

2012

The study of human interaction when playing rock-paper-scissors

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University of Plymouth

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Appendix 1

**University of Plymouth
Faculty of Science and Technology**

Research Information Sheet

Name of Principle Investigator

Neil Drew

Title of research:

The study of human interaction, when playing rock, paper, scissors.

Aim of research

This experiment will investigate the degree of our interactions when participating in a number of games of rock, paper, scissors, and whether winning and losing frequencies occur.

Description of procedure

The procedure will first consist of you completing a personality questionnaire, and then playing 3 rounds of rock, paper, scissors, with 5 games in each round. During this procedure, a camera will be present to record the results of experiment. The whole experiment will take approximately 15 minutes.

Description of risks

There are no known risks associated with this procedure. You will not be exposed to risks greater than or additional to those encountered in normal lifestyles.

Benefits of proposed research

There are no direct benefits to you from participating in this study. However, we hope that by participating in this research it will provide you with insight into why we choose and perform specific actions in everyday interaction with people. We are happy to answer any questions you may have about your participation. You can contact the principle investigator via email: neil.drew@students.plymouth.ac.uk. Or if you prefer, you can contact the supervisor of the experiment: Patric.bach@plymouth.ac.uk

Right to withdraw

You are free to withdraw from the research at any stage of the experiment, and you can ask for your data to be destroyed if desired.

If you are dissatisfied with the way the research is conducted, please contact the principle investigator first, Neil Drew. If you feel the problem has not been resolved please contact the supervisor Patric Bach. Email details are above.

Appendix 2

University of Plymouth

Faculty of Science and Technology

Human Ethics Committee Consent Form

Consent to Participate In Research Project/Practical Study

Name of Principle Investigator

Neil Drew

Title of research:

The study of human interaction, when playing rock, paper, scissors.

Brief Statement of purpose of work:

This experiment will investigate the degree of human interaction which can be a factor in influencing peoples actions when participating in a game of rock, paper, scissors.

The objectives of this experiment have been explained to me.

I understand that I am free to withdraw from the research at any stage, and ask for my data to be destroyed if I desire to do so.

I understand that my anonymity is guaranteed, unless I expressly state otherwise.

I understand that the Principle investigator of this work will have attempted, as far as possible, to avoid any potential harm and risks, and that safety and health risks will have been assessed by appropriate authorities.

Under these circumstances, I agree to participate in the research.

Name:

Signature:

Date:

Appendix 3

**University of Plymouth
Faculty of Science and Technology**

Debrief

Principle Investigator

Neil Drew

Title of research:

The study of human interaction, when playing rock, paper, scissors.

Purpose of research

The aim of this experiment was to investigate the degree in which mirror neurons are a factor in influencing peoples actions when participating in a game of rock, paper, scissors, and whether winning and losing frequencies can occur. Mirror neurons are neurons in the brain which fire and react when we simply observe another person performing an action, and we empathize with the action.

Humans have a tendency to imitate observed actions, thus the purpose was to measure the degree to which this is true when participating in 3 rounds of rock, paper scissors. Finally, we ask kindly if you could not discuss the details of your participation with other students as it may affect our results if we then test these students.

We are happy to answer any questions you may have about any aspect of this study and your participation. You can contact the principle investigator via email:

neil.drew@students.plymouth.ac.uk. Or if you prefer, you can contact the supervisor of the experiment: Patric.bach@plymouth.ac.uk

You are free to withdraw your data at any time, and it will be destroyed.

Appendix 4

Table of means

This Table displays the average amount of wins and losses for both the winning sequence round and the losing sequence round for all participants. These results were then used to carry out the One-sample T-test.

Participant	Losing round: sum of wins-losses (divided by) wins + losses	Winning round: sum of wins-losses (divided by) wins+losses	Difference between the two
1	1	-0.5	1.5
2	-1	1	-2
3	0	0	0
4	0.5	1	-0.5
5	0	1	-1
6	-1	-0.3	-0.6
7	1	0	1
8	0	0.3	-0.3
9	0.5	0.3	0.16
10	-1	1	-2
11	0.3	0	0.3
12	-0.3	-1	0.6
13	-0.5	0	-0.5
14	0	1	-1
15	1	1	0
16	0	-1	1
17	1	0	1
18	0	-0.3	0.3
19	1	1	0
20	0	0	0
21	-1	1	-2
22	0.3	-0.3	0.6
23	0	0	0
24	1	0.3	0.6
25	1	0	1
26	-1	-1	0

= Recurring sign

Appendix 5

Autistic Spectrum Quotient

No	Item	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
1	I prefer to do things with others rather than on my own				
2	I prefer to do things the same way over and over again				
3	If I try to imagine something, I find it very easy to create a picture in my mind				
4	I frequently get so strongly absorbed in one thing that I lose sight of other things				
5	I often notice small sounds when others do not				
6	I usually notice car number plates or similar strings of information				
7	Other people frequently tell me that what I've said is impolite, even though I think it is polite				
8	When I'm reading a story, I can easily imagine what the characters might look like				
9	I am fascinated by dates				
10	In a social group, I can easily keep track of several different people's conversations				
11	I find social situations easy				
12	I tend to notice details that others do not				
13	I would rather go to the library than a party				

No	Item	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree	
14	I find making up stories easy					
15	I find myself drawn more strongly to people than to things					
16	I tend to have very strong interests, which I get upset about if I can't pursue					
17	I enjoy social Chit-chat					
18	When I talk, it isn't always easy for others to get a word in edgeways					
19	I am fascinated by numbers					
20	When I'm reading a story, I find it difficult to work out the characters' intentions					
21	I don't particularly enjoy reading fiction					
22	I find it hard to make new friends					
23	I notice patterns in things all the time					
24	I would rather go to the theatre than a museum					
25	It does not upset me if my daily routine is disturbed					
26	I frequently find that I don't know how to keep a conversation going					
27	I find it easy to "read between the lines" when someone is talking to me					
28	I usually concentrate more on the whole picture, rather than the small details					

No	Item	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree	
29	I am not very good at remembering phone numbers					
30	I don't usually notice small changes in a situation, or a person's appearance					
31	I know how to tell if someone listening to me is getting bored					
32	I find it easy to do more than one thing at once					
33	When I talk on the phone, I'm not sure when it's my turn to speak					
34	I enjoy doing things spontaneously					
35	I am often the last to understand the point of a joke					
36	I find it easy to work out what someone is thinking or feeling just by looking at their face					
37	If there is an interruption, I can switch back to what I was doing very quickly					
38	I am good at social chit-chat					
39	People often tell me that I keep going on and on about the same thing					
40	When I was young, I used to enjoy playing games involving pretending with other children					
41	I like to collect information about categories of things (e.g. types of car, types of bird, etc.)					
42	I find it difficult to imagine what it would be like to be someone else					
43	I like to plan any activities I participate in carefully					

No	Item	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree	
44	I enjoy social occasions					
45	I find it difficult to work out people's intentions					
46	New situations make me anxious					
47	I enjoy meeting new people					
48	I am a good diplomat					
49	I am not very good at remembering people's date of birth					
50	I find it easy to play games with children that involve pretending					

Appendix 6

Notes taken throughout experimentation

1) This was found in participant 1, winning 1st sequence group 1:
Participant towards the end seemed to get bored of the game, and knew I was trying some sort of method to either win or lose, so just did 4 scissors in a row to avoid being caught out. This may be because they think the experimenter has a prediction on what they will choose, and it is unlikely that we would predict them to pick 4 scissors in a row, as it seemed like tactical play by the participant.

2) Sometimes participants would get the timing wrong on what time to go (after 3 fists). This would mess up their results as they would do their initial action (rock, paper or scissors) and then as they had to do it again, they would usually change their choice to avoid predictability. So they had to make a conscious thought on what action to pick, rather than it just being natural without much thought where it is more likely that mirror neurons and imitation would have an effect.

3) When asked a participant whether he noticed anything before I debriefed him, he said he did notice that I was doing it in a sequence for him to imitate me.

4) Participant 11, said she noticed the sequence I was doing, e.g. Rock, Paper, and then scissors, so she knew I was never going to do the same action twice in a row. So she could use this to her advantage. This is a problem when participants are thinking too much by trying to figure out what I am doing.

5) I have noticed that instead of the participant copying what I did in the last game of rock paper scissors, instead they are choosing the action that beats the action I did in the previous game. This is shown clearly in participant 18 results, when I was trying to lose. And because they chose this method I actually won the majority.

6) Participants 21 pointed out afterwards when asked, that she did notice a pattern in the first round of games, but then lost it in the 2nd round. Thus I think the fake random round is vital in throwing off participants thought on the sequences I was doing, as the pattern is not there anymore. Although this pattern she noticed may have affected her actions in the 1st round, and possibly in the third.