Fragebogen

1 Welcome

Thank you very much for participating in our experiment! Your participation helps us to gain valuable insights about the interaction between

This experiment consists of two parts with a total duration of approximately 5-7 minutes:

1. You will see six videos of a robot that moves in two different ways in each video and we will ask you to compare the movements and answer some questior

2. We will ask you to disclose some personal information.

2 ApproachDirectionFilter

Please proceed to robot movement #1

2.1.1 ApproachDirection1&2

Please watch the following video of a robot moving in two different ways (A/B) towards you

Once you've seen the video, please scroll down to answer some questions about both movement behaviors

Please indicate your perception of approach A towards you

- ◯ From the side
- ◯ A little from the side
- ◯ Neither from the side nor straight towards you
- ◯ A little straight towards you
- ◯ Straight towards you

Please indicate your perception of approach B towards you

- ◯ From the side
- ◯ A little from the side
- ◯ Neither from the side nor straight towards you
- ◯ A little straight towards you
- ◯ Straight towards you

Please rate your impression of the human-likeness of movement A on these scales:

Fake	◯	◯	◯	◯	◯	Natural
Machinelike	◯	◯	◯	◯	◯	Humanlike
Unconscious	◯	◯	◯	◯	◯	Conscious
Artificial	◯	◯	◯	◯	◯	Lifelike
Moving rigidly	◯	◯	◯	◯	◯	Moving elegantly

Please rate your impression of the human-likeness of movement B on these scales:

Fake	◯	◯	◯	◯	◯	Natural
Machinelike	◯	◯	◯	◯	◯	Humanlike
Unconscious	◯	◯	◯	◯	◯	Conscious
Artificial	◯	◯	◯	◯	◯	Lifelike
Moving rigidly	◯	◯	◯	◯	◯	Moving elegantly

Which movement behavior do you prefer?

- ◯ A
- ◯ B

2.2.1 ApproachDirection2&1

Please watch the following video of a robot moving in two different ways (A/B) towards you

Once you've seen the video, please scroll down to answer some questions about both movement behaviors

Please indicate your perception of approach A towards you

- ◯ From the side
- ◯ A little from the side
- ◯ Neither from the side nor straight towards you
- ◯ A little straight towards you
- ◯ Straight towards you

Please indicate your perception of approach B towards you

- ◯ From the side
- ◯ A little from the side
- ◯ Neither from the side nor straight towards you
- ◯ A little straight towards you
- ◯ Straight towards you

Please rate your impression of the human-likeness of movement A on these scales:

Fake	◯	◯	◯	◯	◯	Natural
Machinelike	◯	◯	◯	◯	◯	Humanlike
Unconscious	◯	◯	◯	◯	◯	Conscious
Artificial	◯	◯	◯	◯	◯	Lifelike
Moving rigidly	◯	◯	◯	◯	◯	Moving elegantly

Please rate your impression of the human-likeness of movement B on these scales:

Fake	◯	◯	◯	◯	◯	Natural
Machinelike	◯	◯	◯	◯	◯	Humanlike
Unconscious	◯	◯	◯	◯	◯	Conscious
Artificial	◯	◯	◯	◯	◯	Lifelike
Moving rigidly	◯	◯	◯	◯	◯	Moving elegantly

Which movement behavior do you prefer?

- ◯ A
- ◯ B

3 SmoothFilter

Please proceed to robot movement #2

3.1.1 Smooth1&2

Please watch the following video of a robot moving in two different ways (A/B)

Once you've seen the video, please scroll down to answer some questions about both movement behaviors

Please indicate your perception of the robot's smoothness for movement A

- ◯ Very calm
- ◯ Calm
- ◯ Neutral
- ◯ Nervous
- ◯ Very nervous

Please indicate your perception of the robot's smoothness for movement B

- ◯ Very calm
- ◯ Calm
- ◯ Neutral
- ◯ Nervous
- ◯ Very nervous

Please rate your impression of the human-likeness of movement A on these scales:

Fake	◯	◯	◯	◯	◯	Natural
Machinelike	◯	◯	◯	◯	◯	Humanlike
Unconscious	◯	◯	◯	◯	◯	Conscious
Artificial	◯	◯	◯	◯	◯	Lifelike
Moving rigidly	◯	◯	◯	◯	◯	Moving elegantly

Please rate your impression of the human-likeness of movement B on these scales:

Fake	○	○	○	○	○	Natural
Machinelike	○	○	○	○	○	Humanlike
Unconscious	○	○	○	○	○	Conscious
Artificial	○	○	○	○	○	Lifelike
Moving rigidly	○	○	○	○	○	Moving elegantly

Which movement behavior do you prefer?

- ○ A
- ○ B

3.2.1 Smooth2&1

Please watch the following video of a robot moving in two different ways (A/B)

Once you've seen the video, please scroll down to answer some questions about both movement behaviors

Please indicate your perception of the robot's smoothness for movement A

- ○ Very calm
- ○ Calm
- ○ Neutral
- ○ Nervous
- ○ Very nervous

Please indicate your perception of the robot's smoothness for movement B

- ○ Very calm
- ○ Calm
- ○ Neutral
- ○ Nervous
- ○ Very nervous

Please rate your impression of the human-likeness of movement A on these scales:

Fake	○	○	○	○	○	Natural
Machinelike	○	○	○	○	○	Humanlike
Unconscious	○	○	○	○	○	Conscious
Artificial	○	○	○	○	○	Lifelike
Moving rigidly	○	○	○	○	○	Moving elegantly

Please rate your impression of the human-likeness of movement B on these scales:

Fake	○	○	○	○	○	Natural
Machinelike	○	○	○	○	○	Humanlike
Unconscious	○	○	○	○	○	Conscious
Artificial	○	○	○	○	○	Lifelike
Moving rigidly	○	○	○	○	○	Moving elegantly

Which movement behavior do you prefer?

- ○ A
- ○ B

4 PartApproachFilter

Please proceed to robot movement #3

4.1.1 PartApproach1&2

Please watch the following video of a robot approaching a part in two different ways (A/B)

Once you've seen the video, please scroll down to answer some questions about both movement behaviors

Please indicate your perception of the robot's part approach for movement A

- ○ Very careful
- ○ Careful
- ○ Neutral
- ○ Careless
- ○ Very careless

Please indicate your perception of the robot's part approach for movement B

- ○ Very careful
- ○ Careful
- ○ Neutral
- ○ Careless

- ○ Very careless

Please rate your impression of the human-likeness of movement A on these scales:

Fake	○	○	○	○	○	Natural
Machinelike	○	○	○	○	○	Humanlike
Unconscious	○	○	○	○	○	Conscious
Artificial	○	○	○	○	○	Lifelike
Moving rigidly	○	○	○	○	○	Moving elegantly

Please rate your impression of the human-likeness of movement B on these scales:

Fake	○	○	○	○	○	Natural
Machinelike	○	○	○	○	○	Humanlike
Unconscious	○	○	○	○	○	Conscious
Artificial	○	○	○	○	○	Lifelike
Moving rigidly	○	○	○	○	○	Moving elegantly

Which movement behavior do you prefer?

- ○ A
- ○ B

4.2.1 PartApproach1&2

Please watch the following video of a robot approaching a part in two different ways (A/B)

Once you've seen the video, please scroll down to answer some questions about both movement behaviors

Please indicate your perception of the robot's part approach for movement A

- ○ Very careful
- ○ Careful
- ○ Neutral
- ○ Careless
- ○ Very careless

Please indicate your perception of the robot's part approach for movement B

- ○ Very careful
- ○ Careful
- ○ Neutral
- ○ Careless
- ○ Very careless

Please rate your impression of the human-likeness of movement A on these scales:

Fake	○	○	○	○	○	Natural
Machinelike	○	○	○	○	○	Humanlike
Unconscious	○	○	○	○	○	Conscious
Artificial	○	○	○	○	○	Lifelike
Moving rigidly	○	○	○	○	○	Moving elegantly

Please rate your impression of the human-likeness of movement B on these scales:

Fake	○	○	○	○	○	Natural
Machinelike	○	○	○	○	○	Humanlike
Unconscious	○	○	○	○	○	Conscious
Artificial	○	○	○	○	○	Lifelike
Moving rigidly	○	○	○	○	○	Moving elegantly

Which movement behavior do you prefer?

- ○ A
- ○ B

5 Speedfilter

Please proceed to robot movement #4

5.1.1 Speed1&2

Please watch the following video of a robot moving at two different speed levels (A/B)

Once you've seen the video, please scroll down to answer some questions about both movement behaviors

Once you've seen the video, please scroll down to answer some questions about both movement behaviors

Please indicate your perception of the robot's speed for movement A

- ◯ Very slow
- ◯ Slow
- ◯ Neutral
- ◯ Fast
- ◯ Very fast

Please indicate your perception of the robot's speed for movement B

- ◯ Very slow
- ◯ Slow
- ◯ Neutral
- ◯ Fast
- ◯ Very fast

Please rate your impression of the human-likeness of movement A on these scales:

Fake	◯	◯	◯	◯	◯	Natural
Machinelike	◯	◯	◯	◯	◯	Humanlike
Unconscious	◯	◯	◯	◯	◯	Conscious
Artificial	◯	◯	◯	◯	◯	Lifelike
Moving rigidly	◯	◯	◯	◯	◯	Moving elegantly

Please rate your impression of the human-likeness of movement B on these scales:

Fake	◯	◯	◯	◯	◯	Natural
Machinelike	◯	◯	◯	◯	◯	Humanlike
Unconscious	◯	◯	◯	◯	◯	Conscious
Artificial	◯	◯	◯	◯	◯	Lifelike
Moving rigidly	◯	◯	◯	◯	◯	Moving elegantly

Which movement behavior do you prefer?

- ◯ A
- ◯ B

5.2.1 Speed2&1

Please watch the following video of a robot moving at two different speed levels (A/B)

Once you've seen the video, please scroll down to answer some questions about both movement behaviors

Please indicate your perception of the robot's speed for movement A

- ◯ Very slow
- ◯ Slow
- ◯ Neutral
- ◯ Fast
- ◯ Very fast

Please indicate your perception of the robot's speed for movement B

- ◯ Very slow
- ◯ Slow
- ◯ Neutral
- ◯ Fast
- ◯ Very fast

Please rate your impression of the human-likeness of movement A on these scales:

Fake	◯	◯	◯	◯	◯	Natural
Machinelike	◯	◯	◯	◯	◯	Humanlike
Unconscious	◯	◯	◯	◯	◯	Conscious
Artificial	◯	◯	◯	◯	◯	Lifelike
Moving rigidly	◯	◯	◯	◯	◯	Moving elegantly

Please rate your impression of the human-likeness of movement B on these scales:

Fake	◯	◯	◯	◯	◯	Natural
Machinelike	◯	◯	◯	◯	◯	Humanlike
Unconscious	◯	◯	◯	◯	◯	Conscious

Artificial ○ ○ ○ ○ ○ Lifelike

Moving rigidly ○ ○ ○ ○ ○ Moving elegantly

Which movement behavior do you prefer?

○ A

○ B

6 MovRangeFilter

Please proceed to robot movement #5

6.1.1 MovRange1&2

Please watch the following video of a robot using different moving ranges (A/B)

Once you've seen the video, please scroll down to answer some questions about both movement behaviors

Please indicate your perception of the robot's moving range (i.e., how much space it uses) for movement A

○ Very little space

○ Little space

○ Neutral

○ Much space

○ Most space

Please indicate your perception of the robot's moving range (i.e., how much space it uses) for movement B

○ Very little space

○ Little space

○ Neutral

○ Much space

○ Most space

Please rate your impression of the human-likeness of movement A on these scales:

Fake ○ ○ ○ ○ ○ Natural

Machinelike ○ ○ ○ ○ ○ Humanlike

Unconscious ○ ○ ○ ○ ○ Conscious

Artificial ○ ○ ○ ○ ○ Lifelike

Moving rigidly ○ ○ ○ ○ ○ Moving elegantly

Please rate your impression of the human-likeness of movement B on these scales:

Fake ○ ○ ○ ○ ○ Natural

Machinelike ○ ○ ○ ○ ○ Humanlike

Unconscious ○ ○ ○ ○ ○ Conscious

Artificial ○ ○ ○ ○ ○ Lifelike

Moving rigidly ○ ○ ○ ○ ○ Moving elegantly

Which movement behavior do you prefer?

○ A

○ B

6.2.1 MovRange1&2

Please watch the following video of a robot using different moving ranges (A/B)

Once you've seen the video, please scroll down to answer some questions about both movement behaviors

Please indicate your perception of the robot's moving range (i.e., how much space it uses) for movement A

○ Very little space

○ Little space

○ Neutral

○ Much space

○ Most space

Please indicate your perception of the robot's moving range (i.e., how much space it uses) for movement B

○ Very little space

○ Little space

○ Neutral

○ Much space

○ Most space

Please rate your impression of the human-likeness of movement A on these scales:

Fake ○ ○ ○ ○ ○ Natural

Machinelike	○	○	○	○	○	Humanlike
Unconscious	○	○	○	○	○	Conscious
Artificial	○	○	○	○	○	Lifelike
Moving rigidly	○	○	○	○	○	Moving elegantly

Please rate your impression of the human-likeness of movement B on these scales:

Fake	○	○	○	○	○	Natural
Machinelike	○	○	○	○	○	Humanlike
Unconscious	○	○	○	○	○	Conscious
Artificial	○	○	○	○	○	Lifelike
Moving rigidly	○	○	○	○	○	Moving elegantly

Which movement behavior do you prefer?

- ○ A
- ○ B

7 UnconventionalFilter

Please proceed to robot movement #6

7.1.1 Unconventional1&2

Please watch the following video of a robot rotating differently (A/B)

Once you've seen the video, please scroll down to answer some questions about both movement behaviors

Please indicate your perception of the robot's rotations for movement A

- ○ Very unnecessary rotations
- ○ Unnecessary rotations
- ○ Neutral
- ○ Economical rotations
- ○ Very economical rotations

Please indicate your perception of the robot's rotations for movement B

- ○ Very unnecessary rotations
- ○ Unnecessary rotations
- ○ Neutral
- ○ Economical rotations
- ○ Very economical rotations

Please rate your impression of the human-likeness of movement A on these scales:

Fake	○	○	○	○	○	Natural
Machinelike	○	○	○	○	○	Humanlike
Unconscious	○	○	○	○	○	Conscious
Artificial	○	○	○	○	○	Lifelike
Moving rigidly	○	○	○	○	○	Moving elegantly

Please rate your impression of the human-likeness of movement B on these scales:

Fake	○	○	○	○	○	Natural
Machinelike	○	○	○	○	○	Humanlike
Unconscious	○	○	○	○	○	Conscious
Artificial	○	○	○	○	○	Lifelike
Moving rigidly	○	○	○	○	○	Moving elegantly

Which movement behavior do you prefer?

- ○ A
- ○ B

7.2.1 Unconventional1&2

Please watch the following video of a robot rotating differently (A/B)

Once you've seen the video, please scroll down to answer some questions about both movement behaviors

Please indicate your perception of the robot's rotations for movement A

- ○ Very unnecessary rotations
- ○ Unnecessary rotations
- ○ Neutral

- ◯ Neutral
- ◯ Economical rotations
- ◯ Very economical rotations

Please indicate your perception of the robot's rotations for movement B

- ◯ Very unnecessary rotations
- ◯ Unnecessary rotations
- ◯ Neutral
- ◯ Economical rotations
- ◯ Very economical rotations

Please rate your impression of the human-likeness of movement A on these scales:

Fake	◯	◯	◯	◯	◯	Natural
Machinelike	◯	◯	◯	◯	◯	Humanlike
Unconscious	◯	◯	◯	◯	◯	Conscious
Artificial	◯	◯	◯	◯	◯	Lifelike
Moving rigidly	◯	◯	◯	◯	◯	Moving elegantly

Please rate your impression of the human-likeness of movement B on these scales:

Fake	◯	◯	◯	◯	◯	Natural
Machinelike	◯	◯	◯	◯	◯	Humanlike
Unconscious	◯	◯	◯	◯	◯	Conscious
Artificial	◯	◯	◯	◯	◯	Lifelike
Moving rigidly	◯	◯	◯	◯	◯	Moving elegantly

Which movement behavior do you prefer?

- ◯ A
- ◯ B

8 Demographie

Thank you for answering the questions about your perception of the robot. Finally, please give us some personal details about you.

What is your age range?

- ◯ under 19
- ◯ 20-29
- ◯ 30-39
- ◯ 40-49
- ◯ 50-59
- ◯ 60-69
- ◯ over 70
- ◯ Prefer not to answer

What gender do you identify as?

- ◯ Female
- ◯ Male
- ◯ Other
- ◯ Prefer not to answer

If you have already had an interaction with a robot before taking this survey, please indicate the type(s) of robot you have experienced:

☐ Domestic Robots (e.g., vacuum cleaner, pool cleaner etc.) ☐ Military Robots (e.g., rescue robots, underwater search robots etc.) ☐ Medical Robots (e.g., rehab

If you already have interacted with a robot before this survey, please indicate the frequency of these interactions.

- ◯ Never
- ◯ One time
- ◯ Several times
- ◯ Frequently

Where do you live?

- ◯ North America
- ◯ South America
- ◯ Europe
- ◯ Africa
- ◯ Asia

- ◯ Asia
- ◯ Australia
- ◯ Antarctica
- ◯ Prefer not to answer

What is the highest level of education you have completed?

- ◯ No formal education
- ◯ 0-4 years of schooling
- ◯ 5-12 years of schooling
- ◯ Some secondary school
- ◯ Senior secondary schooling (completed high school or equivalent)
- ◯ Post-high school training (eg. vocational or technical training)
- ◯ Some college (pre-degree, diploma, certificate, ordinary national diploma)
- ◯ College graduate (bachelor's degree, higher national diploma)
- ◯ Prefer not to say

9 Endseite

Thank you for your participation!

Please copy the following code and paste it into the Prolific app to confirm your participation: 7D75C076