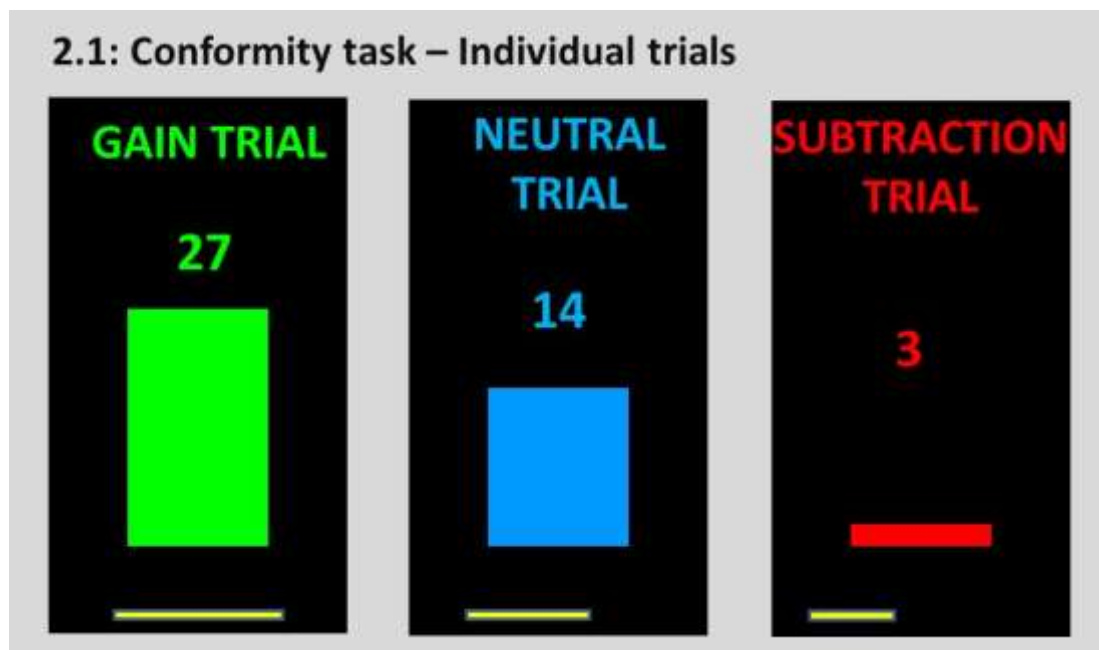


Figure 4: Conformity task – Individual trials. During the first part of the Conformity task the participant played 30 trials of individual trials. He had 6 seconds time per trial after appearance of the yellow bar to press the left mouse button as often as he wanted. On the screen the participant saw what kind of trial he was playing (green for gain, blue for neutral, red for subtraction) and the number of clicks he made in that trial.

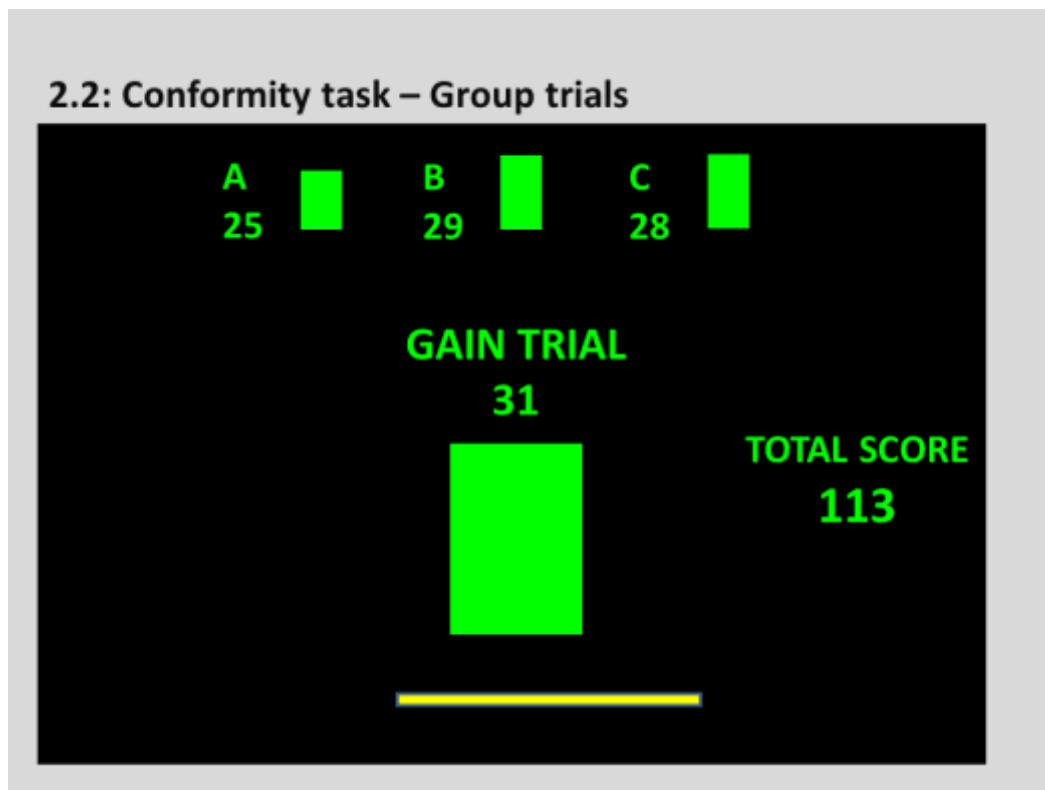


Figure 5: Conformity task – Group trials: In the second part of the task the participant continued with the game in the same manner, but in the next 60 trials he also saw the results of the anonymised three other players' (A, B & C) that were produced by the computer, and was led to believe that they saw the participant's results. A total score of all 4 players was displayed. The picture shows an example of a gain trial.

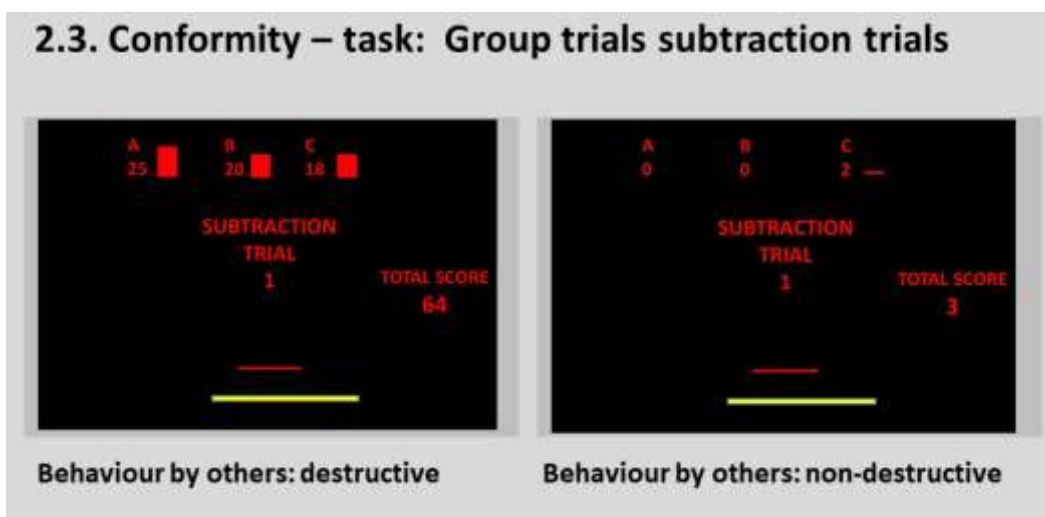


Figure 6: Conformity task – Group trials subtraction trials. The subtraction trials formed our second factor by assigning the participant to either a group where the behaviour by others in the subtraction trials was

destructive (high amounts of clicks) or non-destructive (little or no clicks). The left picture shows a condition of destructive other players, the right picture shows a condition of non-destructive other players.

Results

Validity of the experimental paradigms and manipulation

To confirm the validity of our experimental paradigms and the effectiveness of our group manipulation we first performed an analysis of the ratings from the Similarity Debriefing. We assessed whether our similarity manipulation really resulted in different evaluation of one's co-players depending on the assigned experimental group ('Similar' and 'Non-Similar'). All the questions were answered with a 7-point rating slide (-3 = not at all; 3 = very much), except the "Similarity Score" that had a minimum value of 0 and a maximum value of 4.

Independent-samples t-tests were conducted to compare ratings in similar and non-similar conditions. There were significantly higher ratings in the 'Similar' groups for the ratings "How connected do you feel to your group?" ($T(115) = 2.48, p = 0.01$), "How similar to yourself do you find your group?" ($T(115) = 11.02, p < 0.001$) and the Inclusion of Other in Self-overlap ($T(115) = 4.06, p < 0.001$).

No significant differences were found for the rest of the ratings: "Similarity in Statements" ($T(115) = -1.59, p = 0.11$), "How well do you feel you know your group?" ($T(115) = -0.38, p = 0.71$), "How likeable do you find your group?" ($T(115) = -1.85, p = 0.07$), "How familiar do you find your group?" ($T(115) = -1.57, p = 0.12$) and "Do you have a lot in common with your group?" ($T(115) = 0.71, p = 0.48$).

These results suggest that our manipulation did result, at least partly, in different evaluations of one's co-players depending on the assigned experimental group and therefore worked.

Figure 7 depicts the differences in the ratings for 'Similar' and 'Non-Similar' groups.

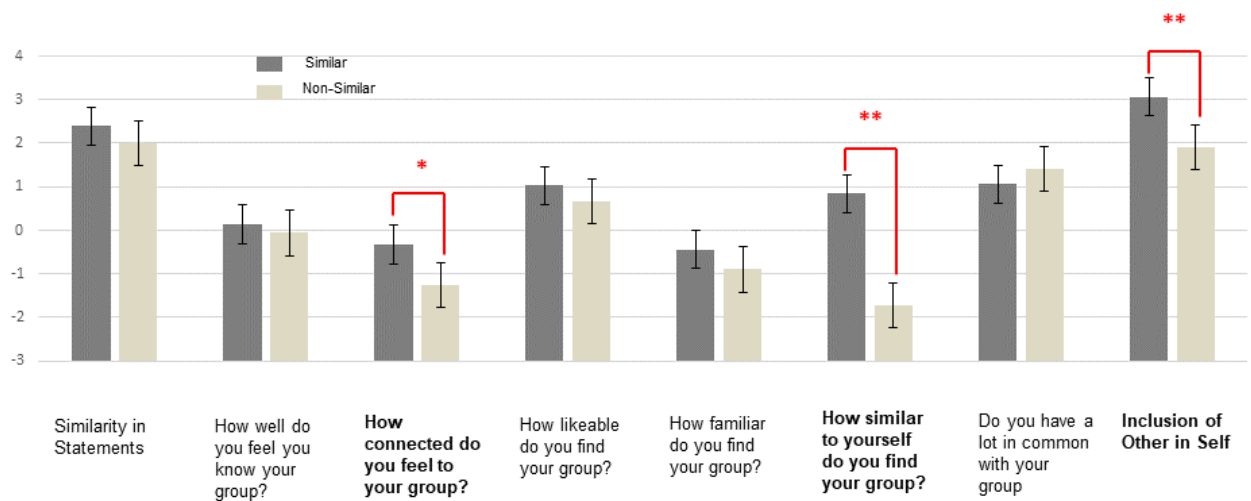


Figure 7: Ratings of the Similarity Debriefing after the Similarity Induction Task for the Similar and Non-Similar experimental groups.

Gain trials

Main effect of similarity

Testing for effects of similarity on behaviour in gain trials across our three points of measurement, we conducted a 2 x 3 repeated measures ANOVA with the factors Condition Similarity (Similar and Non-Similar) and Trial Block (Individual Block 1, Group Block, Individual Block 2). The analysis revealed no significant main effect of similarity in gain trials ($F(1,115) = 1.24$, $p = 0.27$). We did find a significant main effect of Trial Block ($F(1,115) = 31.30$, $p < 0.001$), showing that the clicks in gain trials increased from Individual Block 1 (mean = 41,59) to Group Block (mean = 45,19) to Individual Block 2 (mean = 45,77).

No significant interaction between similarity and block ($F(1,115) = 1.71$, $p = 0.19$) could be found.

Subtraction trials

Main effect of the behaviour by others

To explore the effects of behaviour by co-players on clicking in subtraction trials we decided to focus on the behavioural change in the different trial blocks. The clicks in the Individual 1 block provided a baseline. We then calculated with this baseline rates so-called “difference values” by subtracting the baseline number of clicks from

- Clicks in group trials (“Group versus Individual 1”-value). This created a value indicating how behaviour changed when the participant saw the other players and they saw him or her.
- Clicks in the second individual round of trials (“Individual 2 versus Individual 1”-value). This created a value indicating how the individual behaviour had changed compared to original baseline behaviour. This value made it possible to see if the behaviour only changed in the Group Block and went back to baseline behaviour in the Individual 2 block or if the change in behaviour from the Group Block also lasted in the Individual 2 block.

First we checked on the behavioural change in subtraction trials from individual baseline to group trials.

We conducted a 2x2 ANOVA with Similarity (Similar and Non-Similar) and Behaviour by co-players (Destructive and Non-Destructive) as between-subjects factors and “Group versus individual”-value in subtraction trials as the dependent variable and found a main effect for behaviour by co-players ($F(1,115) = 10.31, p = 0.00$).

Figure 8 depicts the change in subtraction clicks with respect to individual baseline.

Change in subtraction clicks with respect to individual baseline

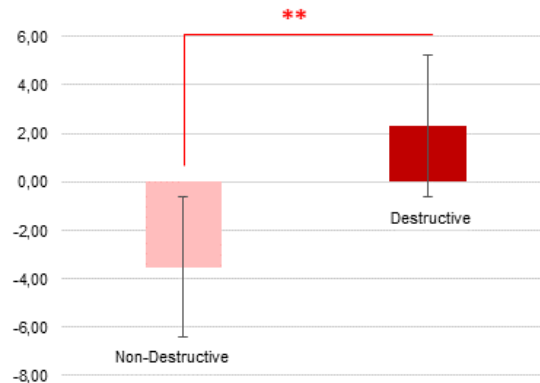


Figure 8: Changes in subtraction clicks comparing individual baseline to group trials for factor “behaviour by-co-players”.

A post-hoc independent samples t-test was conducted to compare the difference values in destructive and non-destructive groups. There was a significant difference in the changes in subtraction clicks in destructive groups (mean = 2.29, SD= 9.50) and non-destructive groups (mean = -3.52, SD = 9.85) conditions ($T(115) = 3.21, p = 0.002$). These results show that clicking rates in destructive groups went up, whereas in non-destructive groups they went down.

To further look into the change in clicking rates, we decided to check the behavioural changes in the Individual 2-Block compared to baseline. For this an independent samples t-test was conducted to compare the difference values (Individual 2 – Baseline) in destructive and non-destructive groups. There was a significant difference in the changes in subtraction clicks in destructive groups (mean = 0.80, SD = 12.51) and non-destructive groups (mean = -3.29, SD = 8.85) conditions ($T(115) = 2.08, p = 0.04$). These results suggest that clicking rates in destructive groups continued to increase in the Individual 2 block, whereas in non-destructive groups they shrunk compared to baseline.

Main effect of similarity

The 2x2 ANOVA with Similarity (Similar and Non-Similar) and Behaviour by co-players (Destructive and Non-Destructive) as between-subjects factors and “Group versus

individual"-value in subtraction trials as the dependent variable, revealed no significant main effect of Similarity ($F(1,115) = 0.14, p = 0.71$).

Interaction effect of similarity and behavior by co-players in subtraction trials

The 2x2 ANOVA with Similarity (Similar and Non-Similar) and Behaviour by co-players (Destructive and Non-Destructive) as between-subjects factors and "Group versus individual"-value as the dependent variable, revealed no significant interaction effect for Similarity x Behaviour by co-players ($F(1,115) = 0.06, p = 0.81$).

Analysis of the debriefing results

To get further information on people's clicking motivation we conducted several independent samples t-tests for the ratings in questionnaire after the Conformity Task. First, we ran an analysis comparing 'Similar' and 'Non-Similar' groups. There were significantly higher ratings in the 'Similar' groups for only the rating "Even though there was no profit, I was motivated to reach the maximum of clicks" (referring to neutral trials) ($T(115) = -2.14, p = 0.03$).

An independent samples t-test comparing the results in the debriefing for 'Destructive' and 'Non-Destructive' groups revealed significantly higher ratings for 'Non-Destructive' participants for "I find my own behaviour appropriate" ($T(115) = -3.07, p = < 0.00$), "I find the behaviour of my team members appropriate" ($T(115) = -4.25, p = < 0.00$), "How satisfied are you with your team's performance?" ($T(115) = -2.65, p = < 0.00$).

Figure 11 gives an overview of the results with regard to the hypotheses.

Hypothesis	Support
Individuals with similar co-players will have higher clicking rates in gain trials than individuals with non-similar co-players.	✗
Individuals with destructive co-players will have higher clicking rates in group subtraction trials than individuals with non-destructive co-players. (Manipulation check)	✓
Individuals with similar co-players will have higher clicking rates in group subtraction trials than individuals with non-similar co-players, if the co-players are destructive. (Interaction effect)	✗

Figure 9: Summary of hypotheses and results.

Discussion

The present study was designed to explore the effects of group bonding on conformity in pro- and antisocial behaviour in a computer game setup. More precisely, the main objective was to find out if group bonding (induced by a feeling of similarity with the co-players) can raise the participation in antisocial, destructive and non-beneficial behaviour.

To this end, we presented participants with a Similarity Induction Task, in which they had to select statements fitting their personal attitudes in everyday life. By also displaying fictitious answers of the three co-players, we gave the participants either the impression of playing with very similar or very dissimilar teammates. We then assessed how this perception of one's group would affect the behaviour in a computer game (Conformity Task), especially regarding maximizing group gain on the one hand and engagement in destructive, non-beneficial behaviour on the other hand.

In addition to group 'similarity' as a main factor, we added destructive or non-destructive 'behaviour by co-players' as a second factor driving the expected effects.

In line with our expectations, the respective social norm in each group of teams (non-destructive and destructive) resulted in conforming behaviour to the given norm: destructive co-players led to higher clicks in subtraction trials, whereas non-destructive co-players led to a decrease in clicks in subtraction trials.

Against our expectations, the induced group similarity did not lead to higher clicks in gain trials and therefore in the willingness to maximize group gains. Neither did group similarity affect participation in destructive behaviour, as no difference in subtraction clicks could be found for the two groups.

Implications of findings for hypotheses

Similarity Induction Task & main effects of similarity on behaviour

We did not find support for group similarity leading to more engagement in group gain. The manipulation was checked, suggesting that the different evaluation of co-players depending

on experimental group was given between our two groups. One reason might be that our manipulation was too subtle to induce a strong feeling of group connectedness. Three of our eight ratings were significantly different, namely “How connected do you feel to your group?”, “How similar to yourself do you find your group?” and the IOS scale overlap. This is a substantial result, since these three ratings measure very clearly the attitudes relevant to the research question: the impression of (non)similarity, the feeling of connectedness and the feeling of closeness to one’s group. There were no significant difference for “Similarity in Statements”, “How well do you feel you know your group?”, “How likeable do you find your group?”, “How familiar do you find your group?” and “Do you have a lot in common with your group?”. The “Similarity Induction Task” of our study was possibly not a strong enough identity category. Our statements reflected personal preferences, desires and opinions which differed only subtly from the alternatively presented ones, and which may therefore be a less powerful indicator of identity than identity categories proposed in other research, like nationality (Dien, 2000), musical preferences (Tarrant et al., 2001) or community identity (Hummon, 1986). Of course, this sets an impulse to improve the manipulation, but also these ratings measure personal sensitivities, that probably require a more profound relationship with another person or group.

Influence of the respective social norms

We could find a statistically significant main effect of the behaviour by co-players in subtraction trials. The further analysis showed the interesting fact that the respective social norm really determined the behaviour. More precisely, when playing with destructive others the amount of clicks in subtraction trials increased and vice versa non-destructive others led to a decline in clicks in subtraction trials. Watching other anonymous players behaving destructively and also being aware of the other players seeing oneself play, clearly lead people to conform to the given group behaviour. Interestingly, participants with non-destructive co-players behaved, as expected, less destructively. This shows that conformity happened in both directions.

It is worth noting that the mere exposure to peers behaving antisocially can be enough to adjust one’s own behaviour according to that antisocial behaviour. The participation in this

destructive behaviour in our task definitely was associated with effort and costs, as fast clicking of the mouse button was strenuous and energies could have been saved for gain trials to maximize gain. The clicks in subtraction trials brought absolutely no benefit and were a waste of resources.

Our finding represents a contribution concerning the power of social norms. With this study we broadened the horizon of obedience studies that have shown the strong impact of individual behaviour on behaviour modification, by investigating conformity to destructive behaviour expressed by a group of strangers instead.

Interaction effect

Against our expectations, no significant interaction for the Factors 'Similarity' and 'Behaviour of co-players' could be found. This means that our factors did not seem to influence each other. The subtlety of our similarity manipulation might be here again a contributor to this fact. In the present circumstances, the factor 'Behaviour by co-players' heightened somewhat higher and the factor 'Similarity' simply was too mild.

Debriefing after Conformity Task

People assigned to the 'Similar' condition had significantly higher ratings in the rating "Even though there was no profit, I was motivated to reach the maximum of clicks" in neutral trials than people in 'Non-Similar' groups. Clearly, no causalities can be drawn from a result like this but one interpretation is that the induced similarity did affect motivation in some way.

People assigned to the 'Non-Destructive' condition showed higher ratings for the ratings "I find my own behaviour appropriate", "I find the behaviour of my team members appropriate", and "How satisfied are you with your team's performance?". These are interesting findings because they all refer to moral considerations of the participants. People in the 'Destructive' condition obviously did have concerns about their co-players behaviour as well as their own.

Relevance of our findings in light of other studies

With this study we established a link to previous studies that have linked similarity to enhanced group identification (Jetten et al., 2001; Byrne et al. 1986); studies that have investigated social conformity in group gambling tasks (Yu & Sun, 2013), studies investigating conformity in prosocial behaviour (Frey & Meier, 2004) as well as studies of conformity in unethical behaviour (Gino et al., 2009). On the one hand we sought to replicate the effects of similarity on group identification and on the other hand extend previous findings to investigations of conformity performed by a group instead of an individual. We could show the effect the behaviour by co-players had on the individual's gaming behaviour. This allows future studies to use similar paradigms as our game paradigm to investigate conformity in antisocial behaviour by any other means and with any other preceding manipulation.

Limitations and interpretational issues

One major shortcoming of our study was that the similarity manipulation we used only had weak effects on behaviour and decision making as we could not find a main effect of similarity. Our manipulation was intentionally very subtle and included no statement pairs of e.g. political, social or ethnic nature because we wanted to avoid any other bias that could have driven liking and also it was the aim of this study to investigate whether a very small degree of similarity can impact behaviour significantly. It would be interesting to conduct a comparable study with a stronger similarity manipulation to investigate what degree of similarity suffices to create significant impact.

An important question in studies about social influence like ours is whether the observed behaviour can be interpreted as conformity or compliance. Vaughan & Hogg (2011) define conformity as a deep seated, private and enduring change in behaviour and attitudes due to group pressure. Compliance, on the other hand, refers to a superficial, public and transitory change in behaviour and expressed attitudes in response to requests, coercion or group pressure. The crucial difference is that compliance does not reflect internal change and usually persists only while behaviour is under surveillance. Conformity, on the contrary, is associated with a feeling of confidence and certainty that the beliefs and actions described by the norm are correct, appropriate and socially desirable (Vaughan & Hogg, 2011). We

measured behavioural change with the difference scores to see how clicking behaviour changed from the individual baseline (Individual Block 1) and we did observe behavioural change in the Group Block. If clicking behaviour would have switched back to baseline behaviour then in the Individual Block 2, one could argue that the behaviour represented compliance. But, as we did also see the behavioural change in the Individual Block 2 compared to baseline (destructive co-players led to an increase in subtraction clicks and non-destructive co-players to a reduction), the data shows that it is actually the pattern of conformity, because the behavioural change maintains even in the condition where surveillance had stopped.

Our study was conducted in a computer game setup and it must be emphasized that our findings reflect behaviour in a laboratory context. Even though people in this study engaged in antisocial behaviour with the sole purpose of harming unknown others, there are clear distinctions between harming others in the context of subtracting points from a stranger group's total score and any other setting in the real world. Thus, generalizing our findings to other contexts should be done cautiously. Also, the whole experiment was realised in the form of a computer game. A current study of Austrian young people's usage patterns of internet and computer games revealed that 70% of the surveyed played computer games at least once week (Riedl et al., 2016). This reflects the normality computer games have in the lives of young people. Fighting an opponent is a main purpose of many games, so it needs to be considered that the behaviour in our game did not necessarily mirror conformity behaviour but normative gaming behaviour.

Conclusion

The present study provides new insights into the effects of similarity in groups on forming social norms and fostering conformity in antisocial behaviour. With our results we deliver another puzzle stone in understanding mechanism of human decision making and concepts of morality and we illustrate how group dynamics can sometimes be a double-edged sword: they are just as influential driving altruistic phenomena like donating as harmful phenomena observed in society, such as harassment of minorities. Our experiment demonstrates a

dilemma that occurs similarly in different situations in life: how does an individual behave in a morally reprehensible situation when the group morality differs from one's own. What happens when an individual has to make the decision either to follow one's own moral compass and taking the risk of being socially rejected or violating one's own morality but be provided in return with the projection of a group?

The evidence gathered in this study highlight the power of social norms and provide a solid ground for future research that will aim to shed more light on the effects group similarity can have on human decision making and conformity in different behaviours.

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Appendices

APPENDIX A

Abstract

Ähnlichkeit ist ein sehr subtiles Mittel um soziales Bonding zu erzeugen. Soziale Bindungen sind ein essentieller Teil des menschlichen Funktionierens und können als Schlüsselmotivation gesehen werden weshalb Menschen Gruppen bilden. Gruppenbildungen führen immer zu einer Unterscheidung von in-group und out-group, sowie zu Bildung von Gruppennormen. Gruppennormen können Motivation für vorteilhaftes und prosoziales Verhalten in Gruppenmitgliedern auslösen, andererseits können sie aber genauso antisoziales und schädliches Verhalten hervorrufen. Die vorliegende Arbeit möchte untersuchen ob sich wahrgenommene Gruppenähnlichkeit auf den Grad an Beteiligung in antisozialen Verhalten auswirkt. In einem gemischten faktoriellen Design spielten 117 Teilnehmer ein Konformitäts-Computerspiel mit entweder destruktiven oder nicht-destruktiven Mitspielern, nachdem sie den Eindruck vermitteln bekamen entweder ähnliche oder unähnliche Mitspieler zu haben. Klickraten in destruktiven Durchgängen dienten als abhängige Variable, die das Verhalten widerspiegelten. Nur das Verhalten der Mitspieler (destruktiv oder nicht-destruktiv) beeinflusste die Konformität in antisozialen Verhalten, aber nicht die wahrgenommene Ähnlichkeit mit der Gruppe. Versuchspersonen mit destruktiven Mitspielern wiesen höhere Klickraten in Abzugsdurchgängen auf als Versuchspersonen mit non-destruktiven Mitspielern. Weitere theoretische und praktische Implikationen werden dargelegt.

Stichworte: Ähnlichkeit, Gruppenbonding, Konformität, antisozial, soziale Normen

APPENDIX B

Informed consent as participants received it (in German)



SCAN-Unit
Faculty of Psychology

Probandeninformation und Einwilligungserklärung zur Teilnahme an der Studie

”Knopfdruckspiel in einem Online-Gruppensetting”

Sehr geehrte/r TeilnehmerIn!

Wir laden Sie herzlich ein, an der oben genannten Studie teilzunehmen.

Ihre Teilnahme an dieser Studie erfolgt freiwillig. Sie können jederzeit und ohne Angabe von Gründen aus der Studie ausscheiden. Die Ablehnung der Teilnahme oder ein vorzeitiges Ausscheiden aus dieser Studie hat keine nachteiligen Folgen für Sie.

Experimentelle Studien sind notwendig, um verlässliche neue Forschungsergebnisse zu gewinnen. Unverzichtbare Voraussetzung für die Durchführung einer Studie ist jedoch, dass Sie Ihr Einverständnis zur Teilnahme an dieser Untersuchung schriftlich erklären. Bitte lesen Sie sich deshalb den folgenden Text sorgfältig durch und zögern Sie nicht, Fragen zu stellen.

Bitte unterschreiben Sie die Einwilligungserklärung nur, wenn

- Sie Art und Ablauf der Studie vollständig verstanden haben,
- Sie bereit sind, der Teilnahme zuzustimmen und
- Sie sich über Ihre Rechte als Probandin an dieser Studie im Klaren sind.

1. Was ist der Zweck dieser Studie?

Die Social, Cognitive and Affective Neuroscience Unit der Fakultät für Psychologie an der Universität Wien beschäftigt sich schwerpunktmäßig mit verschiedenen Aspekten sozialer und kognitiver Phänomene. In der aktuellen Studie geht es um die Zusammenhänge zwischen persönlichen Vorlieben und Lebenseinstellungen im Alltag, der Fähigkeit zur Einschätzung dieser Eigenschaften bei anderen und der Leistung in einem Knopfdruckspiel, das im Team gespielt wird.

2. Wie läuft diese Studie ab?

Die Studie besteht aus zwei Hauptteilen, die beide am Computer ausgeführt werden. Während beider Aufgaben sind Sie und die anderen drei TeilnehmerInnen über Ihre Computer miteinander verbunden. Ihre Eingaben werden für die anderen TeilnehmerInnen aber anonymisiert dargestellt und umgekehrt.

Im ersten Teil werden alle anderen TeilnehmerInnen ein Online Kennenlernspiel spielen (Dauer: etwa 10 Minuten). Im zweiten Teil der Studie spielen die TeilnehmerInnen gemeinsam ein Knopfdruckspiel (Dauer: etwa 40 Minuten). Zusätzlich zu diesen Aufgaben werden Sie einige Fragebögen ausfüllen.

Detaillierte Instruktionen sowie Probedurchgänge erfolgen am Computerscreen.

Wichtig: Um die Versuche über die verschiedenen Versuchsgruppen möglichst vergleichbar ablaufen zu lassen, ist es während der Testung nicht erlaubt, mit den anderen TeilnehmerInnen zu kommunizieren!

3. Worin liegt der Nutzen einer Teilnahme an dieser Studie?

Die Teilnahme an der vorliegenden Studie hat für Sie persönlich keinen unmittelbaren Nutzen. Die Ergebnisse dieser Studie sollen aber wichtige neue Erkenntnisse bezüglich der Zusammenhänge zwischen persönlichen Vorlieben und Lebenseinstellungen, der Fähigkeit zur Personeneinschätzung und der Leistung in einem Geschwindigkeitsspiel am Computer liefern.

4. Wann wird die Studie vorzeitig beendet?

Sie können jederzeit, auch ohne Angabe von Gründen, Ihre Teilnahmebereitschaft widerrufen und aus der Studie ausscheiden, ohne dass Ihnen dadurch irgendwelche Nachteile entstehen.

Es ist aber auch möglich, dass Ihr/e VersuchsleiterIn entscheidet, Ihre Teilnahme an der Studie vorzeitig zu beenden, ohne vorher Ihr Einverständnis einzuholen. Die Gründe hierfür können sein:

- a. Sie können den Erfordernissen der Studie nicht entsprechen
- b. Der/die VersuchsleiterIn hat den Eindruck, dass eine weitere Teilnahme an der Studie nicht in Ihrem Interesse ist.

5. In welcher Weise werden die im Rahmen dieser Studie gesammelten Daten verwendet?

Um Ihre Privatsphäre zu gewährleisten, werden alle Daten vor Auswertung anonymisiert (in einen Code umgewandelt). Ihre Daten werden ausschließlich für diese Studie herangezogen. Die Weitergabe der Daten erfolgt ausschließlich zu statistischen Zwecken und Sie werden darin ausnahmslos nicht namentlich genannt. Auch in etwaigen Veröffentlichungen der Daten dieser Studie werden Sie nicht namentlich genannt.

6. Gibt es einen Kostenersatz oder eine Vergütung?

Durch Ihre Teilnahme an dieser Studie entstehen für Sie keine zusätzlichen Kosten. Als Vergütung für Ihren Zeitaufwand erhalten Sie nach Ihrer Teilnahme einen fixen Betrag von € 8 und die Summe, die Sie mit Ihrem Team im Spiel gewinnen. Bei einem vorzeitigen Abbruch der Studie, aus welchen Gründen auch immer, erhalten Sie eine Entschädigung für Ihren Anreiseaufwand in Höhe von 4€.

7. Möglichkeiten zur Diskussion weiterer Fragen

Für weitere Fragen im Zusammenhang mit dieser Studie steht Ihnen die Studienleitung gern zur Verfügung.

Name der Kontaktperson:

Erreichbar unter (Bürozeiten):

Name der Kontaktperson:

Erreichbar unter (Bürozeiten): knopfdruckspiel.wien@gmail.com

8. Einwilligungserklärung

Bitte lesen Sie sich dieses Formular sorgfältig durch und fragen Sie, wenn Sie etwas wissen möchten oder nicht verstehen.

Name des/der Probandes/in in Druckbuchstaben:

Geburtsdatum:

Code (von VersuchsleiterIn auszufüllen):

Ich erkläre mich bereit, an der Studie „*Knopfdruckspiel in einem Online-Gruppensetting*“ teilzunehmen.

Ich bin von dem/der VersuchsleiterIn ausführlich und verständlich über die vorliegende Studie informiert worden. Ich bin über mögliche Belastungen und Risiken, sowie über Wesen, Bedeutung und Tragweite der Studie als auch sich daraus für mich ergebende Anforderungen aufgeklärt worden. Ich habe darüber hinaus den Text dieser Probandenaufklärung und Einwilligungserklärung, die insgesamt 3 Seiten umfasst, sorgfältig

gelesen. Fragen, die aufgetreten sind, wurden mir von dem/der VersuchsleiterIn und/oder deren MitarbeiterInnen verständlich und ausreichend beantwortet. Ich hatte genügend Zeit, um mich zu entscheiden. Ich habe zurzeit keine weiteren Fragen mehr.

Ich werde den Anordnungen, die für die Durchführung der Studie erforderlich sind, Folge leisten, behalte mir jedoch das Recht vor, meine freiwillige Mitwirkung jederzeit zu beenden, ohne dass mir daraus Nachteile entstehen. Ich bin zugleich damit einverstanden, dass meine im Rahmen dieser Studie ermittelten Daten aufgezeichnet werden. Um die Richtigkeit der Datenaufzeichnung zu überprüfen dürfen Beauftragte des Auftraggebers und der zuständigen Behörden bei der Studienleiterin Einblick in meine personenbezogenen Daten nehmen. Beim Umgang mit den Daten werden die Bestimmungen des Datenschutzgesetzes beachtet.

Eine Kopie dieser Probandeninformation und Einwilligungserklärung habe ich erhalten. Das Original verbleibt bei der Studienleiterin.

(Datum und Unterschrift des/der Probandes/in)

(Datum, Name und Unterschrift des/der verantwortlichen Versuchsleiters/in)

APPENDIX C

Task instructions Similarity Induction Task as the participants saw them (in German)

Starting screen: 'Knopfdruckspiel'

Kennenlernspiel

Im ersten Teil dieses Spieles geht es für Sie und Ihre MitspielerInnen darum, unterschiedliche Aussagen zu bewerten und sich darüber hinaus gegenseitig besser kennenzulernen.

Ihre Aufgabe ist es dabei, in jedem Durchgang die beiden Aussagen am Bildschirm sorgfältig durchzulesen und spontan zu entscheiden, welche Alternative besser auf Sie selbst zutrifft:

- Passt die Aussage auf der linken Seite besser, drücken Sie die **Pfeil-nach-Links-Taste**:
- Passt die Aussage auf der rechten Seite besser, drücken Sie die **Pfeil-nach-Rechts-Taste**:

Die Antworten können Sie erst wählen wenn zwei weißen Balken unter diesen erscheinen.

Nach Eingabe Ihrer Antwort werden Sie auch die bevorzugte Antwort Ihrer MitspielerInnen am Bildschirm sehen und so erfahren, wie dieser Mitspieler auf dasselbe Aussagenpaar geantwortet hat.

*** Bitte drücken Sie die Leertaste um fortzufahren ***

Probedurchgänge

Um Sie mit dem Format der Aussagen, die nun von Ihnen zu bewerten sind, bekannt zu machen, werden jetzt zwei Probedurchgänge erfolgen.

Bitte antworten Sie schnell und spontan, und sehen Sie sich aufmerksam an, wie Ihre MitspielerInnen antworten!

*** Drücken Sie die Leertaste um mit den Probedurchgängen anzufangen***

Haben Sie keine Fragen mehr?

Drücken Sie dann bitte die Leertaste, um mit der Aufgabe zu beginnen!

STATEMENT PAIRS

Ich mag die Lebendigkeit und Vielfalt der Großstadt mehr als das Leben am Land. / Ich mag die Gemütlichkeit und Natur am Land mehr als das Leben in der Großstadt.

Ich mag Katzen eher als Hunde: Ich finde Sie kuscheliger und mir gefällt, dass sie machen was sie wollen. / Ich mag Hunde eher als Katzen: Ich finde sie treuer und mehr auf den Menschen bezogen.

Ich finde Tattoos etwas Schönes und ganz Persönliches und könnte mir gut vorstellen mich tätowieren zu lassen. / Ich finde, dass Tattoos den Körper verunstalten und würde mich daher nie tätowieren lassen.

Ich mache lieber Urlaub am Strand, weil ich mich entspannen und dem Alltag entfliehen will. / Ich mache lieber Fernreisen, weil ich gerne fremde Menschen und Kulturen kennenlernen will.

Wenn das Wetter sehr heiß ist, bin ich gerne draußen und genieße die Hitze und die Sonne. / Wenn das Wetter sehr heiß ist, bin ich gerne im Kühlen und schütze mich vor der Hitze.

Ich mag Häuser mit kräftigen Farben, da diese originell und lebendig auf mich wirken. / Ich mag Häuser mit dezenten Farben, da diese unaufdringlich und zeitlos auf mich wirken.

Ich mag Eis mit Schokoladengeschmack, weil ich den Geschmack aromatisch finde. / Ich mag Eis mit Fruchtgeschmack, weil ich den Geschmack erfrischend finde.

Ich mag Sportarten, die Geschicklichkeit, Technik und Erfindungsgabe von mir erfordern. / Ich mag Sportarten, die Kraft, Ausdauer und Willensstärke von mir erfordern.

Klassische Möbel wirken oft muffig und langweilig auf mich. / Moderne Möbel wirken oft seelenlos und kalt auf mich.

Ich sehe mir gerne Filme an, die mich zum Lachen bringen. / Ich sehe mir gerne Filme an, die mich zum Nachdenken bringen.

Mir gefällt moderne Kunst, da ich es spannend finde die Wirklichkeit auf eine andere Weise zu betrachten. / Mir gefällt klassische Kunst, da ich eine genaue Abbildung der Wirklichkeit am schönsten finde.

Ich würde eher ein Jahr als Astronaut am Mars verbringen als ein Jahr in einem U-Boot: im Weltall ist es zwar einsam, aber viel spannender. / Ich würde eher ein Jahr in einem U-Boot verbringen als ein Jahr als Astronaut am Mars: unter Wasser ist es vielleicht langweilig, aber auch weniger riskant.

Ich mag es eher in einem grünen Außenbezirk zu wohnen, weil es mir gefällt, dass man dort sein eigenes Reich hat und über genügend Platz verfügt. / Ich mag es eher in einer Wohnung in der Innenstadt zu wohnen, weil ich von dort schneller in die Stadt gelange und mir die Lebendigkeit gefällt.

Ich denke in Bildern und sehe Verbindungen visuell vor mir. / Ich denke in Sprache und beschreibe in meinem Kopf Verbindungen mit Worten.

Ich beschäftige mich gerne mit realistischen, praktischen Dingen. / Ich beschäftige mich gerne mit Theorien, Konzepten, Gedanken und Ideen.

Ich mache mir gerne To-Do Listen. / Ich erledige Aufgaben so, wie sie auftreten.

In der Schule haben mir die sprachlichen Fächer besser gefallen, weil ich da mein Sprachgefühl einbringen konnte. / In der Schule haben mir die naturwissenschaftlichen Fächer besser gefallen, weil ich dabei mein logisches Denken anwenden konnte.

Ich fälle gerne klare Entscheidungen. / Ich halte mir lieber alle Möglichkeiten offen.

Es fällt mir leichter mich mündlich auszudrücken: da kann ich direkter sagen, was ich mir denke. / Es fällt mir leichter mich schriftlich auszudrücken: da habe ich mehr Zeit um meine Gedanken zu ordnen.

Ich komme nicht klar mit Besserwissern, weil es mich ärgert, wenn jemand immer Recht haben muss. / Ich komme nicht klar mit Pessimisten, weil es mich stört, wenn jemand alles schlecht und negativ macht.

Im Alltag mache ich gerne Pausen, um wieder neue Energie zu bekommen. / Für Pausen nehme ich mir im Alltag wenig Zeit; ich bin lieber schneller mit der Arbeit fertig.

Mit schweren Aufgaben beginne ich eher früh, weil ich am Ende keinen Stress haben will. / Mit schweren Aufgaben beginne ich eher spät, weil ich den Druck brauche.

Wenn mir die neue Frisur eines Freundes/einer Freundin nicht gefällt, fällt es mir eher schwer, etwas Positives aber Unwahres darüber zu sagen. / Wenn mir die neue Frisur eines Freundes/einer Freundin nicht gefällt, fällt es mir eher schwer, etwas Ehrliches aber Negatives darüber zu sagen.

Ich mag es, viel Verantwortung im Leben zu haben. / Ich mag es, möglichst frei von Pflichten zu sein.

Ihre MitspielerInnen und Sie haben nun gegenseitig einen Eindruck Ihrer persönlichen Präferenzen und Vorlieben bekommen.

Es folgen nun weitere vier Aussagenpaare im gleichen Stil wie bisher. Sie sollen nun aber die Aussage wählen, die Ihrer Einschätzung nach am Meisten auf Ihre MitspielerInnen zutrifft.

Das Selektieren Ihrer Antworten erfolgt wie bisher:

- Passt die linke Aussage besser, dann drücken Sie die Pfeil-nach-Links-Taste:
- Passt die rechte Aussage besser, dann drücken Sie die Pfeil-nach-Rechts-Taste:

Die gewählten Antworten sind für die anderen Spieler nicht sichtbar. Auch werden Sie die Antworten Ihrer MitspielerInnen nicht mehr sehen.

*** Bitte drücken Sie die Leertaste um fortzufahren ***

Im letzten Teil des Kennenlernspiels sollen Sie nun bitte für dieselben vier Aussagenpaare, die Sie gerade für Ihre MitspielerInnen bewertet haben, die Aussage wählen die am Meisten auf Sie selbst zutrifft.

Das Selektieren Ihrer Antworten erfolgt wie bisher:

- Passt die linke Aussage besser, dann drücken Sie die Pfeil-nach-Links-Taste:
- Passt die rechte Aussage besser, dann drücken Sie die Pfeil-nach-Rechts-Taste:

Die gewählten Antworten sind für die anderen Spieler nicht sichtbar. Auch werden Sie die Antworten Ihrer MitspielerInnen nicht mehr sehen.

*** Bitte drücken Sie die Leertaste um fortzufahren ***

STATEMENT PAIRS II

Wenn ich alleine zuhause bin, koche ich nicht gerne: es ist mir zu viel Aufwand und ich denke, ein schnelles Gericht kann auch gesund sein. / Auch wenn ich alleine zuhause bin, koche ich gerne: es macht mir Spaß und mir ist wichtig, gesund zu essen.

Ich möchte in meiner Freizeit mehr Zeit zum Entspannen einplanen. / Ich möchte in meiner Freizeit mehr Zeit für aufregende Aktivitäten einplanen.

Ich würde gerne einmal Tiefseetauchen, weil mich die Tier- und Pflanzenvielfalt des Meeresgrundes fasziniert. / Ich würde gerne einmal Höhlenklettern, weil mich das Klettern durch bizarre Welten aus unterirdischen Felsgebilden fasziniert.

Ich wäre gerne entschlossener. / Ich wäre gerne spontaner.

Zum Schluss bitten wir Sie noch einige Fragen zu beantworten. Es geht darum wie gut Sie glauben Ihre Gruppe nun zu kennen und generell um der Beziehung zwischen Ihnen und Ihrer Gruppe.

Für Ihre Bewertungen verwenden Sie eine Skala, die von „gar nicht“ (ganz links) bis „sehr“ (ganz rechts) geht.

Sie geben Ihre Bewertung wie folgt auf der Skala ein:

- Mit den **Pfeil-nach-Links-** und **Pfeil-nach-Rechts-Tasten** schieben Sie den Regler nach links und rechts:
- Bestätigen Sie danach Ihre Eingabe mit der **Pfeil-nach-Oben-Taste**:

Bei den Bewertungen ist vor allem Ihre spontane Antwort von Interesse: es gibt keine richtigen oder falschen Antworten!

Ihre Eingaben sind anonym: die anderen Teilnehmer werden Ihre Bewertungen nicht sehen.

*** Drücken Sie die Leertaste um fortzufahren. ***

Wie sehr haben Sie das Gefühl Ihre Mitspieler über das Kennenlernspiel kennengelernt zu haben?

Wie verbunden fühlen Sie sich mit Ihren MitspielerInnen?

Wie sympathisch finden Sie Ihre MitspielerInnen?

Wie vertraut kommen Ihnen Ihre MitspielerInnen vor?

Wie ähnlich (zu Ihnen selbst) kommen Ihnen Ihre MitspielerInnen vor?

Ich habe den Eindruck dass die Teilnehmer in meiner Gruppe viel gemeinsam haben.

Bitte bewerten Sie jetzt wie Sie das Verhältnis zu Ihren MitspielerInnen empfinden.

Die abgebildeten Kreisen stellen Sie selbst (im Weiß) und Ihre MitspielerInnen (im Blau) dar.

Durch verändern der Überlappung der Kreise können Sie angeben wie nahe Sie sich Ihren MitspielerInnen fühlen.

Bitte bewegen Sie mit den Pfeiltasten die Kreise in die Überlappung, die Ihrer Meinung nach die momentane Beziehung zwischen Ihnen und Ihren MitspielerInnen am Besten darstellt.

Mit den Pfeil-nach-Links- und Pfeil-nach-Rechts-Tasten schieben Sie Ihren Kreis nach links und rechts.

Bestätigen Sie danach Ihre Antwort mit der Pfeil-nach-Oben-Taste.

Bitte warten Sie auf weiter Anweisungen der Versuchsleitung.

APPENDIX D

Task instructions Conformity Task as the participants saw them (in German)

Knopfdruckspiel

In der nächsten Aufgabe werden Sie und Ihre MitspielerInnen ein Knopfdruckspiel spielen. In diesem Spiel können Sie durch möglichst schnelles Knopfdrücken Punkte für Ihr Team sammeln. Diese Punkte werden am Ende der Studie in Geld umgesetzt und ausgezahlt.

Sie spielen das Spiel gemeinsam mit Ihren MitspielerInnen, mit denen Sie über Ihre Computer während des gesamten Spiels verbunden sind.

Im Spiel gibt es drei Arten von Durchgängen, die auf den nächsten Seiten erklärt werden.

*** Drücken Sie die Leertaste um fortzufahren. ***

Gewinndurchgänge

Bei Gewinndurchgängen können Sie mit Ihren Klicks Punkte verdienen.

Bei jedem Durchgang haben Sie und Ihre MitspielerInnen 6 Sekunden Zeit die LINKE MAUSTASTE so oft wie Sie wollen zu drücken.



Pro Klick sammelt jede/r SpielerIn 1 Punkt für das Team. Sollten Sie gar nicht drücken, sammeln Sie 0 Punkte für Ihr Team. Abzüge gibt es nicht.

*** Drücken Sie die Leertaste um fortzufahren. ***

Neutrale Durchgänge

In Neutralen Durchgängen haben Sie und Ihre MitspielerInnen auch die Möglichkeit die linke Maustaste zu drücken, aber hier haben Klicks keinen Effekt: sie ergeben keine Punkte und in der Folge kein Geld aber auch keine Abzüge.

Falls Sie in diesen Durchgängen die Taste drücken, wird lediglich die Anzahl von Klicks am Schirm angezeigt.

*** Drücken Sie die Leertaste um fortzufahren. ***

Abzugsdurchgänge

In Abzugsdurchgängen bewirken die Klicks von Ihnen und Ihren MitspielerInnen, dass Punkte vom Punktestand der nächsten Gruppe an Versuchspersonen abgezogen werden.

Wichtig: die abgezogenen Punkte werden Ihrem Team NICHT angerechnet, sondern einzig und alleine dem nächsten Team ABGEZOGEN. Wenn Sie nicht drücken werden der nächsten Gruppe keine Punkte abgezogen.

Es steht Ihnen bei diesen Durchgängen also frei, durch Klicken den Endgewinn der nächsten Gruppe zu beeinflussen, so wie auch der Endgewinn Ihres Teams von der vorherigen Gruppe beeinflusst worden sein könnte. Informationen dazu erfahren Sie erst am Ende des Spiels.

*** Drücken Sie die Leertaste um fortzufahren. ***

Probedurchgang

Es folgt nun ein Probe-Gewinndurchgang. Klicken in diesem Durchgang hat noch keinen Effekt auf das Punktekonto Ihres Teams.

Sie sehen zuerst eine Ankündigung. Sobald ein Balken (Timer) am unteren Display erscheint, haben Sie 6 Sekunden Zeit um durch Klicken möglichst viele Punkte für Ihr Team zu sammeln (1 Punkt pro Klick). Für das Klicken verwenden Sie immer die LINKE MAUSTASTE.

Mit einem grünen Balken werden am Schirm die Anzahl der Klicks angezeigt. Obwohl Sie und Ihre MitspielerInnen das Spiel gleichzeitig spielen, sehen alle SpielerInnen jeweils nur die eigenen Klicks.

*** Drücken Sie die Leertaste wenn Sie bereit für den Probedurchgang sind ***

Das war der Probedurchgang!

Haben Sie keine Fragen mehr? Dann drücken Sie bitte die Leertaste um mit dem ersten Teil vom Spiel anzufangen!

Das war der erste Teil des Knopfdruckspiels!

Sie werden das Spiel gleich weiterspielen. Im nächsten Teil werden Sie und Ihre MitspielerInnen am Schirm nicht nur die eigene Anzahl von Klicks, sondern auch die Anzahl von Klicks der anderen SpielerInnen sehen.

Das Spiel bleibt unverändert:

Bei **Gewinndurchgängen** sammeln Sie und Ihre MitspielerInnen durch Klicken Punkte für Ihr Team, die am Ende des Spiels in Geld umgesetzt und ausgezahlt werden.

Bei **Neutralen Durchgängen** hat Klicken keinen Effekt auf das Punktekonto: es wird lediglich die Anzahl von Klicks angezeigt.

Bei **Abzugsdurchgängen** werden durch Klicken Punkte vom Punktestand der nächsten Gruppe an Versuchspersonen abgezogen. Klicks haben keinen Effekt auf das eigene Punktekonto.

Am Schirm werden allen SpielerInnen nun mit mehreren Balken sowohl die Anzahl der eigenen Klicks, als auch die Anzahl der Klicks der anderen SpielerInnen angezeigt.

*** Drücken Sie die Leertaste wenn Sie bereit für einen Probedurchgang sind ***

Das war der Probedurchgang!

Haben Sie keine Fragen mehr? Dann drücken Sie bitte die Leertaste um mit dem zweiten Teil vom Spiel anzufangen!

Das war der zweite Teil des Knopfdruckspiels!

Nach einer kurzen Pause fängt nun der letzte Teil an. In diesem Teil werden Sie und Ihre MitspielerInnen, wie im ersten Teil, nur die eigene Anzahl von Klicks am Schirm sehen.

Das Spiel bleibt unverändert:

Bei **Gewinndurchgängen** sammeln Sie und Ihre MitspielerInnen durch Klicken Punkte für Ihr Team, die am Ende des Spiels in Geld umgesetzt und Ihnen und Ihren MitspielerInnen ausgezahlt werden.

Bei **Neutralen Durchgängen** hat Klicken keinen Effekt auf das Punktekonto: es wird lediglich die Anzahl von Klicks angezeigt.

Bei **Abzugsdurchgängen** werden durch Klicken Punkte vom Punktestand der nächsten Gruppe an Versuchspersonen abgezogen. Klicks haben keinen Effekt auf das eigene Punktekonto.

*** Drücken Sie die Leertaste um mit dem Spiel fortzufahren ***

Endergebnisse

Gewinn

Neutral

Abzug

Endergebnisse in Euros

Gewinnbetrag (gerundet)

Ihr Team hat mit den gesammelten Punkten verdient: € 8

Von diesem Betrag haben die Spieler der vorherigen Versuchsgruppe abgezogen: € 0

Jeder Spieler hat verdient: € 2

Abzugsbetrag der nächsten Versuchsgruppe (gerundet)

Ihr Team hat vom Gewinnbetrag der nächsten Versuchsgruppe abgezogen: €

*** Drücken Sie die Leertaste um weiterzufahren ***

Das Knopfdruckspiel ist jetzt zu Ende!

Es folgen nun einige Fragen über Ihre persönliche Eindrücke und Empfindungen während des Knopfdruckspiels.

Die Fragen sind auf einer Skala mit Schieberegler zu beantworten. Dabei steht das linke Ende der Skala für „gar nicht“ und das rechte Ende für „sehr“.

Sie geben Ihre Bewertungen wie folgt ein:

- Mit den **Pfeil-nach-Links-** und **Pfeil-nach-Rechts-Tasten** schieben Sie den Regler nach links und rechts:
- Mit der **Pfeil-nach-Oben-Taste** bestätigen Sie Ihre Eingabe:

Bitte antworten Sie ehrlich und spontan. Es gibt keine falschen Antworten!

Ihre Eingaben sind anonym: die anderen TeilnehmerInnen werden Ihre Bewertungen nicht sehen.

*** Drücken Sie die Leertaste um fortzufahren. ***

Fragen über die Aufgabe zum Knopfdruckspiel

Fragen zu den Gewinndurchgängen

Wie motiviert waren Sie Punkte für Ihr Team zu gewinnen?

Gar nicht motiviert

Sehr motiviert

Fragen zu den Gewinndurchgängen

Wie sehr haben Sie sich bemüht die maximale Klickzahl in den 6 Sekunden zu erreichen, damit Ihr Team möglichst viele Punkte erhält?

Ich habe mich kaum bemüht

Ich habe mein Allerbestes gegeben

Sie haben während des Spiels auch in neutralen Durchgängen geklickt.

Warum haben Sie in diesen Durchgängen geklickt?

Obwohl es keinen Gewinn gab, war ich selbst motiviert auch in diesen Durchgängen
möglichst viele Knopfdrücke zu erreichen

Ich habe mich an das Klicken gewöhnt

Ich habe nur geklickt um mich weiter aktiv zu halten und nicht zu langweilen

Ich war mir unsicher ob die Klicks wirklich keinen Gewinn bringen und dachte es würde nicht
schaden

Sie haben während des Spiels auch in Abzugsdurchgängen geklickt.

Warum haben Sie in diesen Durchgängen geklickt?

Ich habe nur geklickt um mich weiter aktiv zu halten und nicht zu langweilen

Ich war mir unsicher ob die Klicks wirklich keinen Gewinn bringen und dachte es würde nicht
schaden

Bewerten Sie folgende Aussagen zu den Abzugsdurchgängen:

Ich gehe davon aus, dass das vorherige Team meinem Team Punkte abgezogen hat

Es war mir wichtiger besser mehr Punkte als das nächste Team zu sammeln

Ich finde es bedenklich einem anderen Team Punkte abzuziehen

Ich finde es ist Teil des Spiels gewesen auch Punkte abzuziehen

Ich fand mein Verhalten angemessen

Ich fand das Verhalten meiner Mitspieler angemessen

Ich stimme gar nicht zu

Ich stimme sehr stark zu

Allgemein

Wie zufrieden sind Sie über die Leistung ihres Teams?

Wie motivierend fanden Sie die individuellen Teilaufgaben des Knopfdruckspiels?

Wie motivierend fanden Sie die Teilaufgaben bei denen Feedback über die Knopfdrücke von allen Spielern am Schirm gezeigt wurde?

Das war der Computerteil des Experimentes.

Warten Sie auf Hinweise der Versuchsleiterin.

APPENDIX E

Post-experimental paper-pencil questionnaire (in German)



SCAN-Unit
Faculty of Psychology

Versuchspersonennummer: _____

Liebe(r) TeilnehmerIn,

Vielen Dank, dass Sie an unserem Experiment teilgenommen haben!

Ihre Meinung ist uns sehr wichtig. Deshalb bitten wir Sie, sich noch kurz Zeit zu nehmen, um ein paar Fragen zu beantworten.

Bitte antworten Sie ehrlich und spontan, es ist uns wichtig zu wissen, was Sie über das Experiment denken, wie Ihre Eindrücke waren, welche Kritikpunkte Sie haben. Durch Ihre Mithilfe können wir das Experiment weiter optimieren.

1. Was war, Ihrer Meinung nach, der Zweck der Studie; die Fragestellung, die verfolgt wurde?

2. Um die Responses aller TeilnehmerInnen auf der gleichen Weise aufzeichnen zu können und eine gewisse Anonymität sicher zu stellen, haben wir uns dafür entschieden in dieser Studie alle TeilnehmerInnen in getrennten Computernischen zu positionieren.

- a. Meinen Sie, es hätte Sie in irgendeinem der Tasks beeinflusst, wenn alle TeilnehmerInnen das Spiel ohne Trennwände am selben Computer gespielt hätten, und Sie also weniger anonym wären?

b. Da Sie keinen direkten Kontakt zu den TeilnehmerInnen hatten: hat sich die online Interaktion jemals künstlich oder unecht angefühlt? Wenn ja, wie stark war dieses Gefühl?

c. Haben Sie sonst noch Bemerkungen zum Versuchsablauf?

Vielen Dank für Ihre Teilnahme!