The Impact of Money On Cooperation: Money Does Not Change The World.

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The experimenters would like to thank Bishop's University administration department for letting us use campus rooms to conduct our experiment.

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Abstract

The present research aimed at replicating a study that suggested that money activation reduced helpfulness toward others. Forty undergraduate students sampled from Bishop's University were distributed randomly between a control-group and a money-primed group, in an independent t-test fashion. We wanted to see whether money activation would lead students in the experimental group to be less helpful by measuring the amount of datasheets they would have been willing to code in order to help the experimenters relative to the control group. Results showed a clear-cut negative. Money did not have an effect on the willingness of participants.

Keywords: Money, priming, helpfulness, cooperation, behavioural economics

The Impact of Money on Cooperation

According to past research, activation of symbols related to money and the world of business in a person's mind could lead to an increase in self-reliance, but also to a decrease in cooperation and reluctance to ask for help (Kay, Wheeler, Bargh & Ross, 2004; Vohs, Mead & Goode, 2006). The latter behaviours sometimes were counterproductive and could potentially lead to a loss of efficacy in a working environment where money was used as an incentive. Moreover, an impeded will to cooperate and a tendency to work alone might create situations where employees are likely to make undisclosed mistakes.

The present research aimed directly at Experiment 3 by Vohs et al. (2006), which found that priming people with money-related stimuli caused them to behave more self-sufficiently and to be less helpful (as determined by the smaller amount of time money-primed participants were willing to give to help a student). Their theory was based on the idea that people associated the concept of money with self-reliance because it enabled them to achieve goals without the assistance of others (Lea & Webley, 2006; as cited in Vohs et al., 2006).

Gasiorowska and Helka (2012) were able to replicate the aforementioned study, and obtained results similar to those of Vohs et al. In this case, however, participants were working adults. This situation left room for an alternative hypothesis related to their prior contacts with money. In order to saw if life experience was linked to participant's behaviour in such experiments, we conducted our study using a younger sample.

We predicted that we should find participants who were primed with money-related concepts to be less helpful than the control group. We based this hypothesis on the study by Kay et al. (2004), which indicated that priming university students with business related objects – which were semantically close to money – might deplete their will to cooperate.

Method

Participants

Undergraduate students from Bishop's university were sampled by the research team. 40 participants (21 females, 19 males, M_{age} = 22.055 years, SD = 5.135) were recruited and randomly assigned to two test conditions. Participants came from every field of study (humanities = 4, Education = 6, Social Science = 17, Natural Science = 5, Social & Natural Sciences = 2). Participants were separated in the money-prime condition (n = 20) and in the control condition (n = 20). Candies were given as a reward for their participation.

Material

A information sheet was made to obtain various informations concerning each participant. It asked for gender, age, field of study, number of credits completed, English level, if participant did volunteering work and if he was part of a social club at Bishop (see Appendix B).

The prime task necessitated two sets of jumbled words. A first list of 30 sets of five neutral jumbled words named "Jumbled sentence" was used in the control condition (e.g., "The / tree / globe / green / is")(see Appendix C). The experiment condition used a second list, named "Scrambled sentence", that had 15 sets of five scrambled neutral words and an equal amount jumbled words related to money (e.g., "is / wallet / ants / full / my")(see Appendix D). Participants had to use four of these words to make a proper English sentence.

A standardize sentence was made for the purpose of asking for helps. It contained a sentence that explained the reason of his presence (he worked on another experiment), a sentence that asked for help, and another that told how many minutes it takes to code a set of data (five minutes) (see Appendix E).

A sheet that asked how many datasheets participants were willing to code to help the experimenter was distributed. It asked for their names, and the number of data they were willing to code and their email address (see Appendix F).

Design

The experiment was conducted as an independent t-test design. Participants were randomly assigned a subject's number. The subject's number gave which condition they were belonging to (odd number = control group, even number = experimental group). The independent variable consisted of the prime stimulus and had two levels: the neutral prime, and the money prime. The dependent variable measured the number of datasheets subjects were willing to code to help the experimenter.

Procedure

Two experimenters was needed for this experiment. One acted as the "researcher" and the other one acted as a "colleague" who had nothing to do with the present experiment.

Upon their arrival, the "researcher" asked participants to fill out a consent form (see Appendix A) and were given the information sheet and the document containing jumbled word – either neutral or money-related, depending on the subject’s number. Participants had to stay until everyone completed the information sheet and the document. During that time the "colleague" stayed seated.

After the "researcher" collected the questionnaires, the "colleague" told participants he needed help to code raw data obtained in another experiment. While the "colleague" asked for help, the "researcher" handed a sheet on which subjects had to write down how many datasheets they were willing to code. It was made clear that there was no obligation – nor compensation –

to help. When the second task was finished, participants were told to leave and were given a debriefing form outside the experiment room.

Results

Descriptive Statistics

Participants under the neutral prime were willing, in average, to code 3.95 datasheets (*SD* = 3.30). The median was 4.50 and the mode was 0 (*n* = 5). Those under the money prime were willing to code 3.70 datasheets (*SD* = 4.03). The median was 2.50 and the mode was 0 (*n* = 7).

T-test

There was no difference between participants' willingness to code datasheets when primed with a neutral stimulus and a money stimulus, $T(38) = 0.215$, $p. = 0.83$, and the effect size (d) = 0.08. When the outlier in the money primed group was removed (see figure 4), there was still no difference, $T(37) = 0.82$, $p. = 0.42$, and the effect size (d) = 0.25.

Correlation

Participants who studied in the field of social science tended to give more times to help to code datasheets, $r = 0.34$, $p. = 0.03$. All the other variables from the information sheet had no significant correlation ($p. \neq 0.05$) with the number of datasheets willing to code.

Discussion

We expected results to be significant, that is, participants in the experimental condition would be less willing to give some of their time to help a stranger. Unfortunately, it was not the case since we got a solid clear-cut refutation. Such results discredited the hypothesis stated by Vohs et al. that activating the concept of money in people's mind leads them to behave self-sufficiently and cooperate less. In addition, our effect size was close to none when, in the

original experiment, they obtained a medium (close to large) effect size (cohen's d = 0.6). Such results let us put some serious concern about the reliability of Vohs et al. experiment.

We thought that severe limitations would have explained our results. Since the experiment took place during the middle of the semester, we believed most students had jobs, assignments and other obligations of their own that could had potentially biased results. In addition, we believe the procedure that measure willingness was inappropriate. Participants could have been reluctant to offer help as they already took some of their free time to participate in a study. Moreover, some of the willingness to help could be explain by participants who studied in the social science division. We inferred that student who studied social science knew the experimenter and/or had a particular interest to help since the "project" that needed help was related to the psychological domain.

References

Vohs, D., Mead, N. L. & Goode, M. R. (2006). The Psychological Consequences of Money. *Science*, *314*, 1154-1156. doi: 10.1126/science.1132491

Gasiorowska, A. & Helka, A. M. (2012). Psychological consequences of money and money attitudes in dictator game. *Polish Psychological Bulletin*, *43(1)*, 20-26. doi: 10.2478/v10059-012-0003-8

Kay, A. C., Wheeler, S. C., Bargh, J. A. & Ross, L. (2004). Material priming: The influence of mundane physical objects on situational construal and competitive behavioral choice. *Organizational Behavior and Human Decision Processes*, *95*, 83-96. doi: 10.1016/j.obhdp.2004.06.003

Table 2: *Number Of Observations Under Each Condition*

	Neutral-group	Money-prime-group
Number of forms	n = 20	n = 20

Table 1: *Descriptive Statistics For The Number of Datasheet Willing To Code Under Each Prime*

Prime Stimulus	*M*	*SD*	*SE*
Neutral Prime	3.95	3.30	0.74
Money Prime	3.70	4.03	0.90

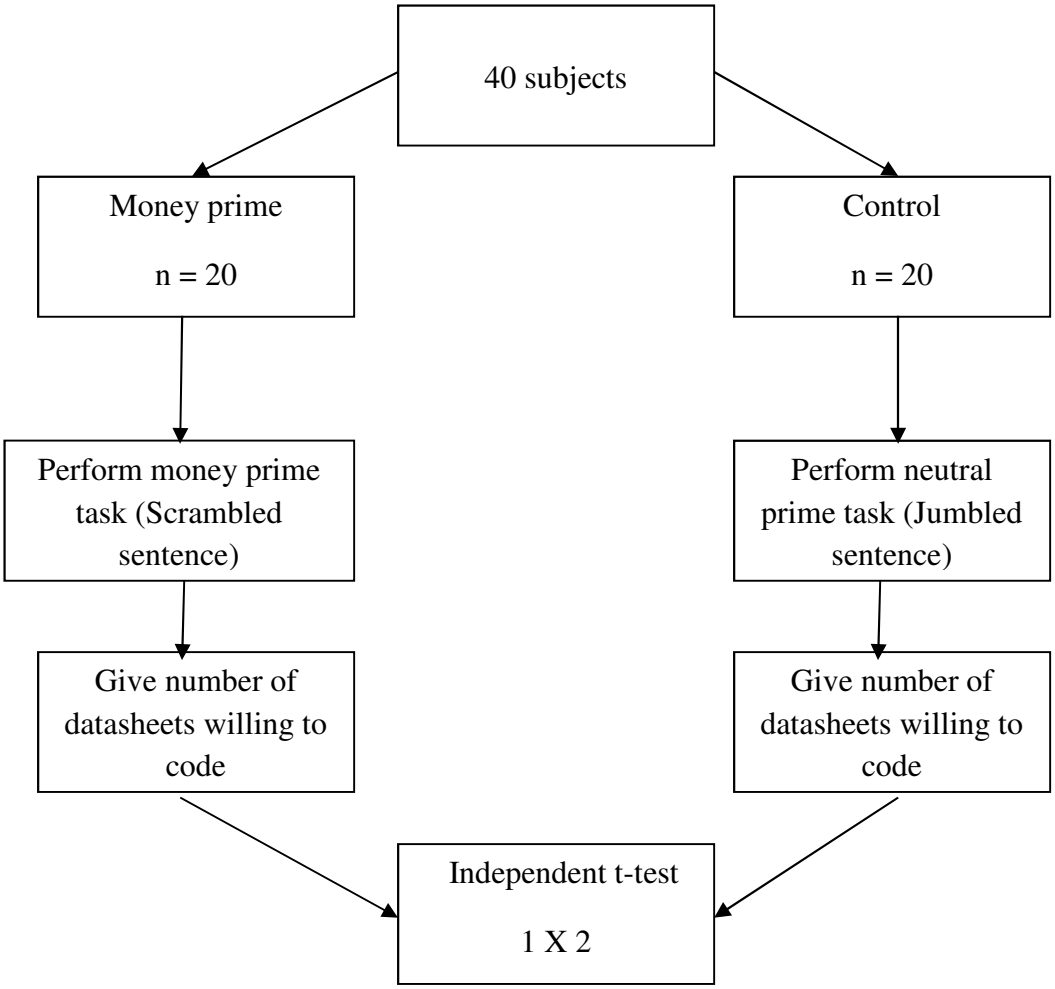

Figure 1. Block diagram of the experiment

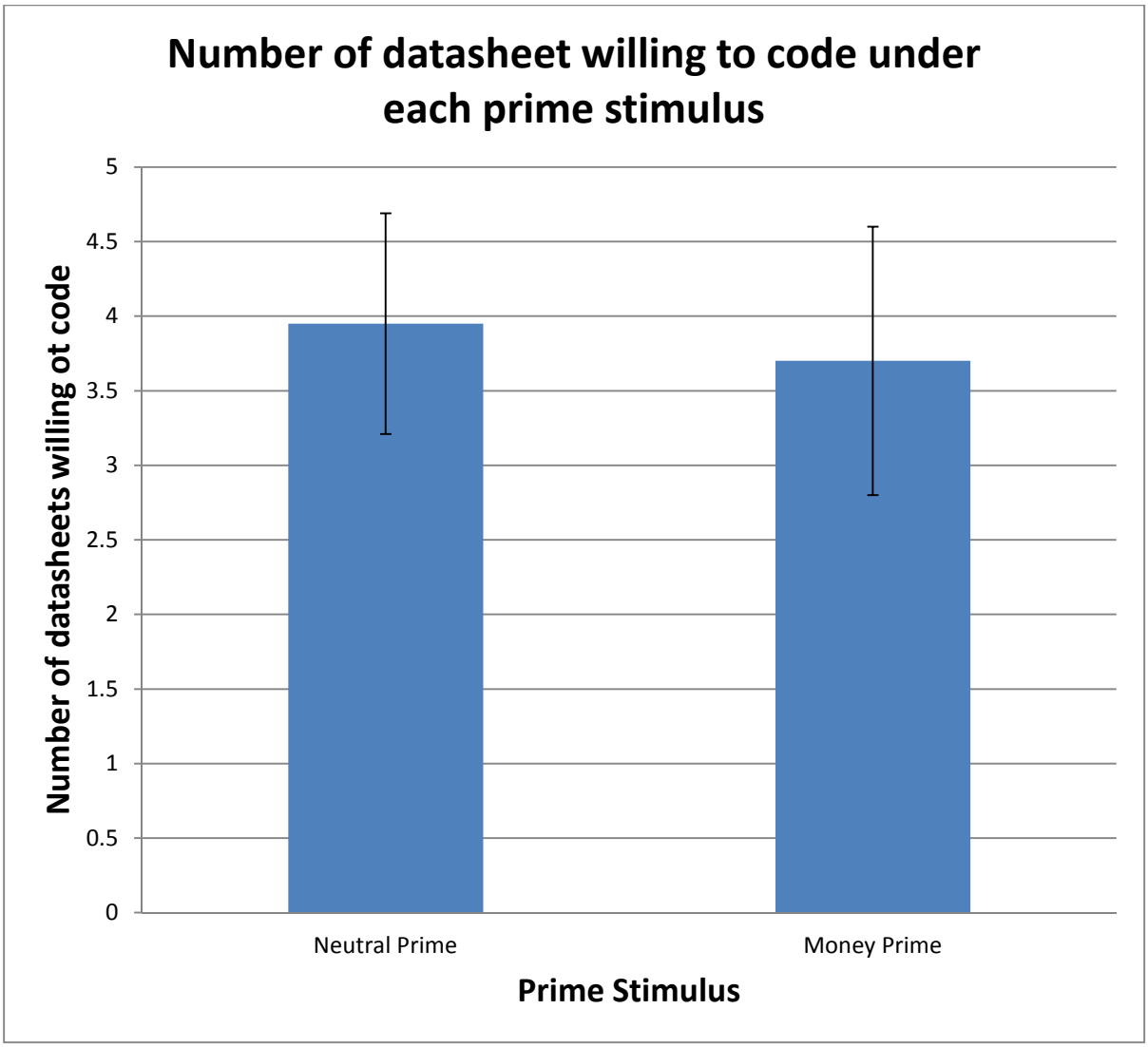

Figure 2: Graph of the average number of datasheet willing to code by participants under each prime stimulus

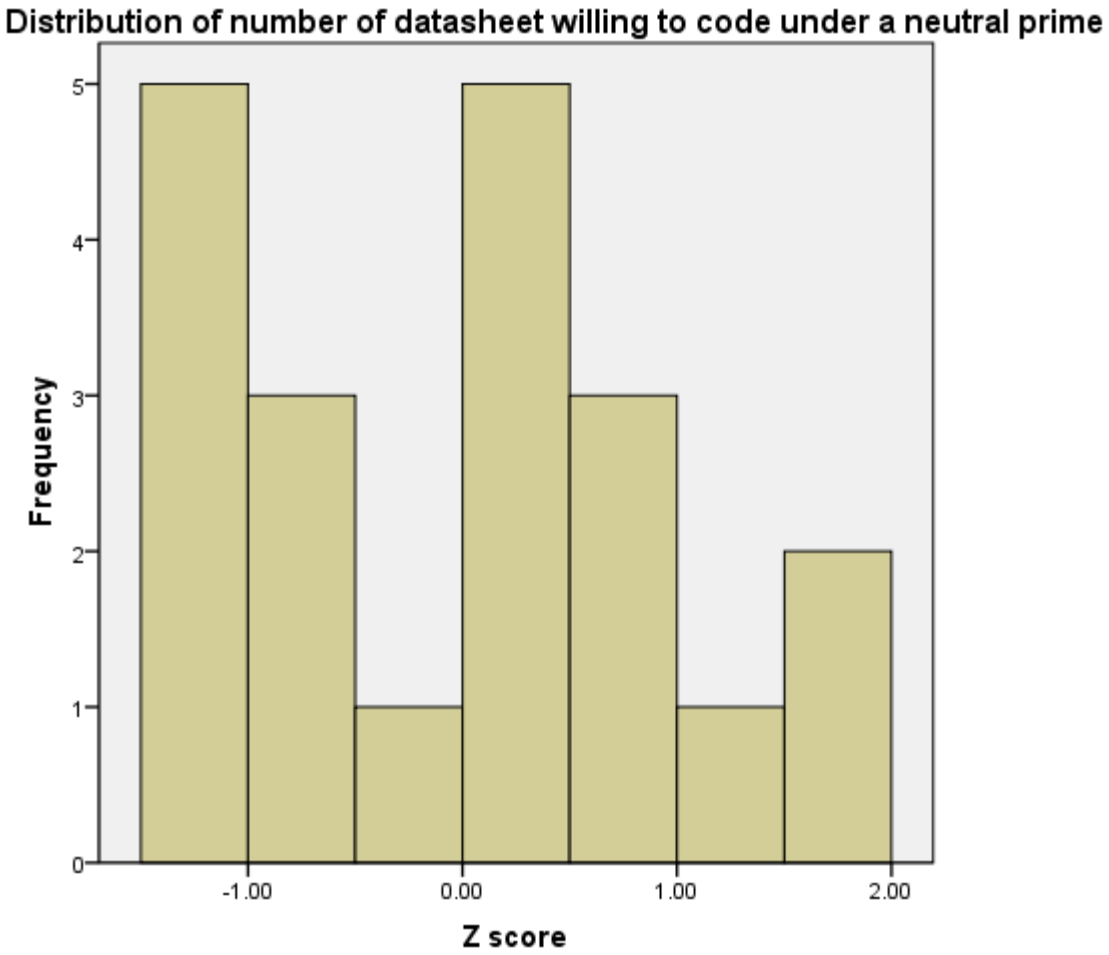

Figure 3: Graph of the distribution of datasheet willing to code under a neutral prime

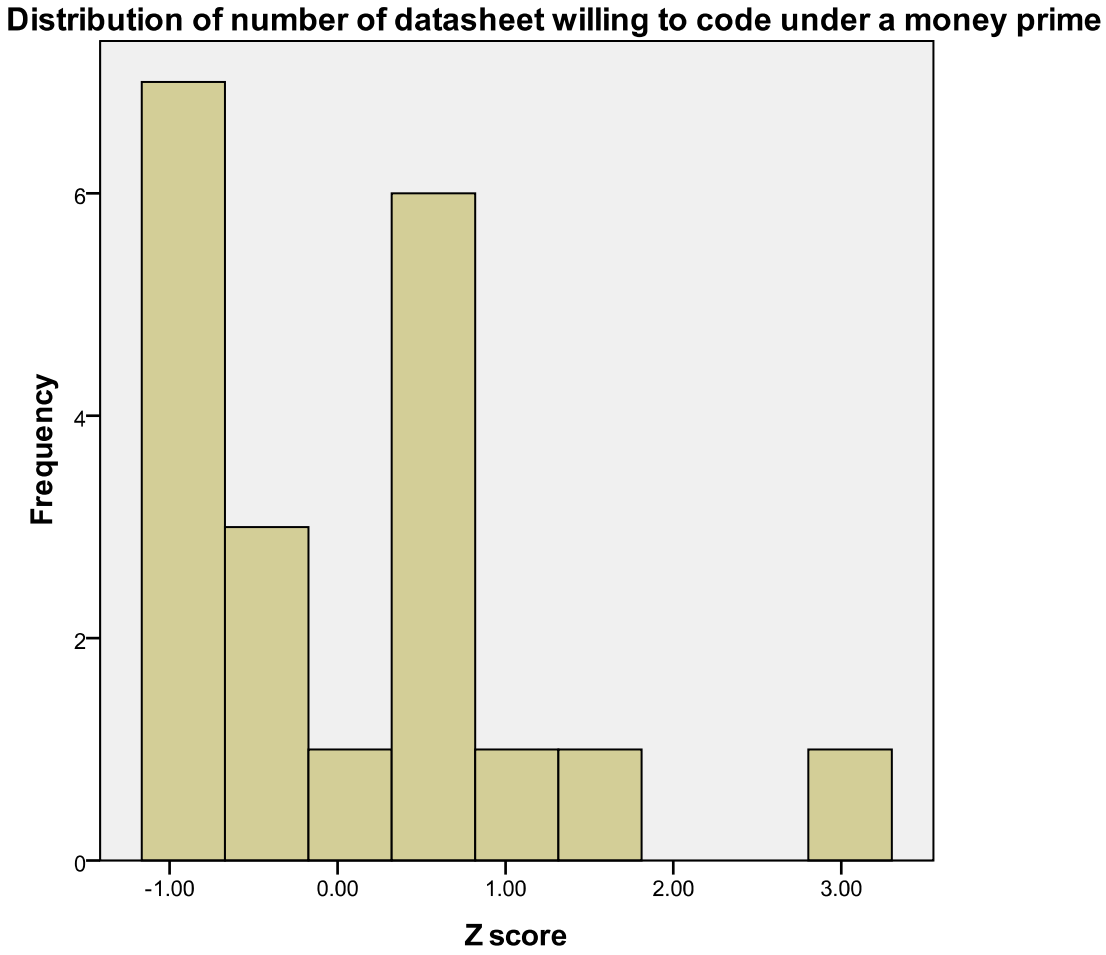

Figure 4: Graph of the distribution of datasheet willing to code under a money prime

Appendix A: *Consent Form*

CONSENT FORM

Title of project: Word-puzzles and behaviour

Please read the following information about the study to be conducted and sign below if you agree to participate.

I agree to participate voluntarily in a project being conducted by Dr Leo Standing of the Department of Psychology at Bishop's University, Lennoxville, Quebec. The objective of the project is to gather information related to people's behavior in unscrambling simple word puzzles.

As a participant in this project, I will be asked to unscramble 30 sets of scrambled sentences, each of 5 words, to produce a meaningful sentence in each case. I am aware that at all times, I have the right to withdraw from the project without negative consequences.

The data collected will only be accessible to Dr Standing, will be kept in a private computer, and will be destroyed after 1 year. All data collected will be confidential and the property of the researcher, and will be used strictly for the above-mentioned project. Upon request, I may have access to the data I provided. I am aware that academic publications and presentation(s) may result from this project, that my identity will be kept confidential, and that the data I provided may or may not be published, at the discretion of the researcher. In order to be informed of any publication, I may give my address and phone number to the researcher.

The possible risks in the study are believed to be zero.

The potential benefits resulting in my participation are enhanced knowledge of the factors which affect our behavior.

Dr Standing can be reached at Bishop's at (819) 822-9600, ext.2456, or by email at lstandin@ubishops.ca. The University's Research Ethics Board approved this project 10/9/2012. If I have any concerns regarding this project, I may contact Dr. Christopher Stonebanks, Chair of the Research Ethics Board of Bishop's University (819-822-9600, ext. 2203) or Dr. Michael Childs, Vice-Principal of Bishop's University (819-822-9600, ext. 2388).

I agree to participate in this project and I have made this decision based on the information I have received about it. I have read and understand the present consent form and I accept its stipulations.

Participant's Name:_____

Participant's Signature:_____

Date:_____

Appendix B: *Information Sheet*

Information

Please fulfil all questions.

Participant number: _____

Age (*years and months*): _____

In which domain are you studying (*if you are doing a double major, please circles both of them*):

Humanities	
Business	
Education	
Social Science	
Natural Science	

How many credits have you completed? (*e.g. a standard course is 3 credits and therefore a full time semester is 15 credits*): _____

Concerning your English skill, which situation best describe you?

It is a second language and I have a lot of difficulties with it	
It is a second language and I have only few difficulties with it	
It is a second language and I have no difficulty with it	
It is my main language and I have a lot of difficulties with it	
It is my main language and I have only few difficulties with it	
It is my main language and I have no difficulty with it	

Do you do some volunteering work ? (*yes or no*): _____

Are you in a club at Bishop ? (*yes or no*): _____

Appendix C: *Document With Neutral Sentences*

Jumbled Words Task

Use four of the five words provided to create a meaningful sentence:

E.g.: you / lamp / nice / to / meet = Nice to meet you.

1. name / is / my / jim / bottle

_____

2. comfortable / macaroni / is / chair / the

_____

3. call / necessity / me / tonight / please

_____

4. plate / her / is / hair / long

_____

5. manager / the / absent / yesterday / is

_____

6. The / tree / globe / green / is

_____

7. name / what / is / wall / your

_____

8. pie / page / the / hot / is

_____

9. tough / ceiling / homework / can / be

_____

10. floor / holiday / sweeping / the / needs

_____

11. leave / rotten / brief / message / a

_____

12. broken / wind / jar / is / this

_____

13. tulip / car / goes / fast / this

_____

14. game / feed / go / the / dog

_____

15. cold / carpet / ocean / is / water

_____

16. phone / spanish / is / ringing / the

_____

17. is / on / cloakroom / the / empty

_____

18. toilets / morning / clogged / the / are

_____

19. tastes / moments / food / the / great

_____

20. always / hospital / arrives / he / late

_____

21. kitchen / the / is / charge / clean

_____

22. smoke / that / house / beautiful / is

_____

23. together / children / desk / the / played

_____

24. sore / he / myth / teeth / has

_____

25. dodge / closed / are / tonight / we

_____

26. fire / out / the / scenery / put

_____

27. sky / is / the / wood / bright

_____

28. drank / juice / hurry / some / we

_____

29. shoes / off / elephant / your / take

_____

30. cab / chair / call / a / please

_____

Appendix D: *Document Primed With Money Sentences*

Scrambled Words Task

Use four of the five words provided to create a meaningful sentence:

E.g.: you / lamp / nice / to / meet = Nice to meet you.

1. name / is / my / jim / bottle

_____

2. comfortable / macaroni / is / chair / the

_____

3. pay / doodle / cheque / I / by

_____

4. plate / her / is / hair / long

_____

5. cash / only / balloon / take / we

_____

6. The / tree / globe / green / is

_____

7. name / what / is / wall / your

_____

8. obvious / money / forgot / my / I

_____

9. is / wallet / ants / full / my

_____

10. corridors / are / we / debt / in

_____

11. leave / rotten / brief / message / a

_____

12. credit / use / asphalt / card / my

_____

13. tulip / car / goes / fast / this

_____

14. increasing / times / prices / are / home

_____

15. cold / carpet / ocean / is / water

_____

16. phone / spanish / is / ringing / the

_____

17. the / stop / odds / at / bank

_____

18. toilets / morning / clogged / the / are

_____

19. borrowed / I / castle / dollars / five

_____

20. always / hospital / arrives / he / late

_____

21. pension / skinny / necessary / funds / are

_____

22. taxes / pay / bear / many / I

_____

23. together / children / desk / the / played

_____

24. needs / brocoli / project / fundings / this

_____

25. dodge / closed / are / tonight / we

_____

26. an / spring / we / investment / made

_____

27. sky / is / the / wood / bright

_____

28. is / high / squirrel / my / salary

_____

29. shoes / off / elephant / your / take

_____

30. are / useful / volcano / cards / debit

_____

Appendix E: *Standardize Sentence For Asking Help*

Standardize sentence for "Asking help"

Can I have your attention please,

My name is (your name) and I am doing a research with Professor Siroix.

We have given questionnaires to people and I have now a lot of questionnaire to code.

I would like to know if you would be able to help me to code some of them.

Each questionnaire take in general 5 minutes to codes.

If you can write your e-mail address and how many questionnaire you would be agree to code on the sheet that you are receiving at the moment, it would help me.

You will be contacted by e-mail afterward.

Thank you

Appendix F: *Volunteering Form*

Volunteering Form

Name: _____

Bishop's email: _____

Participant #: _____

# of data file(s): _____

Appendix G: *Debriefing Form*

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Debriefing Form

THANK YOU FOR YOUR PARTICIPATION! We appreciate your help.

This study examined people's willingness to give time when they have been primed with money. We wanted to investigate whether people primed with money would be willing to give less of their time to help a colleague, as it has been hypothesized that the concept of money induces a self-sufficient attitude.

This research is a replication of a past research. We wanted to verify if the effect observed in the first research would be matched by our results.

The principal investigators is Dr. Standing of the Department of Psychology, Bishop's University.

Feel free to ask us any questions.