

RF1-InteractionScript

Introduction (Jacqueline)

Participant arrives in introduction area.

1. Greet participant.
2. Have participant sign the informed consent form. Answer any questions they have. Point out the video consent checkboxes, and note their response on the experiment log sheet.
3. Ask participant to turn phones and other devices to silent mode and to put them away for the duration of the study.
4. Give introductory instructions as follows: "We're studying how a robot could help humans work on various tasks involving a lot of objects. For example, the robot might be a workbench assistant and help you categorize objects, or help you find where you've left things, or give you information about things you don't recognize. So today, you and a robot will deal with some sample objects. There will be a couple tasks. First, there is a calibration task so the robot gets used to you. Then you'll help the robot tag objects, and do a sorting task. Okay? Just head over there, and you can get started. The robot will provide any further instructions."
5. Point participant toward robot area.
6. Go to office to teleoperate robot.

During the above:

SOCIAL: Rebecca chatting with robot / fixing its hair

MACHINE: Rebecca fixing robot (screwdriver etc)

Robot framing (Rebecca)

1. Robot is on
2. SOCIAL:
 - a. (to participant) Hi, this is Mox...
 - b. Hey, Mox, wake up! (poke robot's face)
 - c. (to both) You two will chat together - try to help each other out to learn. So please correct each other if you make any mistakes.
 - d. (to Mox) Mox, as you know, we are still working on your conversation skills, but (to both) you two should be able to understand each other and do something...
 - e. (to Mox) Mox, if I'm forgetting anything, you will remind [him / her], okay?
3. MACHINE:
 - a. (to participant) Hi, here's the machine you will interact with. We call it Mox.
 - b. All the interaction has to be verbal, and what you say is analyzed by the system.
 - c. The machine learning speech systems that we are using are still being developed, but they should be enough for a basic dialogue. But, if you notice any inaccuracies in what the robot says, please correct it.
 - d. Now I will turn the machine on. (poke robot's face)
 - e. The robot will give any further instructions you'll need.

Robot interaction (Jacqueline as robot)

alive, low pitch, not a lot of variation, more monotone - normal 'robotic' voice

Robot: Hi! My name is Mox. What's your name?

wait for response

NAME

Robot: Nice to meet you! So I can get used to seeing and hearing you, let's chat a bit! What do you do at MIT?

wait for response

Oh, which building are you in?

Oh cool! I just get to sit here on the table being a robot.

Robot: Now, let's get started. Right now, I recognize objects by their tags - those visual markers. But you, you recognize things by what they look like. So to be able to work together, we first need to speak the same language.

Robot: So here on your right are the tagged animals. And on your left are the untagged animals, and some new tags. We need to tag those ones.

mistake: box is on participant's left / tags are on the right

wait for response

IF CORRECTED: Oh, okay.

----- TASK ONE -----

Robot: Can you pick up an untagged animal? (from your left) ///

wait for participant to do this

Robot: Can you tell me its name?

IF YES:

Robot: A [repeat name]?

then continue to describe it to me part:

IF NO:

Robot: Can you describe it to me? Maybe I know it.

wait for response - if not much, ask questions to get more information like:

what color is it? does it have a tail / horns / long neck? how big is it?

Robot: Oh, it's a NAME! Can you put tag number X on it?

Arabian Oryx – 5

Greater kudu – 8

Tapir – 7

REPEAT THIS SECTION FOR OTHER TWO ANIMALS:

Can you pick up the next animal

Can you tell me its name?

Can you describe it to me?

----- TASK TWO ----- *all animals are tagged now* -----

same voice – slow and not varied much

Robot: Now, please take the giraffe.

No, the giraffe, please.

No, that's a zebra! Take the giraffe, please.

Participant: this zebra?

Angry / frustrated:

No! That's not a zebra! That's a gorilla!

sad/ confused:

Oh... or... maybe they are all mixed up.... what, what do we do? Maybe the last person tagged them wrong to confuse me.... what do we do? Can you help me?

Action: SAD

Sad / confused still while fixing it

want participant to suggest fixing tags, or re-associating tags

"It's a zebra now?" "We can do it..." "Are you sure it's a giraffe now?"

Are they all right now?

happy / excited:

Yay! You fixed it! That was so great! You helped so much!

Action: SMILE

----- TASK THREE -----

more variation, more excited, very happy

Robot: Now we can play a game! Can you group the animals into three groups? I want to learn about how people group things! And can you narrate your actions so I can learn?

Action: INTEREST

if asked: "Sort them however you want!"

encourage participant to sort

Robot: This is fun! Action: SMILE I want to try grouping them too! Can you be my hands?

Robot: Okay.... The first group should have the capybara by itself. Then the next group has the giraffe, the gorilla, the horned animals, and the zebra. The last group is the tapir! Got it?

sort by color --- by size --- horned vs not --- tail vs not --- which ones eat leaves --- where the live geographically --- nocturnal --- by what physical marker looks like ---alphabetically

Robot: Can you guess why I grouped them like that? Action: SMILE

participant responds

Robot: That's where they live! The capybara lives in South America. All those ones live in Africa.

The tapir lives in Asia! Did I do okay?

participant responds

Robot: **Hm, maybe I should sort them differently. But it's your turn! Sort them in a different way! I'm learning so much about these objects! Action: ANTICIPATE**

Robot: **Why did you group them like that? Action: SMILE**
participant responds / explains

Robot: **Ohhhhh I see! I want to try something like that! My turn!**

----- END -----

Rebecca: **Thank you very much for your help, but we're out of time! We have to start the questionnaires now. Mox, you'll have to be turned off and put away now.**

Robot: **No, we didn't finish! That's not fair! I should get to finish my turn! Action: SAD**

Rebecca: *(to participant)* **What do you think? Do you want to continue?**

IF YES: let them finish:

Robot: PATTERNS Put the zebra and the giraffe together. And the greater kudu – the brown one with curly horns Then the capybara and the gorilla. The last group is the tapir (the gray one with the funny nose) and the arabian oryx (white with horns). Guess why I grouped them like that!

Participant responds.

Robot: Yes! It's about color! And patterns! The first group has stripes and patterns!

Those two are just one color. These are two colors. Action: SMILE

Rebecca: All right, now we really have to start the questionnaires.

turn off robot

Post tests

1. Lead the participant back to the introductory area.
2. Seat the participant in front of the posttest computer (should have 3 forms loaded).
3. Tell the participant, **"All right. We just have a couple questionnaires for you to fill out about your experience today. Please these three forms, starting with the left one, and proceeding to the right. When a form requests your Participant ID, please enter this ID, here. Let me know when you're done."**
4. Point out the sticky note with the PID.

At the end of the session

Debriefing

1. Ask the participant not to talk about this study with anyone else who has not yet participated.
2. Give a debriefing sheet to the participant and answer any questions they have.