

Atlas, Stephen; Putterman, Louis

Working Paper

Trust among the avatars: A virtual world experiment, with and without textual and visual cues

Working Paper, No. 2010-18

Provided in Cooperation with:

Department of Economics, Brown University

Suggested Citation: Atlas, Stephen; Putterman, Louis (2010) : Trust among the avatars: A virtual world experiment, with and without textual and visual cues, Working Paper, No. 2010-18, Brown University, Department of Economics, Providence, RI

This Version is available at:

<https://hdl.handle.net/10419/62617>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Appendix to “Trust Among the Avatars”

1. Additional Tables

Table A.1. *p*-values of two-tailed Mann-Whitney tests of differences in absolute A sending and B returning as proportion of amount received, by treatment

Treatment	BASELINE	COOPERATIVE	COMPETITIVE	OPTIMISTIC	CAUTIONARY	COOP-OPTIMISTIC	COMP-CAUTIONARY
BASELINE	-	.433	.109	.064 OPT > BASE	.799	.632	.932
COOPERATIVE	.650	-	.0404 COOP > COMP	.363	.253	.666	.262
COMPETITIVE	.312	.058 COOP > COMP	-	.002 OPT > COMP	.183	.067 CO-OPT > COMP	.112
OPTIMISTIC	.403	.166	.684	-	.028 OPT > CAUT.	.155	.014 OPT > CO-CAU
CAUTIONARY	.304	.092 COOP > CAUT'ARY	.741	.899	-	.481	.943
COOP-OPTIMISTIC	.533	.191	.531	.888	.697	-	.552
COMP-CAUTIONARY	.673	.211	.427	.713	.547	.889	-

Note: The values above and to the right of the diagonal are *p*-values for tests of differences in A sending (X_A). Numbers to the left and below the diagonal of the table are *p*-values for tests of difference in proportion returned by B ($X_B/3X_A$) among observations with positive X_A . A statistically significant test *p*-value is indicated by bold typeface, and the direction of the observed difference is reported below it.

Table A.2. First mover earnings as a function of first-mover sending and treatments (OLS regressions)

	(1)	(2)	(3)	(4)	(5)
First-mover's amount sent (X_a)	0.47*** (0.15)	0.03 (0.65)	1.03*** (0.40)	0.54 (0.74)	0.40 (2.00)
First-mover's amount sent Squared (X_a^2)		0.004 (0.005)		0.004 (0.006)	0.006 (0.019)
COOPERATIVE dummy	8.69 (19.00)	7.84 (19.07)	5.68 (35.49)	6.73 (35.57)	7.94 (58.84)
COMPETITIVE dummy	-18.73 (19.23)	-17.93 (19.29)	-5.36 (34.63)	-6.01 (34.69)	29.71 (57.31)
OPTIMISTIC dummy	-29.14 (18.35)	-29.97 (18.42)	21.81 (38.07)	24.22 (38.25)	28.38 (62.25)
CAUTIONARY dummy	-29.72* (17.22)	-29.97* (18.42)	19.45 (30.30)	18.87 (30.35)	12.73 (50.58)
COOP-OPTIMISTIC dummy	-12.70 (18.45)	-13.10 (18.50)	5.33 (33.88)	6.40 (33.95)	-7.66 (56.71)
COMP-CAUTIONARY dummy	-18.73 (17.82)	-17.03 (18.02)	39.64 (34.78)	41.69 (34.93)	5.57 (61.60)
X_a * COOPERATIVE			-0.07 (0.54)	-0.10 (0.54)	-0.17 (2.72)
X_a * COMPETITIVE			-0.21 (0.66)	-0.17 (0.66)	-2.24 (2.72)
X_a * OPTIMISTIC			-0.88 (0.54)	-0.93* (0.55)	-1.12 (2.70)
X_a * CAUTIONARY			-0.95 (0.50)*	-0.96* (0.50)	-0.58 (2.47)
X_a * COOP-OPTIMISTIC			-0.39 (0.54)	-0.42 (0.54)	0.36 (2.62)
X_a * COMP-CAUTIONARY			-1.19* (0.61)	-1.19* (0.61)	0.54 (2.72)
X_a^2 * COOPERATIVE					0.00 (0.02)
X_a^2 * COMPETITIVE					0.02 (0.03)
X_a^2 * OPTIMISTIC					0.00 (0.02)
X_a^2 * CAUTIONARY					-0.00 (0.02)
X_a^2 * COOP-OPTIMISTIC					-0.01 (0.02)
X_a^2 * COMP-CAUTIONARY					-0.02 (0.02)
Constant	110.15	118.22	82.74	91.07	93.51
Prob > F	0.01	0.02	0.02	0.02	0.09

Adj R ²	0.07	0.07	0.09	0.09	0.06
--------------------	------	------	------	------	------

Notes: All regressions have 146 observations, that is all complete observations except those in which the first-mover came from a non-unique IP address. Omitted treatment dummy is BASELINE. Numbers in parentheses are standard errors. *** = significant at 1% level; ** = significant at 5% level; * = significant at 10% level.

Table A.3.1. First-mover sending as a function of attitudes toward generalized trust, relative trustworthiness of Second Life residents, and relative deservingness of reciprocity of Second Life residents. (Tobit regressions)

	(1)	(2)	(3)	(4)
General Trust	9.47 (8.13)			8.91 (8.16)
Trust Second Life residents		6.37 (7.31)		3.90 (7.83)
Reciprocity to Second Life residents			8.40 (9.96)	6.26 (10.63)
COOPERATIVE dummy	17.85 (15.83)	16.69 (15.81)	17.44 (15.84)	18.17 (15.81)
COMPETITIVE dummy	-24.17 (15.17)	-24.57 (15.19)	-22.95 (15.31)	-22.99 (15.26)
OPTIMISTIC dummy	33.92** (15.34)	29.97* (15.91)	32.30** (15.41)	30.53* (15.86)
CAUTIONARY dummy	1.49 (14.24)	-2.12 (14.20)	-0.83 (14.13)	0.60 (14.32)
COOP-OPTIMISTIC dummy	10.38 (15.26)	9.12 (15.31)	11.08 (15.37)	10.98 (15.37)
COMP-CAUTIONARY dummy	-5.47 (14.59)	-6.49 (14.68)	-4.98 (14.61)	-6.08 (14.65)
Log likelihood	-611.38	-611.67	-611.70	-610.91
Prob > χ^2	0.01	0.01	0.01	0.02
Pseudo R ²	0.02	0.01	0.01	0.02

Notes: All regressions have 156 observations, that is all complete observations of first-movers form unique IP addresses. Dependent variable: X_A . Omitted treatment dummy is BASELINE. Numbers in parentheses are standard errors. *** = significant at 1% level; ** = significant at 5% level; * = significant at 10% level.

Table A.3.2. Second-mover proportion returned as a function of attitudes toward generalized trust, relative trustworthiness of Second Life residents, and relative deservingness of reciprocity of Second Life residents. (Tobit regressions)

	(1)	(2)	(3)	(4)
First mover's amount sent	0.0003 (0.001)	0.0003 (0.001)	0.0003 (0.0009)	0.0004 (0.0008)
General Trust	0.22*** (0.06)			0.19*** (0.06)
Trust Second Life residents relative to general population		0.25*** (0.05)		0.23*** (0.06)
Second Life residents' relative deservingness of reciprocity			0.14 (0.08)	-0.00 (0.08)
COOPERATIVE dummy	0.11 (0.11)	0.05 (0.10)	0.04 (0.11)	0.08 (0.10)
COMPETITIVE dummy	-0.10 (0.13)	-0.17 (0.12)	-0.14 (0.13)	-0.15 (0.12)
OPTIMISTIC dummy	-0.08 (0.11)	-0.10 (0.11)	-0.09 (0.12)	-0.12 (0.11)
CAUTIONARY dummy	-0.11 (0.10)	-0.13 (0.10)	-0.11 (0.11)	-0.14 (0.09)
COOP-OPTIMISTIC dummy	-0.00 (0.11)	-0.06 (0.10)	-0.05 (0.11)	-0.04 (0.10)
COMP-CAUTIONARY dummy	-0.02 (0.10)	-0.06 (0.10)	-0.03 (0.11)	-0.06 (0.10)
Log likelihood	-74.76	-71.18	-80.20	-65.43
Prob > χ^2	0.03	0.00	0.62	0.00
Pseudo R ²	0.10	0.15	0.04	0.21

Notes: All regressions have 142 observations, that is all complete observations except those in which the first-mover sent zero. Dependent variable: $X_B/3X_A$. Omitted treatment dummy is BASELINE. Numbers in parentheses are standard errors. *** = significant at 1% level; ** = significant at 5% level; * = significant at 10% level.

Table A.4. Gain in total earnings as a fraction of initial endowments

Treatment	Mean effic. gain ⁺	% A's "Trusting" ($X_A > 0$)	% A's "Losing" ($X_A > X_B$) [*]	% A's "Breaking Even" ($X_A = X_B$) [*]	% A's "Rewarded" ($X_A < X_B$) [*]
BASELINE	49.3%	100%	21.1%	10.5%	68.4%
COOPERATIVE	59.1%	94.7%	16.7%	5.6%	77.8%
COMPETITIVE	33.1%	81.0%	41.2%	5.9%	53.0%
OPTIMISTIC	70.4%	95.7%	31.8%	4.6%	63.6%
CAUTIONARY	48.9%	93.1%	40.1%	7.4%	51.9%
COOP- OPTIMISTIC	55.0%	95.2%	30.0%	25.0%	45.0%
COMP- CAUTIONARY	47.0%	95.8%	21.74%	11.0%	59.6%

⁺ Gain in total earnings during the interaction as a fraction of initial endowment (i.e., $2X_A/200$). Equivalent to % of endowment sent by first-mover.

^{*} Only cases with $X_A > 0$ are considered.

2. Evolution of Lab Infrastructure

As a pioneer experimental setup in a virtual world, our initial lab design (Atlas 2008a) was the subject of some discussion. John Duffy and Robert Bloomfield have each produced working papers discussing our initial lab setup, and Thomas Chesney initiated a thread discussing our work on the blog *Terra Nova*. Since then, this feedback has motivated substantial redesign of the infrastructure and virtual lab environment, with particular attention paid to controls, identity mapping and data accuracy.

The updated environment featured private treatment rooms to enable a greater degree of control over the participant experience. In the initial setup, users participated in a public space alongside other participants, but the intrusion of other Second Life residents threatened the reliability and validity of the results. As participants entered the lobby of the new setup, a greeter automaton welcomed participants and directed them to enter a teleporter to travel to a private space to begin the study. This 'teleporter' cycled assignment to the treatment rooms, where subjects were alone for the remainder of the experiment, were subject to greatly enhanced controls, and could experience distinct visual treatments.

Another feature of the improved lab infrastructure was the collection of IP addresses as subjects were seated in the treatment room. As participation in the experiment provided a relatively high-paying job in Second Life, we were concerned that individuals could participate multiple times, a practice referred to as 'experiment farming' (Atlas, 2008a). While the early infrastructure prevented participants from participating multiple times with the same avatar, some participants circumvented this deterrent by participating through the use of several avatars. Consequently, the updated lab collected IP addresses,

which we used to detect when users had participated previously. We used this information to clear our data set of duplicate IP addresses, but deliberately did not prevent avatars from participating if we had encountered their IP addresses previously. We believe this approach optimizes the tradeoff between deterrence and detection, as banning multiple avatars from the same IP address (gains to deterrence) could encourage users to participate again under a different IP address and threaten the integrity of the resulting data due to less detection of experiment farming. In contrast, we banned duplicate participation by the same avatar. We believe the new infrastructure improved the mapping of participants in our final data set to unique yet anonymous individuals.

Finally, a number of improvements to the user interface and script sought to improve the accuracy of real-world demographic information. Subjects were assured numerous times of the privacy of the data they provided, our recognition of its sensitivity and the importance of their honest responses. They were also given a ‘no response’ option to the most sensitive questions about gender, and had two-way navigation controls through the demographic questions to ease the correction of earlier mistakes. While we maintain no illusion of perfect accuracy of the demographic information, we believe these improvements resulted in more accurate self-reports from participants.

Duffy’s final concern about selection bias is attenuated by the replicability of automated recruitment through in-world classified advertisements and relatively high wage compared with other in-world employment opportunities.

Additional References Cited

Chesney, Thomas, 2008, “Lying Online,” *Terra Nova*, Acc. Jan 17, 2009:
http://terranova.blogs.com/terra_nova/2008/03/lying-online.html

Duffy, John, 2008, “Trust in Second Life,” unpublished paper, University of Pittsburgh,
Available online: <http://www.pitt.edu/~jduffy/papers/TrustinSL.pdf>

3. Variables used in the analysis

Female = 1 if subject reports that real-world self is female, 0 if subject reports male or no response.

Student = 1 if reported age < 18 or if reported age is 18 – 22 and the subject selected the employment status “full-time student” or “part-time student and/or part-time work,” 0 otherwise.

Age: The mid-point of the age-range selected by the subject with regard to their real-world self, except that in the 1 to 17 year range we assume age 16 and in the 51 and older range we assume age 55. Other age ranges are 18 – 22, 23 – 30, 31 – 40, and 41 – 50.

Income: The mid-point of the reported hourly wage rate of the real-world self, except that for answers in the “less than \$5.85” band we assume a value of \$4.00 and for those in the greater than \$40 band we assume a value of \$60. Other ranges are \$5.85-\$8, \$8 - \$12, \$12 - \$15, \$15 - \$20, and \$20 - \$40.

In-world money = 1 if (a) subject selected a wage rather than “I do not work in Second Life” in response to the question, “What is the average hourly wage you receive for work done in Second Life?” and (b) subject reports having made no purchase of Lindens for real currency during the past month.

4. Advertisement, Greeter Script, and Experiment Instructions

Advertisement:

Earn L\$100 in 15 Minutes - Academic Study Participants Needed

Interested in earning some quick Lindens? Come to the Second Life Experimental Economics Laboratory to participate in a 15-minute academic research study on virtual decisionmaking. This project is sponsored by Tufts University - your responses will not be used for marketing purposes. Places are limited, so come now to ensure you do not miss this opportunity!

Compensation: You will be given a L\$100 endowment. Based on your choices and those of a counterpart, you can earn between L\$0 and L\$400. (One of your choices can assure you of at least L\$100.)

(Some keywords: test subject, test subjects, experiments, free lindens, research, linden, earn, job, work, participate, win, clothes, clothing, furniture, skins, skin, pay, buy, sell, event, newbies, newbie, events, shop, cheap, deal, sale, easy job)¹

Greeter script:

Welcome to the Second Life Experimental Economics Research Lab.

We have automated the entire study including providing instructions, collecting your answers, and providing your compensation.

|Next

Please do not speak or type while in the lab.

Click on the TP beam in the booth to be transported to a private room to begin the study.

Would you like a FAQ notecard?

|Yes|No

¹ These commonly searched keywords were included to broaden the visibility of the advertisement

After reading the FAQs and consent information, please click on the teleport beam in the booth to be transported to a private room where the study will begin.

FAQ Notecard:

Second Life Experimental Economics Research Lab
<http://slurl.com/secondlife/Etopia%20Island/193/55/23>

FREQUENTLY ASKED QUESTIONS

How long will this take?

15-20 minutes. You will be asked an initial experimental question followed by a series of follow-up questions about your first and second-life demographics as well as some attitudinal questions.

How much can I earn?

You will initially be endowed with an L\$100 "show up" fee, and by selecting one set of choices you will keep exactly this amount. You will also have an opportunity to earn more, but at the risk of earning less. Depending on the decisions made by yourself and an anonymous counterpart to whom you will be assigned, your final payment will range between L\$0-400.

When will I be paid?

Your counterpart participates in the experiment several hours before/after you. Consequently, the first decision-maker will be paid several hours after we collect their data, whereas the second decision-maker will be paid immediately.

Can I participate again?

No. The same person repeating the experiment compromises the integrity of the study. Therefore, it is essential that you do not complete this questionnaire more than this one time. We hope to provide additional opportunities to participate in economic experiments in Second Life, but this will only be possible if participants like yourself respect this limitation.

Can I talk about this with others?

No. Please **do not** speak about this survey to anyone entering or exiting the lab, as this also will taint our data. You are welcome to share with others the fact that you participated in the study, to remark on whether it was interesting, etc., but we request that you do not tell others about the details of this survey, as this may also taint our data. It is crucial that you do not speak at all (i.e. type) until after the experiment is complete.

Violation of this silence may compromise our study and could result in withholding your payment from the study.

Who do I contact if I have additional questions?

Principal Investigator: _____

SL Contact: Curric Vita

Email: <redacted>

RESEARCH STUDY PARTICIPANT CONSENT INFORMATION

STUDY TITLE: Economic Experiments in Virtual Worlds

STUDY NUMBER: 0710037

PRINCIPAL INVESTIGATOR: _____, MA, Tufts University Economics Department

PURPOSE AND DURATION: This study involves a decision science experiment. We expect it to take less than 15 minutes to complete.

PROCEDURES: You will be asked a question about distributing an amount of Second Life Lindens between yourself and another player. After that, you will be asked a series of 28 demographic and background questions.

COSTS, RISKS, AND DISCOMFORT: There are no anticipated costs, risks, or discomfort associated with this study, outside those normally encountered during game play.

BENEFITS: Depending on the answers given by you and the other player, you will receive between 0 and 400 of Second Life Lindens. We will transfer this prize to you automatically after both players make their decisions.

CONFIDENTIALITY: The results of this study may be published in a scholarly book or journal article, presented at professional conferences or used for teaching purposes. However, your personal name, avatar name or other identifiers will not be used for any use other than distributing your compensation for participating in the study.

REQUEST FOR MORE INFORMATION: You may ask more questions about the study at any time. Please e-mail the principal investigator at <redacted> or telephone at <redacted> with any questions or concerns about the study. In addition, you may contact Yvonne Wakeford at the Office of Institutional Review Board at <redacted>

WITHDRAWAL OF PARTICIPATION: Should you decide at any time during the study that you no longer wish to participate, you may withdraw your consent and discontinue your participation without prejudice.

Experiment Instruction

Thank you for volunteering to participate in this economics experiment. You will be asked a series of questions. We expect it to take less than 15 minutes to complete.

Do you give your consent to participate in this study?

AUTHORIZATION OF CONSENT

I have read the consent form. I confirm that the purpose of the research, the study procedures, the possible risks and discomforts as well as the benefits have been explained to me.|yes|no

Before we begin, please confirm whether you, the human behind the avatar, are at least 18 years old.|yes|no

You have been asked to participate in an economics experiment. The instructions you are about to read are self explanatory. If you have any questions, you should read back through these instructions.

It is crucial that you do not speak (i.e. type) until after the experiment is complete. Violation of this silence may compromise our study and could result in withholding your payment from the study.

Please note: After clicking *next*, your participation is logged and you will not be able to restart the experiment.

In this experiment you will be paired with a different person whose identity will not be made known to you. Your identity will not be made known to that person either.

Please note in particular that the person you will be paired with is *not* someone you are encountering as you visit our lab; rather, you will be paired with an individual who participates at a different time.

As soon as you finish reading these instructions, you will be assigned to be either the first or second decision-maker.

That assignment will be determined by the number of pending observations that require the second decision-maker to make a decision.

If there are less than a certain threshold of pending observations, you will be assigned to be the first decision-maker.

If there are more than that number of pending observations, you will be the second decision-maker and matched earliest pending observation.

This approach ensures that neither you nor your counterpart will know the other's identity and you will not encounter each other during your visit to this lab.

Then you will answer the main experimental question followed by 32 follow-up demographic and attitudinal questions.

You will answer these questions by clicking your responses in the blue box, much as how you have been clicking *next* to continue to read the instructions.

Warning! Be sure to not click *ignore* as this will end the experiment early! Once you answer all the questions, you will have an opportunity to change your answers in previous sections, with the notable exception of the initial question. Then you will leave the lab and be paid within the next 12 hours.

Both you and the other person are receiving L\$100 as a show up fee for participating in this experiment. One of you will have the opportunity to send some, all, or none of their show up fee to the other.

Each Linden sent by this first decision-maker will be tripled.

For example, if you are the first decision-maker and you send L\$20, the second decision-maker will receive L\$60. If you send L\$90, the second decision-maker will receive L\$270.

That person will then decide how much money to send back to the first person and how much to keep.

< Cooperative Treatment >

By working together and acting fairly, both participants can double their money. (The first decision-maker can send L\$100, the second decision-maker can return L\$200, and they therefore each earn L\$200 instead of each earning L\$100)

< Competitive Treatment >

However, assuming that second person wants to earn as much as possible, he/she will send none of the money received back to the first person.

So if the first person sends L\$100 and the second person keeps the largest amount of money, he/she will earn L\$400 and the first person will earn zero.

< The remaining instructions are read by all participants >

In order that both you and the participant with whom you are paired see exactly the same instructions, we include here also the messages that will be seen by the first and second decision maker in the following stage, in which your role is revealed to you.

If you are the first decision maker, your message will be:

*You are the first decision maker. Please decide what number of Lindens (if any) from your L\$100 endowment to send to the second decision-maker with whom you will be paired.

This amount will be tripled, and then this person will decide how much of this amount to send back to you and how much to keep.*

If you are the second decision maker, your message will be:

*You have been assigned to be the second decision-maker. You were sent L\$X by your counterpart, which means you have received X in addition to your L\$100 show-up fee. You can send any part, including nothing, or all of the money you received, but you keep your original L\$100 plus any portion of the amount you choose to keep.

Unlike with your counterpart any money you send goes to that individual as it is, without being tripled.*

After you make this decision, you will answer 32 mandatory follow-up survey questions. Then you will be paid at a time that is determined by whether you are the first or second decision-maker.

The first decision-maker will be paid a few hours after participating in order to allow enough time to ensure that you do not encounter the second decision-maker during your visit.

As soon as the second decision-maker completes his or her decision, both participants will be paid automatically by the script of this chair.

It is essential that you only participate in this study a single time, as repeating the experiment compromises the integrity of the study.

We hope to provide additional opportunities to participate in economic experiments in Second Life, but this will only be possible if participants like yourself respect this limitation.

This ends the instructions.

The next dialog box will tell you about your role in the decision game and ask for the amount of \$L that you want to send. You will first define a range and then specify the number of \$L you want to send. Please choose carefully.

<A Instruction>

You are the first decision maker. Please decide what number of Lindens (if any) from your L\$100 endowment to send to the second decision-maker with whom you will be paired.

This amount will be tripled, and then this person will decide how much of this amount to send back to you and how much to keep.

0-9

10-19
20-29
30-39
40-49
50-59
60-69
70-79
80-89
90-100

<Subjects click on a range, then see the set of integers from which they make their exact selection>

<B Instruction>

You have been assigned to be the second decision-maker. You were sent L\$<GIVE> by your counterpart, which means you have received L\$<3*GIVE> in addition to your L\$100 show-up fee.

You can send any part, including nothing, or all of the money you received, but you keep your original L\$100 plus any portion of the amount you choose to keep.

Unlike with your counterpart any money you send goes to that individual as it is, without being tripled.

< subject selects the tens, then the ones by clicking on blue boxes>

Please remember that you must answer the following demographic questions to receive your earnings. Your answers will not be used for any purpose other than for academic research, and your honesty is essential for useful results.

These questions are divided into questions about your 'second life' and 'first life' demographics.

We would like to remind you that your answers to these questions are confidential and your individual information will not be shared with anyone.

In particular, we would like to emphasize that if you have adopted a Second Life persona that differs from the characteristics of your first life, be assured that we will not reveal any aspects of either identity to anyone.

Question 1

How many avatars in Second Life have you used in the last week?

- 1) 1
- 2) 2
- 3) 3-4
- 4) 5+

Question 2

What age do you consider this avatar to be?

- | | |
|-------------|----------|
| 1) Under 18 | 2) 18-22 |
| 3) 23-30 | 4) 31-40 |
| 5) 41-50 | 6) 51 + |

Question 3

What gender do you consider this avatar to be?

- 1) Male
- 2) Female
- 3) Genderless

Question 4

In Lindens, what is the average hourly wage you receive for work done in Second Life?

- | | |
|-------------------|------------------------|
| 1) L\$0-100 | 2) L\$101-500 |
| 3) L\$501-1,000 | 4) L\$1,000-2000 |
| 5) L\$2,001-4,000 | 6) L\$4,000-L\$8,000 |
| 7) L\$8,000 + | 8) I do not work in SL |

Question 5

How many hours a week do you complete paid work in Second Life?

- | | | |
|----------|----------|----------|
| 1) 0 | 2) <5 | 3) 6-10 |
| 4) 11-15 | 5) 16-20 | 6) 21-30 |
| 7) 31-40 | 8) 41-50 | 9) 51 + |

Question 6

In the past month, have you purchased Lindens for USD or another “real world” currency?

- 1) Yes
- 2) No

Question 7

Where did you find out about this experiment?

- 1) Just wandering by
- 2) Read classified ad
- 3) Word of mouth

The next set of "First Life" questions are about the person behind the avatar.

We understand that some of this information is sensitive and for that reason we would like to provide our full assurance that your answers are confidential and you will remain anonymous in all uses of the resulting data.

We take our responsibility to protect your information very seriously, and your honest responses are crucial for the integrity of the study.

Question 8

What is the age of your “first-life” self (i.e. the age of the person sitting behind the keyboard controlling the avatar)?

- 1) 1-17 2) 18-22
- 3) 23-30 4) 31-40
- 5) 41-50 6) 51 +

Question 9

What is the gender of your “first-life” self (i.e. the gender of the person sitting behind the keyboard controlling the avatar)?

- 1) Male
- 2) Female
- 3) Prefer not to respond.

Question 10

What is your average hourly wage in first-life (Real World) paid work (in USD)?

- 1) below \$5.85/hr 2) \$5.85 - \$8
- 3) \$8 - \$12 4) \$12 - \$15
- 5) \$15 - \$20 6) \$20 - \$40
- 7) above \$40/hr

Question 11

How do you characterize your level of educational attainment:

- 1) No high school completed
- 2) Some high school completed
- 3) High school graduate 4) Some college
- 5) College graduate 6) Post-college degree

Question 12

Employment/Education Status:

- 1) Full time employment
- 2) Full-time student
- 3) Part-time education and/or employment
- 4) Unemployed and not currently a student

Question 13

Race:

- 1) Caucasian 2) African American
- 3) Asian/Pacific Islander 4) Hispanic/Latino
- 5) American Indian 6) Multiracial
- 7) No answer

Question 14

Where were you born?

- 1) North America
- 2) Latin America and Caribbean
- 3) Western Europe

- 4) Eastern Europe
- 5) South Asia
- 6) East or South East Asia
- 7) Australia, New Zealand
- 8) Africa
- 9) North Africa, Middle East

Question 15

Where do you currently live?

- 1) North America
- 2) Latin America and Caribbean
- 3) Western Europe
- 4) Eastern Europe
- 5) South Asia
- 6) East or South East Asia
- 7) Australia, New Zealand
- 8) Africa
- 9) North Africa, Middle East

Question 16

Number of Siblings:

<< back

- 0
- 1
- 2
- 3
- 4
- 5-6
- 7+

Question 17

Number of Younger Siblings:

- 0
- 1
- 2
- 3
- 4
- 5-6
- 7+

Question 18

Marital Status:

- 1) Single
- 2) Engaged
- 3) Married/Domestic Partnership

- 4) Divorced/Separated
- 5) Widowed

Question 19

Number of Children:

- 0
- 1
- 2
- 3
- 4
- 5-6
- 7+

Question 20

Are you currently under the influence of mind-altering drugs or alcohol?

- 1) yes
- 2) no

Attitudinal questions: These final questions are hypothetical questions intended to better understand the strategy you have applied in the earlier decision to distribute Lindens.

Question 21

Which of the following best describes the frequency with which you attend a church or other religious service?

- 1) Never
- 2) Once a year
- 3) A few times a year
- 4) Monthly
- 5) Weekly
- 6) Multiple times a week

Question 22

When was the last time that you contributed money or time to a charitable organization or cause?

- 1) Today
- 2) During the past week
- 3) During the past month
- 4) During the past six months
- 5) During the past year
- 6) More than a year ago

Question 23

Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?

- 1) Most people can be trusted.
- 2) You can't be too careful.

Question 24

In your opinion, are Second Life residents more trustworthy, less trustworthy, or about the same as people in the general population?

- 1) More trustworthy
- 2) About the same
- 3) Less trustworthy

Question 25

In your opinion, are Second Life residents more deserving of reciprocal treatment, i.e. deserving of having a kindness returned, than people in the general population?

- 1) More deserving of reciprocal treatment
- 2) About the same
- 3) Less deserving of reciprocal treatment

Question 26

If presented with the question answered by the first decision-maker in this study, (i.e. to divide L\$100 between themselves and the tripled fund given to the 2nd decision-maker), how many L\$ do you expect a Second Life resident to send, on average?

- 1) 0
- 2) 1-10
- 3) 11-20
- 4) 21-30
- 5) 31-40
- 6) 41-50
- 7) 51-60
- 8) 61-70
- 9) 71-80
- 10) 81-90
- 11) 91-100

Question 27

Suppose someone sent that average amount you just identified. What percentage of its tripled amount would you expect the second decision-maker to send back?

- 1) 0%
- 2) Greater than 0%, Less than 33%
- 3) 33%
- 4) Greater than 33%, Less than 50%
- 5) 50%
- 6) Greater than 50%, Less than 66%
- 7) 66% or Greater

Question 28

Suppose you had sent the second decision-maker L\$100. How much of the L\$300 they received do you think they would have sent to you?

- 1) 0
- 2) 1-50
- 3) 51-100
- 4) 101-150
- 5) 151-200
- 6) 201-250
- 7) 251-299
- 8) 300

Question 28

Suppose the first decision-maker had sent you L\$100. How much would you have sent from the L\$300 you would have received?

- 1) 0
- 2) 1-50
- 3) 51-100
- 4) 101-150
- 5) 151-200
- 6) 201-250
- 7) 251-299
- 8) 300

Question 29

Suppose you had sent the second decision-maker 50 Lindens. How much of the L\$150 they received do you think they would have sent to you?

- 1) 0
- 2) 1-25
- 3) 26-50
- 4) 51-75
- 5) 76-100
- 6) 101-125
- 7) 126-149
- 8) 150

Question 29

Suppose the first decision-maker sent you 50 Lindens. How much would you have sent from the L\$150 you would have received?

- 1) 0
- 2) 1-25
- 3) 26-50
- 4) 51-75
- 5) 76-100
- 6) 101-125
- 7) 126-149

8) 150

Question 30

What percentage of the amount of Lindens the second decision-maker received from you do you expect them to send to you?

- 1) 0%
- 2) Greater than 0%, Less than 33%
- 3) 33%
- 4) Greater than 33%, Less than 50%
- 5) 50%
- 6) Greater than 50%, Less than 66%
- 7) 66% or Greater

Question 30

Suppose, instead, the average person from the Second Life population was presented with the situation you were presented with before, i.e. they had to decide how much of <xx> Lindens to divide between themselves and the first decision-maker who sent it. What percentage would they return to the first decision-maker?

- 1) 0%
- 2) Greater than 0%, Less than 33%
- 3) 33%
- 4) Greater than 33%, Less than 50%
- 5) 50%
- 6) Greater than 50%, Less than 66%
- 7) 66% or Greater

Question 31

How important was the prospect of earning Lindens as a motivation for your participation in this experiment?

- 1) Very important
- 2) Moderately important
- 3) Not important

Question 32

Final question: Do you agree or disagree with this statement? The range of possible earnings from participating in this experiment was reasonable given the time required.

- 1) Strongly agree
- 2) Agree but not strongly
- 3) Disagree but not strongly
- 4) Strongly disagree

You finished the survey. Thank you for participating in the experiment. If you need to check the status of your payment, there is a device in the lobby for this purpose.