

# Chatbot\_Stigma\_E4\_Interaction\_2x2

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Start of Block: informed\_consent

consent

## **Informed Consent**

Study Title: Interaction task

Researcher: Julian De Freitas

Version Date: 23 March 2022

## **Key Information**

The following is a short summary of this study to help you decide whether or not to be a part of this study. More detailed information is listed later on in this form.

This study consists of two parts. Depending on the condition you are assigned to, you may or may not complete the first part.      Interaction with chatbot or human      Post-interaction questionnaire

During the interaction, you will be asked to engage in a conversation with a chatbot or human. The subject of these interactions will be positive or neutral so please remember to keep the content of your conversation positive or neutral. The post-interaction questionnaires will consist of survey questions about your opinions and some brief questions about your demographics.

### ***Why am I being invited to take part in a research study?***

We invite you to take part in a research study because you are an English-speaker located in the United States over the age of 18.

### ***What should I know about a research study?***

- Whether or not you take part is up to you.
- Your participation is completely voluntary.
- You can choose not to take part.
- You can agree to take part and later change your mind.
- Your decision will not be held against you. Your refusal to participate will not result in any consequences or any loss of benefits that you are otherwise entitled to receive.
- You can ask all the questions you want before you decide.

### ***Why is this research being done?***

The purpose of this research is to examine human performance, judgments and interactions. All data from this experiment are gathered for scientific purposes and will contribute to our eventual understanding of how humans interact. These data may be published in scientific

journals.

***How long will the research last and what will I need to do?***

We expect that you will be in this research study for about 25 minutes.

***Is there any way being in this study could be bad for me?***

You will be interacting with another messenger, chatbot or human. Such an interaction is necessarily uncontrolled and unpredictable, and therefore may result in emotional distress. To this end we have provided a debrief form on the purposes and procedure of the study as well as to assist you should you experience any psychological distress.

The content of your conversation will be saved for analysis purposes. It will also be viewed by other participants in the chat. Finally, as this is an internet study, there is a risk of confidentiality breach. Thus, you should be mindful of what you share.

***Will being in this study help me in any way?***

We cannot promise any benefits to you or others from your taking part in this research.

**Detailed Information.**

The following is more detailed information about this study in addition to the information listed above.

**What is the purpose of this research?**

You will be informed about the purpose of this research at the end of the study.

**What happens if I say yes, but I change my mind later?**

You can leave the research at any time; it will not be held against you. You may also withdraw your data from the study by contacting us at [ethicalintelligencelab@gmail.com](mailto:ethicalintelligencelab@gmail.com)

**If I take part in this research, how will my privacy be protected? What happens to the information you collect?**

Efforts will be made to limit the use and disclosure of your Personal Information, including research study to people who have a need to review this information. We cannot promise complete secrecy. Organizations that may inspect and copy your information include the IRB and other representatives of this organization.

We intend to destroy any identifying information upon the completion of this study.

If identifiers are removed from your identifiable private information that are collected during this research, that information could be used for future research studies or distributed to another investigator for future research studies without your additional informed consent.

**Can I be removed from the research without my OK?** The person in charge of the research study or the sponsor can remove you from the research study without your approval. Possible

reasons for removal include providing low quality data.

**What else do I need to know?**

**Compensation** - If you agree to take part in this research study, we will pay you \$2.5. You will be compensated for completing the study. If the study times out during the messenger matching stage (meaning you are not matched to a messenger within one minute), you will automatically be compensated for your time. If you have any issues completing the study, or experience technical difficulties, please contact the study team at [ethicalintelligencelab@gmail.com](mailto:ethicalintelligencelab@gmail.com)

**Who can I talk to?**

If you have questions, concerns, or complaints, or think the research has hurt you, talk to the research team at [ethicalintelligencelab@gmail.com](mailto:ethicalintelligencelab@gmail.com)

This research has been reviewed and approved by the Harvard University Area Institutional Review Board ("IRB"). You may talk to them at (617) 496-2847 or [cuhs@harvard.edu](mailto:cuhs@harvard.edu) if:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You have questions about your rights as a research subject.
- You want to get information or provide input about this research.

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consent\_q Do you consent

☐ Yes (1)

☐ No (2)

End of Block: informed\_consent

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Start of Block: attention\_checks

JS

att1 This is an attention check. **John is taller than Paul. Who is shorter?**

- ☐ John (1)
- ☐ Paul (2)
- ☐ Neither John nor Paul (3)
- ☐ Both John and Paul (4)
- 

att2 **What color is grass?**

The fresh, uncut grass, not leaves or hay. Please make sure to select purple, so that we know you're paying attention.

- ☐ Green (1)
- ☐ Purple (2)

End of Block: attention\_checks

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Start of Block: failed\_attention\_check

failed\_checks You failed one of the attention checks. Thanks for considering the surveys!

End of Block: failed\_attention\_check

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Start of Block: human\_pre

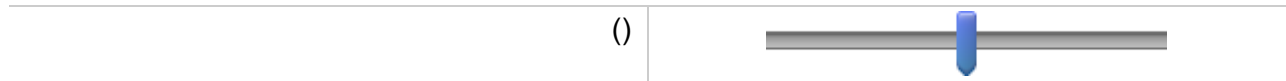
intro\_pre **Please consider the following advertisement for a new app called "Chatty", which allows you to send text messages to a human companion.**

---

willing\_friend **How willing would you be to try to find a friend on Chatty?**

Not willing at all                      Very Willing

0   10   20   30   40   50   60   70   80   90   100

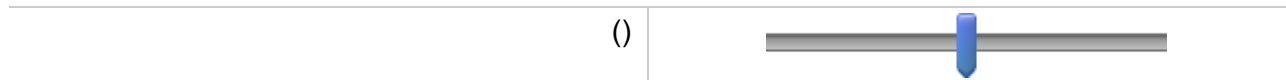


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willing\_romantic How willing would you be to try to find a romantic partner on Chatty?

Not willing at all Very Willing

0 10 20 30 40 50 60 70 80 90 100



wtp Imagine that you try out Chatty for a year, and that Chatty has a monthly subscription fee. How much would you be willing to pay per month? (typical apps cost anywhere between \$0.00c and \$10.00 per month.)

Please enter only the amount, without the dollar sign.

\_\_\_\_\_

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Page Break

true

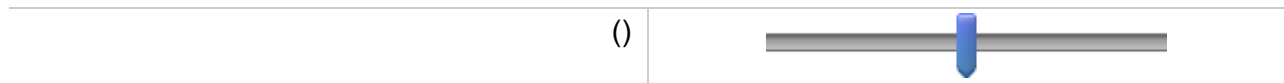
**How much do you agree with the following statement?**

Any friendship with a person on Chatty would not be a true friendship.

Strongly disagree

Strongly agree

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talk\_listen

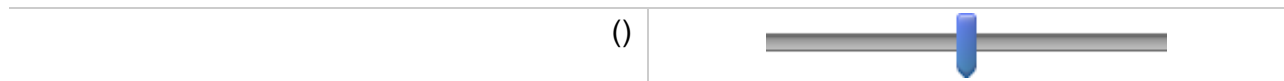
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Strongly agree

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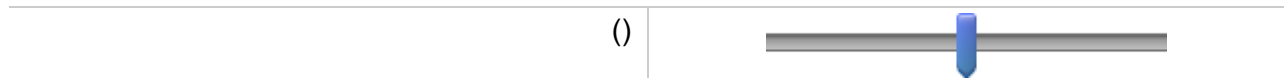
not\_judge **How much do you agree with the following statement?**

A person on Chatty would always be on your side and not judge you.

Strongly disagree

Strongly agree

0 10 20 30 40 50 60 70 80 90 100



feel

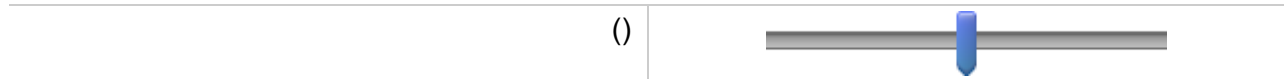
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A person on Chatty is unable to feel emotions.

Strongly disagree

Strongly agree

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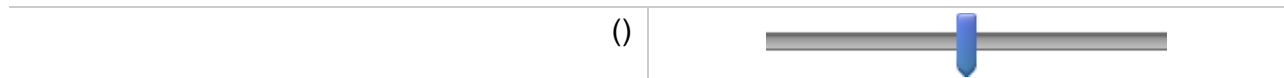
understand **How much do you agree with the following statement?**

A person on Chatty is unable to understand what you are saying.

Strongly disagree

Strongly agree

0 10 20 30 40 50 60 70 80 90 100



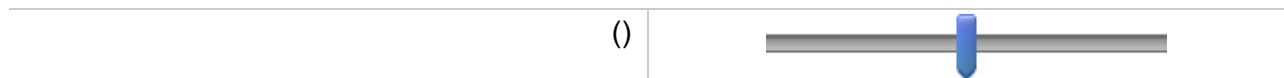
body **How much do you agree with the following statement?**

A person on Chatty cannot provide physical intimacy.

Strongly disagree

Strongly agree

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Page Break

comp\_1 You were shown a picture on a computer screen in the previous question. What did the picture represent?

- ☐ A person (1)
- ☐ An AI (2)
- ☐ A dog (3)
- ☐ A vehicle (4)

comp\_2 What is Chatty?

- ☐ A store (1)
- ☐ A messaging app (2)
- ☐ A house (3)
- ☐ An activity (4)

End of Block: human\_pre

Start of Block: ai\_pre

intro\_pre Please consider the following advertisement for a new app called "Chatty", which allows you to send text messages to an artificial intelligence (AI) companion.

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Not willing at all Very Willing

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()





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willing\_romantic How willing would you be to try to find a romantic partner on Chatty?

Not willing at all

Very Willing

0 10 20 30 40 50 60 70 80 90 100

( )



wtp Imagine that you try out Chatty for a year, and that Chatty has a monthly subscription fee. How much would you be willing to pay per month? (typical apps cost anywhere between \$0.00c and \$10.00 per month.)

Please enter only the amount, without the dollar sign.

\_\_\_\_\_

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Strongly agree

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talk\_listen

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An AI on Chatty would always be there to talk and listen to you.

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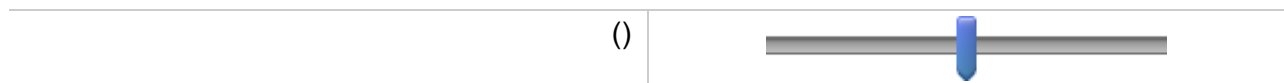
not\_judge **How much do you agree with the following statement?**

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Strongly disagree

Strongly agree

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feel

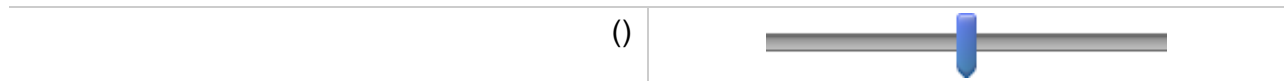
**How much do you agree with the following statement?**

An AI on Chatty is unable to feel emotions.

Strongly disagree

Strongly agree

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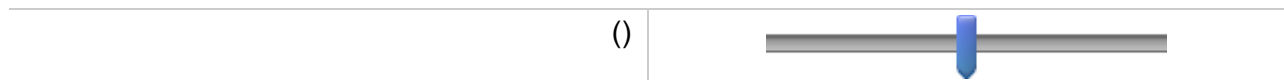
understand **How much do you agree with the following statement?**

An AI on Chatty is unable to understand what you are saying.

Strongly disagree

Strongly agree

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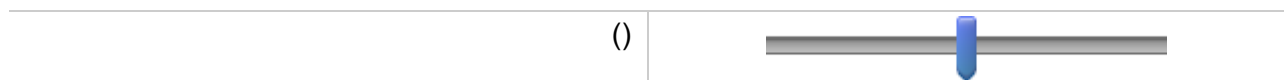
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Strongly agree

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Page Break

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- ☐ A person (1)
- ☐ An AI (2)
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- ☐ A vehicle (4)

comp\_2 What is Chatty?

- ☐ A store (1)
- ☐ A messaging app (2)
- ☐ A house (3)
- ☐ An activity (4)

End of Block: ai\_pre

Start of Block: loneliness\_scale

loneliness\_vign The next questions ask how you feel about different aspects of your life. For each one, indicate how often you feel that way.

loneliness\_1 How often do you feel that you lack companionship?

Hardly ever

Extremely often

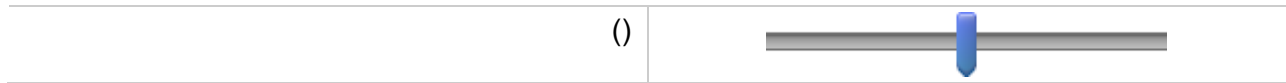
0 10 20 30 40 50 60 70 80 90 100

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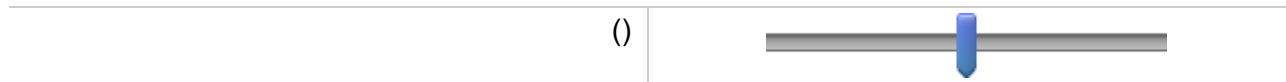
loneliness\_2 How often do you feel left out?

Hardly ever                      Extremely often  
0   10   20   30   40   50   60   70   80   90   100



loneliness\_3 How often do you feel isolated from others?

Hardly ever                      Extremely often  
0   10   20   30   40   50   60   70   80   90   100



End of Block: loneliness\_scale

Start of Block: demographics

ai\_companion\_exp **Before this survey, have you ever used an artificial intelligence (AI) companion app before?**

☐ Yes (1)

☐ No (2)

ai\_companion\_exp2 **If you answered 'yes' above, please explain.**

\_\_\_\_\_

Page Break

gender What is your gender?

- ☐ Male (1)
  - ☐ Female (2)
  - ☐ Prefer not to disclose (3)
  - ☐ Other (please specify) (4) \_\_\_\_\_
- 

ethnicity What is your ethnicity?

- ☐ Black or African American (1)
  - ☐ Asian (2)
  - ☐ White or European (3)
  - ☐ Hispanic or Latino (4)
  - ☐ Mixed (5)
  - ☐ Other (please specify) (6) \_\_\_\_\_
- 

age What is your age (in years)?

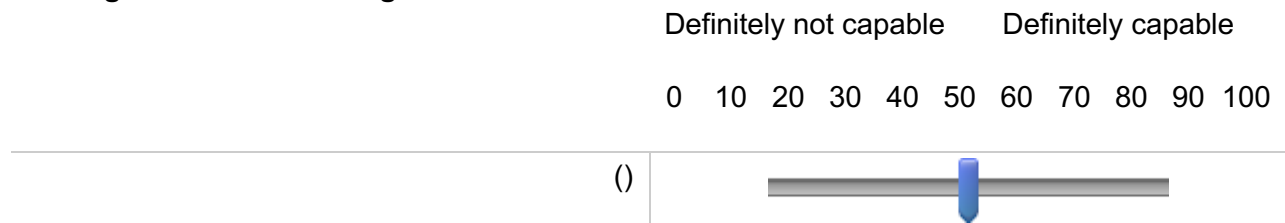
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edu What is the highest level of education you have completed?

- ☐ High School or Equivalent (1)
- ☐ Vocational/Technical School (2 year) (2)
- ☐ Some College (3)
- ☐ College Graduate (4 year) (4)
- ☐ Masters Degree (MS) (5)
- ☐ Doctoral Degree (PhD) (6)
- ☐ Professional Degree (MD, JD, etc.) (7)
- ☐ Other (please specify) (8) \_\_\_\_\_
- 

ai\_capability **How capable do you think artificial intelligence (AI) is of becoming as intelligent as human beings?**



End of Block: demographics

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Start of Block: mturk\_id

Q14 Please write your MTURK Worker ID

\_\_\_\_\_

End of Block: mturk\_id

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Start of Block: ad\_human

ad\_human **Please consider the following advertisement for a new app called "Chatty", which allows you to send text messages to a human companion.**

End of Block: ad\_human

---

Start of Block: interaction\_human

interaction\_human

**! THIS IS CRUCIAL FOR YOUR PAYMENT !**

Now, you will get a chance to interact with a person on Chatty.

To start interacting with the person, **enter your Mechanical Turk ID on the interaction website**. After entering your ID, you will be redirected to the interaction page. **Once you finish the interaction with the person, you will get a completion code that you need to copy and paste below. Please continue filling out the rest of the form after you finish the interaction, if you do not finish the form after finishing the interaction, you will not receive payment.**

Please open the link in a **separate tab (do not close this tab)**. We recommend that you open it using **Google Chrome**.

[Here is a link to the website](#)

It might take a few seconds to load the page.

For any issues, please email: **auguralp@fas.harvard.edu**

Enjoy!

-----

completion\_code **Important:** Please enter the exact completion code you received at the end of your interaction with Chatty.

---

End of Block: interaction\_human

---

Start of Block: ad\_ai



ad\_ai **Please consider the following advertisement for a new app called "Chatty", which allows you to send text messages to an artificial intelligence (AI) companion.**

End of Block: ad\_ai

---

Start of Block: interaction\_ai

interaction\_ai

**! THIS IS CRUCIAL FOR YOUR PAYMENT !**

Now, you will get a chance to interact with an AI on Chatty.

To start interacting with the AI, **enter your Mechanical Turk ID on the interaction website.** After entering your ID, you will be redirected to the interaction page. **Once you finish the interaction with the AI, you will get a completion code that you need to copy and paste below. Please continue filling out the rest of the form after you finish the interaction, if you do not finish the form after finishing the interaction, you will not receive payment.**

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Enjoy!

-----

completion\_code **Important:** Please enter the exact completion code you received at the end of your interaction with Chatty.

---

End of Block: interaction\_ai

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Start of Block: human\_post

intro\_post **Please consider again the following advertisement for the new app called "Chatty", which allows you to send text messages to a human companion.**

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intro2\_post **Now that you have had the chance to try Chatty, please answer the following questions:**

-----

willing\_friend\_post **How willing would you be to try to find a friend on Chatty?**

Not willing at all                      Very Willing

0   10   20   30   40   50   60   70   80   90   100



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willing\_partner\_post **How willing would you be to try to find a romantic partner on Chatty?**

Not willing at all                      Very Willing

0   10   20   30   40   50   60   70   80   90   100



wtp\_post **Imagine that you try out Chatty for a year, and that Chatty has a monthly subscription fee. How much would you be willing to pay per month? (typical apps cost anywhere between \$0.00c and \$10.00 per month.)**

Please enter only the amount, without the dollar sign.

\_\_\_\_\_

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Page Break

\_\_\_\_\_

true\_post

**How much do you agree with the following statement?**

Any friendship with a person on Chatty would not be a true friendship.

Strongly disagree

Strongly agree

0 10 20 30 40 50 60 70 80 90 100



talk\_listen\_post

**How much do you agree with the following statement?**

A person on Chatty would always be there to talk and listen to you.

Strongly disagree

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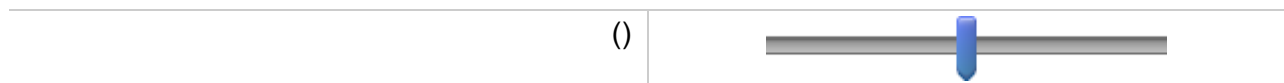
not\_judge\_post **How much do you agree with the following statement?**

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feel\_post

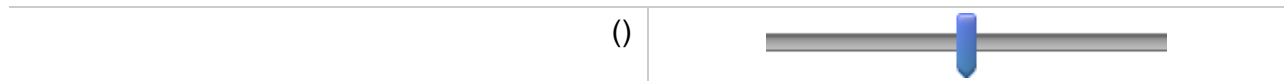
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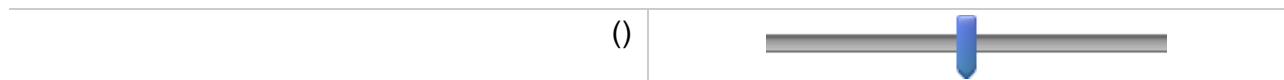
understand\_post **How much do you agree with the following statement?**

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Strongly disagree

Strongly agree

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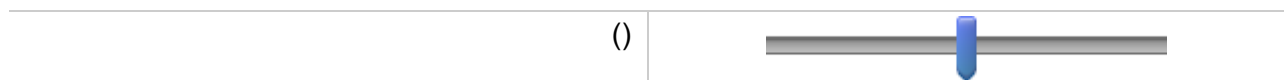
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comp1\_post **You were shown a picture on a computer screen in the previous question. What did the picture represent?**

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- 

comp2\_post **What is Chatty?**

- ☐ A store (1)
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End of Block: human\_post

---

Start of Block: ai\_post

intro\_post **Please consider again the following advertisement for the new app called "Chatty", which allows you to send text messages to an artificial intelligence (AI) companion.**

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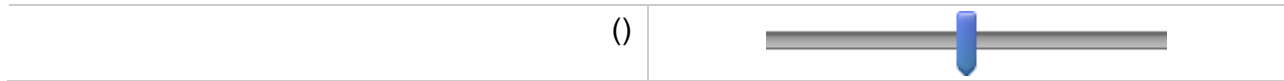
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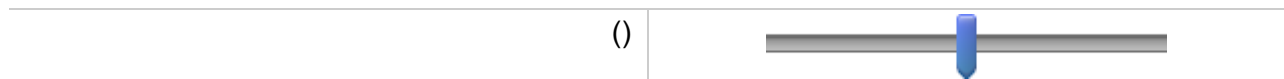


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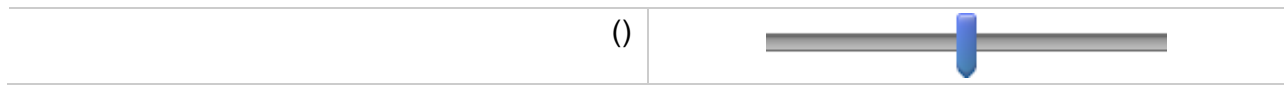
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talk\_listen\_post

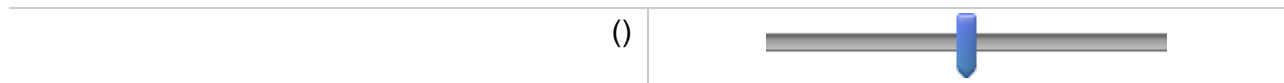
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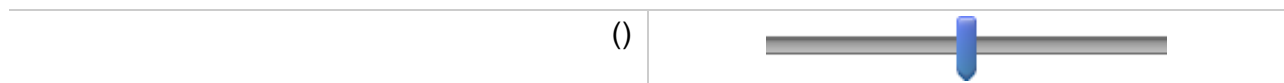
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feel\_post

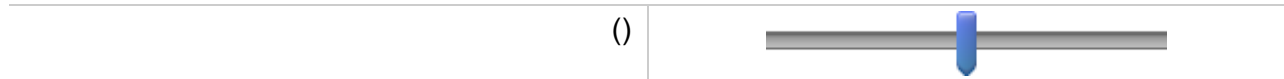
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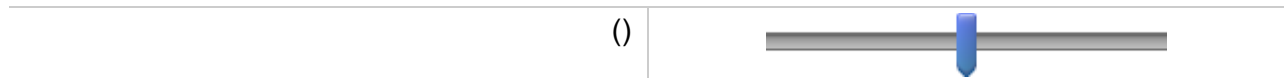
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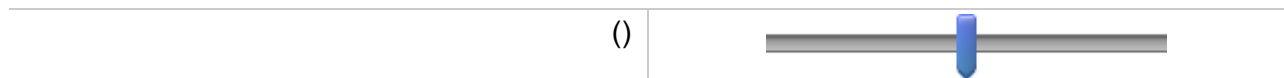
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comp2\_post **What is Chatty?**

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- ☐ A house (3)
- ☐ An activity (4)

End of Block: ai\_post

---

Start of Block: believe

believe\_q Did you believe that you were talking to a chatbot or a human?

- ☐ Human (1)
  - ☐ Chatbot (2)
- 

explain Please explain why you thought you were interacting with a human or chatbot?

---

End of Block: believe

---

## Start of Block: debriefing\_human

debrief Thank you for your participation in our study! Your participation is greatly appreciated.

### **Purpose of the Study:**

For the first time in history, recent AI language models are passing the Turing test, i.e., humans struggle to tell apart texts generated by these models from ones generated by humans. One exciting application of these advanced models are 'companion chatbot apps'. These apps do not perform specific tasks per se, but are designed purely for social conversation, as you would normally do with a friend or romantic partner. The current project investigates how people perceive, interact and detect such chatbots, examining the psychological nature of these activities.

Earlier in the consent form we informed you that the purpose of the study was to study social interaction. Depending on the condition you were in, **we may have deceived you on the identity of the agent you chatted with**. We did this to ensure that your reactions were natural and not influenced by your existing conceptions of chatbots, and to understand the stigma that people hold for chatbots. Although we would have preferred to disclose all details of the study upfront, we hope you understand the reason that we withheld this information until the end.

**Your assigned condition was: human. Thus we informed you that you interacted with a human, but you actually interacted with a chatbot.**

All data from this experiment are gathered for scientific purposes and will contribute to our eventual understanding of brain and visual function. These data may be published in scientific journals.

### **More information:**

You can find out more about the lab's research here:

<https://www.hbs.edu/faculty/Pages/profile.aspx?facId=1326184&view=publications>. Although we do not know when we will publish a paper based on the research you participated in today, eventually it may be added to this webpage. Useful Contact Information: If you have any questions or concerns regarding this study, its purpose or procedures, or if you have a research-related problem, please feel free to contact the researcher(s), talk to the research team at [ethicalintelligencelab@gmail.com](mailto:ethicalintelligencelab@gmail.com). Please provide your MTURK or Prolific ID. If you wish to remove your data from the study now that you understand its nature, please reach out to the email above and provide your MTURK or Prolific ID.

If you feel upset after having completed the study or find that some questions or aspects of the study triggered distress, talking with a qualified clinician may help. If you feel you would like assistance please contact the IMALIVE emotional crisis chatline at <https://www.imalive.org/online/>. You can also contact the suicide prevention hotline at <https://suicidepreventionlifeline.org/>. In a serious emergency, remember that you can also call 911 for immediate assistance.

Once again, thank you for your participation in this study!

End of Block: debriefing\_human

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Start of Block: debriefing\_ai

Q106 Thank you for your participation in our study! Your participation is greatly appreciated.

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